



FINAL ENVIRONMENTAL IMPACT STATEMENT  
**COLORADO GRAY WOLF  
10(j) RULEMAKING**

U.S. Fish and Wildlife Service

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SEPTEMBER 2023



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Prepared for  
U.S. Fish and Wildlife Service

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September 2023

## EXECUTIVE SUMMARY

This environmental impact statement (EIS) analyzes the U.S. Fish and Wildlife Service’s (Service) proposed action to address a request from the State of Colorado to designate a gray wolf population that would be reintroduced into Colorado as an experimental population under section 10(j) of the Endangered Species Act of 1973 (ESA), as amended (16 United States Code [USC] 1531 et seq.). The Service has regulatory authority under the ESA to manage the conservation and recovery of federally listed threatened and endangered species, including the federally listed endangered gray wolf. This authority extends to creating rules and regulations and permitting legitimate activities that would otherwise be prohibited by federal law. Development of this 10(j) rule is considered a major federal action requiring review under the National Environmental Policy Act of 1969 (NEPA). This EIS has been prepared in accordance with NEPA and its implementing regulations (40 Code of Federal Regulations [CFR] 1500–1508). The Service has prepared an EIS for this proposed action due to the level of public interest in the State Plan to reintroduce gray wolves to Colorado and the potential for public controversy.

The proposed section 10(j) rule would provide management flexibility to the Service and its designated agents for the reintroduction and management of the gray wolf (*Canis lupus*). The Service uses the term “gray wolf” to refer to *Canis lupus*, separate from the Mexican wolf (*Canis lupus baileyi*). The gray wolf and Mexican wolf are listed as separate entities under the ESA, and the term “gray wolf” as a listed entity encompasses several subspecies, with the exception of the Mexican wolf. Definitions of technical and regulatory terms used in this EIS are provided in Appendix A.

On November 3, 2020, Colorado voters approved Proposition 114 (codified as Colorado Revised Statute 33-2-105.8), a citizen-initiated ballot measure requiring the Colorado Parks and Wildlife (CPW) Commission to take the steps necessary to begin reintroductions of gray wolves to a portion of the species’ historical range in Colorado by December 31, 2023. As part of the reintroduction process, CPW requested the Service designate the gray wolf population that would be reintroduced to Colorado as experimental under section 10(j) of the ESA. Designating the population as experimental would allow the Service to tailor ESA protections for the population to provide management flexibility and better address stakeholder concerns.

### PURPOSE AND NEED FOR ACTION

The purpose of this action is to respond to Colorado’s request to designate the gray wolf population that would be reintroduced to Colorado as experimental under section 10(j) and to further the conservation of the species. This reintroduction effort is a result of Colorado Revised Statute (CRS) 33-2-105.8, passed on November 3, 2020, which directs the CPW Commission to take the steps necessary to begin reintroductions of gray wolves to a portion of the species’ historical range in Colorado by December 31, 2023.

The need for this action is to provide management flexibility to the Service and its designated agents. Currently, the gray wolf is listed as endangered under the ESA in Colorado. To facilitate reintroduction efforts, the State of Colorado has requested the Service designate the gray wolf population that would be reintroduced as an experimental population under section 10(j) of the ESA. This designation would reduce the regulatory impact of reintroducing a federally listed species in a specific geographic area (an experimental population boundary). This EIS evaluates the use of the 10(j) process for this reintroduction.

### PROPOSED ALTERNATIVES

Three alternative approaches for the proposed regulatory framework were chosen for analysis in the EIS:

- **No-action alternative** – Under this alternative, the Service would not approve the 10(j) rule, and no management flexibility would be provided to the Service and its designated agents. Under the no-action alternative, the State of Colorado would still reintroduce the gray wolf on the Western Slope in accordance with CRS 33-2-105.8.
- **Alternative 1** – Provide the Service and its designated agents management flexibility and provide for conservation of the species by approving a section 10(j) rule for the gray wolf population in Colorado, including any gray wolf living in, dispersing into, or reintroduced to the state.
- **Alternative 2** – Provide the Service and its designated agents management flexibility and provide for conservation of the species by approving a section 10(j) rule for the gray wolf population that would be reintroduced in a limited territory and issuing a permit under section 10(a)(1)(A) for an existing gray wolf population, should one become established, outside the designated experimental population boundary in the state.

The three alternatives addressed in the EIS were developed during internal scoping. The two action alternatives are consistent with section 10 of the ESA. The State of Colorado could request to be approved as a designated agent of the Service under either alternative 1 or 2; therefore, these alternatives meet the purpose and need for the proposed action. The Service developed alternative 2 to manage gray wolves that would be reintroduced to Colorado and any established, pre-existing wolf populations in the state, should they occur, consistent with section 10 of the ESA. The term “population” is defined in section 1.4 of the EIS. Pre-existing wolf populations include wolves living in the state and wolves that naturally have dispersed into the state before finalization of the section 10(j) rule and meet the definition of a population. The no-action alternative is included in compliance with Council on Environmental Quality regulations implementing NEPA (40 CFR 1502.14(c)). The no-action alternative considers implementation of the State Plan subject to restrictions under section 9 of the ESA. Under the no-action alternative, the Service would not issue a section 10(j) rule or section 10(a)(1)(A) permit and would continue to manage gray wolves in Colorado as an endangered species under the ESA. The alternatives are summarized in table ES-1.

The Service has identified alternative 1 as the Preferred Alternative for implementing the proposed action. Alternative 1 would provide a consistent federal regulatory framework and take provisions across the state for managing gray wolves that would be reintroduced and gray wolves living in or naturally dispersing to Colorado. This alternative would provide the management flexibility requested by the State of Colorado within the experimental population boundary, which would include the entire state. Management flexibility would be provided statewide because, although gray wolves would be reintroduced on the Western Slope in accordance with CRS 33-2-105.8, wolves can disperse long distances and may eventually occur throughout the state. See section 2.4.2 for additional detail on alternative 1.

## **SUMMARY OF ENVIRONMENTAL CONSEQUENCES**

The EIS analyzes the potential environmental consequences of alternatives that would implement the proposed action to develop a regulatory framework at the request of the State of Colorado to assist in its wolf reintroduction program. The analysis in the EIS compares the potential impacts of the action alternatives (alternatives 1 and 2) to conditions under the no-action alternative. The no-action alternative recognizes that the State of Colorado can move forward without a regulatory framework from the Service and considers the impacts of managing gray wolves that would be reintroduced to Colorado as an endangered species under the ESA. Table ES-2 summarizes the impacts of these alternatives to special status species, other wildlife, Tribal resources, socioeconomics, and environmental justice concerns.

**Table ES-1. Comparison of Alternatives**

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Regulatory Management Framework Used	All ESA protections apply.	Section 10(j) throughout entire State of Colorado	If an existing population is documented before a section 10(j) rule is finalized, the state could apply for a permit, and the Service could issue the state a section 10(a)(1)(A) permit in the portion(s) of Colorado in which an existing population (as defined by the Service) is located, if discovered. For analysis purposes, this alternative is based on the following State of Colorado Big Game Management units: 161, 6, 7, 16, 17, and 171, which occur in Jackson County and the western part of Larimer County (see figure 2-2). An experimental population boundary would be established for the remainder of the state outside this area that would be wholly separate geographically from the existing population.
Listed status of wolves	Endangered	Threatened	Threatened within the experimental population boundary. Endangered in area covered under the section 10(a)(1)(A) permit.
Consultation (per section 7)	Federal agencies are required to consult with the Service for any project or action they authorize, fund, or carry out that may affect federally listed endangered gray wolves in Colorado.	Not required unless those actions are on lands of the National Park System or the National Wildlife Refuge System (16 USC §1539(j)(2)(C)(i)).	Within the experimental population boundary, not required unless those actions are on lands of the National Park System or the National Wildlife Refuge System (16 USC §1539(j)(2)(C)(i)). Required in areas covered by the section 10(a)(1)(A) permit.
Take in self-defense	Any person may take a gray wolf in defense of the individual's life or the life of another person.	Same as the no-action alternative.	Same as the no-action alternative.
Agency take of wolves determined to be a threat to human life and safety	The Service or designated agent(s) may promptly remove any wolf that the Service or designated agent(s) determines to be a threat to human life or safety.	Same as the no-action alternative.	Same as the no-action alternative.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Opportunistic harassment	May be authorized under a separate authority (section 10(a)(1)(A) of the ESA [16 USC §1539(a)(1)(A)]).	Any person may conduct opportunistic harassment of any gray wolf in a non-injurious manner at any time. Opportunistic harassment must be reported to the Service or designated agent(s) within seven days.	Within the experimental population boundary, any person may conduct opportunistic harassment of any gray wolf in a non-injurious manner at any time. Opportunistic harassment must be reported to the Service or designated agent(s) within seven days. Within the 10(a)(1)(A) permit area, opportunistic harassment may be authorized under a separate authority (section 10(a)(1)(A) of the ESA [16 USC §1539(a)(1)(A)]).
Intentional harassment	No lethal or injurious nonlethal take would be permitted.	After the Service or designated agent(s) has confirmed wolf activity on private lands, on a public land-grazing allotment, or on a Tribal reservation, the Service or designated agent(s) may issue written take authorization valid for not longer than one year, with appropriate conditions, to any landowner or public land permittee to intentionally harass wolves. The harassment must occur in the area and under the conditions as specifically identified in the take authorization. Intentional harassment must be reported to the Service or a designated agent within seven days.	Within the experimental population boundary, same as alternative 1. Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.
Taking of wolves “in the act” of depredation on private land	No lethal or injurious nonlethal take would be permitted.	Consistent with state or Tribal requirements, any landowner may take a gray wolf in the act of attacking livestock or working dogs on private land, provided the landowner provides evidence of livestock, stock animals, or working dogs recently (less than 24 hours) wounded, harassed, molested, or killed by wolves, and the Service or designated agent(s) is able to confirm the livestock, stock animals, or working dogs were wounded, harassed, molested, or killed by wolves. The carcass of any wolf taken and the area surrounding it should not be disturbed to preserve the physical	Within the experimental population boundary, take of wolves “in the act” of depredation on private land would be the same as alternative 1. Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
		evidence that the take was conducted according to this rule.	
Taking of wolves “in the act” of depredation on public land	No lethal or injurious nonlethal take would be permitted.	Consistent with state or Tribal requirements, any livestock producer and public land permittee who is legally using public land under a valid federal land-use permit may take a gray wolf in the act of attacking livestock or working dogs legally present on public lands without prior written authorization. The Service or designated agent(s) must be able to confirm the livestock or working dogs were wounded, harassed, molested, or killed by wolves. The carcass of any wolf taken and the area surrounding it should not be disturbed to preserve the physical evidence that the take was conducted according to this rule. Any person legally present on public land may immediately take a wolf that is in the act of attacking the individual’s stock animal or working dog, provided conditions noted in “taking of wolves in the act on private land” are met. Any take or method of take on public lands must be consistent with the rules and regulations on those public lands. Any lethal or injurious take must be reported to the Service or a designated agent within 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.	Within the experimental population boundary, take of wolves “in the act” of depredation on public land would be the same as alternative 1. Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Additional taking by private citizens on private land	No lethal or injurious nonlethal take would be permitted.	At the Service's or designated agents' direction, the Service or designated agent may issue a repeated depredation written take authorization of limited duration (45 days or less) to a landowner or their employees to take up to a specified (by the Service or designated agent) number of wolves on their private land if: (1) the landowner has had at least one depredation by wolves on livestock that has been confirmed by the Service or designated agent within the last 30 days; and (2) the Service or designated agent has determined that repeatedly depredating wolves are routinely present on the private land and present a significant risk to the health and safety of livestock; and (3) the Service or designated agent has authorized lethal removal of wolves from that same private land. These authorizations may be terminated at any time once threats have been resolved or minimized. Any lethal or injurious take must be reported to the Service or a designated agent with 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.	Within the experimental population boundary, issuance of repeated depredation written take authorization for repeatedly depredating wolves for a private landowner would be the same as alternative 1.  Within the 10(a)(1)(A) area, no lethal take would be permitted; only nonlethal take would be allowed.



Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Additional taking by grazing permittees on public land	No lethal or injurious nonlethal take would be permitted.	At the Service's or designated agent(s) direction, the Service or designated agent(s) may issue a repeated depredation written take authorization of limited duration (45 days or less) to a public land-grazing permittee to take repeatedly depredating wolves on that permittee's active livestock grazing allotment if: (1) the grazing allotment has at least one depredation by wolves on livestock that has been confirmed by the Service or designated agent(s) within the past 30 days, and (2) the Service or designated agent(s) has determined that repeatedly depredating wolves are routinely present on that allotment and present a significant risk to the health and safety of livestock, and (3) the Service or designated agent(s) has authorized lethal removal of repeatedly depredating wolves from that same allotment. These authorizations may be terminated at any time once threats have been resolved or minimized. Any take or method of take on public land must be consistent with the rules and regulations on those public lands. Any lethal or injurious take must be reported to the Service or a designated agent with 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.	Within the 10(j) boundary, issuance of repeated depredation written take authorization for repeatedly depredating wolves for a grazing permittee would be the same as alternative 1.  Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Agency take of wolves that repeatedly depredate livestock	No lethal or injurious nonlethal take would be permitted.	The Service and designated agent(s) may carry out harassment, nonlethal control measures, relocation, placement in captivity, or lethal control of repeatedly depredate wolves. The Service or designated agent(s) would consider: (1) evidence of wounded livestock, working dogs, or other domestic animals, or remains of livestock, working dogs, or domestic animals that show that the injury or death was caused by wolves, or evidence that they were in the act of attacking livestock, working dogs, or other domestic animals; (2) the likelihood additional wolf-caused losses or attacks may occur if no control action is taken; (3) evidence of unusual attractants or artificial or intentional feeding of wolves; and (4) evidence that animal husbandry practices recommended in approved allotment plans and annual operating plans were followed.	Within the experimental population boundary, same as alternative 1. Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.
Incidental take	Incidental take could be permitted or exempted under other ESA authorities.	Take of a gray wolf is allowed if the take is accidental and incidental to an otherwise lawful activity and if reasonable due care was practiced to avoid such take, and such take is reported to the Service or designated agent within 24 hours (the Service may allow additional time if access to the site of the take is limited). Shooting a wolf as a result of mistaking it for another species is not considered accidental and may be referred to the appropriate authorities for prosecution.	Within the experimental population boundary, same as alternative 1. Within the 10(a)(1)(A) permit area, same as the no-action alternative.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Additional taking provisions for agency employees	No lethal or injurious nonlethal take would be permitted.	Any employee or agent of the Service may take a wolf from the wild if such action is (1) for take related to the release, tracking, monitoring, recapture, and management for the experimental population; (2) to aid or euthanize sick, injured, or orphaned wolves; (3) to dispose of a dead specimen; (4) to salvage a dead specimen that may be used for scientific study; (5) to aid in law enforcement investigations involving wolves; or (6) to remove wolves with abnormal physical or behavioral characteristics, as determined by the Service or designated agents, to prevent them from passing on or teaching those traits to other wolves.	Same as alternative 1 for areas within the experimental population boundary. For areas covered under the 10(a)(1)(A) permit, the following forms of take may occur: (1) for take related to the release, tracking, monitoring, recapture, and management for the experimental population; (2) to aid or euthanize sick, injured, or orphaned wolves; (3) to dispose of a dead specimen; (4) to salvage a dead specimen that may be used for scientific study; (5) to aid in law enforcement investigations involving wolves; or (6) to remove wolves with abnormal physical or behavioral characteristics, as determined by the Service or designated agents, to prevent them from passing on or teaching those traits to other wolves.
Tribal take to reduce impacts on wild ungulates	No lethal or injurious nonlethal take would be permitted.	The Service has included an exception to allow nonlethal and lethal management of gray wolves that are having an unacceptable impact on ungulate herds or populations on Tribal lands. This exception requires a science-based proposal that must, at a minimum, include the following information: (1) the basis of ungulate population or herd management objectives; (2) data indicating that the ungulate herd is below management objectives; (3) what data indicate that wolves are a major cause of the ungulate population decline; (4) why wolf removal is a warranted solution to help restore the ungulate herd to management objectives; (5) the level and duration of wolf removal being proposed; (6) how ungulate population response to wolf removal will be measured and control actions adjusted for effectiveness; and (7) demonstration that attempts were and are being made to	Within the experimental population boundary, the Service has included an exception to allow nonlethal and lethal management of gray wolves that are having an unacceptable impact on ungulate herds or populations on Tribal lands. This exception requires a science-based proposal that must, at a minimum, include the following information: (1) the basis of ungulate population or herd management objectives; (2) data indicating that the ungulate herd is below management objectives; (3) what data indicate that wolves are a major cause of the ungulate population decline; (4) why wolf removal is a warranted solution to help restore the ungulate herd to management objectives; (5) the level and duration of wolf removal being proposed; (6) how ungulate population response to wolf removal will be measured and control actions adjusted for effectiveness; and (7) demonstration that attempts were and are being made to

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
		<p>address other identified major causes of ungulate herd or population declines or of Tribal government commitment to implement possible remedies or conservation measures in addition to wolf removal. The proposal must be subjected to both public and peer review prior to it being finalized and submitted to the Service for review. At least three independent peer reviewers with relevant expertise in the subject matter that are not staff of the Tribe submitting the proposal must be used to review the proposal. Upon Service review, and before wolf removals can be authorized, the Service will evaluate the information provided by the requesting Tribe and provide a written determination to the requesting Tribal game and fish agency on whether such actions are scientifically based and warranted.</p>	<p>At least three independent peer reviewers with relevant expertise in the subject matter that are not staff of the Tribe submitting the proposal must be used to review the proposal. Upon Service review, and before wolf removals can be authorized, the Service will evaluate the information provided by the requesting Tribe and provide a written determination to the requesting Tribal game and fish agency on whether such actions are scientifically based and warranted.</p> <p>Within the 10(a)(1)(A) permit area, no lethal take would be permitted. Only nonlethal take would be allowed.</p>

**Table ES-2. Comparison of the Potential Environmental Impacts of the Alternatives**

Environmental Resource	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Biological Resources – Species of Special Concern – Wolves	Under the no-action alternative, wolves would remain listed as endangered, and regulated take would be limited to instances where wolves pose a threat to human life or safety. The wolf population is expected to increase in size and distribution in areas where habitat suitability is high (i.e., sufficient wild prey and limited contact with humans).	Alternative 1 could have adverse environmental impacts to individual wolves through regulated take but is not expected to hinder recovery or have population-level effects in the long term. Alternative 1 would provide management flexibility, which would contribute in the long term to achieving statewide management objectives for wolves.	Alternative 2 would provide added protection for wolves in the 10(a)(1)(A) permit area, which may lead to an increase in growth and distribution of the reintroduced wolf population in the short term. In the long term, the potential environmental impacts would be the same as under alternative 1 because of natural dispersal outside the 10(a)(1)(A) permit area.
Biological Resources – Other Species of Special Concern (Including Other Federally Listed and State-listed Species)	No flexibility for the management of reintroduced wolves for the purposes of conserving other species of special concern, potentially resulting in short- or long-term, adverse effects on prey species. However, adverse impacts to species of special concern are not likely because substantial population declines of species of special concern have not been documented as a result of previous wolf reintroductions elsewhere in North America.	Potential environmental impacts would be the same as those described under the no-action alternative because management flexibility for reintroduced wolves under alternative 1 would not include provisions for the take of wolves for the purposes of protecting or managing species of special concern. Like under the no-action alternative, alternative 1 is not likely to result in adverse effects on species of special concern.	Potential environmental impacts would be the same as under alternative 1.
Biological Resources – Other Wildlife (Elk, Deer, and Other Ungulates)	No flexibility for the management of reintroduced wolves for the purposes of managing other wildlife populations for conservation, potentially resulting in short- or long-term, adverse impacts to prey populations.	Potential impacts to prey populations would be similar to those described under the no-action alternative because management flexibility for reintroduced wolves for the purposes of managing ungulate populations would be limited to reservation lands for the Ute Mountain Ute Tribe and Southern Ute Indian Tribe within Colorado. Because these lands make up a relatively small portion of the state’s geographic area, potential take of wolves for the management of ungulates on reservations lands is not likely to	Potential impacts to prey populations would be the same as under alternative 1.

Environmental Resource	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
		result in measurable effects on statewide elk and deer populations.	
Cultural Resources – Tribal Resources	<p>Under this alternative, damage to archaeological and historical resources may occur in locations where the presence of wolves coincides with these resources. For instance, denning activities may damage surface or subsurface resources if these locations are used by wolves, and the presence of wolves may inhibit the potential for Tribal access to these resources.</p> <p>The reintroduction of wolves could also affect natural resources (e.g., wildlife) of importance to traditional cultural practices in part due to competition resulting in changes to predation habits or habitat selection.</p> <p>The reintroduction of wolves could affect wildlife species that are hunted or used by the Tribes as part of traditional cultural practices, such as elk, deer, and other ungulates. Elk, deer, and other ungulate populations could decline in response to unmanaged predation and other pressures from wolf reintroduction and result in a disruption to traditional cultural practices.</p>	<p>Potential impacts to Tribal resources would be similar to those described for the no-action alternative, although for some resources, including livestock, potential impacts could be reduced due to the management flexibility available under the 10(j) rule. Under alternative 1, the Southern Ute Indian Tribe and Ute Mountain Ute Tribe would have the ability to take wolves if populations of big game ungulates decline below established Tribal management goals as a result of wolf reintroduction. Therefore, alternative 1 could have a beneficial impact on ungulate populations and the traditional cultural practices related to these populations on reservation lands over the long term, compared to the no-action alternative.</p>	<p>Potential impacts to Tribal resources would be similar to those described for alternative 1 due to the management flexibility that would be provided by the section 10(j) rule. If an existing population were identified within a reservation, lethal take of wolves would be prohibited within the section 10(a)(1)(A) permit boundary. Alternative 2 would still provide the designated agents, including Tribes, flexibility to manage an existing population of gray wolves to mitigate impacts to livestock. The Southern Ute Indian Tribe and Ute Mountain Ute Tribe also would have the management flexibility to address decreases in ungulate populations below Tribal goals on reservation lands within the experimental population boundary, which could reduce impacts to the traditional cultural practices associated with these species.</p>

Environmental Resource	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Socioeconomic Resources	<p>Due to the lack of management options under the no-action alternative, outdoor recreation, agriculture, and livestock producers would experience the most socioeconomic impacts. Lethal or nonlethal methods to address wolves if they reduce the population of ungulates below Tribal management objectives would not be available as a management tool. Outfitters and guides could experience long-term localized consequences from decreases in ungulate populations, altered movement patterns of herds, or shifted demand for hunting to other parts of the state. A decline in hunting applications could lead to decreased wildlife revenue for CPW.</p> <p>An estimated 103–916 cattle and 26–298 sheep statewide, and 29–256 cattle and 15–164 sheep in the 21 focal counties could be killed or injured assuming a population of 200 wolves. This would result in estimated inflation-adjusted loss of up to \$1,588,709.50 in the statewide study area and up to \$365,013.13 in the 21 focal counties annually under the no-action alternative, which represents 0.0311 percent (Colorado) and 0.0071 percent (21 focal counties) of the total market value of cattle and sheep in Colorado.</p>	<p>Under alternative 1, impacts to outdoor recreation outfitters would be similar to those under the no-action alternative. Because there would be no statewide provision to address the management of wolves to address ungulate impacts on Colorado recreation outfitters, impacts would be the same as under the no-action alternative—long term, localized, and adverse. Implementation of the ungulate provision on Southern Ute and Ute Mountain Ute reservation lands could mitigate adverse economic effects to Tribes and outfitters by maintaining ungulate populations at a higher level than under the no-action alternative. Under alternative 1, the Service and its designated agents would manage the reintroduction of wolves with the greatest degree of flexibility. Alternative 1 would result in fewer direct long-term costs to livestock producers. Implementation of alternative 1 may not fully offset indirect economic losses caused by livestock stress from wolf predation. Additionally, livestock producers could incur costs for implementing nonlethal take strategies.</p>	<p>The socioeconomic impacts under alternative 2 within the experimental population boundary would be the same as those described for alternative 1. The impacts for outfitters and guides would be similar to those described in the no-action alternative within the 10(a)(1)(A) permit area. Due to the limited options for implementing management, big game hunting demand may shift to areas without gray wolves. Alternative 2 would allow for lethal and/or nonlethal take under the provisions of the section 10(j) rule in most areas of the state, except for Jackson County and western Larimer County, which would be subject to a section 10(a)(1)(A) permit (see table ES-1). Under alternative 2, livestock producers within the section 10(a)(1)(A) permit boundary may face disproportionately higher direct and indirect costs from wolf depredation.</p>

Environmental Resource	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Environmental Justice	<p>Under the no-action alternative, if wolves are present within the Brunot Area lands or on Tribal reservations, localized impacts could be disproportionately high and adverse for Tribal members, particularly those who rely economically on livestock production or hunting and those who rely on subsistence hunting. This alternative could result in localized disproportionately high and adverse impacts to low-income and minority livestock producers and outfitters and guides, particularly in the focal counties due to the presence of suitable ecological conditions for gray wolves. Under this alternative, these impacts would not be mitigated because reintroduced gray wolves would be managed as an endangered species under the ESA.</p>	<p>Disproportionately high and adverse impacts could occur on low-income outfitters and guides, subsistence hunters, and Tribes in local areas across most of the state based on the factors discussed under the no-action alternative. Implementation of the ungulate provision on Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands could have a long-term, beneficial impact on big game ungulate species by mitigating the potential for ungulate populations to decline below Tribal management objectives. Direct costs to livestock producers over the long term resulting from depredation would be lower under this alternative, compared to the no-action alternative.</p> <p>Implementation of alternative 1 may not fully mitigate indirect economic losses or incurred costs to implement nonlethal take strategies. However, the potential for disproportionately high and adverse impacts would be reduced under alternative 1 compared to the no-action alternative.</p>	<p>Under alternative 2, potential impacts to population groups of concern would be the same as described under alternative 1 for areas within the proposed experimental population boundary, which would cover most of the state.</p> <p>While lethal take of wolves would be prohibited within the section 10(a)(1)(A) permit boundary, alternative 2 would still provide the Service and its designated agents flexibility to manage an existing population of gray wolves to address livestock depredation. Within the section 10(a)(1)(A) permit boundary, impacts to low-income and minority livestock producers would be slightly reduced compared to the no-action alternative; however, these impacts may still be disproportionately high and adverse due to the cost of implementing nonlethal take measures. Impacts to outfitters and guides and subsistence hunters would be similar to impacts described under alternative 1.</p>



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## ACRONYMS AND ABBREVIATIONS

CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CPW	Colorado Parks and Wildlife
CRS	Colorado Revised Statute
EIS	environmental impact statement
ESA	Endangered Species Act
FR	Federal Register
MWEPA	Mexican Wolf Experimental Population Area
NEPA	National Environmental Policy Act
NPS	National Park Service
NRM DPS	Northern Rocky Mountains Distinct Population Segment
OAHP	(Colorado) Office of Archaeological and Historic Preservation
OHV	off-highway vehicle
SAG	(Colorado Wolf Management Plan) Stakeholder Advisory Group
Service	U.S. Fish and Wildlife Service
SGCN	Species of Greatest Conservation Need
State Plan	Colorado Wolf Restoration and Management Plan
SWAP	(Colorado's) State Wildlife Action Plan
TWG	(Colorado Wolf Management Plan) Technical Working Group
USC	United States Code
USDA	United States Department of Agriculture
USEPA	U.S. Environmental Protection Agency
WTGMA	Wolf Trophy Game Management Area

# CHAPTER 1 PURPOSE AND NEED FOR ACTION

## 1.1 INTRODUCTION

The U.S. Fish and Wildlife Service (Service) is evaluating a range of alternatives to address a request from the State of Colorado to designate the gray wolf population that would be reintroduced to Colorado as experimental under section 10(j) of the Endangered Species Act of 1973 (ESA), as amended (16 United States Code [USC] 1531 et seq.). The section 10(j) designation would provide management flexibility to the Service and its designated agents for the reintroduction and management of the gray wolf (*Canis lupus*). The Service uses the term “gray wolf” to refer to *Canis lupus*, separate from the Mexican wolf (*Canis lupus baileyi*). The gray wolf and Mexican wolf are listed as separate entities under the ESA, and the term “gray wolf” as a listed entity encompasses several subspecies, with the exception of the Mexican wolf. The gray wolf is currently listed as endangered in 44 states, including portions of Arizona, New Mexico, Oregon, Utah, and Washington, and threatened in Minnesota under the ESA. Wolf populations in Montana, Wyoming, Idaho, and the eastern portions of Washington and Oregon and a small portion of north-central Utah are not listed under the ESA. On November 3, 2020, Colorado voters approved Proposition 114 (codified as Colorado Revised Statute [CRS] 33-2-105.8), a citizen-initiated ballot measure requiring the Colorado Parks and Wildlife (CPW) Commission to take the steps necessary to begin reintroductions of gray wolves to a portion of the species’ historical range in Colorado by December 31, 2023. As part of the reintroduction process, CPW has requested the Service designate the gray wolf population that would be reintroduced as experimental under section 10(j) of the ESA. Designating the population as experimental would allow the Service to tailor ESA protections for the population to provide management flexibility and better address stakeholder concerns. Definitions of technical and regulatory terms used in this EIS are provided in Appendix A.

## 1.2 REGULATORY AUTHORITIES

The reintroduction of wolves to the State of Colorado is a State-led action that does not require the approval of the Service. The authority for the State to reintroduce the gray wolf comes from CRS 33-2-105.8 and the existing ESA Section 6 Cooperative Agreement Between the Service and CPW for the Conservation of Endangered and Threatened Fish or Wildlife (Section 6 Cooperative Agreement). Section 6(b) of the ESA states that *“The Secretary may enter into agreements with any State for the administration and management of any area established for the conservation of endangered species or threatened species.”*

The State of Colorado’s Section 6 Cooperative Agreement, created in 1976 and reviewed and renewed annually by the Service, gives the State authority to establish programs for the conservation of federally threatened and endangered wildlife where the state has *“... established an acceptable conservation program, consistent with the purposes and policies of the Act, for all resident fish or wildlife in the state which are deemed by the Secretary to be Endangered or Threatened and has furnished a copy of such a program together with all pertinent details, information and data requested by the Secretary.. .”*

The State of Colorado’s final Wolf Restoration and Management Plan (State Plan) is such a program under its Section 6 State Management Agreement. The ESA does not prohibit the State of Colorado from partnering with other states to capture gray wolves in states where they are not listed under the ESA and transport those wolves to Colorado for release. Once released, in the absence of a 10(j) rule, the wolves in Colorado would take on endangered federal status. If the 10(j) rule is in effect before Colorado

reintroduces a population of gray wolves to the State, those wolves would be managed under the framework of the 10(j) rule.

Once the State of Colorado has completed the action of reintroduction of the gray wolf under the authority of the Section 6 Cooperative Agreement, the Service has regulatory authority under the ESA to manage the conservation and recovery of federally listed threatened and endangered species, including creating rules and regulations and permitting legitimate activities that would otherwise be prohibited by federal law. As noted above, the State of Colorado made a request to the Service to designate the gray wolf population that would be reintroduced to Colorado as experimental under section 10(j) of the ESA, as amended (16 USC 1531 et seq.). Development of a 10(j) rule, which is under the authority of the Service, is the action being evaluated by the Service and is considered a major federal action requiring review under the National Environmental Policy Act of 1969 (NEPA). This environmental impact statement (EIS) has been prepared in accordance with NEPA and its implementing regulations (40 Code of Federal Regulations [CFR] 1500–1508). The Service has prepared an EIS, rather than an environmental assessment, for this proposed action due to the level of public interest in the State Plan to reintroduce gray wolves to Colorado and the potential for public controversy. Appendix B includes descriptions of other federal, state, and international laws, policies, and treaties that are relevant to the proposed action and analysis in the EIS. The EIS assesses the environmental impacts that may result from implementing either of the action alternatives, which would designate the gray wolf population that would be reintroduced to Colorado as an experimental population under section 10(j) of the ESA, or from the State-led reintroduction of the species without a section 10(j) rule (the no-action alternative).

### **1.3 PURPOSE OF THE ACTION**

The purpose of this action is to respond to the State of Colorado’s request to designate the gray wolf population that would be reintroduced to Colorado as an experimental population under section 10(j) and to further the conservation of the species. This reintroduction effort is a result of CRS 33-2-105.8, passed on November 3, 2020, which directs the CPW Commission to take the steps necessary to begin reintroductions of gray wolves to a portion of the species’ historical range in Colorado by December 31, 2023.

### **1.4 NEED FOR THE ACTION**

The need for this action is to provide management flexibility to the Service and its designated agents. Currently, the gray wolf is listed as endangered under the ESA in Colorado. To facilitate reintroduction efforts, the State of Colorado has requested the Service designate the gray wolf population that would be reintroduced as an experimental population under section 10(j) of the ESA. This designation would reduce the regulatory impact of reintroducing a federally listed species in a specific geographic area (an experimental population boundary). This EIS evaluates the use of the 10(j) process for this reintroduction.

### **1.5 BACKGROUND**

Gray wolves were common in Colorado prior to the early 1900s. After bison (*Bison bison*), elk (*Cervus canadensis*), deer (*Odocoileus* spp.), and other native ungulate species were decimated by unregulated hunting and settlement, wolves and other large predators threatened the expanding livestock industry when the populations of their natural prey declined. By the 1940s, government-sponsored predator control programs and overhunting eradicated wolves across most of the species’ historical range in the contiguous United States. The last known wolf in Colorado was killed in Conejos County in 1945.

Subspecies or regional populations of subspecies of the gray wolf were first listed under the Endangered Species Preservation Act of 1966 and the Endangered Species Act of 1969, predecessors of today's ESA. However, because modern taxonomists recognized fewer subspecies, the entire species was listed in 1978 as an endangered species throughout the contiguous United States, except in Minnesota where wolves were listed as threatened (85 *Federal Register* [FR] 69778). As enacted by Congress, the purposes of the ESA are “to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take steps as may be appropriate to achieve the purposes of the treaties and conventions set forth...” The ESA “further declared to be the policy of Congress that all Federal Departments and agencies shall seek to conserve endangered species and threatened species and shall use their authorities in furtherance of this Act.” The ESA also states “the Secretary shall develop and implement plans (herein, referred to as ‘recovery plans’) for the conservation and survival of endangered species...”

The Service implemented three gray wolf recovery programs in specific regions of the country within the species' historical range—the northern Rocky Mountains, the southwestern United States, and the eastern United States—to establish and prioritize recovery of regional populations of gray wolves. In the northern Rocky Mountains, gray wolves were designated as an experimental population and reintroduced into two of three recovery areas. Gray wolves began to naturally recolonize the third recovery area in northwestern Montana. This population was managed as an endangered species under the ESA. Mexican wolves were also designated as an experimental population and reintroduced into the southwestern United States. Recovery of gray wolves in the eastern United States relied on natural recolonization from an extant population in Minnesota (85 FR 69778 2020). The wolf population in the northern Rocky Mountain region, found in Montana, Wyoming, Idaho, the eastern portions of Washington and Oregon, and a small portion of north-central Utah, has since been delisted from the ESA. Wolves in the northern Rocky Mountain region were most recently delisted in 2012 (76 FR 25590, May 5, 2011) and 2017 (82 FR 20284, May 1, 2017).

In 2019, the Service evaluated the classification of gray wolves in the contiguous United States (lower 48 states) and Mexico under the ESA and proposed to delist the gray wolf due to the biological recovery of the species. Following that evaluation, in 2020 the Service published a final rule in the *Federal Register* to remove the species in the contiguous United States and Mexico from the Lists of Endangered and Threatened Wildlife and Plants (85 FR 69778 2020). The final rule to delist the species was based upon review of the best scientific and commercial data currently available, which indicated that current and foreseeable threat factors for the species, including human-caused mortality, habitat and prey availability, disease and parasites, and the effects of climate change, were not likely to result in reductions in gray wolf numbers or habitat (85 FR 69778 2020).

The Service finalized the rule to delist the gray wolf (85 FR 69778) in 2020, removing all gray wolves in the lower 48 states from the lists of species protected under the ESA. However, the final delisting rule was vacated by court order (*Defenders of Wildlife v. U.S. Fish & Wildlife Serv.*, No. 21-CV-00344-JSW, 2022 WL 499838 (N.D. Cal. Feb. 10, 2022)) on February 10, 2022. With this court order, gray wolves outside the delisted northern Rocky Mountains population in Wyoming, Montana, Idaho, the eastern portions of Washington and Oregon, and north-central Utah were once again protected under the ESA. Gray wolves are listed as threatened in Minnesota and endangered in 44 additional states. Any take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of wolves in these areas without a permit or other authorization is prohibited by federal law (USFWS 2022a).



After wolf reintroduction in the northern Rocky Mountains, unconfirmed wolf sightings became more common in Colorado. However, the first confirmed wolf in Colorado in modern times was struck and killed by a vehicle near Idaho Springs in 2004. Although four additional lone wolves have been confirmed in Colorado since 2004, no resident groups were documented in the state until 2020. In January 2020, CPW field personnel followed up on sighting reports from the public and confirmed at least six wolves traveling together in extreme northwest Colorado. This group was down to a single individual later that year and, at present, there is no indication that any wolf or wolves remain in the northwest corner of the state. Separately, in north-central Colorado, an individual wolf from Wyoming was first documented during summer 2019 and paired up with another wolf during winter 2020–2021. This pair produced offspring in spring 2021, becoming the first documented reproductively active group in Colorado in recent history. As of December 31, 2022, this group contains the only known wolves in the state and is composed of two individuals (Odell 2023).

The Service defines a wolf population as “at least two breeding pairs of wild wolves successfully raising at least two young each year (until December 31 of the year of their birth), for two consecutive years” (USFWS 1994). Only one breeding pair had been identified in Colorado as of 2021, and no reproduction was documented in the spring of 2022 or spring of 2023; therefore, these two criteria have not been met. According to this definition, no gray wolf populations have been documented in the state.

As noted above, on November 3, 2020, Colorado voters approved Proposition 114, a citizen-initiated ballot measure requiring the CPW Commission to take the steps necessary to begin reintroductions of gray wolves to a portion of the species’ historical range in Colorado by December 31, 2023. The CPW Commission released the Final Wolf Restoration and Management Plan on May 3, 2023 (referred to here as the State Plan; CPW 2023a). Details of the State Plan are incorporated into the action alternatives discussed in Chapter 2 of this EIS and assessed in Chapter 4, Environmental Consequences.

While the federal government typically leads (or co-leads) reintroduction programs for species listed under the ESA, Colorado’s gray wolf reintroduction plan is different in that the effort is citizen-directed and State-led. Reintroduction of gray wolves to Colorado is not an identified strategy in the Service’s recovery programs for the species. However, although the reintroduction can occur without the involvement of the Service (see section 1.2) because gray wolves remain listed as endangered throughout the State of Colorado, any management program with expanded take authorization would require some involvement by the Service, and CPW has requested that the Service develop a 10(j) rule under the ESA to provide increased management flexibility for the gray wolf population that would be reintroduced to Colorado. Under section 10(j) of the ESA, the Service may designate a reintroduced population of a listed species as an experimental population. This designation would reduce the regulatory impact of reintroducing a federally listed species in a specific geographic area (experimental population boundary), while still contributing to the species’ conservation. Section 10(j) of the ESA is described further under section 1.7.1, below.

## **1.6 PROJECT LOCATION AND DESCRIPTION**

CPW is planning to reintroduce gray wolves to a portion of the species’ historical range in the State of Colorado. Historically, gray wolves occurred across Colorado in all the state’s major habitat types. Potential reintroduction sites are discussed in the State Plan. However, the study area for this analysis includes the entire state of Colorado, or the area in which the federal regulatory framework that would be implemented under alternatives 1 or 2 would apply.

## **1.7 PLANNING AND EIS PROCESS**

The Service prepared this EIS to evaluate the impacts of the proposed action on the human environment, consistent with the purpose and goals of NEPA (42 USC 4321 et seq.) and pursuant to the Council on Environmental Quality's (CEQ) implementing NEPA regulations at 40 CFR Parts 1500–1508 (as amended). Additionally, the EIS was prepared consistent with the Department of the Interior's NEPA regulations (43 CFR Part 46), long-standing federal judicial and regulatory interpretations, and Administration priorities and policies including Secretary's Order No. 3399 requiring bureaus and offices to use "the same application or level of NEPA that would have been applied to a proposed action before the 2020 Rule went into effect."

The following sections describe the planning and EIS process, including public involvement in the process. Development of the alternatives evaluated in the EIS and detailed descriptions of the action alternatives and the no-action alternative are provided in Chapter 2. A discussion of the scoping of issues to be addressed in detail in the analysis is included in Chapter 3.

### **1.7.1 Scope of the EIS**

This EIS evaluates the potential environmental effects of the Service's proposed action to address the State of Colorado's request to issue a section 10(j) rule, consistent with section 10 of the ESA, to provide management flexibility for the Service and its designated agents in reintroducing and managing a population of gray wolves in a portion of the species' historical range, while still providing for conservation of the species. The reintroduction effort is directed by CRS 33-2-105.8, which requires the CPW Commission to take the steps necessary to begin reintroductions of gray wolves to a portion of the species' historical range in Colorado by December 31, 2023. The State may reintroduce wolves with or without further action by the Service, in compliance with the State's cooperative agreement under section 6 of the ESA (see section 1.2); therefore, considering an alternative to not pursue active wolf reintroduction efforts is outside the Service's legal authority and outside the scope of the EIS.

Another action related to wolves occurring in the area is the restoration of the Mexican wolf. In support of Mexican wolf recovery, the Service is working with CPW and neighboring states to address management of gray wolves should the reintroduced gray wolves expand outside Colorado. Any take of gray wolves that expand outside Colorado will be addressed through one 10(a)(1)(A) permit to the Colorado Ecological Services Field Office, in association with a memorandum of understanding between the neighboring states (New Mexico, Arizona, and Utah) and the State of Colorado to reduce any potential effects of gray wolves on Mexican wolves. The Service will be a signatory to the memorandum of understanding. The permit will authorize state, federal, and Tribal partners to assist in the capture and return of wolves originating from the Colorado experimental population. This permit will also allow for Mexican wolves to be captured and returned to New Mexico or Arizona. The issuance of this 10(a)(1)(A) permit is an independent action separate from the 10(j) rule because it is for gray wolves that leave the State of Colorado 10(j) population and enter adjacent states. The 10(j) rule only covers the State of Colorado. The activities associated with Mexican wolves, however, are analyzed in the cumulative impact analysis of this 10(j) document.

Furthermore, the State of Colorado has developed a wolf restoration and management plan and will be the agency leading gray wolf reintroduction efforts in the state. As such, elements directly related to the reintroduction of wolves, such as how many wolves would be released, where they would be released, and population objectives are outside the scope of the EIS. The proposed section 10(j) rule would address the potential for take resulting from State-led activities associated with reintroduction and management of

gray wolves in Colorado. These activities are described in the State Plan (CPW 2023a). Reintroduction and management of gray wolves in Colorado is not an identified priority of the Service's previous national wolf strategy outlined above; therefore, the Service is not proposing any additional management measures for the gray wolf population that would be reintroduced by the State of Colorado.

### **1.7.2 Public Participation – Scoping and Draft EIS Public Review**

Following publication of the Notice of Intent to prepare an EIS, the Service held a public scoping period from July 21, 2022, to August 22, 2022, to invite interested members of the public to ask questions and provide input on the proposed action and alternatives and issues to be considered in the EIS. Three in-person public meetings were held in Gunnison, Silverthorne, and Craig, Colorado, on August 2, August 3, and August 4, 2022, respectively. A virtual public meeting was held on August 10, 2022. The numbers of participants and summaries of comments received at each of these meetings are included in the Public Scoping Summary Report (Appendix C). In general, comments received during public scoping included suggestions for the range of alternatives (e.g., lethal vs. nonlethal management, boundary of the 10(j), listing status of the gray wolf); ecosystem dynamics and the role of the gray wolf; socioeconomics and environmental justice, including impacts to livestock producers, outfitters, and tourism; components of the NEPA analysis, including purpose and need and the scope of analysis; impacts to other federally listed species, such as the Mexican wolf and other sensitive species; impacts to other wildlife, including ungulates; and impacts to Tribal resources and Tribal consultation.

A second opportunity for public review occurred with the release of the proposed rule and draft EIS, which were made available to the public for a 60-day review period from February 17, to April 18, 2023. During this time, three in-person public meetings were held on the Western Slope of Colorado (March 14-16, 2023), one meeting was held in Lakewood, Colorado (March 28, 2023), and a virtual meeting was held on March 22, 2023. Responses to public comments on the proposed rule and draft EIS are provided in Appendix D. In general, comments received during review of the draft EIS included many of the same issues as scoping, including the range of alternatives, NEPA sufficiency, and potential impacts to people and businesses. The comments also included feedback on the proposed rule including suggestions for changing definitions of terms, allowable take, and reporting requirements.

## **CHAPTER 2 PROPOSED ACTION AND ALTERNATIVES**

### **2.1 INTRODUCTION**

Chapter 2 describes the proposed action and the alternatives developed to address the purpose and need for the proposed action, defined in sections 1.2 and 1.3, in accordance with regulations implementing NEPA at 40 CFR 1502.14.

### **2.2 PROPOSED ACTION**

Following approval of Proposition 114 by Colorado voters in November 2020 (now codified as CRS 33-2-105.8), the State of Colorado requested that the Service develop a section 10(j) rule under the ESA to provide management flexibility for the State-led gray wolf reintroduction and management efforts. The gray wolf is currently listed as an endangered species in the lower 48 states except for the Northern Rocky Mountain Distinct Population Segment (NRM DPS), and Minnesota where wolves are listed as threatened. In response to this request, the Service is proposing to promulgate a section 10(j) rule, consistent with section 10 of the ESA, to provide management flexibility for the reintroduction and management of a population of gray wolves in Colorado and to further the conservation of the species, as required for establishing a 10(j) rule. The Service would establish this framework by the end of 2023 to meet the deadline established in CRS 33-2-105.8, which requires the CPW Commission to take the steps necessary to begin reintroductions of gray wolves to a portion of the species' historical range by December 31, 2023. The section 10(j) rule would remain in place unless the lower 48 states population of gray wolf is federally delisted.

The Service has identified alternative 1 as the Preferred Alternative for implementing the proposed action. Alternative 1 would provide a consistent federal regulatory framework and take provisions across the state for managing gray wolves that would be reintroduced and gray wolves living in or naturally dispersing to Colorado. This alternative would provide management flexibility within the experimental population boundary, which would include the entire state, and further the conservation of the species. Management flexibility would be provided statewide because, although gray wolves would be reintroduced on the Western Slope in accordance with CRS 33-2-105.8, wolves can disperse long distances and may eventually occur throughout the state. See section 2.4.2 for additional detail on alternative 1.

### **2.3 ALTERNATIVE SCOPING**

The scope of the alternatives included in the EIS takes into consideration recommendations in the State Plan and comments received during internal and public scoping and public review of the draft EIS.

#### **2.3.1 Development and Evaluation of Alternatives**

Internal scoping considered the types of regulatory frameworks, consistent with section 10 of the ESA, that the Service may implement based on federal authority under the ESA, federal priorities for management of gray wolf recovery, and the best available scientific information. Alternative frameworks were identified through internal scoping and are described in the sections below. The federal regulatory framework developed by the Service would address gray wolf reintroduction and management measures included in the State Plan. CPW began development of the State Plan following approval of Proposition 114 in November 2020. The State facilitated a public engagement process to invite feedback on the plan

and convened a Technical Working Group (TWG) and Stakeholder Advisory Group (SAG), which both met monthly beginning in June 2021 to provide recommendations to CPW during plan development. CPW considered and incorporated this feedback, including management recommendations from the two groups and concerns raised in public comments, into the draft State Plan, released on December 9, 2022, and the final State Plan, released on May 3, 2023.

Participants in the public scoping and draft EIS review processes identified various alternative regulatory frameworks and management measures that should be considered. Public comments related to proposed alternatives are summarized in the Public Scoping Summary Report (Appendix C). The Service considered all proposed alternatives identified during public scoping and review of the draft EIS, but all of these alternatives are not evaluated in detail in the EIS. Alternatives addressed in the EIS and other identified alternatives that are not evaluated further are described briefly below.

### **2.3.2 Alternatives Addressed in the EIS**

Three alternative approaches for the proposed regulatory framework were chosen for analysis in the EIS:

- **No-action alternative** – Under this alternative, the Service would not approve the 10(j) rule, and no management flexibility would be provided to the Service and its designated agents. Under the no-action alternative, the State of Colorado would still reintroduce the gray wolf on the Western Slope in accordance with CRS 33-2-105.8.
- **Alternative 1** – Provide the Service and its designated agents management flexibility and provide for conservation of the species by promulgating a section 10(j) rule for the gray wolf population in Colorado, including any gray wolf living in, dispersing into, or reintroduced to the state.
- **Alternative 2** – Provide the Service and its designated agents management flexibility and provide for conservation of the species by promulgating a section 10(j) rule for the gray wolf population that would be reintroduced in a limited territory and issuing a permit under section 10(a)(1)(A) for an existing gray wolf population, should one become established prior to finalization of the section 10(j) rule. The 10(j) rule would exclude the area occupied by an existing population of wolves from the section 10(j) boundary.

The three alternatives addressed in the EIS were developed during internal scoping. The two action alternatives are consistent with section 10 of the ESA. The State of Colorado could request to be approved as a designated agent of the Service under either alternative 1 or 2; therefore, these alternatives meet the purpose and need for the proposed action. The Service developed alternative 2 as an alternative for managing the gray wolf population that would be reintroduced and any established, pre-existing wolf populations in the state (should one be identified prior to finalization of the section 10(j) rule proposed under alternative 1) consistent with section 10 of the ESA. The term “population” is defined in section 1.4. Pre-existing wolf populations include wolves living in the state and wolves that naturally have dispersed into the state before finalization of the section 10(j) rule and meet the definition of a population.

The no-action alternative, is included in compliance with CEQ regulations implementing NEPA (40 CFR 1502.14[c]). The no-action alternative considers implementation of the State Plan subject to sections 6 and 9 of the ESA. Under the no-action alternative, the Service would not issue a section 10(j) rule or section 10(a)(1)(A) permit and would continue to manage gray wolves in Colorado as an endangered species under the ESA. Detailed descriptions of the alternatives evaluated in the EIS are discussed below.

### 2.3.3 Alternatives Identified During Scoping and Review of the Draft EIS, but Not Evaluated Further

Fifteen additional alternatives or alternative elements were identified during internal and public scoping and public review of the draft EIS that are not evaluated further because they are outside the Service's legal authority, outside the scope of the proposed action, or would not meet the purpose and need for the proposed action. These alternatives are summarized below, along with the reasons they are not included for consideration in the EIS.

1. **Apply a Section 10(j) Rule to a Smaller Geographic Area (Experimental Population Boundary)** – The Service considered evaluating an alternative to establish a smaller experimental population boundary in Colorado. However, this alternative would not meet the purpose and need for the proposed action and is not evaluated further because it may pose undue restrictions on the ability of CPW to provide adequate habitat for gray wolves as their population within the state grows or to manage wolves that disperse outside the experimental population area to other parts of the state.
2. **Apply a Section 10(j) Rule to a Larger Geographic Area (Experimental Population Boundary)** – Commenters suggested that the experimental population boundary be expanded to include a buffer zone around Colorado's state borders to prevent unregulated take where wolves lack ESA protection, such as in Wyoming. Special management provisions are only applicable within the experimental population boundary where an ESA-listed species is present. If the gray wolf is not federally listed as endangered in a state, designation of a section 10(j) rule and creation of an experimental population boundary is not applicable, and these regulatory tools would not change the designation of wolves in that state to offer more protection. Furthermore, a section 10(j) rule and experimental population boundary cannot be applied in areas where existing populations of a species are present. Colorado coordinated with adjoining states during the State's planning process for reintroduction, and these states did not express a desire to be included in the section 10(j) designation. For these reasons, this element is outside the Service's legal authority and was not carried forward for analysis.
3. **Establish a Candidate Conservation Agreement or Other Cooperative Agreement** – Establishing a Candidate Conservation Agreement or other cooperative agreement with the State was not evaluated further in the EIS because these agreements only apply to non-listed species. The gray wolf would need to be delisted under the ESA for these agreements to apply, which is outside the scope of the proposed action.
4. **No Wolf Reintroduction** – Under this alternative, the recovery of the gray wolf in the state would rely on natural recolonization and population growth, and the Service would continue to manage the species as endangered under the ESA. The Service considered an alternative under which the gray wolf would not be intentionally reintroduced by the State of Colorado; however, this alternative is outside the Service's legal authority. The CPW Commission is required to comply with CRS 33-2-105.8 and take the steps necessary to begin reintroductions of gray wolves to a portion of the species' historical range in Colorado by December 31, 2023. As discussed in section 1.2, the State has authority under the Section 6 Cooperative Agreement to reintroduce the gray wolf without the approval of the Service. Therefore, each of the alternatives evaluated in the EIS assumes that the planned reintroduction and management of gray wolves will move forward, led by the State of Colorado.

- Variations on Statewide Permits Issued by the Service** – During public scoping, commenters suggested variations on Statewide permits such as developing a section 10(a)(1)(A) permit for the entire state, a section 10(a)(1)(B) permit for the entire state, or a section 10(j) rule with no lethal take. Part of the purpose of this effort is to provide management flexibility for the reintroduction process. Use of a section 10(a)(1)(A) permit would not provide for full management flexibility because the permit would not allow for lethal take statewide. The Service has previously included purposeful, lethal take in a 10(a)(1)(A) permit, which a court later invalidated (*Humane Soc’y of U.S. v. Kempthorne*, 481 F. Supp. 2d 53 (D.D.C. 2006), *vacated sub nom. Humane Soc. of U.S. v. Kempthorne*, 527 F.3d 181 (D.C. Cir. 2008)).

The Service considered the use of all regulatory frameworks, including the 10(a)(1)(B) permit; however, this permitting tool is not used for recovery actions, such as the gray wolf reintroduction. The section 10(a)(1)(B) permit is issued at the conclusion of the Habitat Conservation Plan process as a mechanism to permit incidental take of a species, not intentional take; therefore, this is not an appropriate regulatory mechanism to consider for this effort.

In regard to considering a section 10(j) rule with no lethal take permitted, this management approach would best be accomplished through a different regulatory framework, such as a Safe Harbor Agreement. The section 10(j) rulemaking process is most effective when it provides a range of management flexibility, including lethal take; therefore, the Service did not consider a scenario with a section 10(j) rule and no lethal take. Establishing another type of regulatory framework would not meet the purpose and need for the proposed action because these regulatory frameworks would limit management flexibility throughout the state; therefore, these regulatory mechanisms were not further evaluated.

- Alternative Elements Related to Wolf Release, Management, Compensation, and Education** – Commenters provided suggestions on where wolves should be reintroduced, the use of radio collars to track wolves, how many wolves should be introduced, providing a compensation program for livestock producers, providing various education programs on conflict reduction, the ecological importance of wolves, relocation of wolves that leave specific geographic areas, and management tools for livestock producers to address wolves. All of these elements are directly related to the reintroduction of the gray wolf, rather than the development of a regulatory framework, and are not within the scope of this EIS. These elements were addressed in the State Plan that was approved by the CPW Commission in May 2023.

The relocation of gray wolves that leave Colorado, including the relocation of gray wolves to mitigate potential impacts on the Mexican wolf population and recovery of that population, would be addressed by separate permits issued by the Service to the State of Colorado and other designated agents, and is outside the scope of this EIS. See section 4.9.2 for a description of permitting approaches that would be used to mitigate potential impacts on the Mexican wolf.

- Population Goals or Thresholds** – Commenters suggested various ways to implement population goals and/or thresholds, including allowing for 1,000 wolves on the landscape, creating a limit on lethal control actions if wolf populations are not meeting certain goals, implementing ecosystem recovery targets as an indicator of wolf recovery, and setting population goals and timelines for the delisting of the gray wolf. The determination of how many wolves would be released per year and the goals for total numbers of wolves are outside the scope of the Service’s effort, which is focused solely on the section 10(j) rulemaking process. These issues are addressed in the State Plan. Additionally, the Service has not developed a recovery plan or

recovery criteria for the gray wolf in Colorado. Setting recovery criteria related to the federal delisting of the gray wolf is a planning effort that is outside the scope of this EIS.

8. **Mexican Wolf Interactions/Management** – Commenters provided a variety of comments related to the Mexican wolf, including keeping the two populations of wolves separate, allowing them to intermingle, and reintroducing a subpopulation of the Mexican wolf to Colorado. Issues related to gray wolf and Mexican wolf interactions are addressed in the EIS under section 4.4, Species of Special Concern, and section 4.9, Cumulative Impacts and Other Considerations. The Service recognizes the potential for interactions between the two listed entities, and managing these interactions would occur in coordination with the Mexican Wolf Recovery Program. As of the publication of this EIS, the states potentially impacted by these interactions are developing a memorandum of understanding to detail the actions that would be taken to limit these interactions as wolves cross into adjacent states. The Service will be a signatory to this memorandum and would provide the regulatory means for relocating wolves through a 10(a)(1)(A) permit. The specific suggestion of including recovery of the Mexican wolf under the section 10(j) rulemaking is outside the scope of this action. Recovery of the Mexican wolf was considered and disregarded as an alternative under the State Plan in the final report prepared by the Colorado Wolf Management Plan TWG (TWG 2021). Colorado is planning to reintroduce the gray wolf, and this 10(j) process is considering the regulatory framework for managing the population of gray wolves that would be reintroduced to Colorado, rather than the Service reintroducing the species.
9. **Use of Trapping and Foothold Traps** – Commenters requested that the section 10(j) rule allow for the trapping of gray wolves and the use of foothold traps. The Service considered this element in the planning process since it has been used in other section 10(j) regulations for species reintroductions. However, the State Constitution only allows for the use of (nonlethal) leghold traps for scientific investigations and other limited purposes. Should State law change, the range of alternatives considered in the EIS does not include anything that dictates what tools can or cannot be used, and the State would be able to use foothold traps as a management tool should it choose to do so. Therefore, this element was not specifically included in the range of alternatives.
10. **Reproductive Control** – Commenters suggested that reintroduced wolves should be spayed and neutered because the population is experimental. Because the gray wolf is listed under the ESA as an endangered species, reproductive control would be contrary to the goals of the ESA, the mission of the Service with regard to promoting the recovery of listed species, and the purpose and need for the proposed action; therefore, this element was not considered in the range of alternatives.
11. **Lethal Take of all Gray Wolves Prior to the Population Being Deemed Essential** – Commenters suggested that the rule include an “escape clause” that would allow the Service to lethally take all wolves in the experimental population if the nonessential status were to become at risk. However, the gray wolf is listed under the ESA as an endangered species; therefore, lethal take for this purpose would not be consistent with the ESA, the mission of the Service, or the purpose and need for the proposed action and was not considered as an alternative element. Once an experimental population is designated as essential or nonessential, there is no regulatory mechanism to change the essential/nonessential designation.
12. **Public Land Management** – Commenters suggested various ways to manage public lands to address conflicts with wolves, including removing all livestock from public lands and forbidding lethal take on public lands. The removal of grazing/livestock leases on federal lands is not within the jurisdiction of the Service, and instead, falls to other agencies such as the Bureau of Land



Management and U.S. Forest Service. Lethal take on public lands would occur within the same regulatory framework and same restrictions as lethal take on state and private lands.

13. **Include an Ungulate Provision in the Rule that Applies Statewide** – The draft EIS evaluated a statewide provision to address potential gray wolf impacts on ungulate populations; however, the final rule and EIS only include such a provision on reservation lands of the Ute Mountain Ute Tribe and Southern Ute Indian Tribe, as designated agents of the Service. Adding this provision only on these lands recognizes the sovereignty of these Tribal nations.
14. **Only Allow for Nonlethal Management Measures for the Gray Wolf** – The Service considers it important to retain the ability to remove wolves in specific situations in which nonlethal management actions are ineffective at resolving conflicts. The effectiveness of nonlethal deterrents depends on various characteristics of the area and individual livestock operations. For instance, many tools (fladry [i.e., a nonlethal tool designed to protect livestock from predation by creating a visual barrier to wolves], radioactivated guard boxes, and electric fencing) are only effective in small areas. Nevertheless, some innovative tools (range riding, hazing) have reduced wolf depredations in certain situations. The Service would continue to focus on and expand the use of nonlethal tools where appropriate, but felt it would not meet the purpose and need for the proposed action to have an alternative that relied solely on nonlethal management measures. The rule limits lethal removal at the agency’s discretion.
15. **Additional Requirements for Allowing Take** – Commenters suggested a number of conditions that should be met before take is permitted, including requiring four or more livestock losses on private land by a single wolf within seven days to lethally take the wolf; including the presence of carrion or unusual odors; verifying that the livestock operator implemented at least two area-specific conflict minimization techniques; verifying that further nonlethal prevention would not be effective and that lethal take of the wolf would not harm the wolf population and State recovery objectives; requiring more than one depredation event to occur before lethal take is permitted; and allowing only the Service and its designated agents the authority to legally take wolves. The Service believes the take allowances are already limited and including additional requirements on the use of lethal take would provide additional barriers that would reduce the effectiveness of the rule and would not provide the management flexibility the rule was developed to provide. Regarding who has the authority for legal take, some conflicts are likely to occur on private property or in remote and difficult to reach locations, making timely responses by the Service or designated agent personnel difficult. Authorizing take for livestock operators and landowners under strictly defined circumstances would help to minimize conflict when landowners are the closest responders. These additional requirements would not meet the purpose and need for the 10(j) rule in conserving the species while reducing the regulatory impact; therefore, these elements were not included in the range of alternatives evaluated.

## **2.4 ALTERNATIVES CONSIDERED IN DETAIL IN THE ENVIRONMENTAL ANALYSIS**

The no-action alternative and the two action alternatives are described below. A comparison of the alternatives is provided after the description of the alternatives in table 2-4. Under each of the alternatives, the provisions of the ESA would remain in effect, except as provided by the proposed rule under alternatives 1 and 2. Under each alternative, except as provided by the proposed rule, permits would be available and required for handling, transporting, or otherwise managing gray wolves for scientific

purposes, enhancement of propagation or survival, educational purposes, or other purposes consistent with the ESA (50 CFR 17.32).

In the event the gray wolf is delisted from the ESA before the final section 10(j) rule is issued, the take provisions noted below would no longer apply, and Colorado would likely apply to the Service for a Candidate Conservation Agreement with Assurances and accompanying section 10(a)(1)(A) permit with no other regulatory framework applied to the gray wolf in Colorado. The Candidate Conservation Agreement would identify specific conservation measures that the State would voluntarily undertake to conserve gray wolves in Colorado. If approved, assurances would be authorized by a section 10(a)(1)(A) permit and would specify that no additional land, water, or resource use restrictions, aside from any restrictions identified in the agreement, would be applied should gray wolves be listed under the ESA in the future (USFWS and NOAA 2016).

The State Plan would direct the population goals and management of gray wolves in Colorado. Initial planning indicates that the State intends to release 10 to 15 wolves per year, for 3 to 5 years. According to the State Plan, “the total number of wolves relocated in any year and in total will depend on capture success, continued participation by cooperating states, and the degree to which relocated animals remain in Colorado and survive” (CPW 2023a). The State has identified target thresholds of either (1) a minimum count of 150 wolves anywhere in Colorado for two successive years, or (2) a minimum count of 200 wolves anywhere in Colorado with no temporal requirement, which must be met before the species would be delisted from the State’s list of threatened and endangered species and managed as a delisted, nongame species (CPW 2023a). If the gray wolf is delisted by the State but remains federally listed under the ESA, the provisions of the implemented federal regulatory framework (10(j) rule) would remain in effect.

## **2.4.1 No-Action Alternative**

### **Background**

CEQ regulations (40 CFR 1502.14[c]) require an EIS to evaluate the no-action alternative. The no-action alternative provides a benchmark that enables decision-makers to compare the potential environmental effects of the proposed action alternatives with conditions that are likely to occur in the absence of the proposed action. Under the no-action alternative, the proposed action would not occur. This means that the Service would not establish a section 10(j) rule or issue a 10(a)(1)(A) permit to provide management flexibility for the Service or its designated agents in reintroducing a population of gray wolves to Colorado and provide for conservation of the species. The no-action alternative would not meet the purpose and need for the proposed action but is being analyzed in the EIS to provide a reference point against which the potential effects of the action alternatives can be compared.

### **Summary**

Under the no-action alternative, the Service would not issue a section 10(j) rule or other federal regulatory framework consistent with section 10 of the ESA. An experimental population boundary would not be created in Colorado, and the gray wolf would be considered endangered throughout the state.

### **Detailed Description**

Under the no-action alternative, in compliance with CRS 33-2-105.8, the CPW Commission would still take the steps necessary to begin reintroductions of gray wolves by December 31, 2023, but gray wolves would be reintroduced as a federally endangered species. Under the no-action alternative, the State of Colorado would be able to reintroduce a population of gray wolves without authorization from the Service. The State may capture gray wolves from the federally delisted population in the northern Rocky

Mountains region (i.e., Idaho; Montana; Wyoming, or parts of Washington, Oregon, or north-central Utah) to be reintroduced to Colorado. Federally delisted populations are managed under state laws and regulations and not under the authority of the ESA. Additionally, the State of Colorado is authorized under its cooperative agreement with the Service, pursuant to section 6(c) of the ESA, to establish programs for the conservation of federally threatened and endangered wildlife, including gray wolves.

The Service would manage the population of gray wolves that would be reintroduced and gray wolves living in or dispersing into Colorado as an endangered species in the state. This means that:

- State-led management actions and any actions that have the potential to result in a take of the species would be regulated under section 9 of the ESA, which establishes prohibitions related to endangered species.
- Federal agencies would be required to consult with the Service under section 7 of the ESA if reintroduced gray wolves may be present in the area of effect for a proposed federal action.
- The Service may issue section 10(a)(1)(A) permits to individuals or organizations for scientific activities or activities that support recovery of the species. The types of permits that may be issued are discussed in section 2.4.4. The Service would not issue a section 10(a)(1)(A) permit to the State of Colorado under this alternative.
- If appropriate, an applicant could pursue a section 10(a)(1)(B) permit for incidental take in the course of otherwise legal activities. The Service may issue a section 10(a)(1)(B) permit through a separate process.

The specific actions allowed under the no-action alternative are shown in table 2-1.

**Table 2-1. Actions Permitted under the No-Action Alternative**

Situation	Alternative Element
Consultation (per section 7)	Federal agencies are required to consult with the Service for any project or action they authorize, fund, or carry out that may affect federally listed endangered gray wolves in Colorado.
Listed status of wolves	Endangered
Take in self-defense	Any person may take a gray wolf in defense of the individual's life or the life of another person.
Agency take of wolves determined to be a threat to human life and safety	The Service or designated agent(s) may promptly remove any wolf that the Service or designated agent(s) determines to be a threat to human life or safety.
Opportunistic harassment	May be authorized under a separate authority (section 10(a)(1)(A) of the ESA [16 USC §1539(a)(1)(A)]).
Intentional harassment	No lethal or injurious nonlethal take would be permitted.
Taking of wolves "in the act" of depredation on private land	No lethal or injurious nonlethal take would be permitted.
Taking of wolves "in the act" of depredation on public land	No lethal or injurious nonlethal take would be permitted.
Additional taking by private citizens on private land	No lethal or injurious nonlethal take would be permitted.
Additional taking by grazing permittees on public land	No lethal or injurious nonlethal take would be permitted.
Agency take of wolves that repeatedly depredate livestock	No lethal or injurious nonlethal take would be permitted.

Situation	Alternative Element
Incidental take	Incidental take could be permitted or exempted under other ESA authorities.
Additional taking provisions for agency employees	No lethal or injurious nonlethal take would be permitted.

## 2.4.2 Alternative 1, Preferred Alternative

### Background

Section 10(j) of the ESA includes provisions for establishing an experimental population of a federally listed species. The designation “experimental population” had its origin in a 1982 amendment to the ESA, which created section 10(j). Before the 1982 amendment, the Service could reintroduce endangered species into unoccupied historical range, but reintroduction efforts were often met with public resistance. One reason for this opposition was that the Service had no management tools to address the potential for the listed species to disrupt land management activities. The “experimental population” designation gives the Service more flexibility to manage endangered species by relaxing “take” prohibitions and consultation requirements under the ESA.

An experimental population may be designated as “essential” or “nonessential.” An essential population is considered essential to the continued existence of a federally listed threatened or endangered species (USFWS 2018).

If a reintroduced population is designated experimental and nonessential under section 10(j), both take prohibitions under section 9 and consultation requirements under section 7 of the ESA are relaxed. Federal agencies are only required to confer with the Service on federal activities affecting a nonessential population that are likely to jeopardize the species (16 USC 1536). The exception would be for federal actions in national parks and national wildlife refuges that may affect a nonessential population, which would still require consultation with the Service under section 7. Management of a nonessential experimental population can be tailored to specific areas and specific local conditions and concerns. The experimental population rule has been used to reintroduce Mexican wolves to southern Arizona and New Mexico, red wolves to Alligator River National Wildlife Refuge in North Carolina, and gray wolves to the central Idaho and the Greater Yellowstone Area recovery areas in the northern Rocky Mountain region.

### Summary

Under alternative 1, the Service would designate the population of gray wolves that would be reintroduced to Colorado as an experimental population under section 10(j) of the ESA. The Service would establish an experimental population boundary to include the entire state of Colorado, which would outline the geographic area to which the section 10(j) rule would apply. National park and national wildlife refuge lands in Colorado would be included in the experimental population boundary. However, site-specific regulations may apply on some federal ownerships. For instance, federal land management agencies such as the National Park Service (NPS) or the Service may prohibit use of firearms or other methods of lethal take in national parks or national wildlife refuges. Any take or method of take on public lands must be consistent with the federal rules and regulations on those public lands.

The section 10(j) rule would define the allowable take of gray wolves in response to the management activities proposed in the State Plan (see the detailed description of this alternative below for more information). The Service would determine, on the basis of the best available information, whether the population is essential to the continued existence of an endangered species or a threatened species in accordance with section 10(j)(2)(B) of the ESA during the process of developing the section 10(j) rule.

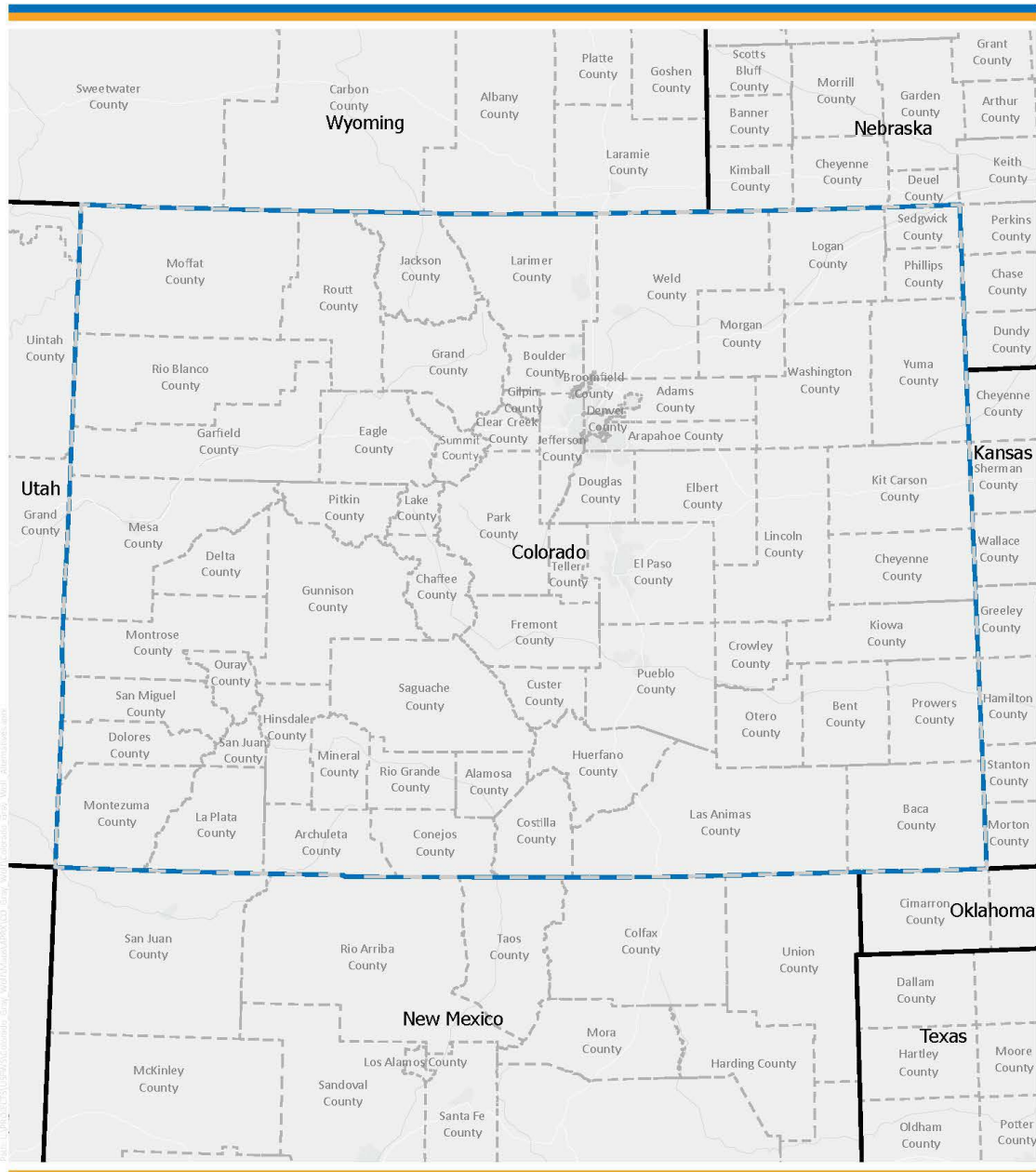
This determination was a component of the proposed rule published in the *Federal Register* but not part of the NEPA process.

An experimental population must be established in an area that is wholly separate geographically from nonexperimental populations of the species. The Service has determined that the population of gray wolves that would be reintroduced in Colorado would be geographically separate from the delisted northern Rocky Mountains population and federally listed gray wolves in the remaining lower 44 states. Although a single group of gray wolves has been identified in Colorado as of September 2022, this group does not constitute a population, according to the definition provided in section 2.4.3. The nearest known pack of wolves in Wyoming is more than 124 miles from the Colorado border, which is more than two times the average dispersal distance for gray wolves in the northern Rocky Mountains (Jimenez et al. 2017); however, it is possible that gray wolves dispersing from the northern Rocky Mountains population could reach Colorado. However, these movements likely would be infrequent given Colorado's distance from existing populations of gray wolves, the difficulty of dispersal across most of Wyoming, and the normal dispersal distances of gray wolves.

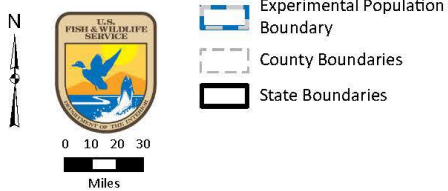
### **Detailed Description**

Under alternative 1, the Service would designate the population of gray wolves that would be reintroduced by the State of Colorado as an experimental population. The extent of the proposed experimental population boundary would be the entire state of Colorado (see figure 2-1). Gray wolves may disperse long distances from the State's initial reintroduction sites, so including the entire state in the experimental population boundary would provide consistent regulatory management of take across the state.

Under the section 10(j) rule, the population of gray wolves that would be reintroduced to Colorado, wolves living in the state, or wolves that naturally disperse into the state, would be managed under special regulations inside the proposed experimental population boundary. When the proposed 10(j) rule is finalized, "take" as defined under the ESA, would be allowed to occur in some instances. "Take" under the ESA means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Provisions related to take that would be included in the section 10(j) rule are displayed in table 2-2. Any provisions that involve lethal take would not apply if there were evidence of unusual attractants or artificial or intentional feeding.



**Figure 2-1**  
Experimental Population Boundary under Alternative 1



Colorado Gray Wolf 10(j) Rulemaking EIS

**Table 2-2. Actions Permitted under Alternative 1**

Situation	Alternative Element
Listed status of wolves	Threatened
Consultation (per section 7)	Not required unless those actions are on lands of the National Park System or the National Wildlife Refuge System (16 USC §1539(j)(2)(C)(i)).
Take in self-defense	Any person may take a gray wolf in defense of the individual's life or the life of another person.
Agency take of wolves determined to be a threat to human life and safety	The Service or designated agent(s) may promptly remove any wolf that the Service or designated agent(s) determines to be a threat to human life or safety.
Opportunistic harassment	Any person may conduct opportunistic harassment of any gray wolf in a non-injurious manner at any time. Opportunistic harassment must be reported to the Service or designated agent(s) within seven days.
Intentional harassment	After the Service or designated agent(s) have confirmed wolf activity on private lands, on a public land-grazing allotment, or on a Tribal reservation, the Service or designated agent(s) may issue a written take authorization valid for not longer than one year, with appropriate conditions, to any landowner or public land permittee to intentionally harass wolves. The harassment must occur in the area and under the conditions as specifically identified in the take authorization. Intentional harassment must be reported to the Service or a designated agent within seven days.
Taking of wolves "in the act" of depredation on private land	Consistent with state or Tribal requirements, any landowner may take a gray wolf in the act of attacking livestock or working dogs on private land, provided the landowner provides evidence of livestock, stock animals, or working dogs recently (less than 24 hours) wounded, harassed, molested, or killed by wolves, and the Service or designated agent(s) is able to confirm the livestock, stock animals, or working dogs were wounded, harassed, molested, or killed by wolves. The carcass of any wolf taken and the area surrounding it should not be disturbed to preserve the physical evidence that the take was conducted according to this rule.
Taking of wolves "in the act" of depredation on public land	Consistent with state or Tribal requirements, any livestock producer and public land permittee who is legally using public land under a valid federal land-use permit may take a gray wolf in the act of attacking livestock or working dogs legally present on public lands without prior written authorization. The Service or designated agent(s) must be able to confirm the livestock or working dogs were wounded, harassed, molested, or killed by wolves. The carcass of any wolf taken and the area surrounding it should not be disturbed to preserve the physical evidence that the take was conducted according to this rule. Any person legally present on public land may immediately take a wolf that is in the act of attacking the individual's stock animal or working dog, provided conditions noted in "taking of wolves in the act on private land" are met. Any take or method of take on public lands must be consistent with the rules and regulations on those public lands. Any lethal or injurious take must be reported to the Service or a designated agent within 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.

Situation	Alternative Element
Additional taking by private citizens on private land	At the Service's or designated agents' direction, the Service or designated agent may issue a repeated depredation written take authorization of limited duration (45 days or less) to a landowner or their employees to take up to a specified (by the Service or our designated agent) number of wolves on their private land if: (1) the landowner has had at least one depredation by wolves on livestock that has been confirmed by the Service or designated agent within the last 30 days; and (2) the Service or designated agent has determined that repeatedly depredating wolves are routinely present on the private land and present a significant risk to the health and safety of livestock; and (3) the Service or designated agent has authorized lethal removal of wolves from that same private land. These authorizations may be terminated at any time once threats have been resolved or minimized. Any lethal or injurious take must be reported to the Service or a designated agent with 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.
Additional taking by grazing permittees on public land	At the Service's or designated agent(s) direction, the Service or designated agent(s) may issue a repeated depredation written take authorization of limited duration (45 days or less) to a public land-grazing permittee to take repeatedly depredating wolves on that permittee's active livestock grazing allotment if: (1) the grazing allotment has at least one depredation by wolves on livestock that has been confirmed by the Service or designated agent(s) within the past 30-days, and (2) the Service or designated agent(s) has determined that repeatedly depredating wolves are routinely present on that allotment and present a significant risk to the health and safety of livestock, and (3) the Service or designated agent(s) has authorized lethal removal of repeatedly depredating wolves from that same allotment. These authorizations may be terminated at any time once threats have been resolved or minimized. Any take or method of take on public land must be consistent with the rules and regulations on those public lands. Any lethal or injurious take must be reported to the Service or a designated agent with 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.
Agency take of wolves that repeatedly depredate livestock	The Service and designated agent(s) may carry out harassment, nonlethal control measures, relocation, placement in captivity, or lethal control of repeatedly depredating wolves. The Service or designated agent(s) would consider: (1) evidence of wounded livestock, working dogs, or other domestic animals, or remains of livestock, working dogs, or domestic animals that show that the injury or death was caused by wolves, or evidence that they were in the act of attacking livestock, working dogs, or other domestic animals; (2) the likelihood of additional wolf-caused losses or attacks may occur if no control action is taken; (3) evidence of unusual attractants or artificial or intentional feeding of wolves; and (4) evidence that animal husbandry practices recommended in approved allotment plans and annual operating plans were followed.
Incidental take	Take of a gray wolf is allowed if the take is accidental and incidental to an otherwise lawful activity and if reasonable due care was practiced to avoid such take, and such take is reported to the Service or designated agent(s) within 24 hours (the Service will allow additional time if access to the site of the take is limited). Shooting a wolf as a result of mistaking it for another species is not considered accidental and may be referred to the appropriate authorities for prosecution.



Situation	Alternative Element
Additional taking provisions for agency employees	Any employee or agent of the Service may take a wolf from the wild if such action is (1) for take related to the release, tracking, monitoring, recapture, and management for the experimental population; (2) to aid or euthanize sick, injured, or orphaned wolves; (3) to salvage a dead specimen that may be used for scientific study; (4) to aid in law enforcement investigations involving wolves; or (5) to remove wolves with abnormal physical or behavioral characteristics, as determined by the Service or designated agents, to prevent them from passing on or teaching those traits to other wolves.
Tribal take to reduce impacts on wild ungulates	The Service has included an exception to allow nonlethal and lethal management of gray wolves that are having an unacceptable impact on ungulate herds or populations on Tribal lands. This exception requires a science-based proposal that must, at a minimum, include the following information: (1) the basis of ungulate population or herd management objectives; (2) data indicating that the ungulate herd is below management objectives; (3) what data indicate that wolves are a major cause of the ungulate population decline; (4) why wolf removal is a warranted solution to help restore the ungulate herd to management objectives; (5) the level and duration of wolf removal being proposed; (6) how ungulate population response to wolf removal will be measured and control actions adjusted for effectiveness; and (7) demonstration that attempts were and are being made to address other identified major causes of ungulate herd or population declines or of Tribal government commitment to implement possible remedies or conservation measures in addition to wolf removal. The proposal must be subjected to both public and peer review prior to it being finalized and submitted to the Service for review. At least three independent peer reviewers with relevant expertise in the subject matter that are not staff of the Tribe submitting the proposal must be used to review the proposal. Upon Service review, and before wolf removals can be authorized, the Service will evaluate the information provided by the requesting Tribe and provide a written determination to the requesting Tribal game and fish agency on whether such actions are scientifically based and warranted.

Individual gray wolves that disperse from, or leave, the experimental population boundary would have the status under the ESA that applies to wolves in the geographic area to which they travel. For example, wolves that travel outside the experimental population boundary to Nebraska would be managed as federally listed endangered species pursuant to the ESA, while wolves that travel into Wyoming would be managed pursuant to state rules and regulations because the species is not listed under the ESA in Wyoming.

**2.4.3 Alternative 2**

**Background**

The Service developed alternative 2 to address the possibility that an existing population of gray wolves is identified in Colorado before the section 10(j) rule is finalized. An existing population, as defined by the Service (USFWS 1994), may include wolves that are living in the state and wolves that naturally disperse into the state. If an existing population of gray wolves is determined to exist in Colorado before the section 10(j) rule is finalized, the State could apply for a permit, and the Service could issue the State of Colorado a permit under section 10(a)(1)(A) of the ESA for management of the existing population. If an existing population of gray wolves is identified before the section 10(j) rule is finalized, these wolves would be managed as an endangered species within the 10(a)(1)(A) permit area.

A section 10(j) rule would be developed for the remainder of the state in an area that is wholly separate geographically from the existing population. Lands managed by the NPS and national wildlife refuge lands in Colorado would be included in the experimental population boundary depending on the location of any existing population in the state.

As noted in section 1.4, one reproductively active group of gray wolves had been documented in Colorado as of the end of 2021, and no reproduction was documented by this group in 2022. As of June 2023, this group included the only two gray wolves known to occur in the state, and the Service has determined that these wolves do not meet the definition of a population. CPW biologists continue to monitor wolves in the state using different techniques, including Global Positioning System or very high frequency telemetry collars, when available and functional, to confirm locations and movement patterns; fixed-wing aircraft surveys; trail cameras; field observations; and investigations of reports from the public. CPW maintains a wolf sighting form online (<https://cpw.state.co.us/learn/Pages/Sighting-Forms.aspx>). When a report is submitted, the information is shared with field staff, who may follow up, depending on details provided in the report. Reports that have substantial detail and credibility are prioritized for investigation. If scat or hair samples are available, CPW analyzes those samples for genetic confirmation of species. CPW regional staff investigate claims of depredation due to wolves and use a variety of tools to gather evidence to make a conclusion. Information from the public, livestock producers, and agency staff is considered when evaluating the potential presence of wolves. Through all efforts and follow up, as of summer 2023, the only known wolves documented in Colorado reside in and around the North Park area (Odell 2023).

Alternative 2 considers the potential for previously unknown breeding groups of gray wolves to be identified in the state before the end of 2023 when the 10(j) rule is expected to be finalized. Section 10(j) of the ESA requires an experimental population to be established wholly separate geographically from nonexperimental populations of the same species, determined based on whether a population of the species is currently present in a geographic area. The Service defined a wolf population in the 1994 EIS for the *Reintroduction of Gray Wolves to Yellowstone National Park and Central Idaho* (USFWS 1994), as follows:

A wolf population is at least two breeding pairs of wild wolves successfully raising at least two young each year (until December 31 of the year of their birth), for two consecutive years.

Section 10(a)(1)(A) of the ESA allows the Service to issue permits for the purposeful or direct take of a federally listed species “for scientific purposes or to enhance the propagation or survival of the affected species.” The Service may issue several types of permits under section 10(a)(1)(A), depending on the proposed activity and the status of the affected species under the ESA. These types of permits include:

- An Enhancement of Survival Permit, which applies to species listed under the ESA and is accompanied by a Safe Harbor Agreement detailing the baseline of the species and management actions to be implemented to benefit the species,
- A Candidate Conservation Agreement with Assurances, which applies to non-listed or candidate species, or
- A Research and Recovery permit, which applies to proposed activities involving listed species, including the capture, handling, and transport of a listed species for scientific purposes.

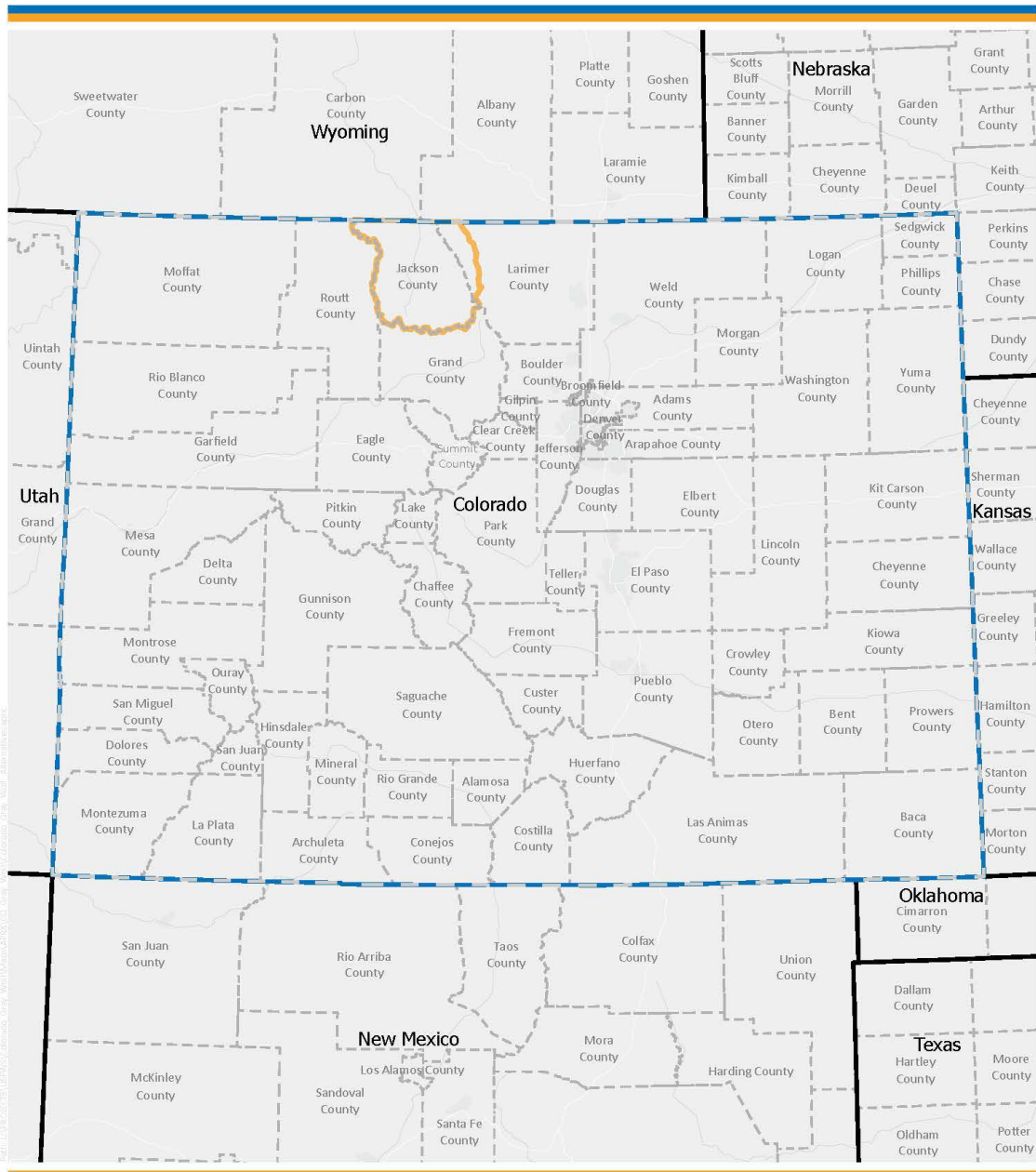
## **Summary**

Under alternative 2, if an existing population of gray wolves is determined to exist in Colorado, the Service would issue a section 10(j) rule for the population of gray wolves that would be reintroduced to

Colorado in a limited territory and issue a permit under section 10(a)(1)(A) of the ESA for management of the existing gray wolf population in Colorado on state and private lands in an area that is wholly separate geographically from the experimental population boundary. Section 10(a)(1)(A) authorizes the Service to develop conservation agreements to further conserve the species. Similar to a section 10(j) rule, a section 10(a)(1)(A) permit allows management flexibility for populations of federally listed threatened or endangered species while providing for conservation of the species as a whole. A section 10(a)(1)(A) permit is applied to existing populations, rather than reintroduced or experimental, populations. If an existing population is not identified before a section 10(j) rule is issued, existing wolves living in or naturally dispersing to Colorado before that time would be managed under the section 10(j) rule; a separate section 10(a)(1)(A) permit would not be issued following promulgation of the section 10(j) rule.

The geographic boundaries for the 10(a)(1)(A) permit area would be delineated based on natural or human-made geographic features (i.e., mountain ranges, rivers, interstates) that encompass the range of the existing population to ensure that the existing, nonexperimental population is wholly separate geographically from the population of gray wolves that would be reintroduced by the State. For the purposes of analysis, an example boundary for a section 10(a)(1)(A) permit could follow the boundaries of the State of Colorado's large game management units in areas where gray wolves are currently found, where these boundaries follow geographic features. For example, and for the purposes of this analysis, it is assumed that the following big game units in Jackson and Larimer Counties would make up the geographic boundary of the section 10(a)(1)(A) permit: 161, 6, 7, 16, 17, and 171. These units represent the area where wolves are currently found in Colorado. Figure 2-2 shows the big game units that are used for analysis under alternative 2. Depending on the locations where an existing population is identified (if one is identified), the boundaries of the 10(a)(1)(A) permit area may change from the boundaries depicted in this EIS.

The Service would issue a section 10(j) rule for the proposed experimental population of reintroduced wolves and an experimental population boundary that would include a smaller geographic area in which the final rule would apply. Within the experimental population boundary, federal regulations for the gray wolf population that would be reintroduced would be the same as those as described above under alternative 1. Similar to alternative 1, under alternative 2, the draft 10(j) rule does not provide for take of wolves to mitigate potential impacts to ungulate populations; however, a provision to address potential impacts to ungulates has been included as an option in this alternative and could be adopted in the final rule. The experimental population boundary would be established in those areas of the state not encompassed by the section 10(a)(1)(A) permit and outside any federal lands that are part of the range of an existing population of wolves (figure 2-2).



**Figure 2-2**  
Experimental Population Boundary and  
Section 10(a)(1)(A) Permit Boundary  
under Alternative 2

**Colorado Gray Wolf 10(j) Rulemaking EIS**

## Detailed Description

The section 10(a)(1)(A) permit under alternative 2 would exempt many of the same management tools from take as those that would be exempted in the section 10(j) rule, except lethal take. No lethal take of gray wolves would be permitted within the section 10(a)(1)(A) permit boundary. Allowed take in the experimental population boundary and section 10(a)(1)(A) permit boundary is included in table 2-3.

Likewise, under this alternative, individual dispersing gray wolves that leave the experimental population or section 10(a)(1)(A) permit boundary would have the status under the ESA that applies to gray wolves in the geographic area to which they travel.

**Table 2-3. Actions Permitted under Alternative 2**

Situation	Alternative Element
Listed status of wolves	Threatened within the experimental population boundary. Endangered in the area covered under the section 10(a)(1)(A) permit.
Consultation (per section 7)	Within the experimental population boundary, not required unless those actions are on lands of the National Park System or the National Wildlife Refuge System (16 USC §1539(j)(2)(C)(i)). Required in areas covered by the section 10(a)(1)(A) permit.
Take in self-defense	Any person may take a gray wolf in defense of the individual's life or the life of another person.
Agency take of wolves determined to be a threat to human life & safety	The Service or designated agent(s) may promptly remove any wolf that the Service or designated agent(s) determines to be a threat to human life or safety.
Opportunistic harassment	Within the experimental population boundary, any person may conduct opportunistic harassment of any gray wolf in a non-injurious manner at any time. Opportunistic harassment must be reported to the Service or designated agent(s) within seven days. Within the 10(a)(1)(A) permit area, opportunistic harassment may be authorized under a separate authority (section 10(a)(1)(A) of the ESA [16 USC §1539(a)(1)(A)]).
Intentional harassment	Within the experimental population boundary, after the Service or designated agent(s) have confirmed wolf activity on private lands, on a public land-grazing allotment, or on a Tribal reservation, the Service or designated agent(s) may issue a written take authorization valid for not longer than one year, with appropriate conditions, to any landowner or public land permittee to intentionally harass wolves. The harassment must occur in the area and under the conditions specifically identified in the take authorization. Intentional harassment must be reported to the Service or a designated agent within seven days. Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.
Taking of wolves "in the act" of depredation on private land	Within the experimental population boundary, consistent with state or Tribal requirements, any landowner may take a gray wolf in the act of attacking livestock or working dogs on private land, provided the landowner provides evidence of livestock, stock animals, or working dogs recently (less than 24 hours) wounded, harassed, molested, or killed by wolves, and the Service or designated agent(s) is able to confirm the livestock, stock animals, or working dogs were wounded, harassed, molested, or killed by wolves. The carcass of any wolf taken and the area surrounding it should not be disturbed to preserve the physical evidence that the take was conducted according to this rule.

Situation	Alternative Element
	Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.
Taking of wolves “in the act” of depredation on public land	<p>Within the experimental population boundary, consistent with state or Tribal requirements, any livestock producer and public land permittee who is legally using public land under a valid federal land-use permit may take a gray wolf in the act of attacking livestock or working dogs legally present on public lands without prior written authorization. The Service or designated agent(s) must be able to confirm the livestock or working dogs were wounded, harassed, molested, or killed by wolves. The carcass of any wolf taken and the area surrounding it should not be disturbed to preserve the physical evidence that the take was conducted according to this rule. Any person legally present on public land may immediately take a wolf that is in the act of attacking the individual’s stock animal or working dog, provided conditions noted in “taking of wolves in the act on private land” are met. Any take or method of take on public lands must be consistent with the rules and regulations on those public lands. Any lethal or injurious take must be reported to the Service or a designated agent within 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.</p> <p>Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.</p>
Additional taking by private citizens on private land	<p>Within the experimental population boundary, at the Service’s or designated agents’ direction, the Service or designated agent may issue a repeated depredation written take authorization of limited duration (45 days or less) to a landowner or their employees to take up to a specified (by the Service or designated agent) number of wolves on private land if: (1) the landowner has had at least one depredation by wolves on livestock that has been confirmed by the Service or designated agent within the last 30 days; and (2) the Service or designated agent has determined that repeatedly depredating wolves are routinely present on the private land and present a significant risk to the health and safety of livestock; and (3) the Service or designated agent has authorized lethal removal of wolves from that same private land. These authorizations may be terminated at any time once threats have been resolved or minimized. Any lethal or injurious take must be reported to the Service or a designated agent within 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.</p> <p>Within the 10(a)(1)(A) area, no lethal take would be permitted; only nonlethal take would be allowed.</p>
Additional taking by grazing permittees on public land	<p>Within the experimental population boundary, at the Service’s or designated agent(s) direction, the Service or designated agent(s) may issue a repeated depredation written take authorization of limited duration (45 days or less) to a public land-grazing permittee to take repeatedly depredating wolves on that permittee’s active livestock grazing allotment if: (1) the grazing allotment has at least one depredation by wolves on livestock that has been confirmed by the Service or designated agent(s) within the past 30 days, and (2) the Service or designated agent(s) has determined that repeatedly depredating wolves are routinely present on that allotment and present a significant risk to the health and safety of livestock, and (3) the Service or designated agent(s) has authorized lethal removal of repeatedly depredating wolves from that same allotment. These authorizations may be terminated at any time once threats have been resolved or minimized. Any take or method of take on public land must be consistent with the rules and regulations on those public lands. Any lethal or injurious take must be reported to the Service or a designated agent within 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.</p> <p>Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.</p>

Situation	Alternative Element
Agency take of wolves that repeatedly depredate livestock	<p>Within the experimental population boundary, the Service and designated agent(s) may carry out harassment, nonlethal control measures, relocation, placement in captivity, or lethal control of repeatedly depredating wolves. The Service or designated agent(s) would consider: (1) evidence of wounded livestock, working dogs, or other domestic animals, or remains of livestock, working dogs, or domestic animals that show that the injury or death was caused by wolves, or evidence that they were in the act of attacking livestock, working dogs, or other domestic animals; (2) the likelihood of additional wolf-caused losses or attacks may occur if no control action is taken; (3) evidence of unusual attractants or artificial or intentional feeding of wolves; and (4) evidence that animal husbandry practices recommended in approved allotment plans and annual operating plans were followed.</p> <p>Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.</p>
Incidental take	<p>Within the experimental population boundary, take of a gray wolf is allowed if the take is accidental and incidental to an otherwise lawful activity and if reasonable due care was practiced to avoid such take, and such take is reported to the Service or designated agent within 24 hours (the Service may allow additional time if access to the site of the take is limited). Shooting a wolf as a result of mistaking it for another species is not considered accidental and may be referred to the appropriate authorities for prosecution.</p> <p>Within the 10(a)(1)(A) permit area, no incidental take would be permitted.</p>
Additional taking provisions for agency employees	<p>Within the experimental population boundary, any employee or agent of the Service may take a wolf from the wild if such action is (1) for take related to the release, tracking, monitoring, recapture, and management for the experimental population; (2) to aid or euthanize sick, injured, or orphaned wolves; (3) to salvage a dead specimen that may be used for scientific study; (4) to aid in law enforcement investigations involving wolves; or (5) to remove wolves with abnormal physical or behavioral characteristics, as determined by the Service or designated agents, to prevent them from passing on or teaching those traits to other wolves.</p> <p>For areas covered under the 10(a)(1)(A) permit, the following forms of take may occur: (1) for scientific purposes; (2) to aid or euthanize sick, injured, or orphaned wolves; (3) to salvage a dead specimen that may be used for scientific study; (4) to aid in law enforcement investigations involving wolves; and (5) to remove wolves with abnormal physical or behavioral characteristics, as determined by the Service or designated agents, to prevent them from passing on or teaching those traits to other wolves.</p>
Tribal take to reduce impacts on wild ungulates	<p>Within the experimental population boundary, the Service has included an exception to allow nonlethal and lethal management of gray wolves that are having an unacceptable impact on ungulate herds or populations on Tribal lands. This exception requires a science-based proposal that must, at a minimum, include the following information: (1) the basis of ungulate population or herd management objectives; (2) data indicating that the ungulate herd is below management objectives; (3) what data indicate that wolves are a major cause of the ungulate population decline; (4) why wolf removal is a warranted solution to help restore the ungulate herd to management objectives; (5) the level and duration of wolf removal being proposed; (6) how ungulate population response to wolf removal will be measured and control actions adjusted for effectiveness; and (7) demonstration that attempts were and are being made to address other identified major causes of ungulate herd or population declines or of Tribal government commitment to implement possible remedies or conservation measures in addition to wolf removal. The proposal must be subjected to both public and peer review prior to it being finalized and submitted to the Service for review. At least three independent peer reviewers with relevant expertise in the subject matter that are not staff of the Tribe submitting the</p>

Situation	Alternative Element
	<p>proposal must be used to review the proposal. Upon Service review, and before wolf removals can be authorized, the Service will evaluate the information provided by the requesting Tribe and provide a written determination to the requesting Tribal game and fish agency on whether such actions are scientifically based and warranted.</p> <p>Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.</p>



1 **Table 2-4. Comparison of Alternatives**

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Regulatory Management Framework Used	All ESA protections apply.	Section 10(j) throughout entire state of Colorado	If an existing population is documented before a section 10(j) rule is finalized, the State could apply for a permit, and the Service could issue the State a section 10(a)(1)(A) permit in the portion(s) of Colorado in which an existing population (as defined by the Service) is located, if discovered. For analysis purposes, this alternative is based on the following State of Colorado Big Game Management units: 161, 6, 7, 16, 17, and 171, which occur in Jackson County and the western part of Larimer County (see figure 2-2). An experimental population boundary would be established for the remainder of the state outside this area that would be wholly separate geographically from the existing population.
Listed status of wolves	Endangered	Threatened	Threatened within the experimental population boundary. Endangered in area covered under the section 10(a)(1)(A) permit.
Consultation (per section 7)	Federal agencies are required to consult with the Service for any project or action they authorize, fund, or carry out that may affect federally listed endangered gray wolves in Colorado.	Not required unless those actions are on lands of the National Park System or the National Wildlife Refuge System (16 USC §1539(j)(2)(C)(i)).	Within the experimental population boundary, not required unless those actions are on lands of the National Park System or the National Wildlife Refuge System (16 USC §1539(j)(2)(C)(i)). Required in areas covered by the section 10(a)(1)(A) permit.
Take in self-defense	Any person may take a gray wolf in defense of the individual's life or the life of another person.	Same as the no-action alternative.	Same as the no-action alternative.
Agency take of wolves determined to be a threat to human life and safety	The Service or designated agent(s) may promptly remove any wolf that the Service or designated agent(s) determines to be a threat to human life or safety.	Same as the no-action alternative.	Same as the no-action alternative.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Opportunistic harassment	May be authorized under a separate authority (section 10(a)(1)(A) of the ESA [16 USC §1539(a)(1)(A)]).	Any person may conduct opportunistic harassment of any gray wolf in a non-injurious manner at any time. Opportunistic harassment must be reported to the Service or designated agent(s) within seven days.	Within the experimental population boundary, any person may conduct opportunistic harassment of any gray wolf in a non-injurious manner at any time. Opportunistic harassment must be reported to the Service or designated agent(s) within seven days. Within the 10(a)(1)(A) permit area, opportunistic harassment may be authorized under a separate authority (section 10(a)(1)(A) of the ESA [16 USC §1539(a)(1)(A)]).
Intentional harassment	No lethal or injurious nonlethal take would be permitted.	After the Service or designated agent(s) has confirmed wolf activity on private lands, on a public land-grazing allotment, or on a Tribal reservation, the Service or designated agent(s) may issue written take authorization valid for not longer than one year, with appropriate conditions, to any landowner or public land permittee to intentionally harass wolves. The harassment must occur in the area and under the conditions as specifically identified in the take authorization. Intentional harassment must be reported to the Service or a designated agent within seven days.	Within the experimental population boundary, same as alternative 1. Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.
Taking of wolves “in the act” of depredation on private land	No lethal or injurious nonlethal take would be permitted.	Consistent with state or Tribal requirements, any landowner may take a gray wolf in the act of attacking livestock or working dogs on private land, provided the landowner provides evidence of livestock, stock animals, or working dogs recently (less than 24 hours) wounded, harassed, molested, or killed by wolves, and the Service or designated agent(s) is able to confirm the livestock, stock animals, or working dogs were wounded, harassed, molested, or killed by wolves. The carcass of any wolf taken and the area surrounding it should not be disturbed to preserve the physical evidence that the take was conducted according to this rule.	Within the experimental population boundary, take of wolves “in the act” of depredation on private land would be the same as alternative 1. Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Taking of wolves “in the act” of depredation on public land	No lethal or injurious nonlethal take would be permitted.	Consistent with state or Tribal requirements, any livestock producer and public land permittee who is legally using public land under a valid federal land-use permit may take a gray wolf in the act of attacking livestock or working dogs legally present on public lands without prior written authorization. The Service or designated agent(s) must be able to confirm the livestock or working dogs were wounded, harassed, molested, or killed by wolves. The carcass of any wolf taken and the area surrounding it should not be disturbed to preserve the physical evidence that the take was conducted according to this rule. Any person legally present on public land may immediately take a wolf that is in the act of attacking the individual’s stock animal or working dog, provided conditions noted in “taking of wolves in the act on private land” are met. Any take or method of take on public lands must be consistent with the rules and regulations on those public lands. Any lethal or injurious take must be reported to the Service or a designated agent within 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.	Within the experimental population boundary, take of wolves “in the act” of depredation on public land would be the same as alternative 1.  Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Additional taking by private citizens on private land	No lethal or injurious nonlethal take would be permitted.	At the Service's or designated agents' direction, the Service or designated agent may issue a repeated depredation written take authorization of limited duration (45 days or less) to a landowner or their employees to take up to a specified (by the Service or designated agent) number of wolves on their private land if: (1) the landowner has had at least one depredation by wolves on livestock that has been confirmed by the Service or designated agent within the last 30 days; and (2) the Service or designated agent has determined that repeatedly depredating wolves are routinely present on the private land and present a significant risk to the health and safety of livestock; and (3) the Service or designated agent has authorized lethal removal of wolves from that same private land. These authorizations may be terminated at any time once threats have been resolved or minimized. Any lethal or injurious take must be reported to the Service or a designated agent with 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.	Within the experimental population boundary, issuance of a repeated depredation written take authorization for repeatedly depredating wolves for a private landowner would be the same as alternative 1.  Within the 10(a)(1)(A) area, no lethal take would be permitted; only nonlethal take would be allowed.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Additional taking by grazing permittees on public land	No lethal or injurious nonlethal take would be permitted.	At the Service's or designated agent(s) direction, the Service or designated agent(s) may issue a repeated depredation written take authorization of limited duration (45 days or less) to a public land-grazing permittee to take repeatedly depredating wolves on that permittee's active livestock grazing allotment if: (1) the grazing allotment has at least one depredation by wolves on livestock that has been confirmed by the Service or designated agent(s) within the past 30 days, and (2) the Service or designated agent(s) has determined that repeatedly depredating wolves are routinely present on that allotment and present a significant risk to the health and safety of livestock, and (3) the Service or designated agent(s) has authorized lethal removal of repeatedly depredating wolves from that same allotment. These authorizations may be terminated at any time once threats have been resolved or minimized. Any take or method of take on public land must be consistent with the rules and regulations on those public lands. Any lethal or injurious take must be reported to the Service or a designated agent with 24 hours. The Service will allow a reasonable extension of the time limit if access to the site is limited.	<p>Within the 10(j) boundary, issuance of repeated depredation written take authorization for repeatedly depredating wolves for a grazing permittee would be the same as alternative 1.</p> <p>Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.</p>

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Agency take of wolves that repeatedly depredate livestock	No lethal or injurious nonlethal take would be permitted.	The Service and designated agent(s) may carry out harassment, nonlethal control measures, relocation, placement in captivity, or lethal control of repeatedly depredating wolves. The Service or designated agent(s) would consider: (1) evidence of wounded livestock, working dogs, or other domestic animals, or remains of livestock, working dogs, or domestic animals that show that the injury or death was caused by wolves, or evidence that they were in the act of attacking livestock, working dogs, or other domestic animals; (2) the likelihood additional wolf-caused losses or attacks may occur if no control action is taken; (3) evidence of unusual attractants or artificial or intentional feeding of wolves; and (4) evidence that animal husbandry practices recommended in approved allotment plans and annual operating plans were followed.	Within the experimental population boundary, same as alternative 1. Within the 10(a)(1)(A) permit area, no lethal take would be permitted; only nonlethal take would be allowed.
Incidental take	Incidental take could be permitted or exempted under other ESA authorities.	Take of a gray wolf is allowed if the take is accidental and incidental to an otherwise lawful activity and if reasonable due care was practiced to avoid such take, and such take is reported to the Service or designated agent within 24 hours (the Service may allow additional time if access to the site of the take is limited). Shooting a wolf as a result of mistaking it for another species is not considered accidental and may be referred to the appropriate authorities for prosecution.	Within the experimental population boundary, same as alternative 1. Within the 10(a)(1)(A) permit area, same as the no-action alternative.

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Additional taking provisions for agency employees	No lethal or injurious nonlethal take would be permitted.	Any employee or agent of the Service may take a wolf from the wild if such action is (1) for take related to the release, tracking, monitoring, recapture, and management for the experimental population; (2) to aid or euthanize sick, injured, or orphaned wolves; (3) to dispose of a dead specimen; (4) to salvage a dead specimen that may be used for scientific study; (5) to aid in law enforcement investigations involving wolves; or (6) to remove wolves with abnormal physical or behavioral characteristics, as determined by the Service or designated agents, to prevent them from passing on or teaching those traits to other wolves.	Same as alternative 1 for areas within the experimental population boundary. For areas covered under the 10(a)(1)(A) permit, the following forms of take may occur: (1) for take related to the release, tracking, monitoring, recapture, and management for the experimental population; (2) to aid or euthanize sick, injured, or orphaned wolves; (3) to dispose of a dead specimen; (4) to salvage a dead specimen that may be used for scientific study; (5) to aid in law enforcement investigations involving wolves; or (6) to remove wolves with abnormal physical or behavioral characteristics, as determined by the Service or designated agents, to prevent them from passing on or teaching those traits to other wolves.
Tribal take to reduce impacts on wild ungulates	No lethal or injurious nonlethal take would be permitted.	The Service has included an exception to allow nonlethal and lethal management of gray wolves that are having an unacceptable impact on ungulate herds or populations on Tribal lands. This exception requires a science-based proposal that must, at a minimum, include the following information: (1) the basis of ungulate population or herd management objectives; (2) data indicating that the ungulate herd is below management objectives; (3) what data indicate that wolves are a major cause of the ungulate population decline; (4) why wolf removal is a warranted solution to help restore the ungulate herd to management objectives; (5) the level and duration of wolf removal being proposed; (6) how ungulate population response to wolf removal will be measured and control actions adjusted for effectiveness; and (7) demonstration that attempts were and are being made to address other identified major causes of ungulate herd or population declines or of Tribal government commitment to implement possible remedies or	Within the experimental population boundary, the Service has included an exception to allow nonlethal and lethal management of gray wolves that are having an unacceptable impact on ungulate herds or populations on Tribal lands. This exception requires a science-based proposal that must, at a minimum, include the following information: (1) the basis of ungulate population or herd management objectives; (2) data indicating that the ungulate herd is below management objectives; (3) what data indicate that wolves are a major cause of the ungulate population decline; (4) why wolf removal is a warranted solution to help restore the ungulate herd to management objectives; (5) the level and duration of wolf removal being proposed; (6) how ungulate population response to wolf removal will be measured and control actions adjusted for effectiveness; and (7) demonstration that attempts were and are being made to address other identified major causes of ungulate herd or population declines or of Tribal government commitment to implement possible remedies or conservation measures in addition to wolf removal. The proposal must be subjected to both public and peer review prior to it being finalized and submitted to the Service for review. At least three independent peer reviewers with relevant expertise in the subject matter that are not staff of the Tribe submitting the proposal must be used to review the proposal. Upon Service review, and before wolf

Components of the Alternatives	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
		<p>conservation measures in addition to wolf removal. The proposal must be subjected to both public and peer review prior to it being finalized and submitted to the Service for review. At least three independent peer reviewers with relevant expertise in the subject matter that are not staff of the Tribe submitting the proposal must be used to review the proposal. Upon Service review, and before wolf removals can be authorized, the Service will evaluate the information provided by the requesting Tribe and provide a written determination to the requesting Tribal game and fish agency on whether such actions are scientifically based and warranted.</p>	<p>removals can be authorized, the Service will evaluate the information provided by the requesting Tribe and provide a written determination to the requesting Tribal game and fish agency on whether such actions are scientifically based and warranted.</p> <p>Within the 10(a)(1)(A) permit area, no lethal take would be permitted. Only nonlethal take would be allowed.</p>



## CHAPTER 3 AFFECTED ENVIRONMENT

### 3.1 INTRODUCTION

Chapter 3 describes the resources and existing conditions that may be affected by one or more of the alternatives described in Chapter 2. For this affected environment analysis, environmental conditions for each resource are evaluated using the best available data for that specific resource. Depending on the resource and the availability of data, discussion of the affected environment may vary. For example, the discussions of socioeconomic conditions and environmental justice communities use the most recent U.S. Census Bureau data available. For some topics, the 2020 decennial census provides the most recent information, while other topics must rely on the 2016 to 2020 five-year American Community Survey or the 2017 Census of Agriculture. Biological resource discussions use the most current and best available species data sets, surveys, and studies to inform the analysis.

The Service considered all potentially relevant resource areas for analysis in this EIS. In compliance with NEPA, its implementing regulations (40 CFR 1500–1508), and CEQ guidance for implementing NEPA, the discussion of the affected environment focuses only on those environmental resources that may be impacted by the proposed action. Section 3.1.1, below, provides more detail on which environmental resource areas were considered for analysis in the EIS.

#### 3.1.1 Scoping Issues and Concerns

##### Introduction

An “issue” describes the relationship between actions and environmental resources (natural, cultural, and socioeconomic). Issues are adverse or beneficial effects that any of the action alternatives or the no-action alternative might cause or that may currently exist. Issues may also be questions, concerns, or other relationships, including beneficial ones. Environmental resources and issues addressed in the EIS were identified during internal and public scoping, as well as during review of the draft EIS, in compliance with NEPA and its implementing regulations (40 CFR 1501.9).

Some environmental resources and issues were analyzed in detail in the EIS, while others were not. The decision to analyze an issue in detail was made solely based on the issue’s relevance to the decision being made or based on the best scientific judgment that the issue is related to the decision being made. For instance, the decision regarding whether the issuance of a section 10(j) rule for gray wolves in Colorado would affect livestock producers and outfitters and guides was determined to be related to the decision being made. Consequently, potential socioeconomic impacts on livestock producers and outfitters and guides are evaluated in detail in the EIS, among the other issues listed in table 3-1. Other commenters were concerned about the use of lethal management measures, reintroduction in general, or about the population levels of gray wolf that could be sustained in Colorado. These issues are outside the scope of the 10(j) rule and this EIS or do not meet the purpose and need for the proposed action as described in section 2.3.3; therefore, they are not analyzed in the EIS. Explanations are included below for issues that are not analyzed in detail in the EIS.

Issues related to the reintroduction in general are not part of the scope of the analysis of this EIS process because the State of Colorado would reintroduce gray wolves to a portion of the species’ historical range in the state in compliance with CRS 33-2-105.8, regardless of the alternative implemented, and would be able to reintroduce the species without additional authorization by the Service, as discussed in section 2.4.1. However, impacts of the State’s reintroduction of gray wolves are considered under the cumulative impacts section of this EIS (section 4.9).

## Environmental Resources and Issues Evaluated in the EIS

Environmental resources and issues analyzed in detail in the EIS are listed in table 3-1.

**Table 3-1. Environmental Resources and Issues Analyzed in Detail in the EIS**

Environmental Resources	Issues
Biological Resources – Species of Special Concern	Potential impacts on the gray wolf (e.g., from hazing and take), and other species of special concern.
Biological Resources – Other Wildlife	Potential impacts on elk, deer, and other ungulate species from the presence or absence of management flexibility.
Cultural Resources – Tribal Resources	Potential impacts identified through consultation with Tribes and the presence or absence of management flexibility to address impacts to sacred sites, hunting on lands with Tribal treaty rights, and livestock production by Tribes or Tribal members.
Socioeconomic Resources	Potential impacts on ranch operations, outfitters, guides, and hunting from the presence or absence of management flexibility.
Environmental Justice	Potential impacts on minority and low-income population groups of concern in the study area from the presence or absence of management flexibility.

## Environmental Resources and Issues Not Evaluated in Detail the EIS

Environmental resources and issues that are not analyzed in detail in the EIS are listed in table 3-2, including a description of why these resources and issues are not evaluated in detail.

**Table 3-2. Environmental Resources and Issues Not Evaluated in the EIS**

Environmental Resources	Issues
Air – Air Quality	Providing flexibility for reintroduction and management of gray wolves in Colorado would not result in actions that would affect air quality.
Air – Climate Change	<p>The Service’s proposed action would not result in a notable increase in emissions of greenhouse gases above current operational emissions. Emissions would result from vehicle trips by Service personnel or designated agents in the course of implementing the section 10(j) rule, depending on the alternative selected. Regardless of the alternative selected, vehicle trips required to implement the proposed action would be similar to the existing number of trips conducted as part of current operations.</p> <p>Additionally, climate change is not expected to affect the gray wolf to a measurable degree. Variations in environmental conditions (such as drought, fire, and prey fluctuations) and episodic threats (e.g., disease) are characteristic of wild populations of most species, including gray wolves. Gray wolf populations that are genetically robust are more likely to recover from episodic threats (USFWS 2020b; USFWS 2012). Based on the above, measurable cumulative impacts on gray wolves in Colorado from changing climate conditions and the limited take that would be allowed under the 10(j) rule are not expected.</p>
Biological Resources – Non-native or Exotic Species	Providing flexibility for reintroduction and management of gray wolves in Colorado would not result in the spread or management of non-native or exotic species.

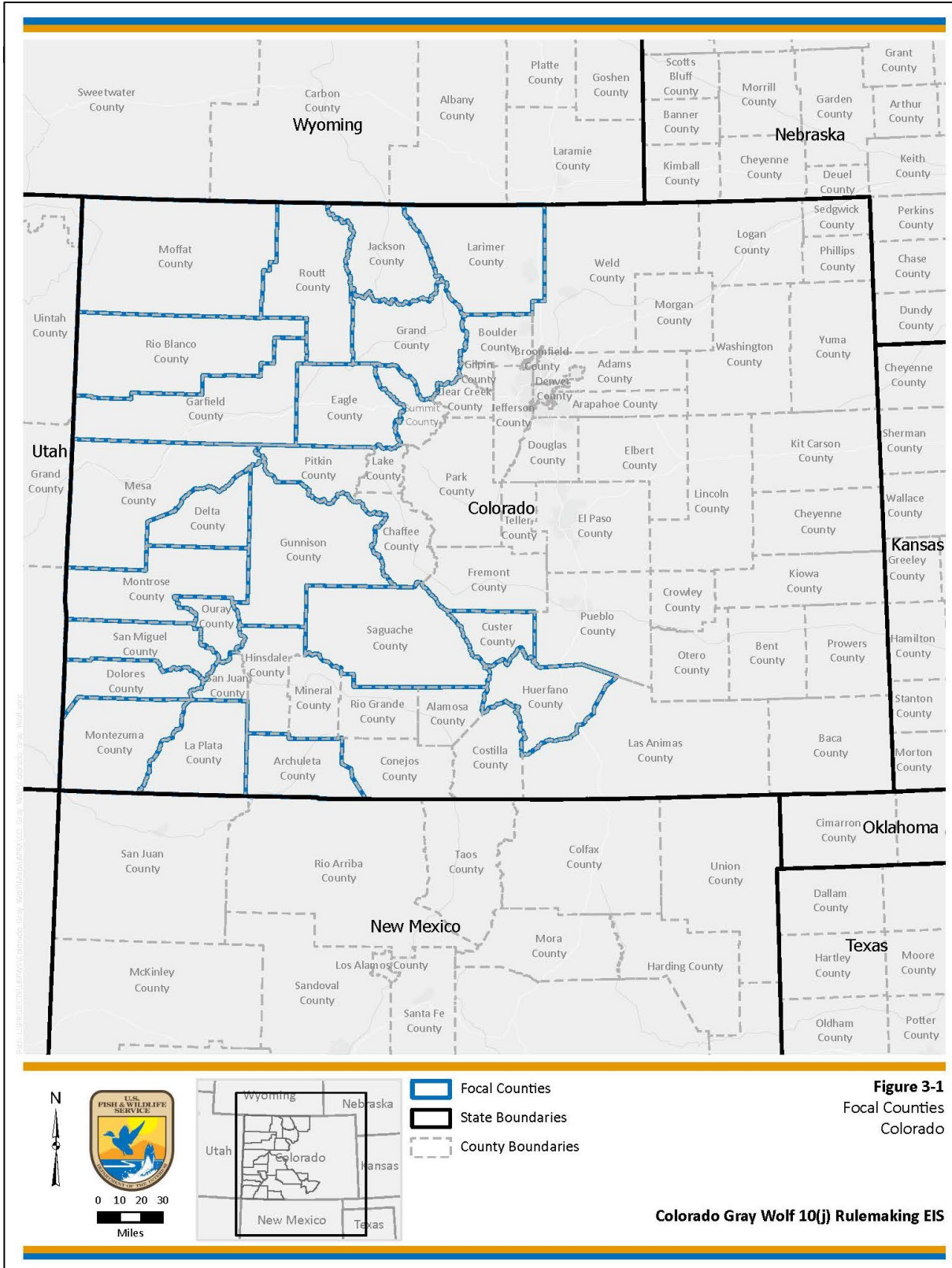
Environmental Resources	Issues
Biological Resources – Vegetation	Providing flexibility for reintroduction and management of gray wolves in Colorado would not affect vegetative communities. As discussed under the affected environment and cumulative impact sections, the number of ungulates on the landscape could impact vegetation, but providing regulatory flexibility is not expected to cause changes in ungulate populations that would result in noticeable impacts to vegetation.
Biological Resources – Ecosystem Dynamics	While the introduction of wolves by the State could result in potential changes in vegetation communities, watersheds, water quality, and other ecosystem dynamics due to changes in wildlife populations, providing management flexibility through a regulatory framework is not expected to result in impacts to ecosystem dynamics. These impacts are further discussed in cumulative impacts.
Biological Resources – Wildlife Disease Risk	Wolves can transmit disease, which can affect other wildlife species; however, available data are not conclusive regarding the likelihood of wolves affecting the health of ungulate populations (negatively or positively) over the long term. Any potential changes in the geographic extent of diseases or disease vectors as a result of the presence of wolves on the landscape would be a potential consequence of the State Plan to reintroduce wolves and would not be influenced by issuing and implementing the 10(j) rule. The proposed action would not result in changes in the way risk of wildlife diseases are managed; therefore, this issue is not evaluated in detail in the EIS.
Cultural Resources – Archaeological Resources	Providing management flexibility for reintroduction and management of gray wolves in Colorado would not result in adverse effects on archaeological resources.
Cultural Resources – Cultural Landscapes	Providing management flexibility through a regulatory framework for the gray wolf in Colorado is not expected to change or impact cultural landscapes. Issues related to sacred sites are addressed under Tribal Resources.
Geological Resources – Geologic Features	Providing management flexibility for gray wolves that would be reintroduced to Colorado would not result in localized or widespread ground disturbance that would affect geologic features.
Geological Resources – Geologic Processes	As noted above, the proposed action would not result in localized or widespread ground disturbance.
Lightscapes	The proposed action would not affect lightscapes or views of the night sky.
Human Health and Safety	The ESA allows for take of individual wolves for personal protection. While human encounters with wolves have the potential to result in human injury, this is very rare. However, like many other mammals, wolves are susceptible to rabies, which can increase the likelihood of attacks on humans. Overall, wolves do not pose a serious risk to human health and safety through disease transmission or provoked/unprovoked attacks. Any potential changes in the geographic extent of diseases or disease vectors or risk to human health and safety as a result of the presence of wolves on the landscape would be a potential consequence of the State Plan to reintroduce wolves and would not be influenced by issuing and implementing the 10(j) rule. The proposed action would not result in changes in the way risks to human health and safety are managed; therefore, this issue is not evaluated in detail in the EIS.
Soundscapes	Providing management flexibility through a regulatory framework may result in short-term noise disturbance during management actions, however, these would be localized and intermittent, and direct impacts would be minimal. Therefore, impacts to soundscapes are not analyzed in detail.

Environmental Resources	Issues
Viewsheds	Providing management flexibility through a regulatory framework may result in intermittent, localized visual impacts during management activities. These impacts would be minimal and therefore are not evaluated in detail in the EIS.
Recreation – Recreational Resources and Tourism	The proposed action would not affect overall access to or the quality of recreational resources in Colorado. The presence of gray wolves as a result of the State’s reintroduction may attract wildlife watchers to areas where wolves are present or discourage recreational users from accessing remote or wilderness areas due to perceived safety risks, which could have impacts on both the ability to access recreation and tourism-related revenues. Changes in recreational use resulting from the presence of wolves on the landscape would be a consequence of the reintroduction action under the State Plan and would not be affected by the limited take that would be allowed under alternatives 1 or 2 to minimize conflicts. The provision of management flexibility under a regulatory framework from the Service would not affect the ability of the public to engage in hunting, hiking, birdwatching, or viewing wolves. Therefore, recreational resources are not discussed in detail in the EIS.
Socioeconomic Resources – Mining, Oil and Gas, and Timber Industries	The proposed action would not result in socioeconomic effects on industries outside livestock production and outdoor recreation (specifically, services provided by outfitters and guides), including the mining, oil and gas, and timber industries. The proposed action could result in beneficial impacts to these and other industries under alternatives 1 or 2 because incidental take would be allowed under the circumstances described in sections 2.4.2 and 2.4.3. Potential impacts resulting from the presence of wolves on the landscape or wolf management actions that would fall under the State Plan are outside the scope of the proposed action and the analysis in the EIS. Because adverse effects on these industries are not anticipated from the Service’s proposed action, these industries are not assessed as part of the socioeconomic resources analysis.
Water Resources - Floodplains	No impacts to floodplains are expected as a result of actions permitted under a regulatory framework issued by the Service.
Water Resources – Marine or Estuarine Resources	No marine or estuarine water resources are located in the project area.
Water Resources – Water Quality or Quantity	The provision of management flexibility under a regulatory framework would not impact water resources including water quality or quantity, or wetlands.
Wilderness	The Service’s proposed action would not directly impact wilderness areas, and implementation of the proposed section 10(j) rule would not supersede any other federal laws or regulations, including the Wilderness Act. Federal land-managing agencies would need to determine how any regulatory framework issued by the Service could be implemented within wilderness areas where livestock grazing may occur, including actions that would be allowed and tools and equipment that could be used, in accordance with applicable federal laws. These determinations may need to be made through separate minimum requirements analyses and/or NEPA processes. Because no actions are proposed in wilderness and federal land-managing agencies would be able to implement the proposed section 10(j) rule in a manner consistent with the Wilderness Act, wilderness is not discussed in detail in the EIS.

### 3.1.2 Study Area

The study area for the affected environment analysis includes the entire state of Colorado. The affected environment (Chapter 3) and environmental consequences (Chapter 4) sections of the EIS provide information and analysis at this statewide level. In addition to the statewide analysis, the Service identified 21 focal counties for more detailed study in the EIS. The focal counties have high ecological suitability for gray wolves, as determined by Ditmer et al. (2022). The Service overlaid a map of Colorado counties on modeling of ecological suitability in summer and winter to determine the list of focal counties (Ditmer 2022; see Appendix E). While the Service recognizes that gray wolves that would be reintroduced to Colorado may occur outside this area, these areas are anticipated to contain the most suitable habitat.

The focal counties include Colorado counties in proximity to suitable reintroduction sites identified by the State in the Western Slope and counties to which wolves are most likely to disperse based on suitable habitat and prey density. Areas with high ecological suitability for gray wolves may have low or high risk for human-wolf conflicts. The Service identified 21 focal counties: Archuleta, Custer, Delta, Dolores, Eagle, Garfield, Grand, Gunnison, Huerfano, Jackson, La Plata, Larimer, Mesa, Moffat, Montezuma, Montrose, Ouray, Rio Blanco, Routt, Saguache, and San Miguel (figure 3-1). While these counties encompass potential reintroduction sites on the Western Slope (e.g., Delta, Dolores, Eagle, Garfield, Grand, Gunnison, La Plata, Mesa, Moffat, Montezuma, Montrose, Ouray, Rio Blanco, Routt, San Miguel and portions of Archuleta or Saguache Counties) or areas where gray wolves are most likely to disperse based on the ecological factors noted above, wolves can disperse long distances and may disperse to areas of the state outside the focal counties. The Service is proposing to implement regulatory flexibility consistent with section 10(j) of the ESA statewide to account for dispersal of gray wolves away from reintroduction sites; therefore, the analysis of the affected environment and potential impacts in this EIS considers both the statewide study area and the focal counties.



## **3.2 SPECIES OF SPECIAL CONCERN**

Species of special concern include federally listed species, those that are federally listed or proposed to be listed as endangered or threatened or that are candidate species for protection under the ESA, and those listed as endangered or threatened at the State level in Colorado or identified as Species of Greatest Conservation Need (SGCN) in Colorado’s State Wildlife Action Plan (SWAP; CPW 2015). Section 3.1.2, above, provides more detail on regions of the state with greater ecological suitability for gray wolves and the methodology used to define these areas by identifying focal counties for this analysis. This discussion of existing conditions for species of special concern and the analysis that follows focuses on the 21 focal counties but also considers the potential for statewide impacts (figure 2-1). The following section discusses the federally listed gray wolf, followed by other federally listed species. When considering other federally listed species, only listed mammals and birds were analyzed because management of gray wolves would not affect listed fish, insects, flowering plants, or vegetation.

### **3.2.1 Gray Wolf**

#### **History**

The gray wolf historically inhabited most of North America, including Colorado, until it was nearly brought to extinction in the 1930s as a result of predator control programs and bounties in the lower 48 United States and southern Canadian provinces (USFWS 2022b). Gray wolves were listed as endangered under the U.S. Endangered Species Preservation Act in 1966 and legally protected under the ESA in 1973. Since then, the Service has managed gray wolves as an endangered species in Colorado under the authority of the ESA. See section 1.4 for a detailed description of how the status of the gray wolf in Colorado has changed over the years.

Given their adaptability as habitat and prey generalists, wolves have been able to recolonize certain parts of their historical range in North America and Europe (Mech 2017); as of 2020, about 6,000 gray wolves are estimated to live in the lower 48 states (USFWS 2020a). Following the successful reintroduction of gray wolves to Yellowstone National Park and Idaho in the 1990s (Fritts et al. 1997), and the subsequent expansion of stable and healthy populations into adjacent states (Jimenez et al. 2017), gray wolves were delisted in Montana, Idaho, Wyoming, eastern Oregon and Washington, and parts of Utah (USFWS 2022b). Wolves remain listed as endangered in Colorado under the ESA and under the State’s Nongame, Endangered, or Threatened Species Conservation Act (CO Rev Stat § 33-2-101).

#### **Current Population Status and Distribution**

The Service and the NPS reintroduced gray wolves to central Idaho and Yellowstone National Park in the 1990s, and by 2015, approximately 2,000 wolves were estimated to inhabit the northern Rocky Mountains. In addition, wolf populations have been established in smaller numbers in Washington, Oregon, and Northern California (Smith et al. 2010; USFWS 2020a). Dispersing wolves from the northern Rocky Mountains population have been documented in Colorado; however, Colorado is geographically separate from the northern Rocky Mountains.

CPW receives approximately 100 reported sightings of wolves per year, although not all are valid. Since 2004, lone wolves have been confirmed numerous times in Colorado, although no resident groups were documented in the state until January 2020, when CPW confirmed a group of at least six wolves in Moffat County near the Wyoming and Utah border. That group was visually observed, and genetic tests were conducted on scat samples near a scavenged elk carcass, which confirmed at least four related individuals in the group (CPW 2020a). Separately, a collared adult female from the Snake River Pack in Wyoming was documented in north-central Colorado in July 2019, and CPW collared an adult male in January 2021 in Jackson County. In June 2021, a litter of six pups was observed with the Snake River female and the CPW-collared male (now dubbed the “North Park

pack”). In February 2022, one of the yearling female wolves from that litter was collared in North Park. In February 2023, CPW recollared the adult male initially collared in 2021 (replacing his existing collar) and collared a subadult male from the North Park pack’s 2021 litter (CPW 2023b).

Wolves have been confirmed in Colorado, including one breeding pair in 2021, although a wolf population has not been recognized in the state as of June 2023 because it does not meet the Service’s definition of a wolf population, which is “at least two breeding pairs of wild wolves successfully raising at least two young each year (until December 31 of the year of their birth), for two consecutive years” (USFWS 1994).

## Ecology

**Physical Characteristics.** Gray wolves are a highly adaptable species and were once the most widely distributed mammal in the world (Ginsberg and Macdonald 1990). They are the largest member of the canid species; they typically range in weight from 16 to 60 kilograms and are 1.3 to 1.5 meters long (Ginsberg and Macdonald 1990). Pelt color varies, but in the northern Rocky Mountains, wolves are most commonly grizzled gray and black (USFWS 1994).

**Group Sizes and Territories.** Gray wolves are a social species that live in groups led by a dominant breeding pair (alphas). Groups consist of the breeding pair’s offspring from previous years and their new pups, as well as other breeding-aged adults. Group size varies and may include more than 30 animals (Ginsberg and Macdonald 1990); however, average group sizes are typically smaller (e.g., 9.8 individuals in Yellowstone National Park [NPS 2022a]; 5.92 individuals in the northern Rocky Mountains [Sells et al. 2022]). Wolves may live in the wild up to 13 years (Mech 1988), but more commonly have a lifespan of 2 to 5 years; only 18 percent of wolves in Yellowstone National Park reached 6 years of age or older (NPS 2022a).

Wolf density may be naturally controlled by prey density (Mech and Barber-Meyer 2015) or intrinsically self-regulated because of social strife and territoriality (Cariappa et al. 2011; Cubaynes et al. 2014). Or as expected to be the case in Colorado, wolf density may be extrinsically regulated as a result of social carrying capacity<sup>1</sup> (TWG 2022a).

A wolf group’s home range/territory size varies by season and by year. From spring to fall, the home range is smaller because activity is centered around the den and rendezvous sites. By October, pups are able to travel and hunt with the group, thus increasing the size of the home range. Prey availability, intraspecific competition with nearby groups, and landscape characteristics (both biotic and abiotic) all influence wolf territory size. Wolf group territory sizes in the northern Rocky Mountains have ranged from 24 to 934 square miles (Colorado Wolf Management Working Group 2004).

**Reproduction.** Wolves reach reproductive maturity at approximately two years of age (Ginsberg and Macdonald 1990), and breeding typically occurs only between the dominant male and female in a group (although groups with additional reproductively mature females have been documented with more than one litter per year; Mech and Boitani 2003; USFWS et al. 2001). Wolves establish one or several den sites up to one month prior to giving birth (Paquet and Carbyn 2003), and pups are born in April. Litter sizes can range from one to nine (Pletscher et al. 1997), but the average is five pups (Fuller et al. 2003; Ausband et al. 2017). Pup survival increases when ungulate prey are abundant (Fuller et al. 2003) and when they are in larger groups with more nonbreeding adults (Brainerd et al. 2008). Pup survival is reduced when the breeding individuals of a pack are removed as a result of

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<sup>1</sup> “Social carrying capacity” is a concept developed by social scientists and extended to wildlife management to describe human tolerance for wildlife (Decker and Purdy 1988). Also coined “wildlife stakeholder acceptance capacity” (Carpenter et al. 2000), the concept is connected to social receptivity to wildlife conservation and management goals and human willingness to coexist with wildlife, particularly large carnivores (Peyton et al. 2007; Madden and McQuinn 2014; Young et al. 2015b).



harvest or management-led lethal control; these actions typically lead to smaller group size and breeder turnover, which decreases pack stability and pup survival (Brainerd et al. 2008; Ausband et al. 2017).

**Dispersal.** Wolves can disperse across long distances (Ditmer et al. 2022; Morales-Gonzalez et al. 2022), which has allowed them to recolonize former habitats where human-caused mortality sources are limited. Lone long-distance dispersals have been documented in nearly all states within the historical gray wolf range (USFWS 2020b). Both male and female subadults will disperse hundreds of miles; radio collar data have demonstrated wolves moving more than 600 miles straight line distance (Mech and Boitani 2003; Jimenez et al. 2017; Morales-Gonzalez et al. 2022). Wolves that have been confirmed in Colorado are thought to have dispersed from Wyoming (Ditmer et al. 2022) and Montana (CPW 2023b).

**Genetics.** Taxonomic relationships of wolves in North America have been studied extensively, although researchers disagree about the genotypic relationship between western gray wolves, eastern wolves, and red wolves (USFWS 2020b; Carroll et al. 2021). Wolves that have dispersed to Colorado are part of the Western United States metapopulation, which is also connected to the large population (>15,000) of wolves in western Canada (Jimenez et al. 2017; USFWS 2020b). The behavioral characteristic of young wolves to disperse when they reach sexual maturity enables extensive genetic exchange through immigration and emigration with adjacent populations (Colorado Wolf Management Working Group 2004).

**Food Habits.** Gray wolves are opportunistic carnivores, and although they will prey on small mammals and birds, carrion, and even plant matter, they tend to focus on large ungulates (Fuller 1989; Colorado Wolf Management Working Group 2004; Stahler et al. 2006; Newsome et al. 2016). However, wolves have demonstrated the ability to shift their diet to take advantage of seasonally available food sources, e.g., beavers (*Castor canadensis*; Gable and Windels 2018; Gable et al. 2020).

Depending on the size of prey, adult wolves may consume from 10 to more than 20 ungulates (i.e., elk [*Cervus canadensis*], mule deer [*Odocoileus hemionus*]) per year, including newborn/juvenile calves (Fuller 1989; NPS 2022a). Ungulate densities in Colorado exceed those in other states where wolves maintain a viable population (Ditmer et al. 2022), and wolves are most likely to prey upon elk, mule deer, and white-tailed deer (*O. virginianus*; Colorado Wolf Management Working Group 2004). Colorado has the largest population of elk in any state (>300,000 individuals; Lukacs et al. 2018; CPW 2021a). The deer population was estimated to be 416,426 in 2021 (CPW 2021b), which is a decrease from the early 2000s and less than the State's population objectives (CPW 2020b).

Other ungulates that wolves may prey upon in Colorado include moose (*Alces alces*), pronghorn (*Antilocapra americana*), bighorn sheep (*Ovis canadensis*; *O. canadensis nelsoni*), and mountain goats (*Oreamnos americanus*). These species are not expected to be a major food source for wolves in Colorado in the near term. See section 3.3.2 for a more detailed description of other ungulate populations in the state.

**Domestic Prey Species/Livestock Depredation.** In addition to wild ungulates, wolves are known to kill and prey on livestock (most commonly cattle and sheep) and other domestic animals. The extent to which this occurs depends on the density of wolves, the group size, and the density and spatial overlap of wild ungulate populations and livestock. In addition, livestock husbandry practices, land cover type, human and road density, the severity of winters, and local hunting pressure all contribute to the likelihood of depredations (DeCesare et al. 2018; Janeiro-Otero et al. 2020; Gese et al. 2021). Livestock depredation may be a learned behavior by individual wolves who become repeat offenders (Bradley et al. 2015; DeCesare et al. 2018). DeCesare et al. (2018) found the strongest predictor of wolf depredation in Montana was the occurrence of depredation in the previous year; however, the authors noted that may have been as a result of animal husbandry practices and increased spatial overlap with livestock in certain districts as much as an intrinsic learning behavior by individual wolves. Generally, wolves primarily prey on native ungulates but sometimes shift toward depredating livestock (Colorado Wolf Management

Working Group 2004; Bradley et al. 2015; DeCesare et al. 2018), which can be detrimental to the affected livestock operations (TWG 2022a). Three separate wolf depredation incidents on cattle were confirmed on a ranch in Jackson County, Colorado, between December 2021 and January 2022 (CPW 2021c, 2022d). See section 3.5 for a more detailed discussion of the socioeconomic impacts of depredation.

**Habitat Preferences.** Wolves are habitat generalists and can inhabit many types of ecosystems if sufficient prey populations are available, and they are able to spatially separate from humans to avoid conflict (Sazatornil et al. 2016; Mech 2017; Mech et al. 2019). Colorado has sufficient ecologically suitable habitat to sustain an ecologically functional wolf population (Carroll et al. 2006; Ditmer et al. 2022); however, the areas in Colorado with highest habitat suitability (e.g., the northern Western Slope) may also have the lowest human tolerance as a result of livestock grazing and agricultural activity on the land (Carroll et al. 2003; Ditmer et al. 2022). As stated in CRS 33-2-105.8, reintroduction of wolves by the State of Colorado is proposed to occur west of the Continental Divide but it is expected that wolves would disperse east of the Continental Divide, into the plains and southeastern canyonland habitats (Ditmer et al. 2022).

**Mortality.** Wolf mortality may occur from natural causes or as a result of interactions with humans. Natural sources of mortality for wolves include inter- and intraspecific strife and natural causes (e.g., old age, disease, parasites, accidents; Colorado Wolf Management Working Group 2004; Murray et al. 2010). Wolves may be killed by other carnivores while competing for prey (Ballard et al. 2003) or from aggressive interactions with other wolves (Cubaynes et al. 2014). Gray wolves in Colorado are likely to be exposed to and affected by viral and bacterial diseases and parasites, including canine distemper, canine parvovirus, rabies, leptospirosis, tularemia, blastomycosis, heartworm, intestinal worms, echinococcosis, sarcoptic mange, lice, and ticks, similar to the rest of their range (Johnson et al. 1994; Brand et al. 1995; Mech et al. 2008; Michigan DNR 2015). In other wolf populations, these diseases and parasites are not considered limiting at the population level (Michigan DNR 2015). It can be difficult to assess the direct and indirect influences of diseases unless wolves are being closely monitored (Brand et al. 1995), but it is possible that a disease outbreak may affect dispersal and colonization of new areas if a high percentage of pups are infected (Mech et al. 2008).

Human-caused mortality typically accounts for more than 80 percent of all wolf mortality (Fuller 1989; Murray et al. 2010). The rate of illegal harvest of wolves is uncertain because unreported killing cannot be precisely quantified, and not all individual wolves in a population are monitored closely to determine cause of death. In Minnesota, 17 to 31 percent of wolf mortality was attributed to illegal human-caused mortality (Fuller et al. 2003), while a review of 21 studies across North America estimated 23 percent of mortalities of monitored wolves was due to illegal harvest (Hill et al. 2022). Depredation of livestock is a primary source of conflict, as is lack of tolerance of wolves in both the United States and Canada (Mech 2017; Morehouse et al. 2018). Areas with a high density of roads have negatively affected wolf persistence by increasing human access (Mladenoff et al. 1995; Kohn et al. 2001; Smith et al. 2010; Hebblewhite and Whittington 2020); the exception being if high road density is near large areas of intact wolf habitat with few or no roads, e.g., wilderness areas or national park units (Mech 1989). Wolf survival in areas of high road density is also affected by landscape features (terrain, topography, cover), traffic, road distribution, and human tolerance (USFWS 1994).

Wolf populations have demonstrated strong resilience to mortality because of the compensatory nature (see definition in Appendix A, Glossary) of natural and human-caused mortality factors and because of wolves' high reproductive potential (Fuller et al. 2003). The range of sustainable human-caused mortality rates varies due to biological and ecological conditions of specific habitats and wolf populations. Previous research in Minnesota and Alaska indicated that wolves could withstand human-caused mortality rates up to 28 percent before a population decline is detected (Fuller 1989; Adams et al. 2008), while modeling the effects of human-caused mortality on northern Rocky Mountain wolf population growth estimated a sustainable rate of 45 percent (Gude et al. 2012). In the final rule for removing wolves from the ESA, the Service identified the adaptable nature of the pack social

structure as enabling wolf populations to rapidly overcome pervasive human-caused mortality or disease (USFWS 2020b). Recruitment rate has been identified as an important variable in population-level responses of wolves to human-caused mortality (Gude et al. 2012).

**Interactions with Other Species.** Wolves may directly compete with other predators for prey or habitat, including coyote (*Canis latrans*), mountain lion (*Puma concolor*), black bear (*Ursus americanus*), lynx (*Lynx canadensis*), bobcat (*Lynx rufus*), and wolverine (*Gulo gulo*) (Ballard et al. 2001; Griffin et al. 2011; Forrester and Wittmer 2013; CPW 2022c). These predators may kill or be killed by wolves (Ballard et al. 2003; Kortello et al. 2007; Elbroch et al. 2020). In some areas where wolves have been restored, competitors have changed their predation habits or habitat selection to avoid competition with wolves (Smith et al. 2003). When wolves were reintroduced to Yellowstone National Park in 1995 after being absent for approximately 70 years, they were expected to compete with other predators, including coyotes, mountain lions, and grizzly bears for prey resources. In the absence of wolves during the preceding decades, these predators likely expanded their niche spaces and habitats to include spaces vacated by wolves (Ruth et al. 2011; Bartnick et al. 2013). Because elk and deer populations at Yellowstone were at or near all-time highs when wolves were reintroduced, prey resources were not limited, which likely buffered the effects of interspecific competition among predators in the short term.

Eventually, studies on interspecific competition between wolves and mountain lions following the natural recolonization and reintroduction of wolves to the northern Rocky Mountains documented behavioral changes in mountain lions due to the presence of wolves. Observed changes included avoidance behaviors, changes in prey selection, and shifts in space use (Bartnick et al. 2013). Between wolves and mountain lions, wolves tend to be the dominant predator, and mountain lions tend to avoid areas where wolves are present. With the increased presence of wolves, mountain lions shifted their habitat use to higher elevations and used other habitats farther removed from wolf home ranges and kill sites. In addition, mountain lions preyed on a higher proportion of mule deer, whereas elk had been their primary prey species in the absence of wolves. This shift in prey selection was likely a result of increased mountain lion-mule deer encounters as mountain lions shifted their habitat use to higher elevations (Bartnick et al. 2013). This interaction is known as competitive interference.

Competition between wolves and grizzly bears was also observed at Yellowstone following the reintroduction of wolves (Ballard et al. 2003; Gunther and Smith 2004). However, grizzly bears have been extirpated from Colorado (DMNS 2022).

Black bears occur throughout most of the western two-thirds of Colorado (CBI 2011a). Although they are omnivores, black bears are considered to be apex predators in some ecosystems. There have been fewer documented interactions between wolves and black bears compared to other predators. Wolves have been documented to kill black bears on occasion. In the majority of these cases, wolves have outnumbered black bears, giving them a competitive advantage in combat. Wolves were the more dominant species in approximately 70 percent of the documented wolf-black bear interactions (Ballard et al. 2003).

Complex interactions among wolves and coyotes have also been observed. Following reintroduction of wolves at Yellowstone, Merkle et al. (2009) observed wolf-coyote encounters over a 12-year period from 1995 to 2007. Wolves were observed to be the more dominant species in interactions with coyotes, with wolves initiating most encounters (Merkle et al. 2009). In most observed encounters, wolves chased coyotes away, but killed them in some encounters. Wolf-coyote interactions decreased over time as the size of the wolf population increased, suggesting that coyotes adapted to the presence of wolves by altering their behaviors or declined in number through dispersion (Merkle et al. 2009). Although wolves do not hunt coyotes as prey, coyotes are reported as the carnivore being most commonly killed by wolves, further demonstrating the need for coyotes to adapt their behaviors in the presence of wolves (Palomares and Caro 1999; Merkle et al. 2009). However, coyotes also benefit from the access to carrion left behind at wolf kill sites (Ballard et al. 2003; Merkle et al. 2009; NPS 2022a). Interspecific competition has not yet been documented with wolves and other predators in Colorado.

**Wolf Recovery and Potential Ecosystem Response.** As noted above, wolves have been reintroduced or naturally recolonized portions of their historic North American range. Notable examples of reintroduction include Yellowstone National Park and central Idaho (USFWS 1994), whereas natural recolonization occurred in northern Wisconsin (Callan et al. 2013), Isle Royale National Park in Michigan (McLaren and Peterson 1994; except for reintroductions that began in 2020 [NPS 2018]), and Banff National Park in Alberta, Canada (Hebblewhite et al. 2005). The following discussion provides an overview of the role of wolves in ecosystems and describes ecosystem-level effects that have been documented elsewhere following reintroduction and recovery efforts. It should be noted that ecosystem response to wolf reintroduction can vary greatly among regions and ecosystems depending on biotic and abiotic factors and complex interactions.

As an apex predator, wolves may exert a strong top-down influence on the trophic structure of the ecosystems they inhabit (Ripple and Beschta 2012). This means that wolves may influence ecosystem structure either directly (e.g., predation) or indirectly (e.g., behavioral modification of prey species and mesocarnivores [predators that occupy mid-levels of food webs]) by altering herbivore abundance and/or distribution on the landscape. This can, in turn, positively or negatively influence vegetation communities and drive ecosystem structure, although most research indicates positive changes related to the effects of wolves (Estes et al. 2011; Ripple and Beschta 2012; Ripple et al. 2014). This process is known as a trophic cascade. Although there are documented examples of trophic cascades across a diversity of ecosystems, they are a topic of debate in the body of scientific literature because of the many variables and complex interactions that can otherwise affect ecosystem structure (Mech 2012; Smith et al. 2019).

Since 1995, when wolves were reintroduced to Yellowstone National Park, changes have been documented that have resulted in improved habitat conditions, including a resurgence of woody browse species such as willow (*Salix* spp.), aspen (*Populus tremuloides*), and cottonwood (*Populus* spp.) in some areas (Smith et al. 2003; Hollenbeck and Ripple 2007; Ripple and Beschta 2012). An increase in the abundance and diversity of riparian bird species in portions of Yellowstone National Park was observed during the same period (Smith et al. 2003; Hollenbeck and Ripple 2007). However, the exact mechanisms and the role that wolves have played in contributing to these changes continues to be debated (Mech 2012; Smith et al. 2019). Changes in ecosystem structure and dynamics following reintroduction or natural recolonization of wolves have been observed in other ecosystems throughout North America including northern Wisconsin (Callan et al. 2013), Isle Royale National Park in Michigan (McLaren and Peterson 1994; NPS 2018), and at Canada's Banff National Park in Alberta (Hebblewhite et al. 2005).

### **3.2.2 Other Federally Listed Species**

Colorado is home to 38 federally listed species, including the gray wolf (USFWS 2022c). Some federally listed species are found throughout the state, while others have limited distribution or occur only in specific habitats. Table 3-3 lists the federally listed mammals and birds that occur in Colorado along with their statuses and provides a summary of their habitat preferences. Table 3-3 also notes in which of the 21 focal counties these species are known to occur or likely to occur. Table 3-3 does not include federally listed fishes, insects, and plants that may occur in Colorado because the proposed action is not likely to affect these species.

Colorado also contains critical habitat for 14 federally listed species. Table 3-4 lists designated critical habitat in Colorado and indicates in which of the 21 focal counties critical habitat is located. Critical habitat is designated based on the presence of primary constituent elements. Primary constituent elements are those specific elements of physical and biological features that provide for a species' life-history processes and are essential to the conservation of the species. As noted above, the proposed action is not expected to affect federally listed fishes, insects, and plants; therefore, critical habitats for these species are not included in table 3-4.

**Table 3-3. Other Federally Listed Species in Colorado**

Common Name	Scientific Name	Status	Habitat Requirements	Occurrence in the Study Area
<b>Mammals</b>				
Black-footed ferret	<i>Mustela nigripes</i>	Endangered	Black-footed ferret occurs in semi-arid grasslands and is closely associated with occupied prairie dog habitat.	Distribution is limited to northern Colorado, including Larimer, Moffat, and Rio Blanco Counties in the focal counties.
Canada lynx	<i>Lynx canadensis</i>	Threatened	In the continental United States, Canada lynx occurs in subalpine and boreal/hardwood forests. Lynxes prefer areas with deep snow and high populations of their key prey, snowshoe hares.	Canada lynx distribution includes portions of all 21 focal counties.
Mexican Wolf	<i>Canis lupus baileyi</i>	Endangered/ Nonessential Experimental Population	The Mexican wolf occupies mountainous woodlands and deserts. It has been extirpated throughout much of its historical range.	Mexican wolf does not occur in Colorado but is present in the neighboring states of New Mexico and Arizona where it was reintroduced beginning in the late 1990s.
New Mexico meadow jumping mouse	<i>Zapus hudsonius luteus</i>	Endangered	The New Mexico meadow jumping mouse inhabits riparian and wetland zones, particularly scrub-shrub and persistent emergent herbaceous wetlands. The New Mexico meadow jumping mouse nests in dry soils.	Distribution is limited to southern Colorado, including La Plata and Archuleta Counties in the focal counties.
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	Threatened	Preble's meadow jumping mice inhabit riparian areas and wet meadows with dense ground cover. They typically hibernate in burrows at the base of vegetation.	Within the focal counties, Preble's meadow jumping mouse only occurs in Larimer County.
<b>Birds</b>				
Eastern black rail	<i>Laterallus jamaicensis ssp. Jamaicensis</i>	Threatened	The Eastern black rail occurs in dense emergent marshes and beaver ponds.	Distribution in the focal counties is limited to Grand, Jackson, and Larimer Counties.
Gunnison sage-grouse	<i>Centrocercus minimus</i>	Threatened	Gunnison sage-grouse are dependent on sagebrush-dominated habitats.	Distribution in the focal counties includes portions of Delta, Dolores, Gunnison, Mesa, Montezuma, Montrose, Ouray, Saguache, and San Miguel Counties.

Common Name	Scientific Name	Status	Habitat Requirements	Occurrence in the Study Area
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Threatened	Mexican spotted owls inhabit mixed conifer forests, pine-oak forests, and rocky canyons. Nesting typically occurs in Douglas-fir trees, forests with high canopy closure, caves, or on cliff ledges.	Distribution is widespread throughout the western half of Colorado. The Mexican spotted owl occurs in all focal counties except Saguache.
Piping plover	<i>Charadrius melodus</i>	Threatened	In Colorado, piping plover habitat is limited to sandy reservoir shores and gravel pits.	Distribution in Colorado is limited to Bent, Crowley, Kiowa, Otero, and Prowers Counties in the southeastern portion of the state. The species does not occur in the focal counties.
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Endangered	Southwestern willow flycatchers are typically found in shrubby floodplains and other riparian areas with dense shrubs and open water. The species is closely associated with willows, tamarisk, and Russian olive trees.	Species distribution is concentrated in the lower southwest portion of Colorado, including Archuleta, Dolores, La Plata, Mesa, Montezuma, Ouray, Saguache, and San Miguel Counties in the focal counties.
Whooping crane	<i>Grus americana</i>	Endangered	Whooping cranes live in mudflats in agricultural areas and around mudflats. They nest in wetlands dominated by bulrush.	Distribution is limited to north-central Colorado. In the focal counties, whooping cranes could occur in Grand, Jackson, Larimer, and Routt Counties. However, whooping cranes have not been seen in Colorado since 2010.
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	Threatened	Yellow-billed cuckoos in Colorado are considered riparian obligates and are closely associated with areas where cottonwoods form the upper-story.	Species distribution in Colorado is primarily in the western portion of the state, including Archuleta, Delta, Dolores, Eagle, Garfield, Grand, Gunnison, Jackson, La Plata, Mesa, Moffat, Montezuma, Montrose, Ouray, Rio Blanco, Routt, Saguache, and San Miguel Counties in the focal counties.

Source: USFWS 2022c,d

**Table 3-4. Critical Habitat in Colorado**

Species	Description of Critical Habitat	Overlap with Focal Counties
Gunnison sage-grouse	Critical habitat was designated on November 20, 2014 (79 FR 69311 69363). The designation covers 1,429,551 acres of primarily sagebrush habitats.	Critical habitat in Colorado is located in parts of Delta, Dolores, Gunnison, Hinsdale, Mesa, Montrose, Ouray, Saguache, and San Miguel Counties. Critical habitat for this species overlaps with the focal counties in Delta, Dolores, Gunnison, Mesa, Ouray, Saguache, and San Miguel Counties.
Mexican spotted owl	Critical habitat was designated on August 31, 2004 (69 FR 53182 53298). The designation covers approximately 8.6 million acres of canyon and forest habitat.	Critical habitat in Colorado includes portions of El Paso, Teller, Fremont, Custer, Pueblo, Huerfano, Douglas, and Jefferson Counties. Critical habitat for this species overlaps with the focal counties in Custer and Huerfano Counties.
New Mexico meadow jumping mouse	Critical habitat was designated on April 15, 2016 (81 FR 14264). The designation covers 13,973 acres along 169.3 miles of flowing streams, ditches, and canals as critical habitat in eight units.	Critical habitat in Colorado is limited to portions of Las Animas, Archuleta, and La Plata Counties in the extreme southern portion of the state. Critical habitat for this species overlaps with the focal counties in Archuleta and La Plata Counties.
Preble's meadow jumping mouse	Critical habitat was designated on December 15, 2010 (75 FR 78430 78483). The area encompasses 662 kilometers of rivers and streams and 34,935 acres.	Critical habitat was designated in parts of Boulder, Broomfield, Douglas, El Paso, Jefferson, Larimer, and Teller Counties. Critical habitat for this species overlaps with the focal counties in Larimer County.
Southwestern willow flycatcher	Critical habitat was designated on January 3, 2013 (78 FR 344 534). About 1,975 stream kilometers and the adjacent flood-prone and 100-year floodplains were designated as critical habitat for a total area of 208,973 acres.	Critical habitat in Colorado is limited to Alamosa, Conejos, Costilla, and La Plata Counties in the southern part of the state. Critical habitat for this species overlaps with the focal counties in La Plata County.
Yellow-billed cuckoo	Critical habitat was designated on April 21, 2021 (86 FR 20798 21005). Approximately 298,845 acres in Arizona, California, Colorado, Idaho, New Mexico, Texas, and Utah were designated as critical habitat.	Critical habitat in Colorado is limited to Mesa and Delta Counties. Critical habitat for this species overlaps with the focal counties in Mesa and Delta Counties.

Source: USFWS 2022c,d

### 3.2.3 State-Listed Species

Seventy-four species are listed as endangered or threatened at the State level in Colorado (CPW 2022c). CPW designates State-listed species in accordance with Colorado’s Nongame, Endangered, or Threatened Species Conservation Act. Some federally listed species occurring in Colorado are also listed at the State level. Therefore, there is considerable overlap between the lists of federally and Colorado State-listed species.

In addition to those species protected under the Colorado Nongame, Endangered, or Threatened Species Conservation Act, many others are considered SGCN. Colorado’s most recent SWAP identifies 159 vertebrate animal and mollusk species and 76 non-mollusk invertebrates as SGCN. The SWAP also identifies 117 plant species as Plants of Greatest Conservation Need. Colorado’s SWAP groups species into one of two categories based on conservation priority within the state: Tier 1 and Tier 2. Tier 1 species are considered to be of higher conservation priority than Tier 2 (CPW 2015). Colorado’s SGCN list includes species listed as endangered or threatened at the federal or State level.

Colorado’s Tier 1 SGCN list of vertebrate animal and mollusk species includes 55 species consisting of 13 mammals, 13 birds, 25 fishes, 2 reptiles, and 2 amphibians. Tier 2 contains 104 species, including 23 mammals, 48 birds, 2 fishes, 14 reptiles, 8 amphibians, and 9 mollusks. Tier 2 also contains all 76 non-mollusk invertebrate species, including 1 arachnid; 2 beetles; 6 bumble bees; 27 butterflies, skippers, and moths; 3 caddisflies; 16 damselflies and dragonflies; 15 mayflies, 1 mydas fly; and 4 stoneflies. Of the 76 Plants of Greatest Conservation Need, 43 are Tier 1, and 74 are Tier 2 (CPW 2015).

Habitats in western Colorado consist of large expanses of sagebrush and juniper shrublands, grasslands and prairies, forests and woodlands, and some alpine habitats (CNHP n.d.). Of Colorado’s 159 State-listed and other SGCN vertebrate animal and mollusk species, those that are known to occur or may occur within the 21 focal counties include 3 amphibians, 14 birds, 10 mammals, 4 reptiles, 20 fishes, and 1 mollusk. State-listed and other SGCN that could occur in the focal counties, along with their statuses, are listed below in table 3-5. Fishes and mollusks are not included in table 3-5 because the proposed action is not likely to affect these species.

**Table 3-5. Other State-Listed Species in the Focal Counties**

Common Name	Scientific Name	Status
<b>Amphibians</b>		
Boreal toad	<i>Bufo boreas</i>	State Endangered
Northern leopard frog	<i>Rana pipiens</i>	State Special Concern
Wood frog	<i>Rana sylvatica</i>	State Special Concern
<b>Birds</b>		
American peregrine falcon	<i>Falco peregrinus anatum</i>	State Special Concern
Bald eagle	<i>Haliaeetus leucocephalus</i>	State Special Concern
Burrowing owl	<i>Athene cunicularia</i>	State Threatened
Columbian sharp-tailed grouse	<i>Tympanuchus phasianellus columbianus</i>	State Special Concern
Ferruginous hawk	<i>Buteo regalis</i>	State Special Concern
Greater sage-grouse	<i>Centrocercus urophasianus</i>	State Special Concern
Greater sandhill crane	<i>Grus canadensis tabida</i>	State Special Concern
Gunnison sage-grouse	<i>Centrocercus minimus</i>	Federally Threatened, State Special Concern
Least tern	<i>Sterna antillarum</i>	State Endangered
Long-billed curlew	<i>Numenius americanus</i>	State Special Concern



Common Name	Scientific Name	Status
Mexican spotted owl	<i>Strix occidentalis lucida</i>	Federally Threatened, State Threatened
Mountain plover	<i>Charadrius montanus</i>	State Special Concern
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	Federally Endangered, State Endangered
Western yellow-billed cuckoo	<i>Coccyzus americanus</i>	State Special Concern, Federally Threatened
<b>Mammals</b>		
Black-footed ferret	<i>Mustela nigripes</i>	Federally Endangered, State Endangered
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	State Special Concern
Kit fox	<i>Vulpes macrotis</i>	State Endangered
Lynx	<i>Lynx canadensis</i>	Federally Threatened, State Endangered
Northern pocket gopher	<i>Thomomys talpoides macrotis</i>	State Special Concern
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	Federally Threatened, State Threatened
River otter	<i>Lontra canadensis</i>	State Threatened
Swift fox	<i>Vulpes velox</i>	State Special Concern
Townsend's big-eared bat	<i>Corynorhinus townsendii pallescens</i>	State Special Concern
Wolverine	<i>Gulo gulo</i>	State Endangered
<b>Reptiles</b>		
Triploid checkered whiptail	<i>Cnemidophorus neotesselatus</i>	State Special Concern
Midget faded rattlesnake	<i>Crotalus viridis concolor</i>	State Special Concern
Longnose leopard lizard	<i>Gambelia wislizenii</i>	State Special Concern
Common garter snake	<i>Thamnophis sirtalis</i>	State Special Concern

Source: CPW 2015

### 3.3 OTHER WILDLIFE SPECIES

Wolves are apex predators, meaning that they occupy the top trophic level in food webs. The introduction or reintroduction of wolves into ecosystems can affect other wildlife species and various aspects of the natural environment. This section focuses on prey species most likely to be affected by gray wolves that would be reintroduced—either directly, through predation, or indirectly through behavioral changes.

#### 3.3.1 Elk and Deer

Elk, mule deer, and white-tailed deer are the primary prey species for wolves in the northern Rocky Mountains (Smith et al. 2004). At Yellowstone National Park in Wyoming and in portions of Montana and Idaho, NPS (2022b) reports that elk comprise up to 90 percent of the diet of wolves during winter months. Elk and deer are abundant in Colorado. Based on the most recent population estimates (2021), Colorado's statewide elk population was 308,901 (CPW 2021a) and the statewide deer population was 416,426 (CPW 2021b). Mule deer populations in portions of western Colorado have been in decline since the 1970s as a result of loss and alteration of habitat and migration routes, competition from elk, disease, predation, and hunting pressure (Bergman et al. 2015; CPW

2020b). Among prey species preferred by wolves, elk and deer are also the species with the highest densities in Colorado (Colorado Wolf Management Working Group 2004).

Elk and deer travel in herds and use a variety of habitats throughout the state. The density of these species in a given location changes seasonally based on environmental conditions and food availability (Singleton 1995, as cited in Ditmer et al. 2022). Snow cover is a driver of seasonal elk and deer movement in Colorado because they seek out areas with less snow cover that provide better access to vegetation (Paquet et al. 1996, as cited in Ditmer et al. 2022). Modeling has shown that the density of elk and mule deer is highest in the Western Slope region of Colorado, north of Interstate 70 during summer and winter. This contributes to the high suitability of northwestern Colorado for wolf reintroduction (Ditmer et al. 2022).

### 3.3.2 Other Ungulates

Wolves also prey upon a variety of other ungulates, such as pronghorn and wild sheep (*Ovis* spp.), and even large animals such as bison (*Bison bison*), moose, and wild horses. Bison are an important source of prey for wolves in the northern Rocky Mountains despite being more difficult to kill than other prey (Smith et al. 2000, MacNulty et al. 2014). However, introduced bison in Colorado are in contained areas and are currently managed in the state as livestock, rather than wildlife. No immediate plans are in place to reintroduce free-roaming bison in Colorado. Bison are not expected to be a significant prey source for gray wolves in Colorado; therefore, impacts on bison are not discussed in detail in this EIS.

Wolf predation on pronghorn at Yellowstone National Park has been closely documented for decades, but overall predation rates have been low (Barnowe-Meyer et al. 2009). The range of pronghorn in Colorado is more expansive in the Eastern Plains region; however, pronghorn also occur in limited portions of the Western Slope including northwestern Colorado (CBI 2011b). Although their population has been steadily increasing in recent decades, pronghorn are considerably less abundant in Colorado than elk and deer with an estimated statewide population of 78,182 in 2021 (CPW 2021d).

Wolves are known to prey on moose, particularly calves, in areas where their ranges overlap (McLaren and Peterson 1994; Messier 1994; Jost et al. 2005). In some areas, such as boreal and taiga forests or in closed systems like Michigan's Isle Royale National Park, moose are primary prey for wolves (Seip 1992; Messier 1994; Jost et al. 2005). In other areas, such as Yellowstone National Park, moose are secondary prey for wolves (Smith et al. 2003; Metz et al. 2012). Moose were rarely observed in Colorado until the late 1970s when CPW transplanted moose from Utah and Wyoming to the North Park region near Walden. Moose are less abundant than most other prey species in Colorado. Colorado's statewide moose population was estimated at 3,505 in 2021, and CPW manages them as a game species (CPW 2021e). Moose distribution in Colorado is concentrated in the northern portion of the Front Range and along the Western Slope, including northwestern Colorado (CBI 2011c).

Wolves also prey opportunistically on wild sheep including Rocky Mountain bighorn sheep. Two subspecies of bighorn sheep are native to Colorado, both of which were nearly extirpated from the state as a result of hunting, loss of habitat, and disease. Rocky Mountain bighorn sheep had supplemental introductions into central Colorado in the 1950s. They are now abundant in the state, with an estimated population of 7,000 animals. They spend summer in high-elevation (>8,000 feet) mountains and move to lower elevations in winter to forage and escape heavy snow. Desert bighorn sheep live in the canyon country of western Colorado, and the most recent population estimate is approximately 550 individuals (CPW 2020c). Wolves have not been reported as a meaningful source of mortality in bighorn sheep populations (Sawyer and Lindzey 2002). This is likely because bighorn sheep are highly effective at avoiding predation using a variety of behavioral strategies (Wishart 2000, as cited in Sawyer and Lindzey 2002). Bighorn sheep also inhabit rugged alpine terrain, making hunting difficult for wolves.

Mountain goats, a non-native species, were introduced to Colorado from Montana between the 1940s and 1970s as a game animal; in 2020, the population was estimated to number 1,600 individuals (CPW 2020d). Mountain goats live at high elevations year-round, although some migrate to lower elevations in winter where there is more shelter from heavy snow. Wolves in Colorado would likely have limited encounters with mountain goats in these high-elevation habitats.

In parts of Europe and Asia, wolves have been reported to prey on wild horses (Van Duyne et al. 2009; Dorj and Namkhai 2013; López-Bao et al. 2013). However, wolves tend to target wild horses when preferred prey resources (e.g., smaller ungulates) are depleted (Van Duyne et al. 2009), which is not the case in Colorado.

### **3.4 TRIBAL RESOURCES**

Various Native American groups have occupied western Colorado for at least the last 12,000 years. Historical records indicate that the Ute were the primary occupants of Colorado west of the Continental Divide, but several other Tribes also lived in the area; table 1 in Appendix F provides a list of the Tribes associated with the various regions of Colorado. A detailed history of occupation is also provided in Appendix F. The affected environment for Tribal resources focuses on archaeological and historical sites and natural resources of importance to traditional cultural practices of the Tribes located in the focal counties for analysis (figure 2-1) that could be impacted by a regulatory framework, as well as Tribal treaty rights pertaining to hunting and for reservations. Government-to-government consultation occurred throughout development of the EIS (as documented in Chapter 5), and this section was informed by input from Tribes during consultation and in their comments on the draft EIS.

#### **3.4.1 Archaeological and Historical Sites**

As shown in Appendix F, a review of the Colorado Office of Archaeological and Historic Preservation (OAHP) Compass database identified 2,106 archaeological and historical sites associated with known Native American Tribes within the focal counties. Of these, 952 are eligible for the National Register of Historic Places. These sites preserve important elements of Native American history and culture and/or have the potential to yield more information about their history through further research.

Appendix F includes a summary of the types of sites (e.g., prehistoric or historic and habitation, architectural, rock art) by county. In addition, table 2 in Appendix F identifies the approximate number of sites associated with known Colorado Tribes by county. The review of the OAHP database reflects the information available at the time of the review and accounts for the best available data for archaeological and historical sites information. However, the review may not be complete due to the limitations of the OAHP database, such as a delay in entries and/or updates causing some information to be outdated. As noted in Appendix F, the OAHP database is sometimes up to five or more years outdated but represents the best available data at the time of publication of this final EIS.

#### **3.4.2 Natural Resources of Cultural Importance**

Natural resources of importance to traditional cultural practices include wildlife within the state of Colorado. For example, the Ute Mountain Ute Tribe, Southern Ute Indian Tribe, and Ute Indian Tribe of the Uintah and Ouray Reservation honor the bear in the bear dance (Southern Ute Indian Tribe 2022; Steward 1932; see Appendix F). The bear dance was derived from a story in which two men witnessed a bear dancing while they were hunting. The story noted that the bear taught the men to dance, along with a corresponding song. The bear also instructed the men to teach the dance and song to their people. The bear is believed to be one of the wisest animals and one

that has magical powers. The Southern Ute, for instance, believe that bears understand the relationship with the Ute and that the dance solidifies this relationship (Anaya 2010).

Other animals of importance, such as to the Pawnee, include buffalo, bear, beavers, wolves, birds of prey, and deer. The buffalo was important for its use for food and clothing (Grinnell 1893). The Pawnee believed that while the buffalo was hunted, its consent was needed (White 1982). It was among the most respected animals of the Pawnee. The bear and beaver were regarded for wisdom and power, while wolves were noted for their craft, and birds of prey were noted for their courage and fierceness. Deer stood for their fleetness (Grinnell 1893).

### **3.4.3 Tribal Treaty Rights and Reservations**

“Treaty-protected rights to [the] use of and access to natural and cultural resources are an intrinsic part of Tribal life and are of deep cultural, economic, and subsistence importance to tribes” (DOI 2021). The purpose of some treaties with Tribes are to protect not only the right to access natural resources, but also the resources themselves (DOI 2021).

“Under the U.S. Constitution, treaties are part of the supreme law of the land, with the same legal force and effect as federal statutes. Pursuant to this principle, and its trust relationship with federally recognized Tribes, the United States has an obligation to honor the rights reserved through treaties, including rights to both on and, where applicable, off-reservation resources, and to ensure that its actions are consistent with those rights and their attendant protections” (DOI 2021). While the signing of treaties generally ended in 1871, federal treaties with Tribes ratified by Congress remain in effect as law (ACHP 2018).

Hunting and gathering have long been important to Tribes with ancestral ties in Colorado (Denison 2019; Givón 2011; Simmons 2000; Janetski 1992; Jones 1955, as cited in Appendix F). The Ute, Shoshone, Comanche, Arapaho, Cheyenne, and Pawnee are distinguished in part from the neighboring Pueblo groups by their focus on hunting and animals over farming and plants in several aspects of life, including social organization, ceremonies, subsistence strategies, and resource procurement and production. The Utes, for instance, were among the first indigenous groups in North America to acquire and master the horse. The horse allowed the Utes to travel farther distances for their subsistence than was previously possible. They expanded the seasonal circuits within their traditional territory, venturing as far east as the panhandles of Texas and Oklahoma (which expanded their Aboriginal or ancestral lands to include areas outside traditional band territories) (see Appendix F, and figure 1 in Appendix F).

Over time, however, the Ute territory, along with the territories of other Tribes, was greatly reduced by actions of the U.S. government, growing trade requirements, and American settlement, particularly following the transfer of Alta California, after the Mexican-American War (1846–1848). Following these events, for instance, numerous treaties and agreements between the Ute and the U.S. government were established. Among these are the Calhoun Treaty, signed in 1849; the Hunt Treaty of 1868, also known as the Treaty with the Ute, 1868; and the Brunot Agreement, initiated in 1874. These treaties and agreements resulted in land cessions and constraints on the traditional practices of the Ute, as well as establishing reservations (figure 3-2).

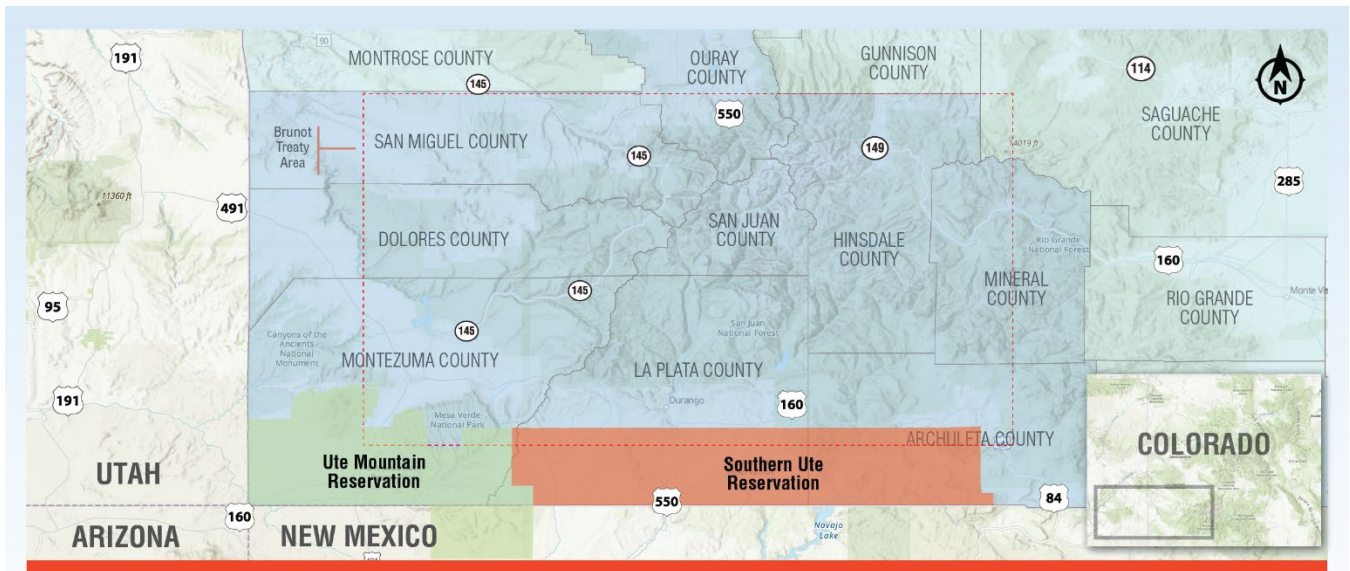
In Colorado, the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe each have a reservation. Reservations refer to “land reserved for a tribe (or multiple Tribes) under treaty, statute, or other agreement with the United States that establishes permanent Tribal homelands” (Fitzpatrick 2021). The Ute Mountain Ute also manage Tribally owned lands near Gunnison, Colorado. Appendix F provides a discussion of these and other treaties and agreements between the Ute and U.S. government.

The treaties and agreements between Tribal and federal governments reduced the land holdings, but provided provisions for hunting and gathering, including on what is today federal lands (USFWS 2022e; NPS 2016; Nie

2008, see Appendix F). When maintaining traditional cultural practices, hunting and gathering is allowed on certain lands, on which these activities may be prohibited uses for non-Tribal members.

One of these areas is the “Brunot Area.” The Brunot Area consists of approximately 3.7 million acres within the San Juan Mountain region within the state of Colorado (Southern Ute Indian Tribe 2021). As cited in the U.S. Forest Service’s *San Juan National Forest Land and Resource Management Plan*, “Article II of the Bruno Agreement specified that ‘the United States shall permit the Ute Indians to hunt upon said lands so long as the game lasts and the Indians are at peace with the white people’” (U.S. Forest Service 2021). The Southern Ute Indian Tribe has an agreement with the State of Colorado to exercise hunting and fishing rights in this location; the Southern Ute Indian Tribe entered into this agreement with the State in 2008 (Southern Ute Indian Tribe 2021). The Ute Mountain Ute Tribe’s hunting rights were acknowledged in 1978 as part of a consent decree that gave enrolled members of the Ute Mountain Ute Tribe the right to hunt deer and elk in the Brunot Area for subsistence, religious, or ceremonial purposes (U.S. Forest Service 2021).

In Colorado, wildlife conservation is subject to the jurisdiction of the Southern Ute Indian Tribe on their reservation. Wildlife on the reservation is considered property of the Tribe, unless privately owned (Ayala 2010). “Southern Ute Tribal members may hunt any type of wildlife not limited by regulation, i.e., big game, at any time without a license or permit” (Ayala 2010). The Ute Mountain Ute operate a wildlife management program and provide for protection and utilization of hunting rights, including those as part of the Brunot Agreement (Ute Mountain Ute Tribe 2020).



### ANCESTRAL RIGHTS

The Southern Ute Tribe was granted hunting rights in a larger part of the state under the Brunot Treaty of 1874.

**Figure 3-2. Boundaries of the Southern Ute Indian Tribe and Ute Mountain Ute Tribe Reservations**

#### 3.4.4 Government-to-Government Consultation

The Southern Ute Indian Tribe, Ute Mountain Ute, Navajo Nation, and Pawnee Nation requested government-to-government consultation with the Service during preparation of this EIS. CPW has been engaged in ongoing Tribal consultations with the Southern Ute Indian Tribe and Ute Mountain Ute Tribe, the two Tribes with sovereign lands within Colorado’s borders (see Chapter 5, below; Keystone Policy Center 2022).

The Southern Ute Indian Tribe and Ute Mountain Ute Tribe have expressed concern for the release of gray wolves in southern Colorado, particularly within the Brunot Area and in areas near reservation lands or fee lands owned by the Tribes (Boyd n.d.; Schaaf 2022; Heart 2023). These concerns are related to potential impacts associated with ranching and hunting traditions and resources (Boyd n.d.; Baker 2023).

A similar sentiment was expressed for the recovery of wolves in the State of Utah and made to the Utah Division of Wildlife Resources by the Uintah and Ouray Tribal Business Committee under authority of the Constitution and By-Laws of the Ute Indian Tribe in 2003. The Tribe “encourage[d] the United States Fish & Wildlife Service to reject any request to establish additional wolf recovery areas within the State of Utah, particularly areas encompassed by the Uintah and Ouray Reservation” (Utah Division of Wildlife Resources 2018). The Tribe noted the potential for impacts to the Tribe’s wildlife management efforts, wildlife populations on their reservation, subsistence hunting, and the livestock and ranching industry (Utah Division of Wildlife Resources 2018).

### 3.5 SOCIOECONOMIC RESOURCES

NEPA requires an analysis of impacts on the human environment, which includes economic, social, and demographic elements in the affected area. The region of influence for this socioeconomic analysis is the state of Colorado because the proposed 10(j) rule would apply to the entire state. While the introduction of wolves to Colorado could have socioeconomic impacts throughout the entire state, the 21 focal counties are likely to experience the greatest economic and social impacts. The following sections describe the current human environment, which includes the economic, social, and demographic elements in Colorado and the focal counties. Due to the possibility of social and economic impacts from wolf reintroduction, an evaluation of human activities in the 21-county focus area and the state of Colorado is necessary to determine primary economic drivers in the region and how the different management options analyzed in this document related to the wolf reintroduction could result in socioeconomic impacts.

#### 3.5.1 Human Activity in Colorado

Ditmer et al. (2022) identified potential factors for predicting socio-ecological suitability of habitats for wolf introduction, including land ownership (private versus public), livestock-dense areas, and the social tolerance of wolves. Ditmer et al. identified that wolf-human conflicts are most associated with human-dominated landscapes (with greater roads/traffic densities) and human activities such as tourism, outdoor recreation, and agriculture.

##### Population

Table 3-6 provides the population counts for the state of Colorado and for the 21 focal counties. Between 2010 and 2020, the human population of the 21 counties grew by 10.96 percent from 822,554 to 912,734 people, making up 15.8 percent of the state’s total population in 2020 (U.S. Census Bureau 2020). By comparison, the population of Colorado grew by 14.8 percent from 5,029,196 to 5,773,714 people in that same period. The 21 counties are more sparsely populated than the state as a whole, as shown in table 3-6. Most of the population in these 21 counties lives in communities centered around ski and mountain resorts or towns along major highways such as Interstate 70. Table 3-7 shows population density.

**Table 3-6. Population Summary**

Geographic Area	2010	2020	% Change 2010–2020	Most Populous City/Town (2020 Population)
Colorado	5,029,196	5,773,714	14.80%	Denver (715,522)
21 Focal Counties	822,584	912,734	10.96%	Fort Collins (169,810)
Archuleta County	12,084	13,359	10.55%	Pagosa Springs (1,571)

Geographic Area	2010	2020	% Change 2010–2020	Most Populous City/Town (2020 Population)
Custer County	4,255	4,704	10.55%	Silver Cliff (609)
Delta County	30,952	31,196	0.79%	Delta City (9,035)
Dolores County	2,064	2,326	12.69%	Dove Creek (635)
Eagle County	52,197	55,731	6.77%	Gypsum (8,040)
Garfield County	56,389	61,685	9.39%	Rifle (10,437)
Grand County	14,843	15,717	5.89%	Granby (2,079)
Gunnison County	15,324	16,918	10.40%	Gunnison (6,560)
Huerfano County	6,711	6,820	1.62%	Walsenburg (3,049)
Jackson County	1,394	1,379	-1.08%	Walden (606)
La Plata County	51,334	55,638	8.38%	Durango (19,071)
Larimer County	299,630	359,066	19.84%	Fort Collins (169,810)
Mesa County	146,723	155,703	6.12%	Grand Junction (65,560)
Moffat County	13,795	13,292	-3.65%	Craig (9,060)
Montezuma County	25,535	25,849	1.23%	Cortez (8,766)
Montrose County	41,276	42,679	3.40%	Montrose (20,291)
Ouray County	4,436	4,874	9.87%	Ridgway (1,183)
Rio Blanco County	6,666	6,529	-2.06%	Meeker (2,374)
Routt County	23,509	24,829	5.61%	Steamboat Springs (13,224)
Saguache County	6,108	6,368	4.26%	Saguache (539)
San Miguel County	7,359	8,072	9.69%	Telluride (2,607)

Source: U.S. Census 2010, 2020, 2020e

**Table 3-7. Land Use Summary**

Geographic Area	Land Area (mi <sup>2</sup> )	2020 Population Density (pop/mi <sup>2</sup> )
Colorado	104,177	55.42
21 Focal Counties	44,474	20.52
Archuleta County	1,350	9.90
Custer County	739	6.37
Delta County	1,142	27.32
Dolores County	1,067	2.18
Eagle County	1,692	32.94
Garfield County	2,956	20.87
Grand County	1,870	8.40
Gunnison County	3,239	5.22
Huerfano County	1,591	4.29
Jackson County	1,614	0.85

Geographic Area	Land Area (mi <sup>2</sup> )	2020 Population Density (pop/mi <sup>2</sup> )
La Plata County	1,690	32.92
Larimer County	2,596	138.32
Mesa County	3,329	46.77
Moffat County	4,743	2.80
Montezuma County	2,029	12.74
Montrose County	2,241	19.04
Ouray County	541	9.01
Rio Blanco County	3,221	2.03
Routt County	2,368	10.49
Saguache County	3,169	2.01
San Miguel County	1,287	6.27

Source: U.S. Census 2020, Colorado State Land Board n.d., U.S. Forest Service 2010

## Employment

Saguache County has the highest unemployment rate of the 21 focal counties at 9.80 percent, while Dolores County has the lowest unemployment rate at 2.00 percent. Saguache, Rio Blanco, and Grand Counties all have unemployment rates higher than the state as a whole. Huerfano County has the highest poverty rate of the focal counties, at 19.90 percent; Saguache County has the second highest poverty rate. Twelve focal counties have poverty rates above Colorado’s poverty rate of 9.8 percent. On average, the poverty rate across the 21 focal counties is 11.04 percent, higher than the state’s poverty rate (U.S. Census Bureau 2022).

Table 3-8 shows employment and income characteristics for the 21 counties—all of which have an unemployment rate lower than the overall Colorado unemployment rate of 4.6 percent, except for Grand, Rio Blanco, Routt, and Saguache Counties. Eagle County has the highest median household income which is \$85,877 while Huerfano County has the lowest median household income, which is \$40,255.

**Table 3-8. Employment Summary**

Geographic Area	Unemployment Rate	Poverty Rate	Median Household Income	Percent Employed in Tourism and Recreation-Related Sectors
Colorado	4.60%	9.80%	\$75,231	10.40%
Archuleta County	4.30%	9.40%	\$55,658	22.50%
Custer County	4.10%	12.20%	\$60,361	12.10%
Delta County	3.30%	12.10%	\$47,968	17.6%
Dolores County	2.00%	12.50%	\$56,786	26.40%
Eagle County	3.90%	9.20%	\$85,877	26.60%
Garfield County	4.00%	7.60%	\$75,435	12.50%
Grand County	5.00%	9.10%	\$71,769	22.00%
Gunnison County	2.20%	9.60%	\$60,557	26.40%
Huerfano County	2.30%	19.90%	\$40,255	19.10%



Geographic Area	Unemployment Rate	Poverty Rate	Median Household Income	Percent Employed in Tourism and Recreation-Related Sectors
Jackson County	3.60%	11.60%	\$46,157	23.90%
La Plata County	2.50%	10%	\$69,291	17.50%
Larimer County	3.40%	9.90%	\$76,366	16.80%
Mesa County	4.30%	11.10%	\$57,157	19.20%
Moffat County	3.20%	9.90%	\$54,583	19.80%
Montezuma County	2.50%	12.90%	\$50,717	22.40%
Montrose County	3%	10.40%	\$54,611	17.40%
Ouray County	2.40%	6.70%	\$68,893	14.80%
Rio Blanco County	5.80%	9.80%	\$54,247	20.20%
Routt County	3.90%	9.50%	\$76,198	18.70%
Saguache County	9.80%	18.60%	\$45,231	15.80%
San Miguel County	3.00%	8.90%	\$64,478	21.50%

Source: American Community Survey 2016-2020

According to U.S. Census Bureau data, the primary industries in the 21 focal counties are in the tourism and recreation-related sector of Arts, Entertainment, Recreation, Accommodation, and Food Services; and Educational Services, Health Care, and Social Assistance (U.S. Census Bureau 2022).

### 3.5.2 Industry Sectors in Colorado

#### Tourism

Tourism is an essential component of Colorado’s economy and of the economy in the 21 focal counties. On average, travelers spent \$19.0 billion in the state of Colorado each year from 2011 to 2020, generating \$2.37 billion annually in tax revenue (Dean Runyan Associates 2021). As of April 2022, tourism-related sectors employed over 339,000 people in Colorado, or 11.0 percent of the 2.85 million workers in the state. Leisure and Hospitality employment experienced a 22.3 percent 10-year increase from April 2012 to April 2022, compared to a 24.0 percent 10-year increase across all sectors (BLS 2022). In 2020, activities directly tied to tourism and travel generated \$866.3 million in local tax revenue from travel and tourism across all counties in Colorado (Dean Runyan Associates 2022). Tourism in the focal counties is largely tied to outdoor recreation, which is discussed below in the “Outdoor Recreation” section.

As of December 2022, a group of two wolves resided in Jackson County, one of the focal counties. Because the wolves were found in Jackson County relatively recently, no data are available on the economic impacts of these wolves on tourism or other sectors of the county’s economy. Jackson County describes itself as “the Moose Viewing Capital of Colorado,” and tourism associated with wildlife viewing in the Arapaho National Wildlife Refuge and the North Park Basin contributes to the local economy (Jackson County n.d.).

#### Outdoor Recreation

According to data from the Bureau of Economic Analysis, outdoor recreation contributed \$12.2 billion and 149,000 jobs to Colorado in 2019, and \$9.6 billion and 120,000 jobs in 2020. For comparison, the economic output of outdoor recreation activities nationwide was \$834 billion in 2019 and \$689 billion in 2020, with 5.2 million jobs in 2019 and 4.3 million jobs in 2020 (Office of Economic Development and International Trade

2021). CPW estimated the economic contributions of activities associated with outdoor recreation to be significantly greater, representing \$62.5 billion and 511,059 jobs across the entire state in 2017—\$14.9 billion and 133,658 of these jobs were in the northwest region of the state, which includes multiple focal counties (CPW 2018).

Skiing and snowboarding make up a significant portion of Colorado’s tourism and outdoor recreation sectors, generating more than \$4.8 billion annually. Ski-related activities bring more than 7 million tourists to the state annually; these tourists support the local economies of mountain communities, including the western portion of the potential release area (Colorado Ski Country USA 2015). Much of this ski tourism is concentrated in the Vail Valley of Eagle County, which includes the resort communities of Vail and Beaver Creek. These areas draw hundreds of thousands of skiers in the winter and substantial summer crowds, although the nature of tourism is quite seasonal (Vail Valley Economic Development n.d.).

Hunting contributed \$843 million (related to trip and equipment expenditures) and 7,937 jobs to the state in 2017, of which \$136 million and 1,488 jobs were in the northwest region, while wildlife watching contributed \$2.44 billion and 13,243 jobs to the state, of which \$161 million and 1,283 jobs were in the northwest region. Big game hunting is particularly important to the northwest region of the state; of the 1,608,611 hunter-days in the state in 2017, 760,237 were in the northwest region (CPW 2018).

### Agriculture and Livestock Grazing

Table 3-9 provides 2019 U.S. Department of Agriculture (USDA) data on the numbers of farms and farm workers in each of the focal counties, as well as in the entire state of Colorado. The proportion of people who work on farms in the 21 focal counties is roughly twice that of the state of Colorado, with particularly high proportions of farm workers in Dolores, Jackson, Custer, and Huerfano Counties. Table 3-10 provides an economic summary of agricultural production in each of the 21 focal counties and the state of Colorado, including total agricultural sales and the average per farm net income. Saguache County has the highest average per farm net income followed by Jackson County, both of which are greater than the state. Huerfano, La Plata, Routt, and Archuleta Counties have negative average farm incomes.

**Table 3-9. Agricultural Summary (2019)**

Geographic Area	Number of Farms	Number of Farm Workers	Farm Workers (% of Population)	Average Farm Area (Acres)
Colorado	38,893	69,032	1.20%	818
21 Focal Counties	14,798	26,467	2.82%	510
Archuleta County	399	727	5.44%	527
Custer County	315	553	11.76%	512
Delta County	1615	2898	9.29%	147
Dolores County	313	549	23.60%	504
Eagle County	257	431	0.77%	604
Garfield County	661	1,217	1.97%	719
Grand County	290	541	3.44%	831
Gunnison County	309	572	3.38%	864
Huerfano County	437	773	11.33%	1331
Jackson County	131	258	18.71%	2301
La Plata County	1093	1981	3.56%	503

Geographic Area	Number of Farms	Number of Farm Workers	Farm Workers (% of Population)	Average Farm Area (Acres)
Larimer County	2043	3699	1.03%	236
Mesa County	2465	4378	2.81%	139
Moffat County	462	797	6.00%	2063
Montezuma County	1123	1991	7.70%	615
Montrose County	1135	1917	4.49%	291
Ouray County	122	184	3.78%	698
Rio Blanco County	320	591	9.05%	1284
Routt County	887	1,629	6.56%	524
Saguache County	288	538	8.45%	1090
San Miguel County	133	243	3.01%	1023

Source: USDA 2019

**Table 3-10. Agricultural Economic Summary (2019)**

Geographic Area	Average Annual Agricultural Sales (\$1,000)	Average Annual Sales per Farm (\$1,000)	Average Farm Income (\$)
Colorado	7,491,702	192.6	29,669
Archuleta County	11,157	27,963	-5,291
Custer County	9,680	30,731	6,537
Delta County	67,117	41,558	9,054
Dolores County	8,516	27,208	8,207
Eagle County	8,243	32,074	223
Garfield County	35,863	54,255	7,104
Grand County	14,440	49,792	5,707
Gunnison County	24,117	78,047	11,341
Huerfano County	13,186	30,174	-1,300
Jackson County	24,487	186,923	71,134
La Plata County	24,352	22,280	-2,541
Larimer County	150,717	73,772	5,555
Mesa County	94,186	38,209	5,634
Moffat County	33,138	71,728	19,950
Montezuma County	46,424	41,340	7,541
Montrose County	81,226	71,565	8,817
Ouray County	4,204	34,463	2,242
Rio Blanco County	52,047	62,034	6,417
Routt County	31,647	35,679	-2,694
Saguache County	105,403	365,983	113,532
San Miguel County	6,374	47,923	6,309

Source: USDA 2019

According to USDA data, most livestock losses nationally, including in Colorado and the states used as geographies of comparison in the Chapter 4 analysis (i.e., Oregon, Washington, and Wyoming), are due to nonpredator causes. Data on livestock inventory and loss are shown below in table 3-11 and table 3-12. Most nonpredator cattle deaths in Colorado are caused by respiratory (33.6 percent) or digestive problems (20.8 percent) (USDA 2017). Most predator-caused cattle deaths in Colorado are from coyotes (68.6 percent), with bears as the second-most common cause (15.0 percent). Leading causes of nonpredator sheep and lamb deaths in Colorado include old age (11.0 percent), respiratory problems (10.9 percent), and enterotoxemia/overeating (9.2 percent). Most predator-caused sheep and lamb deaths in Colorado are from coyotes (59.6 percent) and bears (26.0 percent) (USDA 2015).

**Table 3-11. Statewide Cattle Inventory and Loss Summary\***

	Colorado	Oregon	Washington	Wyoming
Cattle Inventory (2017)	2,812,306	1,243,916	1,155,544	1,308,867
Number of Dairy Cows (2017)	169,423	128,284	276,914	5,719
Number of Cattle on Feed (2017)	1,005,237	92,407	217,509	72,128
Cattle on Range (Non-dairy, Non-feed) (2017)	1,637,646	1,023,225	661,121	1,231,020
Total Cattle Deaths (2015)	115,000	61,000	44,000	39,000
Cattle Deaths from All Predators (2015)	5,080	7,530	1,280	3,400
Percent of Cattle Deaths from Predators (2015)	4.4%	12.3%	2.9%	8.7%
Value of Total Cattle Loss (2015)	\$113,291,000	\$56,270,000	\$41,537,000	\$27,327,000
Value of Total Cattle Loss (Inflation-adjusted to 2023)	\$145,012,480	\$72,025,600	\$53,167,360	\$34,978,560
Value of Cattle Loss from Predators (2015)	\$3,079,807	\$5,347,779	\$580,503	\$1,836,987
Value of Cattle Loss from Predators (Inflation-adjusted to 2023)	\$3,942,153	\$6,845,157	\$743,044	\$2,351,343

Source: USDA 2017, 2019

\*Cattle inventory data are from the 2017 Census of Agriculture (USDA 2019), while full data on the numbers, causes, and value of cattle loss were most recently published by the USDA for 2015 (USDA 2017).

**Table 3-12. Statewide Sheep Inventory and Loss Summary\***

	Colorado	Oregon	Washington	Wyoming
Sheep Inventory (2017)	414,672	177,646	52,329	367,702
Total Sheep Deaths (2015)	29,000	15,000	5,000	16,000
Sheep Deaths from All Predators (2015)	12,654	6,139	1,445	7,400
Percent of Sheep Deaths from Predators (2015)	43.6%	40.9%	28.9%	46.3%
Value of Total Sheep Loss (2015)	\$5,850,000	\$2,526,000	\$1,037,000	\$2,723,000
Value of Total Sheep Loss (Inflation-adjusted to 2023)	\$7,488,000	\$3,233,280	\$1,327,360	\$3,485,440
Value of Sheep Loss from Predators (2015)	\$2,556,500	\$990,000	\$298,000	\$1,122,900
Value of Sheep Loss from Predators (Inflation-adjusted to 2023)	\$3,272,320	\$1,267,200	\$381,440	\$1,437,312

Source: USDA 2015, 2019

\*Sheep inventory data are from the 2017 Census of Agriculture (USDA 2019), while full data on the numbers, causes, and value of sheep loss were most recently published by the USDA for 2015 (USDA 2015).

Although predators are responsible for the minority of sheep and lamb deaths and an even smaller proportion of cattle and calf deaths, the costs of predator-caused livestock losses and implementation of predator control methods can be a financial burden for operators. The figures in the tables above do not include other costs that livestock producers incur as a result of predator attacks, such as livestock that are injured but not killed, damage to property, or reduced livestock value from predator-induced stress.

## **3.6 ENVIRONMENTAL JUSTICE**

The U.S. Environmental Protection Agency (USEPA) defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” (USEPA 2022). Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, issued in 1994 by President Clinton, directs federal agencies to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, or activities on minority or low-income populations.

### **3.6.1 Methodology**

The Service assessed the potential for the proposed action and alternatives to result in disproportionately high and adverse effects on minority or low-income populations following recommendations made in the 2016 report, *Promising Practices for EJ Methodologies in NEPA Reviews* (Federal Interagency Working Group on Environmental Justice & NEPA Committee 2016). In addition to these environmental justice communities, the analysis considers the potential for disproportionately high and adverse effects on two populations of concern, low-income and minority livestock producers and outfitters. Existing conditions and potential effects on American Indian Tribes are discussed in sections 3.4 and 4.6, respectively.

The Service assessed potential environmental justice effects within the statewide study area as well as the 21 focal counties. Data for minority and low-income populations and populations of concern were collected at the county level, taking into consideration the programmatic nature of the proposed action, which could result in effects across the entire state of Colorado. These data were compared to data for the reference geography, the state, to determine which minority or low-income communities may have environmental justice concerns. The reference community is a larger geographic unit or population that is used as a point of comparison to identify minority or low-income communities in the geographic unit of analysis. When addressing the issue of environmental justice, low-income and minority populations that meet certain thresholds relative to the reference community are considered environmental justice communities that may be disproportionately affected by the proposed action and alternatives.

Data from the U.S. Census Bureau were used to define minority and low-income populations. Minority populations were defined based on 2020 decennial census data. For the purposes of this analysis, minorities are defined as individuals who identify themselves as one or more of the following races or ethnicities: Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian, or Hispanic or Latino.

Minority environmental justice communities were identified using both the 50 percent and “meaningfully greater” analyses. If the aggregate minority population (including all minority and Hispanic or Latino individuals) in a county exceeded 50 percent of the total population, an environmental justice community was identified in that county. When the majority of the population in a given geographic area identifies as a race other than white or as

Hispanic or Latino, that population is classified as a “majority-minority” population. Separately, the “meaningfully greater” analysis requires use of a reasonable, subjective threshold (e.g., 5 percent or 10 percent greater than the reference community). What constitutes “meaningfully greater” varies by agency (Federal Interagency Working Group on Environmental Justice & NEPA Committee 2016). For this analysis, the Service has defined “meaningfully greater” as a minority population that exceeds the minority population in the reference community (i.e., the state of Colorado) by more than 5 percent. This threshold is large enough to take into account natural variations in demographic populations within a community.

Data from the U.S. Census Bureau’s (2020) American Community Survey five-year estimates were used to identify low-income populations. Low-income populations are defined using the percent of all individuals for whom poverty status has been determined, as defined by the U.S. Census Bureau, for each specific geographic area. Poverty status is a measure of an individual or household’s financial ability to meet basic living needs. Poverty status is calculated by the U.S. Census Bureau and varies based on the number of individuals in a household. In 2020, the poverty line ranged from \$13,171 for a single individual to \$50,035 for a family of nine or more (U.S. Census Bureau 2020). Low-income environmental justice communities were identified by comparing the percentage of individuals with incomes below the poverty level in each county to the percentage of individuals with incomes below the poverty level at the state level. If the percentage in the county is greater than the percentage in the reference community, a low-income environmental justice community was identified.

### **3.6.2 Existing Conditions**

The population of Colorado is predominately white, with people who identify as minority races or as Hispanic or Latino making up approximately 35 percent of the state’s population. People who identify as Hispanic or Latino make up the largest minority population across the state and in most of the focal counties. Statewide, 20 of Colorado’s 64 counties are home to Hispanic/Latino populations that are meaningfully greater than (i.e., over 5 percent greater than) the percentage of Hispanic/Latino individuals at the state level. In two of these counties, Conejos and Costilla on Colorado’s southern border with New Mexico, Hispanic/Latino individuals make up over 50 percent of the county’s population. These two counties are considered to have majority-minority Hispanic/Latino communities. Of the 21 focal counties, four counties—Eagle, Garfield, Huerfano, and Saguache—have Hispanic/Latino populations that are meaningfully greater than the percentage of Hispanic/Latino individuals at the state level. Based on these data, the Hispanic/Latino populations in 20 counties in the statewide study area were identified as environmental justice communities.

In addition, in Arapahoe County in the north-central part of Colorado, 10.4 percent of the county’s population identified as Black or African American in the 2020 decennial census. This percentage is over 5 percent greater than the number of people identifying as Black or African American at the state level (3.8 percent). While Arapahoe County is not a focal county, this population was identified as an environmental justice population.

One focal county, Montezuma County, has a greater percentage of American Indian individuals than any other minority group. The Ute Mountain Ute Tribe’s reservation, including the reservation headquarters of Towaoc, is partially within Montezuma County. Existing conditions specific to this Tribe and other American Indian Tribes in the study area are discussed in section 3.4. For the purposes of the environmental justice analysis, the American Indian population in Montezuma County is considered an environmental justice community.

The total percentage of minorities in 15 counties, including one focal county, Saguache County, is meaningfully greater than the total percentage of minorities at the state level. All of these counties contain environmental justice communities that have been identified above, including Hispanic/Latino and African American communities.

In 2020, 9.8 percent of individuals in Colorado had incomes below the poverty line. Of the 64 counties in the state, 41 (or approximately two-thirds) had percentages of individuals living below the poverty line that were

greater than the percentage at the state level, including 12 of the focal counties. Low-income environmental justice communities have been identified in these counties. These counties are located across the state in both urban and rural areas. In most, but not all cases, counties with meaningfully greater minority populations also had higher percentages of low-income individuals than the state.

Environmental justice communities identified in the statewide study area and focal counties are listed in table 3-13 and shown in figures 3-3 and 3-4. Minority and low-income populations meeting the criteria for environmental justice communities as discussed above are bolded in table 3-13. Highlighted rows represent focal counties, and bold text indicates an environmental justice community.

**Table 3-13. Environmental Justice Communities in Colorado and the Focal Counties**

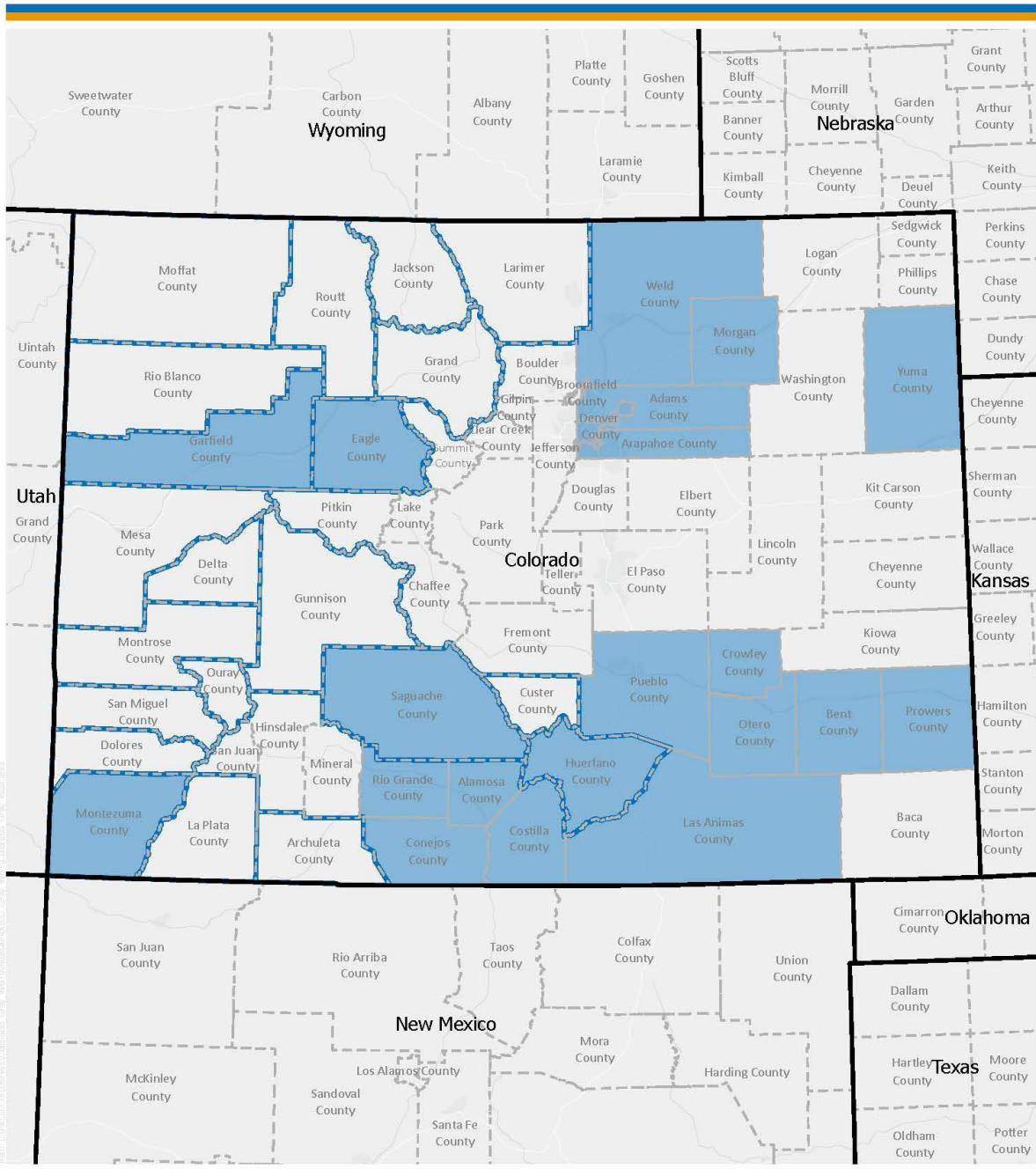
Geographic Area	Percent of Individuals Identifying as Minority or Hispanic/Latino							Total Percent Minority	Percent Of Individuals Below Poverty Level
	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic/Latino		
Colorado	3.8	0.6	3.4	0.2	0.5	4.5	21.9	34.9	9.8
Adams County	3.1	0.6	4.3	0.1	0.5	3.7	<b>41.7</b>	<b>53.9</b>	<b>9.9</b>
Alamosa County	1.3	1.3	0.9	0.1	0.6	3.0	<b>47.0</b>	<b>54.3</b>	<b>18.5</b>
Arapahoe County	<b>10.4</b>	0.4	6.4	0.2	0.5	5.1	20.7	<b>43.8</b>	7.8
Archuleta County	0.3	1.3	0.8	< 0.1	0.6	4.7	16.2	23.8	8.3
Baca County	0.5	1.1	0.2	0	1.1	4.1	9.9	16.8	<b>18.1</b>
Bent County	4.5	1.6	0.7	0	0.1	3.2	<b>31.2</b>	<b>41.3</b>	<b>21.3</b>
Boulder County	1.0	0.3	4.9	< 0.1	0.6	4.5	14.6	25.9	<b>11.2</b>
Broomfield County	1.3	0.3	6.9	0.1	0.5	4.9	13.4	27.3	5.0
Chaffee County	1.5	0.7	0.7	< 0.1	0.5	3.9	9.5	16.8	<b>11.6</b>
Cheyenne County	< 0.1	0.3	0.2	0	0.2	3.4	11.8	15.9	<b>13.1</b>
Clear Creek County	0.5	0.4	0.9	< 0.1	0.4	4.1	6.9	13.3	6.2
Conejos County	0.2	0.6	0.3	< 0.1	0.3	1.5	<b>50.7</b>	<b>53.6</b>	<b>20.8</b>
Costilla County	0.9	1.0	1.6	0	0.4	4.1	<b>56.8</b>	<b>64.7</b>	<b>26.6</b>
Crowley County	<b>8.6</b>	2.5	1.2	< 0.1	< 0.1	2.3	<b>27.2</b>	<b>41.9</b>	<b>26.8</b>
Custer County	0.2	0.9	0.5	0	1.0	4.1	3.8	10.5	7.6
Delta County	0.4	0.4	0.8	< 0.1	0.6	4.1	13.9	20.2	<b>18.1</b>
Denver County	8.5	0.5	3.8	0.2	0.5	4.2	<b>27.9</b>	<b>45.7</b>	<b>11.9</b>
Dolores County	0.8	1.5	0.3	0.2	0.2	5.6	7.6	16.2	6.9
Douglas County	1.3	0.3	5.5	< 0.1	0.4	4.9	9.5	22.1	3.2
Eagle County	0.5	0.2	1.3	< 0.1	0.3	2.4	<b>30.2</b>	35.0	9.2
Elbert County	0.5	0.4	0.7	< 0.1	0.5	4.8	7.9	14.9	4.8
El Paso County	5.6	0.5	3.0	0.4	0.6	6.3	17.8	34.2	9.8



Geographic Area	Percent of Individuals Identifying as Minority or Hispanic/Latino							Total Percent Minority	Percent Of Individuals Below Poverty Level
	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic/Latino		
Fremont County	3.7	1.4	0.7	< 0.1	0.5	4.3	12.4	22.9	<b>13.2</b>
Garfield County	0.4	0.5	0.6	< 0.1	0.5	3.5	<b>31.7</b>	37.4	7.6
Gilpin County	0.6	0.6	1.5	< 0.1	0.6	4.9	6.5	14.7	5.5
Grand County	0.4	0.4	0.5	0.1	0.5	2.9	9.8	14.5	9.1
Gunnison County	0.5	0.4	0.7	< 0.1	0.7	4.0	9.5	15.7	<b>12.4</b>
Hinsdale County	1.0	0.8	0.3	0.1	0.8	5.3	3.8	12.1	<b>10.2</b>
Huerfano County	0.8	1.1	0.4	0	0.7	3.8	<b>31.2</b>	38.0	<b>16.2</b>
Jackson County	0	0.9	0.1	0.1	0.4	4.3	10.0	15.8	9.1
Jefferson County	1.1	0.5	3.0	< 0.1	0.5	4.4	15.7	25.3	6.7
Kiowa County	0.2	0	0.6	< 0.1	< 0.1	5.6	7.2	13.8	<b>13.6</b>
Kit Carson County	0.3	0.3	0.4	< 0.1	0.5	3.7	19.9	25.1	7.4
Lake County	0.4	0.6	0.8	0.1	0.6	3.9	<b>35.8</b>	42.3	<b>13.5</b>
La Plata County	0.3	5.0	0.7	< 0.1	0.7	4.4	12.6	23.8	<b>10.3</b>
Larimer County	1.0	0.4	2.3	< 0.1	0.5	4.6	12.4	21.3	<b>11.1</b>
Las Animas County	1.3	1.0	0.7	< 0.1	0.6	2.9	<b>38.7</b>	<b>45.3</b>	<b>18.2</b>
Lincoln County	4.8	1.1	0.7	0.4	0.4	3.4	14.3	25.1	<b>13.6</b>
Logan County	3.5	0.7	0.6	< 0.1	0.2	2.7	16.3	24.1	<b>10.8</b>
Mesa County	0.7	0.6	1.0	0.1	0.6	4.5	15.0	22.4	<b>13.0</b>
Mineral County	0	0.5	0.3	0	0	4.2	5.4	10.4	<b>14.9</b>
Moffat County	0.6	0.7	0.4	< 0.1	0.5	4.3	16.0	22.4	<b>17.8</b>
Montezuma County	0.3	<b>12.2</b>	0.5	< 0.1	0.4	4.7	12.0	30.2	<b>12.4</b>
Montrose County	0.4	0.6	0.8	< 0.1	0.4	3.7	21.2	27.1	<b>12.3</b>
Morgan County	3.2	0.4	0.5	< 0.1	0.3	2.4	<b>36.3</b>	<b>43.2</b>	<b>10.8</b>
Otero County	0.7	0.6	0.5	0.1	0.6	2.7	<b>41.2</b>	<b>46.4</b>	<b>22.2</b>
Ouray County	0.3	0.3	0.6	< 0.1	0.5	3.9	6.0	11.6	6.7

Geographic Area	Percent of Individuals Identifying as Minority or Hispanic/Latino							Total Percent Minority	Percent Of Individuals Below Poverty Level
	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic/Latino		
Park County	0.5	0.7	0.6	< 0.1	0.5	4.9	7.1	14.3	7.0
Phillips County	0.2	0.3	0.5	< 0.1	0.1	1.7	25.5	28.3	8.0
Pitkin County	0.5	0.2	1.6	< 0.1	0.5	3.1	10.9	16.9	5.7
Prowers County	0.7	1.0	0.3	< 0.1	0.4	2.9	<b>39.0</b>	<b>44.3</b>	<b>16.1</b>
Pueblo County	1.8	0.7	0.9	< 0.1	0.6	3.5	<b>41.6</b>	<b>49.1</b>	<b>17.6</b>
Rio Blanco County	0.4	0.8	0.3	< 0.1	0.4	4.1	9.5	15.6	<b>10.7</b>
Rio Grande County	0.4	1.2	0.3	< 0.1	0.5	3.3	<b>39.9</b>	<b>45.7</b>	<b>15.5</b>
Routt County	0.6	0.3	0.7	0.1	0.4	3.5	8.9	14.4	9.5
Saguache County	0.3	1.3	1.0	< 0.1	0.7	3.0	<b>37.6</b>	<b>43.8</b>	<b>16.2</b>
San Juan County	0.1	0.9	0.3	0	0.1	4.3	12.8	18.4	<b>16.3</b>
San Miguel County	0.2	0.6	0.7	0	0.5	3.3	10.9	16.3	<b>10.4</b>
Sedgwick County	0.1	0.4	0.5	0	0.3	3.1	15.1	19.6	<b>20.0</b>
Summit County	0.7	0.2	1.3	< 0.1	0.5	3.4	17.2	23.4	7.5
Teller County	0.5	0.5	0.8	< 0.1	0.6	5.5	6.9	14.9	9.2
Washington County	0.5	0.2	0.3	0.2	0.4	3.5	10.7	15.8	<b>12.3</b>
Weld County	1.3	0.4	1.7	< 0.1	0.4	3.6	<b>29.9</b>	37.4	<b>10.3</b>
Yuma County	0.2	0.2	0.3	< 0.1	0.3	1.8	<b>27.7</b>	30.4	<b>11.4</b>

Source: U.S. Census Bureau 2020a-d



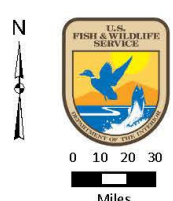
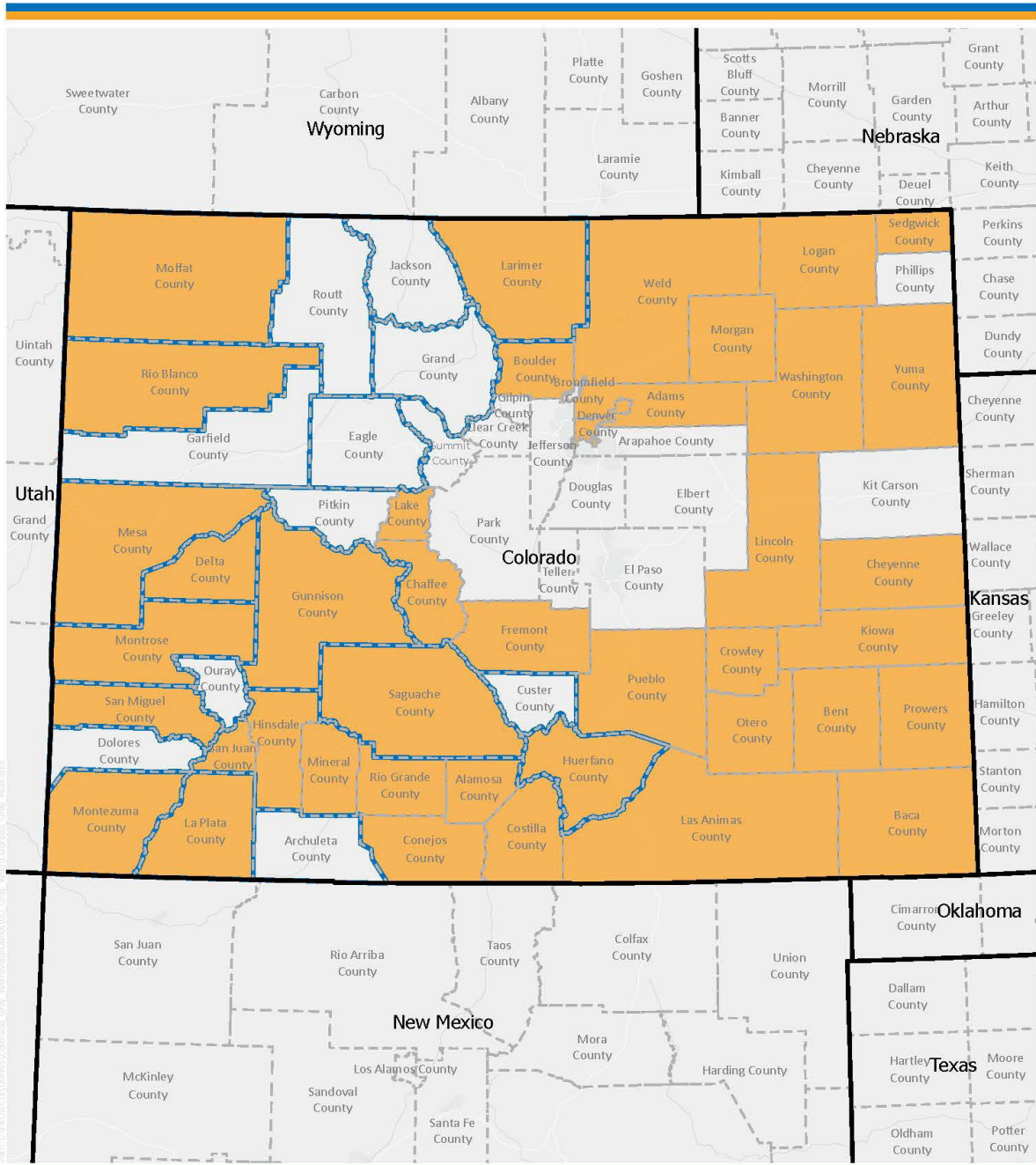
**Figure 3-3**  
 Minority Environmental Justice Communities in the Statewide Study Area and Focal Counties Colorado

**Colorado Gray Wolf 10(j) Rulemaking EIS**

N  
  
 0 10 20 30  
 Miles

Wyoming Nebraska  
 Utah Colorado Kansas  
 New Mexico Texas

- Minority Environmental Justice Communities
- Focal Counties
- County Boundaries
- State Boundaries



- Low Income Environmental Justice Communities
- Focal Counties
- County Boundaries
- State Boundaries

**Figure 3-4**  
 Low-Income Environmental Justice Communities in the Statewide Study Area and Focal Counties Colorado

**Colorado Gray Wolf 10(j) Rulemaking EIS**

Low-income and minority individuals employed in livestock production or as outfitters or guides are addressed in this environmental justice analysis as specific population groups of concern. Demographic and income data for livestock producers in Colorado were obtained from the 2017 USDA Census of Agriculture (see table 3-14). The Census of Agriculture collects data on all agricultural producers in the state, including producers of row crops, field crops, and livestock. Table 3-14 includes data on all agricultural producers in the study area and is used as a conservative proxy for data on livestock producers. Demographic and income data specific to livestock producers were not publicly available as of at the time of publication of this final EIS. Highlighted rows represent focal counties and bold text indicates an environmental justice community.

Minority environmental justice communities within the agricultural population group of concern were identified using the “meaningfully greater” analysis. If the percentage of minority producers or producers of Hispanic, Latino, or Spanish origin exceeds the percentage at the state level by more than 5 percent, these communities are considered environmental justice communities. Six counties in the state, including two focal counties, are home to producers of Hispanic, Latino, or Spanish origin that meet the threshold for environmental justice communities. Two counties in the study area, Denver and Kiowa Counties, neither of which are focal counties, have populations of minority producers that meet the threshold for environmental justice communities.

The 2017 Census of Agriculture does not provide poverty data for agricultural producers. Low-income environmental justice communities within this population group of concern were identified by comparing average farm-related income and the percent change in farm-related income over the five-year period between 2012 and 2017 to data at the state level. Low-income environmental justice communities were identified if a county’s agricultural producers had average farm-related incomes below the average income at the state level or if there was a decrease in farm-related income of over 5 percent between 2012 and 2017. Under these criteria, 41 counties were identified as low-income environmental justice communities. Of those counties, 12 are focal counties: Archuleta, Delta, Dolores, Gunnison, Huerfano, La Plata, Larimer, Mesa, Moffat, Montezuma, Montrose, and Saguache.

**Table 3-14. Agricultural Producer Environmental Justice Population Group of Concern**

Geographic Area	Total Producers	Total Minority Producers	% Minority Producers	Producers of Hispanic, Latino, Spanish Origin	% Producers of Hispanic, Latino, Spanish Origin	Farm-Related Income (Per Farm Average)	% Change in Income Since 2012 (Per Farm Average)
Colorado	69,032	1,601	2%	3,765	5%	23,036	+1
Adams County	1,568	55	4%	133	8%	33,960	<b>-18</b>
Alamosa County	507	16	3%	60	<b>12%</b>	25,993	<b>-22</b>
Arapahoe County	1,516	79	5%	91	6%	<b>13,677</b>	<b>-14</b>
Archuleta County	727	43	6%	93	<b>13%</b>	<b>13,113</b>	+50
Baca County	1,092	18	2%	22	2%	43,014	+15
Bent County	473	17	4%	24	5%	23,149	<b>-60</b>
Boulder County	1,788	43	2%	70	4%	34,915	+156
Broomfield County	60	0	0%	0	0%	no data <sup>1</sup>	no data <sup>1</sup>
Chaffee County	506	15	3%	17	3%	65,300	+312
Cheyenne County	633	1	0%	7	1%	24,234	<b>-47</b>

Geographic Area	Total Producers	Total Minority Producers	% Minority Producers	Producers of Hispanic, Latino, Spanish Origin	% Producers of Hispanic, Latino, Spanish Origin	Farm-Related Income (Per Farm Average)	% Change in Income Since 2012 (Per Farm Average)
Clear Creek County	54	0	0%	0	0%	<b>1,599</b>	<b>-83</b>
Conejos County	879	33	4%	328	<b>37%</b>	27,630	+117
Costilla County	372	12	3%	268	<b>72%</b>	56,414	+91
Crowley County	456	15	3%	42	9%	<b>10,804</b>	<b>-14</b>
Custer County	553	9	2%	6	1%	25,305	+97
Delta County	2,898	65	2%	123	4%	<b>15,862</b>	+106
Denver County	20	3	<b>15%</b>	0	0%	no data <sup>1</sup>	no data <sup>1</sup>
Dolores County	549	5	1%	7	1%	<b>7,388</b>	+30
Douglas County	2,174	73	3%	76	3%	24,322	+50
Eagle County	431	1	0%	24	6%	35,377	+303
Elbert County	2,963	113	4%	113	4%	<b>14,279</b>	<b>-8</b>
El Paso County	2,421	93	4%	89	4%	<b>18,556</b>	+73
Fremont County	1,805	29	2%	119	7%	<b>7,305</b>	+70
Garfield County	1,217	24	2%	28	2%	36,317	+228
Gilpin County	64	2	3%	0	0%	63,124	+521
Grand County	541	5	1%	6	1%	36,853	-2
Gunnison County	572	6	1%	21	4%	<b>14,567</b>	+76
Hinsdale County	68	0	0%	0	0%	<b>12,625</b>	+36
Huerfano County	773	28	4%	180	<b>23%</b>	<b>6,729</b>	<b>-32</b>
Jackson County	258	5	2%	9	3%	55,191	+146
Jefferson County	1,121	21	2%	19	2%	52,808	+116
Kiowa County	645	5	<b>83%</b>	10	2%	30,602	<b>-58</b>
Kit Carson County	1,044	5	0%	15	1%	29,748	<b>-50</b>
Lake County	68	0	0%	4	6%	<b>10,290</b>	no data <sup>1</sup>
La Plata County	1,981	50	3%	163	8%	<b>8,133</b>	+11
Larimer County	3,699	104	3%	130	4%	<b>17,689</b>	+16
Las Animas County	957	44	5%	189	<b>20%</b>	<b>21,600</b>	+54
Lincoln County	903	7	1%	7	1%	<b>18,840</b>	<b>-47</b>
Logan County	1,524	7	0%	38	2%	<b>20,131</b>	<b>-23</b>
Mesa County	4,378	83	2%	215	5%	<b>7,456</b>	+44
Mineral County	32	0	0%	0	0%	<b>17,194</b>	<b>-75</b>
Moffat County	797	8	1%	11	1%	<b>18,053</b>	<b>-15</b>
Montezuma County	1,991	69	3%	126	6%	<b>9,758</b>	+27
Montrose County	1,917	13	1%	72	4%	<b>6,366</b>	-1

Geographic Area	Total Producers	Total Minority Producers	% Minority Producers	Producers of Hispanic, Latino, Spanish Origin	% Producers of Hispanic, Latino, Spanish Origin	Farm-Related Income (Per Farm Average)	% Change in Income Since 2012 (Per Farm Average)
Morgan County	1,302	29	2%	65	5%	24,526	+14
Otero County	772	40	5%	64	8%	<b>15,199</b>	<b>-35</b>
Ouray County	184	5	3%	10	5%	40,130	+164
Park County	496	25	5%	22	4%	<b>16,004</b>	+66
Phillips County	609	0	0%	2	0%	34,160	<b>-45</b>
Pitkin County	201	0	0%	2	1%	<b>8,483</b>	<b>-33</b>
Prowers County	785	12	2%	12	2%	<b>20,444</b>	<b>-48</b>
Pueblo County	1,469	17	1%	116	8%	<b>11,277</b>	-3
Rio Blanco County	591	12	2%	8	1%	24,494	+16
Rio Grande County	585	9	2%	33	6%	33,490	+30
Routt County	1,629	23	1%	68	4%	30,665	+78
Saguache County	538	19	4%	52	10%	32,894	<b>-28</b>
San Juan County	no data <sup>1</sup>	no data <sup>1</sup>	no data <sup>1</sup>	no data <sup>1</sup>	no data <sup>1</sup>	no data <sup>1</sup>	no data <sup>1</sup>
San Miguel County	243	0	0%	1	0%	27,701	+103
Sedgwick County	378	8	2%	5	1%	28,434	<b>-20</b>
Summit County	119	4	3%	2	2%	<b>10,809</b>	+59
Teller County	284	8	3%	7	2%	<b>9,851</b>	+294
Washington County	1,279	13	1%	27	2%	23,277	<b>-22</b>
Weld County	7,232	135	2%	285	4%	32,065	+57
Yuma County	1,341	14	1%	29	2%	32,257	<b>-30</b>

Source: USDA 2019

<sup>1</sup> "No data" indicates that data is not available or was not disclosed by the USDA to avoid disclosing data for individual operations.

Demographic and income data for outfitters and guides were not available publicly, through the state of Colorado, or from other cooperating agencies at the time of publication of this final EIS. Therefore, the impacts analysis for this population group of concern in Chapter 4 is qualitative, based on the lack of available information.

All American Indian Tribes are also considered population groups of concern for environmental justice. One county with an American Indian environmental justice community, Montezuma County, has been identified based on the data shown in table 3-13. Section 3.4 identifies American Indian Tribes with Tribal trust land within the study area and Tribes that have asked to be consulted during the NEPA process, including the Ute Mountain Ute, Southern Ute, and Pawnee Nation. These Tribes or their members are engaged in livestock production and hunting and could potentially be affected by the proposed action and alternatives, including the no-action alternative. Section 3.4 and Chapter 5 provide additional discussion of consultation with these American Indian Tribes and identified concerns.

## **CHAPTER 4 ENVIRONMENTAL CONSEQUENCES**

### **4.1 INTRODUCTION**

This “Environmental Consequences” chapter analyzes the beneficial and adverse impacts that would result from implementation of any of the alternatives considered in this EIS. The resource topics presented in this chapter correspond to the descriptions of existing conditions in Chapter 3. In compliance with NEPA (40 CFR 1502.16) and as required by CEQ regulations implementing NEPA, this chapter compares the environmental consequences for each alternative.

### **4.2 GENERAL METHODOLOGY FOR ASSESSING IMPACTS**

The following analysis evaluates direct, indirect, and cumulative impacts to the human environment (i.e., physical, natural, cultural, and socioeconomic resources) from the proposed implementation of a regulatory framework, requested by the State of Colorado for its gray wolf reintroduction efforts. The approach includes the following elements:

- Focusing the analysis to the greatest extent possible on the implementation of a regulatory framework and associated issues that could have meaningful impacts on the resources or values being evaluated.
- Using general analysis methods and assumptions that follow CEQ and U.S. Department of the Interior regulations and guidance.

The potential for significant impacts from the implementation of a regulatory framework is assessed and described in each resource topic as applicable.

### **4.3 GENERAL ANALYSIS METHODOLOGY AND ASSUMPTIONS**

The interdisciplinary planning team reviewed a substantial body of scientific literature and studies applicable to the state of Colorado and associated resources. This information augmented observations and documentation gathered by the cooperating agencies for this effort. When available, the methodology notes other resource-specific data, observations, or studies for each impact topic. The analysis focuses on expected environmental impacts related to the implementation of a regulatory framework to accompany the State of Colorado’s gray wolf reintroduction efforts. As such, the analysis focuses on the impacts of providing, or not providing, regulatory flexibility for the State’s reintroduction efforts. The environmental baseline for analysis of impacts assumes that the State of Colorado has reintroduced gray wolves in accordance with CRS 33-2-105.8. Issues related to the reintroduction process, including whether reintroduction should occur, where it should occur, how many wolves would be reintroduced, and how a compensation program run by the State would function, are part of the State planning effort and outside the scope of the analysis for this EIS.

#### **4.3.1 Assessing Impacts Using Council on Environmental Quality Criteria**

According to the CEQ NEPA regulations (40 CFR 1500–1508), effects or impacts mean changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and include the following:

- (1) Direct effects, which are caused by the action and occur at the same time and place.
- (2) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced



changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

(3) Cumulative effects, which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

(4) Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effects would be beneficial.

### 4.3.2 Assumptions

The following guiding assumptions were used to provide context for this analysis.

**Analysis Period.** This EIS establishes what management tools would be available under a regulatory framework to address the State of Colorado’s plan to reintroduce the gray wolf. For all action alternatives, it is assumed that the need for regulatory flexibility would be less in the initial reintroduction phases and increase as populations become established. Short- and long-term impacts are defined under each resource area, but in general, short-term impacts are expected in the first three to five years of reintroduction activities and long-term impacts would be five years and beyond. Management under the federal regulatory framework may continue while the species is federally listed without additional NEPA analysis as long as there no “substantial changes in the proposed action that are relevant to environmental concerns; or ... significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts” (40 CFR 1502.9(c)). If the species is federally delisted, the State would manage gray wolves in Colorado.

**Analysis Area.** The area of analysis generally focuses on the state of Colorado. For the action alternatives (alternatives 1 and 2) focal counties are identified that are assumed to have suitable habitat for potential release locations or locations wolves may migrate to after release based on the 2022 study by Ditmer et al. These focal counties are identified in Chapter 2, figures 2-1 and 2-2.

**Duration and Type of Impacts.** Duration describes the length of time over which an effect may occur. For example, impacts could occur over minutes, days, months, or years. The analysis includes a description of the timeframe over which impacts are expected to occur. Type describes the classification of the impact as beneficial or adverse:

- **Beneficial.** A change in the condition or appearance of the resource that moves the resource toward a desired condition.
- **Adverse.** A change in the condition or appearance of the resource that moves the resource away from a desired condition or detracts from its appearance or condition.

### 4.3.3 Jurisdiction and Compliance

The Service is the lead agency for this planning process, whereas NPS, the Bureau of Land Management, the U.S. Forest Service, USDA-Animal and Plant Health Inspection Service’s Wildlife Services, CPW, State of Colorado Department of Agriculture, State of Utah, State of Arizona, State of New Mexico, State of Wyoming, Moffat County, Garfield County, Delta County, Mesa County, Jackson County, Montrose County, Delores County, Grand County, Rio Blanco County, and the White River and Douglas Creek Conservation Districts are

participating as cooperating agencies. The Service has jurisdiction over the implementation of the ESA, including the conservation of listed species such as the gray wolf.

## **4.4 SPECIES OF SPECIAL CONCERN**

### **4.4.1 Gray Wolf**

The following analysis considers the environmental consequences of the management options being considered under section 10 of the ESA for the wolf population following the reintroduction of wolves in Colorado. The environmental consequences were evaluated by assuming each alternative would be implemented starting in 2023, when wolves are reintroduced by the State (as per commitments in CRS 33-2-105.8). In all alternatives, it is anticipated that wolves would be reintroduced in a phased approach over several years (TWG 2022b); as such, wolf numbers and distribution are expected to increase over time.

Adverse impacts are those considered to negatively affect wolf populations, while beneficial impacts are those that would positively affect the population compared to existing conditions in the state (i.e., prior to reintroduction by CPW). Some environmental consequences would develop rapidly following wolf reintroduction and be short term, while others may not emerge for several years and would be long term. Long-term impacts account for the biological life span of wolves and the impacts that develop while the wolf population stabilizes. In all alternatives, wolf distribution would initially likely be determined by prey abundance and distribution (O’Neil et al. 2020). Future population growth would be influenced by and fluctuate because of social conflicts with humans, changes in prey density and distribution, and inter- and intraspecific competition.

In all alternatives assessed in this EIS, the reintroduction of wolves in Colorado and subsequent ability for the wolf population to grow in numbers and distribution would be highly affected by their interactions with humans. Social tolerance is fundamental for any predator reintroduction, and the relationships between predators and land users is complex (Dickman 2010; Murray et al. 2010; Mech 2017; Pooley et al. 2017; Morehouse et al. 2018). Indeed, Congress made the section 10(j) amendment to the ESA in 1982 because prior to that, efforts to reintroduce endangered species were often met with public resistance. CPW identified social tolerance for wolves and economic impacts of their presence in the state as the most significant key elements for the future of wolf conservation and management in Colorado (CPW 2023a). The region of Colorado where wolves may be naturally reestablishing, and the proposed reintroduction areas, are working landscapes, meaning agricultural and ranching operations are an integral part of the landscape. An analysis by Ditmer et al. (2022) demonstrated that although the northern Western Slope of the state contains high ecological suitable habitat for wolves, the area has low socio-ecological suitability because of high risk of human conflict. There is high potential for controversy surrounding wolf conservation and management in Colorado if human interests and needs are not being addressed. Illegal take, which is likely to occur under all alternatives, would affect the wolf population in both the short and long term. An analysis of the social implications of each alternative, including a discussion of the impacts regarding management flexibility, or lack thereof, following livestock depredations, is included in section 4.7. The following analysis is focused only on the biological aspects of wolf population and distribution under each alternative.

#### **No-Action Alternative**

Under the no-action alternative, wolves in the state of Colorado would remain listed as endangered under the ESA. Any take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of wolves without a permit or authorization is prohibited. See section 2.4.2 for details on the type and nature of interactions associated with this alternative.

### *Wolf Numbers and Distribution*

Under the no-action alternative, wolf numbers and distribution would increase in the short term as wolves are reintroduced to the state. The state and federal governments would have no authority for lethal control, except in cases of human safety. At a local level, ungulates could decline in the short term in response to increased predation rates, which could limit wolf population growth if there was insufficient prey. In the long term, it is likely the ungulate populations would stabilize (due to natural fluctuations; Smith et al. 2003) and be able to support a self-sustaining population of wolves indefinitely. Adult wolf survival rates are expected to be similar to pre-harvest years in Minnesota (0.79; Barber-Meyer et al. 2021) and in the Yellowstone area (0.7 to 0.8; Cubaynes et al. 2014; Smith et al. 2020); although year-to-year variation is expected based on research following other reintroduced and naturally recolonizing populations elsewhere in the United States (Smith et al. 2020; Barber-Meyer et al. 2021).

Illegal killing is expected to be higher under the no-action alternative than under the action alternatives based on studies completed elsewhere, particularly in the short term after wolves are reintroduced when there is uncertainty about the potential adverse impacts on local land users. Olson et al. (2015) demonstrated that illegal killing of radio-collared wolves in Wisconsin increased in years when wolves were listed as endangered compared to years when they could be managed by the state. Federal managers in the northern Rocky Mountains estimated that around 10 percent of the known wolf population was illegally killed annually during wolf recovery, second only to lethal control to resolve wolf conflicts with livestock. Studies estimated that illegal take accounted for 24 percent of all mortalities in the northern Rocky Mountains (annually removing approximately 6 percent of the known population); however, 12 percent of all documented mortalities were attributed to unknown causes, so it is highly plausible that the number of wolves illegally taken may have been higher (Smith et al. 2010; Treves et al. 2017b). Although some researchers have documented that rates of illegal take are grossly underestimated because a high proportion of this type of mortality is undocumented (Liberg et al. 2012; Treves et al. 2017a,b), multiple other studies have supported the estimate that between 5 and 12 percent of wolves may be illegally killed annually in different areas of the conterminous United States (Murray et al. 2010; Smith et al. 2010; O'Neil 2017; Ausband et al. 2017; Stenglein et al. 2018; Barber-Meyer et al. 2021). If illegal take is greater than documented in other populations, the impact on the size and distribution of wolves in Colorado would be detrimental in the short and long term (Liberg et al. 2012). If illegal take is lower than documented in other populations, it is expected that in the long term, the wolf population would increase at rates similar to other established populations (i.e., 20 percent per year; Fuller et al. 2003), but may vary due to the population limiting factors discussed in section 3.2.1.

### *Wolf Habitat and Connectivity*

In the long term, it is likely that individual wolves from other populations would continue to disperse into Colorado and may naturally establish packs with the reintroduced wolves and other dispersers. Any wolves that enter Colorado would be protected as an endangered species under the no-action alternative, regardless of their designation in the jurisdiction from which they originated. This would increase the population of wolves in Colorado and contribute to the long-term conservation and recovery of the gray wolf in the western United States.

This alternative is expected to be the most beneficial for wolves from a purely biological standpoint because it would limit any take on wolves that are reintroduced or that disperse naturally into the state. However, illegal human-caused mortality may be highest under this alternative (Olson et al. 2015). Flexibility by state and federal governments to respond to conflicts would be constrained because every wolf would be considered endangered and may decrease social tolerance of reintroduction. The population of wolves is expected to increase in growth and distribution in those areas where habitat suitability is high (i.e., where there is sufficient wild prey and limited contact with humans).

## **Alternative 1**

Under alternative 1, gray wolves would be designated across the entire state of Colorado as an experimental population under section 10(j) of the ESA. The management approach aims to achieve wolf reintroduction goals while resolving conflicts when and where they occur. If the population is designated as nonessential, take prohibitions and consultation requirements under the ESA would be relaxed, such that allowable take would include non-injurious, nonlethal conflict minimization practices, potentially injurious hazing techniques, translocation, and lethal take. See section 2.4.3 for details on the type and nature of interactions associated with this alternative.

### *Wolf Numbers and Distribution*

Under alternative 1, wolf numbers and distribution could be impeded in the short term during the initial reintroduction effort when fewer wolves are on the landscape. The potential loss (under allowable take provisions) of a small number of individuals would have a bigger impact on the total population and could delay the establishment a self-sustaining population of wolves (TWG 2021). Wolf numbers in Colorado during the first five years are likely to be similar to reported wolf numbers in Oregon (average of 37 wolves in 2009–2013) and Washington (average of 27 wolves in 2008–2012) (Oregon DFW 2022; Washington DFW et al. 2022). Lethal control actions in Colorado are likewise anticipated to be similar to Oregon and Washington, during their respective initial monitoring years, where 3 percent and 2 percent, respectively, of the known wolf populations were lethally controlled. In the long term, the allowable take provisions under alternative 1 would be unlikely to reduce the number of wolves in Colorado because wolf populations are able to sustain relatively high rates of human-caused mortality (see section 3.2.1 for discussion on mortality), and depredations that result in lethal control occur over a relatively small area compared to the entire wolf range and involve fewer packs than the total that exist on the landscape.

Nonlethal take actions allowed under alternative 1, including harassment/deterrence actions and capture and relocation, could be implemented as an alternative to lethal take in circumstances where individual wolves are in conflict with livestock production on private and public land (i.e., repeated depredations). Nonlethal take could potentially affect wolves' ability to reproduce and increase the population if wolves are unable to establish territories or find mates because they are harassed/deterred away from areas with suitable habitat and prey. However, it is unlikely that a reintroduced wolf that is disturbed via nonlethal take (e.g., deterrents, capture and translocation) would have reduced survival or inability to breed because wolves are highly adaptable and resilient (Ginsberg and Macdonald 1990), and the management flexibility to implement nonlethal actions may improve wolf survival overall under this alternative (McManus et al. 2015; Bruns et al. 2020). However, if wolves are deterred or relocated to an area in Colorado where the risk of mortality is higher (because they come into conflict with other established wolf packs), or if they disperse outside the state of Colorado, then there would be negative implications to the establishment of a population in the state (TWG 2022b). The provision to allow nonlethal and lethal take of wolves to reduce impacts to ungulate populations limited to Tribal reservation lands of the Ute Mountain Ute Tribe and Southern Ute Indian Tribe could have adverse impacts on individual wolves as a result of lethal control or relocation, but these instances would be limited due to the limited scope of the provision. Lethal take under these circumstances would need to meet the requirements noted in table 2-2 before take would be authorized. Take of wolves under these circumstances is expected to occur rarely and would not have population-level effects on the species in Colorado.

In the long term, it is not expected that allowable take under alternative 1 would have a measurable impact on the population. Over time, the wolf population in Colorado is expected to settle at a density that is naturally regulated locally by wild ungulate prey availability and distribution (Mech and Barber-Meyer 2015), territoriality (Cariappa et al. 2011), and extrinsically by social carrying capacity statewide (CPW 2023a). Nonlethal take (harassment) would become integrated into livestock husbandry best management practices. Ongoing management actions

(lethal and nonlethal) would occur under alternative 1, but they are not expected to have population-level impacts statewide. Given the amount of ecologically suitable habitat and prey availability in Colorado (Carroll et al. 2006; Ditmer et al. 2022), the wolf population is expected to increase at rates similar to other established populations in the long term (i.e., 20 percent per year; Fuller et al. 2003).

#### *Wolf Habitat and Connectivity*

Similar to the no-action alternative, the actions in alternative 1 would not affect wolf habitat and connectivity because there would continue to be natural emigration and immigration from packs in the northern Rockies. It is likely that individual wolves from adjacent populations would continue to disperse into Colorado, where they would be managed under the regulations of section 10(j).

Alternative 1 could result in adverse impacts to individual wolves through regulated take and could delay recovery in the short term, but is not expected to hinder recovery or have adverse population-level effects in the long term. Alternative 1 promotes an adaptive management approach for wildlife managers to support wolf conservation and to implement deterrent tools (lethal and nonlethal take) that reduce the potential for livestock depredation and therefore may increase social tolerance of reintroduction.

#### **Alternative 2**

Under alternative 2, regulations and wolf management approaches would be implemented in two different ways. In most of Colorado, reintroduced wolves would potentially be managed as an experimental population under a section 10(j) rule. Should an existing population of wolves be determined to exist in a specific area of the state before the proposed rule is finalized, those wolves would be managed as an endangered species under a section 10(a)(1)(A) permit, and the population of reintroduced wolves would be managed within an experimental population boundary that is wholly separate geographically from the 10(a)(1)(A) permit area (see section 2.4.3). Resolution of conflicts would depend on where the wolves are located in the state. See section 2.4.5 for details on the type and nature of interactions associated with this alternative.

#### *Wolf Numbers and Distribution*

In the part of the state where the section 10(j) rule is approved, short- and long-term impacts would be the same as described for alternative 1. In the 10(a)(1)(A) permit area, wolf density may be higher in the short term because only nonlethal take would be permitted on both private and public land. The 10(a)(1)(A) permit area may act as a source habitat where the wolf population growth rate and density increases, compared to the rest of the state where risk of human-caused mortality is higher (O'Neil et al. 2020). This may ultimately lead more quickly to a statewide population as defined by the Service (at least two breeding pairs of wild wolves successfully raising at least two young each year for two consecutive years), which could result in a change the wolf protections in the entire state. However, there is uncertainty in quantifying rates of population growth in the 10(a)(1)(A) permit area and in the experimental population boundary because it is currently not known how many wolves would be reintroduced in the state, how much legal take would occur in the experimental population boundary, and how much illegal take would occur in the 10(a)(1)(A) permit area.

The more rapid population growth that is initially expected with the added protection in the 10(a)(1)(A) permit area would cease as wolves approach the ecological carrying capacity of the 10(a)(1)(A) permit area (Smith et al. 2003). In the long term, wolves would naturally disperse from the 10(a)(1)(A) permit area and colonize suitable habitat in the experimental population boundary with sufficient prey and minimal social conflicts with humans and other wolves. Prey densities are considered high enough in Colorado to support wolves (Ditmer et al. 2022). It is expected that in the long term, the wolf population would increase at rates similar to the management approach of alternative 1. In addition, control measures are expected to be similar to alternative 1 in the

experimental population boundary. As noted above, lethal control would not be authorized in the 10(a)(1)(A) permit area.

#### *Wolf Habitat and Connectivity*

Similar to alternative 1, wolf habitat and connectivity would not be affected because there would continue to be natural emigration and immigration from neighboring packs in the northern Rockies under alternative 2.

This alternative is expected to benefit wolves in the short term and have the same effects as alternative 1 in the long term. Under this alternative, wolves that establish a population naturally in the 10(a)(1)(A) permit area would be granted more protection than wolves that are reintroduced to the rest of the state. The wolf population may increase more rapidly in the state as a whole because of the protection granted in one small area, which would support wolf conservation and recovery objectives. However, wildlife do not respect invisible boundaries of administrative zones, and wolves that occur naturally in the 10(a)(1)(A) permit area would eventually disperse into the experimental population boundary based on biological needs and their social environment and be subject to the same human-caused mortality risks as those reintroduced wolves.

#### **4.4.2 Other Species of Special Concern**

The following analysis considers the environmental consequences of the management options under consideration for the reintroduction of wolves in Colorado on species of special concern, including other federally listed species, Colorado State-listed species, and other SGCN. Environmental consequences were evaluated at the statewide population level for State-listed species and other SGCN and at the nationwide population level for federally listed species. Adverse impacts are considered to be those that would negatively affect species populations, or in the case of federally listed species with approved recovery plans, substantially delay or prevent species recovery criteria from being met. Beneficial impacts are those that would positively affect species populations compared to existing conditions, or in the case of federally listed species with approved recovery plans, enhance recovery. Short-term effects are those that would occur within the first few years of wolf reintroduction, while long-term effects are those that would take longer to develop as wolf populations increase and as their range expands throughout the state.

The reintroduction of wolves in Colorado could affect species of special concern. As top predators, gray wolves could compete with other listed predators, such as Canada lynx, or prey on listed ground-nesting birds, such as Gunnison sage-grouse. However, the TWG concluded in its final recommendations to CPW that, “The presence of wolves will not have an impact on populations of threatened and endangered species in Colorado, specifically lynx and Gunnison sage grouse” (TWG 2022c). Gunnison sage-grouse are not a primary prey species for wolves, and predation is not considered to be a driving factor in the species population decline, nor is it considered a barrier to recovery success. Major drivers of Gunnison sage-grouse population decline in Colorado include habitat loss, fragmentation, and degradation (Braun 1998). Similarly, competition with wolves (where their ranges overlap) has not been documented as a driving factor for lynx population decline, nor is it considered a barrier to recovery success (Murphy et al. 2006; USFWS 2017a). Potential impacts of the State Plan on other species of special concern, including lynx and Gunnison sage-grouse, are described in the cumulative effects analysis (section 4.9.2).

Cooperating agencies in the development of this EIS expressed concern that gray wolves could breed with Mexican wolves, a subspecies that has been reintroduced in New Mexico and Arizona, potentially resulting in interspecies competition or genetic swamping, if the ranges of both species expand and eventually overlap (Odell et al. 2018). The Service is currently working with states to minimize impacts on Mexican wolf recovery, including using other federal permitting mechanisms or other tools (see Chapter 5 for more information). Although reintroduced wolves could affect species of special concern through various direct and indirect

interactions, these potential consequences are related to the State of Colorado's action and are therefore addressed in the cumulative effects analysis.

### **No-Action Alternative**

Under the no-action alternative, the Service and its designated agents would not have the flexibility to manage reintroduced wolves for the purposes of protecting or managing species of special concern, including other federally or State-listed species. If populations of species of special concern decline as a result of predation or other pressures associated with the presence of wolves, the Service and its designated agents would not have the flexibility to manage wolves using nonlethal or lethal methods to promote conservation or recovery of protected species because reintroduced wolves in Colorado would not be designated as an experimental population under ESA section 10(j) and would be protected as a federally endangered species throughout the state. Effects on prey species could be short or long term and adverse, if their populations decline as a result of wolf reintroduction. The no-action alternative could also have long-term, adverse effects on the Mexican wolf if the ranges of both species expand and interbreeding or competition occurs. It is difficult to determine the timing, extent, and effects of potential future contact between gray wolves and Mexican wolves. However, the Service has committed to working with states and the Mexican Wolf Recovery Program to mitigate potential future impacts to Mexican wolf recovery. Overall, the no-action alternative is not likely to adversely affect species of special concern because substantial population declines or jeopardy of the continued existence of species of special concern have not been documented as a result of previous wolf reintroductions elsewhere in North America and are not anticipated to result from the reintroduction of wolves in Colorado (TWG 2022c).

### **Alternatives 1 and 2**

The environmental consequences of the alternatives 1 and 2 on species of special concern would be the same as under the no-action alternative because management flexibility for wolves that would be reintroduced to Colorado under alternatives 1 and 2 would not include provisions for the take of wolves for the purposes of protecting or managing species of special concern.

## **4.5 OTHER WILDLIFE SPECIES**

Environmental consequences on other wildlife species were evaluated at the statewide population level. Adverse impacts are considered to be those that would negatively affect species' populations, while beneficial impacts are those that would positively affect these populations compared to existing conditions and relative to established state or Tribal management objectives where applicable. Short-term effects are those that would occur within the first few years of wolf reintroduction, while long-term effects are those that would take longer to develop as wolf populations increase and as their range expands throughout the state. Although some species, primarily prey species, could experience local population-level effects shortly after wolf reintroduction, most environmental consequences would take years to develop before they could affect wildlife populations on a statewide scale. Therefore, the following analysis focuses mostly on the potential long-term environmental consequences of the alternatives.

The reintroduction of wolves in Colorado could affect other wildlife species through predation and competition. Wolves can influence other wildlife populations either directly (e.g., predation) or indirectly (e.g., behavioral modification of prey species and mesocarnivores [predators that occupy mid-levels of food webs]; Estes et al. 2011; Ripple and Beschta 2012; Ripple et al. 2014). The reintroduction of wolves could cause prey species to change their feeding habits by avoiding areas where they could readily be ambushed or change their movement patterns and habitat preferences (Smith et al. 2003; Fortin et al. 2005; Creel et al. 2011), as was observed in elk after the reintroduction of gray wolves in Yellowstone National Park. Similarly, in some areas where wolves have been restored, competing carnivores have changed their predation habits or habitat selection to avoid competition

with wolves (Smith et al. 2003; Bartnick et al. 2013). These potential consequences are related to the State of Colorado's action and would not be affected by any alternative selected by the Service for flexibility (or lack thereof) in the management of wolves in Colorado with regard to take as defined under the ESA. Therefore, they are beyond the scope of this EIS and are not included in the following analysis.

The following analysis is limited to potential environmental consequences of the alternatives on Colorado's ungulate populations. In recognition of Tribal sovereignty, alternatives 1 and 2 include a provision for the take of wolves in limited circumstances, including in the event that wolf predation is having an unacceptable impact on wild ungulate populations on reservation lands for the Ute Mountain Ute Tribe and Southern Ute Indian Tribe within Colorado. However, the alternatives do not provide management flexibility for wolves for the purposes of protecting or managing other wildlife populations. Therefore, potential impacts of wolf reintroduction on non-ungulate populations would occur independently of the proposed action and would not be affected by the alternative selected. As a result, only impacts related to the take provision for management of wolves to address impacts to ungulates on reservation lands for the Ute Mountain Ute Tribe and Southern Ute Indian Tribe within Colorado are discussed below.

#### **4.5.1 No-Action Alternative**

##### *Elk and Deer*

Under the no-action alternative, Colorado's statewide elk and deer populations could decline in response to unmanaged predation and other pressures as a result of wolf reintroduction. However, wolf presence may or may not directly influence changes in ungulate population dynamics. Prey populations naturally vary through time in response to environmental factors (e.g., severe winters, natural mortality), predation pressure, hunter harvest pressure, and habitat conditions (Smith et al. 2003). If elk and deer populations declined below Tribal management objectives, the Service and its designated agents would not have the flexibility to manage wolves to meet elk and deer management goals, even if wolves were a major driver of population decline, because reintroduced wolves in Colorado would not be designated as an experimental population under ESA section 10(j) and would be protected as a federally endangered species throughout the state. Therefore, the no-action alternative could adversely affect elk and deer over the long term. However, it is possible that minimal adverse effects would occur because although elk and deer populations may decline in the short term at the local level in response to wolf predation, it is likely they would stabilize over the long term (due to natural fluctuations in their populations), as was observed at Yellowstone National Park in the years following gray wolf reintroduction (Smith et al. 2003).

##### *Other Ungulates*

In the absence of management flexibility for reintroduced wolves in Colorado, pronghorn, wild sheep, and moose populations could decline. Like with elk and deer, if populations of these species decline below Tribal management objectives in response to wolf reintroduction, the Service and its designated agents would not have the flexibility to manage wolves to promote species conservation or recovery. Therefore, the no-action alternative could adversely affect other ungulate species over the long term. As is the case with elk and deer, if the populations of other ungulate species do not decline below Tribal management objectives in response to wolves, these adverse effects would not occur.

#### **4.5.2 Alternative 1**

Under alternative 1, gray wolves that would be reintroduced to Colorado would be managed as an experimental population under the section 10(j) rule. In recognition of Tribal sovereignty on reservation lands for the Southern Ute Indian Tribe and Ute Mountain Ute Tribe within Colorado, if wolf predation is having an unacceptable impact on wild ungulate populations (deer, elk, moose, bighorn sheep, mountain goats, or antelope) as determined



by the respective Tribe, a Tribe may submit a science-based proposal that considers lethal removal of wolves. “Unacceptable impact” is defined as a “Tribally determined decline in a wild ungulate population or herd, where wolf predation is a major cause, of the population or herd not meeting established Tribal management goals on Tribal land.” The Tribal determination must be peer-reviewed and commented on by the public, prior to a final, written determination by the Service that an unacceptable impact has occurred, and that wolf removal will benefit the affected ungulate herd or population.

### **Elk and Deer**

Elk and deer are likely to be the primary prey for wolves in Colorado based on their population densities in the statewide study area and documented prey selection by wolves elsewhere in the northern Rocky Mountains. Although elk and deer have the highest population densities in Colorado compared to other wolf prey species, their populations could decline over time as a result of predation, behavioral changes, or changes in habitat use in response to wolf reintroduction (Smith et al. 2003; Estes et al. 2011; Ripple and Beschta 2012).

Compared to the no-action alternative, under which the State would reintroduce gray wolves without the management flexibility that would be provided by the section 10(j) rule, alternative 1 could have a beneficial impact on elk and deer on reservation lands for the Ute Mountain Ute Tribe and Southern Ute Indian Tribe within Colorado over the long term because the Tribes could submit a proposal to use lethal take if wolves are having unacceptable impacts on elk and deer populations, subject to final, written determination by the Service that an unacceptable impact has occurred and that wolf removal will benefit the affected ungulate herd or population. However, because this provision would be limited to reservation lands for the Ute Mountain Ute Tribe and Southern Ute Indian Tribe within Colorado, which make up a relatively small portion of the state’s geographic area, it would not likely result in measurable effects on statewide elk and deer populations. Therefore, impacts on statewide elk and deer populations would be similar to those described for the no-action alternative.

### **Other Ungulates**

Other ungulates such as pronghorn, wild sheep, and moose could also be selected prey species for wolves in the focal counties or elsewhere in the state. Like with elk and deer, alternative 1 would allow the Ute Mountain Ute Tribe and Southern Ute Indian Tribe the flexibility to manage wolves on their reservation lands within Colorado if wolves cause the populations of other ungulates to decline below established Tribal management objectives, potentially resulting in a long-term, beneficial impact on these species on reservation lands for the Ute Mountain Ute Tribe and Southern Ute Indian Tribe within Colorado. However, because this provision would be limited to reservation lands for these Tribes within Colorado, it is not likely to result in measurable effects on statewide populations. Therefore, impacts on statewide ungulate populations would be similar to those described for the no-action alternative.

#### **4.5.3 Alternative 2**

Under alternative 2, gray wolves that would be reintroduced to Colorado would be managed as an experimental population under the section 10(j) rule but in an area smaller than the area described for alternative 1.

Like alternative 1, alternative 2 would allow the Service to authorize limited take of wolves on reservation lands for the Ute Mountain Ute Tribe and Southern Ute Indian Tribe within Colorado, if wolf predation is having an unacceptable impact on wild ungulate populations. Therefore, the environmental consequences of alternative 2 on other wildlife species would be the same as described under alternative 1.

## 4.6 TRIBAL RESOURCES

The following section discusses the potential impacts to Tribal resources, which for the purposes of this evaluation, include archaeological and historical sites and natural resources of importance to traditional cultural practices, as well as Tribal treaty rights and reservations. Information on government-to-government consultation with interested Tribes is provided in section 3.4.4 and Chapter 5.

### 4.6.1 No-Action Alternative

#### Archaeological and Historical Resources

Under the no-action alternative, the Service and its designated agents would have limited management options available to control the presence of wolves (i.e., reintroduced gray wolves, pre-existing wolf populations, and those naturally dispersing to Colorado) that may cause damage to archaeological and historical resources or inhibit Tribal access to these resources.

Wolf activities could damage Tribal archaeological and historical resources located within the focal counties, as well as those outside these counties. For example, archaeological or historical resources that may be affected in Colorado include rock shelters (labeled in the OAHP database as Sheltered Lithic, Sheltered Camp, and Sheltered Architectural), because wolves could use the locations in which these sites are present as dens, thus affecting the ability of cultural practitioners to visit and tend to these sites. Wolves may excavate soil to create a new den or expand an existing one used by other mammals (Wisconsin DNR 2016). “Den openings generally are 36 to 63 cm in diameter (14-25 inches) and are oval in shape.... Depth into the dens range from 1.5-5.5 m (5-18 ft)” (Wisconsin DNR 2016). The development of a den by a wolf may cause ground disturbance that could impact a surface or subsurface resource, if present in the same location in which the den is being created or used.

Within Colorado, for example, resources associated with the traditional hunting grounds of the Ute are not quantified as formal site types within the OAHP database but are sometimes marked by Cambium Trees, which are recorded in the database. As labeled in the OAHP database, rock shelters (Sheltered Lithic, Sheltered Camp, and Sheltered Architectural sites) and Cambium Tree (Cambium Tree and Carving Rock or Wood Cambium Tree sites) locations were previously recorded in the focal counties. Due to the large geographic expanse of the area considered, the likelihood of a wolf creating a den in one of the locations of a rock shelter or causing physical damage to one of the Cambium Tree sites is anticipated to be low.

#### Natural Resources of Cultural Importance

The Service and its designated agents would have limited management flexibility under the no-action alternative to affect how wolves would interact with other natural resources of importance to traditional cultural practices. This alternative would not allow for lethal or nonlethal take.

Reintroduced wolves as well as those already living in or naturally dispersing into Colorado could impact natural resources, including other wildlife of importance to traditional cultural practices, in part due to competition resulting in changes to predation habits or habitat selection. For example, as noted in section 3.4, the bear is honored by the Ute Mountain Ute Tribe, Southern Ute Indian Tribe, and Ute Indian Tribe of the Uintah and Ouray Reservation in the bear dance (Southern Ute Indian Tribe 2022; Steward 1932). As discussed in section 3.2.1, *Gray Wolf*, wolves may directly compete with other predators for prey or habitat, including the black bear. Bears may kill or be killed by wolves. In some areas where wolves have been restored, competitors have changed their predation habits or habitat selection to avoid competition with wolves. Section 3.2.1, *Gray Wolf*, indicates that black bears occur throughout most of the western two-thirds of Colorado, and wolves have been documented to kill black bears on occasion. In the majority of these cases, wolves have outnumbered black bears, giving them a competitive advantage in interspecies conflicts.

## **Tribal Treaty Rights and Reservations**

The introduction of wolves, along with those already living in and naturally dispersing into Colorado, may affect Tribal treaty rights, including those within the Brunot Area lands, for off-reservation hunting. The introduction of wolves may impact the population of elk, deer, other ungulates, and moose due to their presence within locations used for hunting (see also section 4.5, *Other Wildlife Species*, and section 4.7, *Socioeconomic Resources*).

Both the Ute Mountain Ute and the Southern Ute have Tribal treaty rights for hunting in the Brunot Area and agreements with the State of Colorado. Tribal rights are also maintained in the San Juan National Forest. As noted in the *San Juan National Forest and Resource Management Plan* (U.S. Forest Service 2021), “[in] exercising their Brunot hunting rights, the Ute Mountain Ute and Southern Ute Tribal members are required to adhere to federal policy and regulations designed to protect natural and cultural resources.”

Through predation and competition, the reintroduction of wolves could affect wildlife species that are hunted or used by the Tribes, such as elk, deer, and other ungulates. As discussed in section 4.5, wolves can influence other wildlife populations either directly (e.g., predation) or indirectly (e.g., behavioral modification of prey species and mesocarnivores). The reintroduction of wolves could cause prey species to change their feeding habits by avoiding areas where they could readily be ambushed or change their movement patterns and habitat preferences.

As a result, under the no-action alternative, elk and deer populations could decline in response to predation and other pressures as a result of wolf reintroduction. Section 4.5 indicates that the no-action alternative could affect populations of elk, deer, pronghorn, wild sheep, and moose over the long term.

As discussed in section 4.7, hunting-related benefits are not anticipated to decline across the state; however, impacts may be experienced at a local level, where wolves may contribute to declines in big game herds.

Potential impacts associated with wolf depredation on domestic livestock are also discussed in section 4.7. Estimates show that between 103 and 916 cattle and between 26 and 298 sheep could be lost per year across the state, assuming a population of 200 wolves (see section 4.7 for a detailed discussion of these estimates). These numbers account for the entire state, rather than an individual location, such as one of the reservations.

Under this alternative, take would be allowed only as self-defense. Therefore, the Service or its designated agents would not have the ability to take wolves that depredate livestock. Consultation with the Service also would be required under section 7 of the ESA.

### **4.6.2 Alternative 1**

#### **Archaeological and Historical Resources**

Impacts to archaeological and historical resources under alternative 1 are anticipated to be similar to those described for the no-action alternative. However, impacts to these resources, such as damage from dens and inhibiting access to sites, may be reduced indirectly through the management flexibility offered by the section 10(j) rule, which the Service and its designated agents may use to protect other resources, such as livestock, and to protect human safety. As noted above for the no-action alternative, the likelihood for conflict with wolves would be anticipated to be low due to the numbers of recorded sites present and probability that wolves may use these sites.

#### **Natural Resources of Cultural Importance**

Impacts to natural resources of importance to traditional cultural practices are anticipated to be similar to those described for the no-action alternative (e.g., competition between species resulting in changes to predation habits or habitat selection), although additional management options for the reintroduction of gray wolves would be

available to the Service and its designated agents under alternative 1. An additional discussion of impacts on wildlife species is included in sections 4.4 and 4.5.

### **Tribal Treaty Rights and Reservations**

The Service outlines some of the methods for collaborative management of threatened and endangered species with Tribes in its Native American Policy, Part 510: Working with Native American Tribes. According to this policy, “There is a broad range of collaborative management opportunities available to the Service and Tribes. These opportunities include holding informative discussions to seek Tribal input, entering into formal agreements with Tribes, cooperatively setting harvest quantities, and sharing conservation management of resources” (USFWS 2016).

If population levels of elk and deer on reservation lands of the Southern Ute Indian Tribe and Ute Mountain Ute Tribe in Colorado decline below established Tribal management goals as a result of wolf reintroduction, management flexibility, including nonlethal and/or lethal take, could be afforded to the Service and the Tribes, as designated agents, under alternative 1. This provision would allow these entities to take wolves as a means to achieve established goals for the management of wild ungulate populations on reservation lands. This provision would require the Tribe to submit a science-based proposal to describe how wolf control might benefit the ungulate population and other measures that are being implemented to improve ungulate populations (see table 2.2 in section 2.4.2 for additional information to be included in the proposal). The Service would ensure the proposal from the Tribe to conduct any control is science-based and would not have a significant effect on the wolf population. As described in section 4.5, alternative 1 could have a beneficial impact on elk, deer, and other wild ungulates on reservation lands over the long term.

Tribes would be able to conduct wolf management to address depredation of livestock and impacts on ungulate populations from wolves on Tribal reservation lands as designated agents of the Service within the experimental population boundary on reservation lands. Tribes would be required to obtain prior approval from the Service before implementing certain management actions as outlined in Chapter 2. These management actions could reduce potential impacts if wolves were allowed to occupy reservation lands.

A similar approach was used under the final 10(j) rule for the experimental population of gray wolves in the northern Rocky Mountains region, where the Service’s final 10(j) rule provided for recognition of the unique relationship between federal and Tribal governments. In this manner, the rule provided Tribes with the same opportunities on reservation lands that the Service offered to states for their land under their management authority. As a result, Tribes with Service-approved wolf management plans could assume the lead for management of wolves under the final 10(j) rule on their reservation lands (DOI 2005). “This rule also treats Tribal members’ lands on reservations as private property within the borders of States with approved wolf plans, increasing wolf management flexibility to protect the private property of Tribal members. In addition, Tribal members who are legally grazing their livestock on public lands may protect them from wolf attack” (DOI 2005).

The provision to allow take of wolves to address potential impacts on ungulate populations on the reservation lands of the Southern Ute Indian Tribe and Ute Mountain Ute Tribe in Colorado would not apply on lands owned by the Tribes outside Tribal reservations or in the Brunot Area, which may affect Tribal treaty rights for off-reservation hunting. These impacts would be similar to those described for the no-action alternative.

Due to the potential use of lethal and nonlethal take to address wolves that depredate livestock, the impacts associated with wolf reintroduction to livestock production by Tribes may be lower under alternative 1 when compared to the no-action alternative (see section 4.7 for additional information). This alternative provides more flexibility in managing the wolf reintroduction compared to the no-action alternative.

### **4.6.3 Alternative 2**

Under alternative 2, the Service has allowed for the potential for an existing population of gray wolves to be present in Colorado. For analysis purposes, the Service is assuming the section 10(a)(1)(A) permit boundary would be located in the northern portion of the state within Jackson and Larimer Counties.

Potential impacts to resources of importance to traditional cultural practices under alternative 2 would be similar to those described for the no-action alternative and alternative 1; however, the geographic location in which impacts may occur may vary due to the smaller boundaries of the experimental population area (i.e., excluding the section 10(a)(1)(A) permit area) compared to the entire state noted for alternative 1. Likewise, the requirements for lethal and nonlethal take would vary depending on the location of the wolves, i.e., within the permit boundary or in the experimental population boundary.

#### **Archaeological and Historical Resources**

Impacts to archaeological and historical resources under alternative 2 are anticipated to be similar to those described for alternative 1.

#### **Natural Resources of Cultural Importance**

Impacts to natural resources of importance to traditional cultural practices are anticipated to be similar to those described for alternative 1.

#### **Tribal Treaty Rights and Reservations**

Under alternative 2, impacts to Tribal treaty rights and in the experimental population boundary would be similar to those as presented for alternative 1. However, alternative 2 would allow for lethal and/or nonlethal take to address livestock depredation and to address potential impacts to wild ungulate populations on the reservations of the Southern Ute Indian Tribe and Ute Mountain Ute Tribe in Colorado, except in areas where an existing population is identified, where section 10(a)(1)(A) would apply and only nonlethal take would be authorized.

## **4.7 SOCIOECONOMIC RESOURCES**

### **4.7.1 Methodology**

The purpose of this analysis is to examine the socioeconomic impacts of the Service implementing a regulatory framework to provide management flexibility for the State of Colorado's reintroduction of the gray wolf. The socioeconomic implications of the proposed action for outdoor recreation, agriculture, and livestock production are presented in a contextual analysis. Additionally, this analysis attempted to review qualitative sources to identify costs associated with lethal and nonlethal take, though literature on this topic is limited. Impacts to tourism were considered; however, the implementation of a regulatory framework under the ESA to manage wolves that would be reintroduced to Colorado under the State Plan is not expected to change tourism, either in a beneficial or adverse manner. Therefore, tourism was excluded from detailed analysis.

Impacts on outdoor recreation were considered for all three alternatives. Under all three alternatives, there would be no take provision across the state to allow for management of wolves if predation reduces the population of big game ungulates below state management objectives (see section 2.3.3). While alternatives 1 and 2 would have provisions to allow take of wolves to address potential impacts on ungulates on Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands in Colorado, these provisions would be limited and would not address impacts on ungulate populations from wolves across the state.

## 4.7.2 No-Action Alternative

### Impact on Outdoor Recreation

Outdoor recreation contributes more than \$800 million and 7,937 jobs to the Colorado economy (see Chapter 3). The three alternatives evaluated could affect outdoor recreation, particularly hunting outfitters and guides because there would be no statewide provision to address wolf impacts on ungulate populations outside Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands in Colorado.

#### *Hunting*

Elk populations and hunter harvest have not fallen in Montana, Idaho, and Wyoming, where wolves were reintroduced in the mid-1990s. However, the effects of wolves on large game vary locally. In the Greater Yellowstone ecosystem, where wolves and elk interact, elk numbers are steady or increasing in some areas but declining in others. When combined with other factors that limit prey populations such as harsh weather, other predators, and human hunters, predation by wolves is more likely to affect big game populations (Mech 2012). The presence of wolves can make big game warier, move more, and use habitat differently by seeking more cover, making hunting more difficult.

A decrease in elk populations could affect hunting by reducing the number of licenses issued and discouraging hunters in general (Miller 1982). A 2012 economic analysis developed a way to measure wolf impacts on elk harvest and used that as a proxy to assess the impacts wolves have on the hunting industry (Hazen 2012). The study determined that wolves did not have a major impact on elk harvest in Montana statewide; however, wolves shifted the demand for big game hunting to other parts of the state where wolves were not introduced.

If ungulate herds fell below state or Tribal population goals or the presence of wolves altered the movement patterns of big game species and/or shifted demand for hunting to different parts of the state, then outfitters and guides could experience long-term, localized consequences under all alternatives analyzed. Additionally, a shift in hunting demand could decrease hunting revenues in localized areas. The same 2012 study found that the number of hunting applications decreased in parts of the state where wolves were present. In southwest Montana, the presence of wolves decreased hunter applications by almost 20 percent of the standard deviation (i.e., the background amount of variation in application numbers across the state). This decrease comprised 286 fewer applications. In the west-central part of the state, applications decreased by nearly 3 percent of the standard deviation (six fewer applications) (Hazen 2012). CPW uses hunting license fees to help fund agency operations. A decline in hunting applications could lead to decreased wildlife revenue for CPW, which may result in a decrease in funds available for wolf or other management operations.

### Impact on Agriculture and Livestock Production

Reintroduction of wolves by the State of Colorado, which would occur under each of the alternatives, would result in direct and indirect costs to livestock producers as a result of the increased risk of, and direct predation of livestock. Under the no-action alternative, only non-injurious opportunistic harassment could be permitted under section 10(a)(1)(A) of the ESA to address instances of livestock depredation. Livestock producers would have the fewest take options to manage wolf predation on their livestock and may incur the highest commercial costs due to depredation. Because the State would manage the reintroduction of gray wolves in phases, wolf depredation on domestic livestock statewide is anticipated to be minimal in the short term due to the initial low numbers and distribution of wolves. However, localized depredation may result in more substantial economic impacts to individual producers in the short term. As wolf population goals are approached and the number and distribution of wolves increase, losses due to livestock depredation are anticipated to increase. The direct cost livestock producers can anticipate due to wolf depredation is the fair market value of any livestock killed by wolves.

Indirect costs<sup>2</sup> that livestock producers may face could include: (1) livestock injuries, (2) lower birth weights of livestock, (3) smaller weight at sale (especially for calves and lambs), (4) property repairs to fences and buildings, (5) loss of silage and grains, (6) costs to implement nonlethal wolf-livestock conflict avoidance and reduction methods, and (7) time of landowners (Harris 2020).

Through a review of literature, Harris (2020) concluded that indirect economic losses often exceed the cost of replacing an animal killed by a wolf. On ranches where wolf-cattle depredation was proven, there was a negative and statistically significant effect of about 22 pounds on the average calf weight across the herd, presumably due to ineffective foraging behavior or stress on mother cows (Ramler et al. 2014). According to two studies (Sommers et al. 2010; Steele et al. 2013), unconfirmed and indirect losses could cost up to six times more than verified losses. However, other researchers concluded that these figures were exaggerated (Hebblewhite 2011).

The State Plan released by CPW in 2023 discusses a detailed depredation compensation and conflict minimization program. CPW will seek money for the compensation program from sources other than hunting and fishing license sales or government subsidies. For documented livestock deaths or injuries, including guard or herding animals, the compensation program provides 100 percent fair market value compensation, up to \$15,000 per animal. Depending on whether they choose a simplified approach or more documentation, livestock owners can select between a basic compensation ratio and detailed production losses. They cannot, however, pursue both alternatives at the same time. The goal is to offer enough compensation and support while decreasing wolf-livestock conflicts (CPW 2023a); however, compensation programs are not guaranteed to cover the total direct or indirect costs associated with a producer's losses. In an effort to minimize conflicts, on a case-by-case basis, livestock owners may obtain materials, specifically turbo fladry and scare devices, and CPW will educate them on various ways to minimize wolf conflicts. Livestock owners can request these materials in writing, and CPW staff may provide assistance in deploying them. CPW will also educate livestock owners on conflict minimization techniques (CPW 2023a). These measures may offset some indirect costs to producers.

Livestock producers experience diminished economic returns resulting from both the direct and indirect effects of predation by wolves. These impacts impose costs on producers, encompassing losses due to wolf predation-related mortality as well as various indirect consequences. There are few studies that estimate the indirect impacts that wolves have on calf weight. However, one study found a statistically significant effect on cattle calf weights on ranches with confirmed wolf predation (Ramler et al. 2014). Furthermore, calves pastured on a ranch with confirmed depredation were 3.5 percent lighter than those without depredation. The resulting weight loss equaled an average of \$6,679 loss in revenue for the ranchers in the study's sample population.<sup>3</sup> When extrapolated to western Montana, the study found that weight loss of cattle due to wolf depredation would result in a loss of \$247,130 (Ramler et al. 2014). Another study analyzed how wolves affect ranch profitability using a 400-head cow-calf ranch in Wyoming and found that short-run financial impacts of indirect effects are potentially as large or even more prominent than those of direct wolf predation. Decreased conception rates and a decline in weaning weights had a negative effect on the year-to-year profitability of the ranch, reducing the short-run profitability by \$10,250 to \$12,855, which was comparable to or larger than the direct average predation loss of \$10,778 (Steele et al. 2013).

The direct economic impact from livestock depredation on ranchers is calculated by multiplying the estimated number of lost animals per year by the market value. This analysis uses data from the Service that compiles confirmed wolf-caused livestock depredations from State agencies and reflects the best available data. Data from the Service represent a lower bound of livestock depredations due to the omission of undiscovered or unreported

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<sup>2</sup> Indirect costs associated with lower birth rates of livestock and smaller weights at sale weight are often difficult to quantify.

<sup>3</sup> Based on a sample of 18 ranchers in western Montana.

predation. Data available from other sources such as NASS may be inflated because NASS estimates depredation based on data self-reported by livestock producers rather than confirmed data on confirmed wolf depredations (Hoag et al. 2022). Available depredation data suggest that livestock being killed by wolves is a small economic cost to the livestock industry as a whole, but it can be significant to some producers. Literature often uses the example that direct losses from wolf depredation on cattle and sheep accounted for less than 1 percent of the gross income from livestock operations in the northern Rocky Mountains between 1987 and 2003<sup>4</sup> (Muhly and Musiani, 2009), drawing the conclusion that wolf depredation’s impact on the livestock industry is minimal. However, those costs are not evenly distributed, and this example understates the high costs that individual producers incur (Hoag et al. 2022). Both direct and indirect losses could substantially affect the livelihood of individual ranchers operating on thin profit margins in volatile markets. Though not widely researched, some livestock producers are more vulnerable to wolf predation than others. Factors that potentially determine which producers are more likely to experience wolf predation on their livestock include where livestock are grazed, livestock type, the type of operation (i.e., range versus pasture operations), and how much the livestock are protected (Center for Human-Carnivore Coexistence 2020a).

### *Economic Loss*

The following equation was taken from the *Final EIS for the Reintroduction of Gray Wolves to Yellowstone National Park and Central Idaho* to estimate the annual depredation in Colorado and the 21 focal counties (USFWS 1994):

$$\frac{\text{No. of livestock in Analysis Area}}{\text{No. of livestock in Other Area}} \times \frac{\text{No. wolves in Analysis Area}}{\text{No. wolves in Other Area}} \times \text{Mean annual depredations (other study area)} \\ = \text{Estimated annual depredations in Analysis Area}$$

Estimating depredation rates should be done with caution, as mentioned in the Yellowstone National Park EIS, because the terrain, vegetation, weather, farm size, husbandry practices, and prey populations vary between places. However, to assess the possible impacts of the wolf population on livestock, the following equation was constructed to standardize depredation rates from reference areas outside Colorado in relation to total livestock in the wolf range and wolf populations. Table 4-1 provides livestock totals for Colorado, the 21 focal counties, and reference areas. The analysis carried out in this study concentrates on the reference areas of the WTGMA and the regions of eastern Washington and eastern Oregon within the NRM DPS. This selection is based on the similarity of management approaches by these states in the reference areas to the management proposed for Colorado under alternatives 1 and 2. Livestock totals for target geographies (the WTGMA and Oregon and Washington portions of the NRM DPS) were calculated by multiplying the total number of cattle and sheep in each county, excluding those in feedlots, by the percentage of non-park pasture land in that county that exists within the target geography. Nonetheless, because of constraints in data availability related to the location of feedlots or the type of livestock kept in feedlots, the sheep counts may encompass sheep within feedlots in the reference areas. Consequently, this calculation may underestimate sheep depredation.

Tables 4-1 and 4-2 present the data used in this equation. Table 4-3 presents the range of estimated depredation of cattle and sheep in Colorado and the 21 focal counties based on calculations using data from the reference areas.

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<sup>4</sup> During this period, gray wolves were managed as federally listed endangered species in the region.



**Table 4-1.<sup>5</sup> Livestock Totals in Colorado, the 21 Focal Counties, and the Reference Areas**

Analysis Area	Cattle <sup>a</sup>	Sheep <sup>b</sup>	Total Livestock <sup>c</sup>
Colorado (Statewide Study Area)	1,807,069	312,738	2,119,807
21 Focal Counties	504,471	172,228	676,699
<b>Reference Areas</b>			
WTGMA - Wyoming	96,202	23,544	20,476
Washington (NRM DPS)	301,332	15,372	316,704
Oregon (NRM DPS)	326,570	15,290	341,860

Source: 2017 USDA-NASS

- <sup>a</sup> Excludes dairy cows and cattle on feed.
- <sup>b</sup> Sheep within feedlots have been excluded from Colorado (Statewide Study Area) and the 21 focal counties sheep counts; however, due to data constraints related to the location of feedlots or type of livestock kept in feedlots, this analysis cannot confirm with certainty whether the sheep totals for the reference areas encompass sheep housed in feedlots. Consequently, this analysis may underestimate sheep depredation.
- <sup>c</sup> The livestock totals used in this analysis are based on 2017 data. These data represents the most recent available statistics from the USDA-NASS.

Table 4-2 presents the number of confirmed wolves in the reference areas. Based on the averages of 2018–2022 state wolf counts, the WTGMA had the highest number of wolves, while the portion of the NRM DPS in Washington had the lowest. No resident groups of wolves were documented in Colorado until January 2020, when CPW confirmed a group of at least six wolves in Moffat County near the Wyoming and Utah border. One year later, in January 2021, a pair of wolves was sighted in Jackson County. In June 2021, that pair was identified with six pups. Three separate wolf depredation incidents on cattle were confirmed on a ranch in Jackson County, Colorado, between December 2021 and January 2022 (CPW 2021c, 2022d). Because of the limited number of wolves and depredations in Colorado during the study timeframe, data from the reference areas was used to estimate future depredation in Colorado instead of the Colorado data noted above.

**Table 4-2. Confirmed Number of Wolves and Livestock Depredation by Wolves in the Reference Areas (2018–2022 Average)**

Study Area	Number of Wolves	Cattle Depredation (2018–2022)	Sheep Depredation <sup>a</sup> (2018–2022)
<b>Reference Areas</b>			
WTGMA - Wyoming	179	44	17
Washington (NRM DPS)	123	11	1
Oregon (NRM DPS)	135	15	10

Source: Oregon DFW 2019-2023, Washington DFW et al. 2019–2023, Wyoming GFD et al. 2019–2023

<sup>5</sup> The analysis involved calculating the percentage of a county’s pasture land that lay within the reference area and multiplying it by the total number of cattle and sheep (excluding dairy cows and livestock on feedlots) to obtain a more precise estimate of livestock totals for the reference areas. The calculation was performed explicitly for the reference areas, which sometimes encompassed portions of counties: the WYGMA and the portions of the NRM DPS in Washington and Oregon.

The application of the equation to the Colorado statewide study area and the 21 focal counties, using the long-term planning estimate of 200 wolves<sup>6</sup> and data from the reference areas for comparison, yielded a range of estimated annual depredations for both Colorado and the 21 focal counties. However, due to data limitations, sheep counts may include sheep in feedlots in the reference areas. Therefore, this calculation may underestimate sheep depredation.

**Table 4-3. Estimated Annual Depredations in Analysis Area**

Area	Estimated Annual Cattle Depredation	Estimated Annual Sheep Depredation
Colorado (Statewide Study Area)	103–916	26–298
21 Focal Counties	29–256	15–164

The direct expenses incurred by livestock producers would be the total value loss of their livestock or, in this case, the total value loss of cows and sheep. Adjusted for inflation, there would be an estimated loss between \$173,543.31 and \$1,542,864.68 in the statewide study area and \$35,713.29 to \$319,168.32 in the 21 focal counties annually. As previously mentioned, livestock producers also would incur indirect costs as a result of wolf predation on their livestock, including costs associated with nonlethal injuries to livestock, decreased conception rates, decreased livestock weight (especially of calves and lambs), and costs associated with repairing fences and buildings, as well as silages and grain losses (Harris 2020).

A survey of Arizona cattle ranchers gathered information on the costs associated with nonlethal wolf-livestock conflict avoidance and reduction methods. On average, ranchers spent between \$5,700 and \$6,000 per year on range riders, \$1,000 to \$15,000 per year on changing pasture rotation or transporting cattle to another location, \$300 to \$700 per each removal of livestock carcasses, and between \$20,000 and \$30,000 per year on purchasing cattle feed for cattle moved off their range. The total annual cost incurred by these ranches ranged from \$500 to \$52,000, with an average of \$19,507. In addition, these ranchers reported expenditures connected with implementing preventive measures. The annual investment ranged from 17 to 1,555 hours, or around 30 hours each week (Bickel et al. 2020). This analysis uses data from Bickel et al. 2020 to estimate indirect costs for Colorado livestock producers. However, these indirect costs are not all-inclusive of the indirect costs livestock producers face and likely understate total indirect costs. Using this data and adjusting for inflation, Colorado livestock producers would incur an estimated \$45,844.82 in indirect costs annually (see table 4-4).

**Table 4-4a. Estimated Annual Economic Costs Associated with Livestock Depredation in Statewide Study Area and the 21-County Study Area Using the WTGMA as a Reference Area**

Using the WTGMA – Wyoming as a Reference Area	Colorado	21 Focal Counties
Cattle Lost	916	256
Sheep Lost	256	141
Direct Costs of Livestock Loss	\$1,246,614.07	\$257,883.74
Direct Costs of Livestock Loss (Inflation-adjusted to 2023)	\$1,542,864.68	\$319,168.32

<sup>6</sup> A population of 200 wolves is a planning estimate and the high-end threshold at which the State anticipates delisting the gray wolf at the state level and managing the species as a delisted, nongame species (see section 2.4). The planning estimate of 200 wolves was used for both the statewide study area and the 21 focal counties. However, it is likely the number of wolves occurring in the 21 focal counties would be less than the number of wolves across the state.

Using the WTGMA – Wyoming as a Reference Area	Colorado	21 Focal Counties
Indirect Costs of Livestock Loss	\$37,042.00	\$37,042.00
Indirect Costs of Livestock Loss (Inflation-adjusted to 2023)	\$45,844.82	\$45,844.82
Total Costs of Livestock Loss	\$1,283,656.07	\$294,925.74
Total Costs of Livestock Loss (Inflation-adjusted to 2023)	\$1,588,709.50	\$365,013.13
Percent of Value Loss	0.0311%	0.0071%

**Table 4-4b. Estimated Annual Economic Costs Associated with Livestock Depredation in Statewide Study Area and the 21-County Study Area Using the Washington NRM DPS as a Reference Area**

Using the Washington NRM DPS as a Reference Area	Colorado	21 Focal Counties
Cattle Lost	103	29
Sheep Lost	26	15
Direct Costs of Livestock Loss	\$140,220.68	\$28,855.86
Direct Costs of Livestock Loss (Inflation-adjusted to 2023)	\$173,543.31	\$35,713.29
Indirect Costs of Livestock Loss	\$37,042.00	\$37,042.00
Indirect Costs of Livestock Loss (Inflation-adjusted to 2023)	\$45,844.82	\$45,844.82
Total Costs of Livestock Loss	\$177,262.68	\$65,897.86
Total Costs of Livestock Loss (Inflation-adjusted to 2023)	\$219,388.13	\$81,558.10
Percent of Value Loss	0.0045%	0.0017%

**Table 4-4c. Estimated Annual Economic Costs Associated with Livestock Depredation in Statewide Study Area and the 21-County Study Area Using the Oregon NRM DPS as a Reference Area**

Using the Oregon NRM DPS as a Reference Area	Colorado	21 Focal Counties
Cattle Lost	120	34
Sheep Lost	298	164
Direct Costs of Livestock Loss	\$211,724.82	\$60,660.94
Direct Costs of Livestock Loss (Inflation-adjusted to 2023)	\$262,040.00	\$75,076.66
Indirect Costs of Livestock Loss	\$37,042.00	\$37,042.00
Indirect Costs of Livestock Loss (Inflation-adjusted to 2023)	\$45,844.82	\$45,844.82
Total Costs of Livestock Loss	\$248,766.82	\$97,702.94
Total Costs of Livestock Loss (Inflation-adjusted to 2023)	\$307,884.81	\$120,921.48
Percent of Value Loss	0.0068%	0.0025%

Under the no-action alternative, the gray wolf would be managed in Colorado as a federally listed endangered species, and lethal and injurious take of wolves to reduce repeated livestock depredation would be prohibited. As a result, ranchers would experience the greatest economic loss under the no-action alternative. Table 4-4 presents a range of estimated total annual costs associated with livestock depredation in the statewide study area and the 21 focal counties determined by the reference areas used for comparison. Based on these calculations, wolf

depredation may cost livestock producers in the statewide study area and 21 focal counties, adjusted for inflation, between \$219,388.13 and \$1,588,709.50 and between \$81,558.10 and \$365,013.13, respectively, including direct and indirect costs on an annual basis. A detailed explanation of the estimated costs of wolf depredation is provided in table 4-4. Because the states of Oregon, Washington, and Wyoming allow take of wolves to address conflicts with livestock production, these estimates do not fully account for depredation that may occur in Colorado under the no-action alternative. Depredation in Colorado under this alternative is likely to be higher, resulting in greater direct and indirect economic costs than the estimates provided above, because the Service and its designated agents would not be able to use a full range of take strategies to address repeated depredations. The reference geographies used in this analysis were selected, as noted above, because management of wolves by these states in these areas is similar to how wolves would be managed in Colorado under the action alternatives. These areas also have larger populations of wolves compared to other western states such California, which has a smaller population of wolves in more limited geographic areas, potentially leading to skewed estimates of depredation and cost if this geographic area was used for comparison.

The estimated percentage of livestock depredation would be 0.0311 percent of the total value of cow and sheep sales in the statewide study area and 0.0071 percent of the total value of cow and sheep sales in the 21 focal counties. However, these numbers underestimate the economic burden that livestock depredation could have on individual livestock producers. The factors that determine why certain producers are more susceptible to wolf predation than others have not been widely studied. However, the degree to which producers are vulnerable to wolf predation is likely contingent on where livestock are grazed (some regions have more wolf activity than others), the type of livestock (sheep are more vulnerable than cattle), the type of operation (e.g., cow/calf versus stocker<sup>7</sup>), range versus pasture operations, and the level of livestock protection (Center for Human-Carnivore Coexistence 2020b).

According to the Colorado Department of Agriculture, agriculture contributes \$47 billion to the state’s economy and employs more than 195,000 people. Furthermore, the cattle industry generates more than \$4 billion in annual sales. Therefore, predator-caused livestock loss impacts business profitability, the business’s contribution to the local economy, and community economics. According to the USDA Economic Research Service, the agriculture multiplier is around 2.6, which means that every dollar in agricultural profit invested in the economy is reinvested 2.6 times back into that economy. Therefore, the economic loss that ranchers face due to livestock depredation by wolves would indirectly impact the local economies within the statewide study area and the 21 focal counties. For the 21 focal counties collectively, adjusted for inflation, one cow contributes \$2,970.64, while a single sheep contributes \$593.90 to the 21 focal counties’ economies (see table 4-5). The amount of money that is not reinvested back into the economies of the 21 focal counties due to wolf depredation ranges from \$86,148.56 to \$760,483.84<sup>8</sup> for cattle, and \$8,908.50 to \$96,805.70 for sheep.

**Table 4-5a. Economic Contribution of Cattle in the 21 Focal Counties Respective to their Local Economies (Adjusted for Inflation, 2023 Dollars)**

Counties	Market Value of Cattle Sold	Inventory of Cattle and Calves	Market Value of Cattle/Calves (Per Animal)	Per Animal Contribution to Local Economy
Archuleta	\$11,562,072.16	10,172	\$1,136.66	\$2,955.31
Custer	\$5,798,363.10	5,529	\$1,048.72	\$2,726.67

<sup>7</sup> Refers to weaned calves grazing pasture to enhance growth prior to finishing and slaughter; they are usually younger, weigh less, and are of lower condition (finish) than “feeders.”

<sup>8</sup> The values of table 4-3 for cattle and sheep in the 21 focal counties multiplied by the per animal contribution to the local economy for cow and sheep.

Counties	Market Value of Cattle Sold	Inventory of Cattle and Calves	Market Value of Cattle/Calves (Per Animal)	Per Animal Contribution to Local Economy
Delta	\$26,871,433.98	23,694	\$1,134.10	\$2,948.67
Dolores	\$2,986,435.47	2,951	\$1,012.01	\$2,631.22
Eagle	\$5,955,543.91	6,024	\$988.64	\$2,570.45
Garfield	\$26,599,839.47	22,468	\$1,183.90	\$3,078.14
Grand	\$11,798,462.21	12,593	\$936.91	\$2,435.96
Gunnison	\$19,985,565.86	17,519	\$1,140.79	\$2,966.06
Huerfano	(D) <sup>a</sup>	17,144	-	-
Jackson	\$24,929,849.07	20,455	\$1,218.77	\$3,168.79
La Plata	\$14,325,031.09	13,241	\$1,081.87	\$2,812.86
Larimer	\$39,923,128.97	31,968	\$1,248.85	\$3,247.00
Mesa	\$35,356,551.60	28,255	\$1,251.34	\$3,253.48
Moffat	\$25,398,507.50	24,663	\$1,029.82	\$2,677.54
Montezuma	\$19,374,162.41	18,372	\$1,054.55	\$2,741.83
Montrose	\$42,901,825.91	35,764	\$1,199.58	\$3,118.91
Ouray	\$4,160,959.82	3,313	\$1,255.95	\$3,265.47
Rio Blanco	\$18,235,991.95	16,155	\$1,128.81	\$2,934.92
Routt	\$29,872,869.06	25,508	\$1,171.12	\$3,044.91
Saguache	\$17,524,793.32	17,036	\$1,028.69	\$2,674.60
San Miguel	\$6,575,603.66	5,781	\$1,137.45	\$2,957.37
<b>Total (21 Focal Counties)<sup>b</sup></b>	<b>\$390,136,990.52</b>	<b>341,461</b>	<b>\$1,142.55</b>	<b>\$2,970.64</b>

Source: 2017 USDA-NASS Census

<sup>a</sup> If publishing a particular data item would identify an operation (for example, if there is only one producer of a particular commodity in a county), NASS does not publish the information. In such cases, the data are suppressed and shown as "(D)," meaning "withheld to avoid disclosing data for individual operations." A dash represents zero, no data for that particular data item. Source: <https://www.nass.usda.gov/AgCensus/FAQ/2022/index.php>

<sup>b</sup> Totals omit data for Huerfano County.

**Table 4-5b. Economic Contribution of Sheep in the 21 Focal Counties Respective to their Local Economies (Adjusted for inflation, 2023 Dollars)**

Counties	Market Value of Sheep Sold	Inventory of Sheep	Market Value of Sheep (Per Animal)	Per Animal Contribution to Local Economy
Archuleta	\$17,327.02	108	\$160.44	\$417.13
Custer	\$34,654.04	203	\$170.71	\$443.84
Delta	\$3,409,709.78	14,194	\$240.22	\$624.58
Dolores	-	-	-	-
Eagle	\$1,464,133.09	5,171	\$283.14	\$736.17
Garfield	\$2,278,502.98	9,563	\$238.26	\$619.48

Counties	Market Value of Sheep Sold	Inventory of Sheep	Market Value of Sheep (Per Animal)	Per Animal Contribution to Local Economy
Grand	\$24,752.88	137	\$180.68	\$469.76
Gunnison	\$1,866,367.46	7,937	\$235.15	\$611.38
Huerfano	\$6,188.22	18	-	-
Jackson	\$65,595.14	294	\$223.11	\$580.09
La Plata	\$2,047,063.52	9,884	\$207.11	\$538.48
Larimer	\$268,568.79	1,210	\$221.96	\$577.09
Mesa	\$2,876,285.13	14,633	\$196.56	\$511.06
Moffat	\$9,549,662.69	40,408	\$236.33	\$614.46
Montezuma	\$318,074.56	1,535	\$207.21	\$538.76
Montrose	\$3,210,449.07	13,990	\$229.48	\$596.65
Ouray	-	-	-	-
Rio Blanco	\$1,231,455.98	4,998	\$246.39	\$640.61
Routt	\$2,142,362.12	8,519	\$251.48	\$653.85
Saguache	\$548,276.38	4,472	\$122.60	\$318.77
San Miguel	\$68,070.43	310	\$219.58	\$570.91
<b>Total (21 Focal Counties)<sup>b</sup></b>	<b>\$31,427,499.28</b>	<b>137,584</b>	<b>\$228.42</b>	<b>\$593.90</b>

Source: 2017 USDA-NASS Census

<sup>a</sup> If publishing a particular data item would identify an operation (for example, if there is only one producer of a particular commodity in a county), NASS does not publish the information. In such cases, the data are suppressed and shown as "(D)," meaning "withheld to avoid disclosing data for individual operations." A dash represents zero, no data for that particular data item. Source: <https://www.nass.usda.gov/AgCensus/FAQ/2022/index.php>

<sup>b</sup> Totals omit data for Dolores County and Ouray County.

### 4.7.3 Alternative 1

Under alternative 1, gray wolves reintroduced in Colorado would be managed as an experimental population under section 10(j) of the ESA. The section 10(j) rule would specify the allowable take of gray wolves and would include lethal and nonlethal take provisions.

Alternative 1 proposes incorporating the provision in the final rule that permits the management of wolves to address the potential impacts on ungulate populations within the Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands. In this case, the Service and authorized agents would have the ability to use nonlethal and/or lethal measures to manage reintroduced wolves, aligning with the Tribal management objectives on reservation lands. This provision is limited to reservation lands and does not apply to the Brunot Area or lands owned by Tribes outside the reservations.

#### Impact on Outdoor Recreation

The impacts on outdoor recreation under alternative 1 would be similar to the impacts described under the no-action alternative. Under alternative 1, the Service and its authorized agents may manage reintroduced wolves to maintain ungulate populations within Tribal conservation goals. Management of wolves would not be permitted for the purpose of protecting ungulate populations outside of reservation lands, but larger ungulate populations within reservations may have beneficial impacts on ungulate populations and hunting in surrounding areas of the state.

## Impact on Agriculture and Livestock Production

Under alternative 1, the Service and its designated agents would have the greatest management flexibility in managing wolves that would be reintroduced to mitigate impacts from depredation of livestock. The proposed section 10(j) regulation under alternative 1 would include the entire state of Colorado and authorize lethal and nonlethal take to mitigate wolf-livestock conflicts and manage wolves that recurrently predate livestock. Alternative 1 would reduce long-term costs associated with depredation for livestock producers compared to the no-action alternative, but it may not eliminate indirect economic losses (e.g., loss of revenue from livestock injuries, lower weights at birth and during sale property repairs, time).

Lethal wildlife removal measures are frequently viewed as more efficient and cost-effective than nonlethal wildlife conflict mitigation tools for minimizing cattle predation. Limited studies specific to gray wolves or comparable species are available that assess the cost effectiveness of lethal versus nonlethal conflict mitigation tools (McManus et al. 2015). One nonlethal method of managing wolves that prey on livestock is wolf translocation. Compared to lethal removal, the translocation of wolves away from conflict sites showed advantages and disadvantages. In the earliest periods of the State's wolf reintroduction efforts, when promoting the formation of new packs is a high priority, soft releasing and translocating wolf groups may be beneficial ways to reduce homing behavior, although initially more expensive. Such activities may prove useful for reducing conflicts and laying the groundwork for long-term coexistence promotion within communities (Bradley et al. 2005). Livestock protection dogs or guarding dogs are another nonlethal method used to reduce predation on ranches. There is a lack of quantitative data on the exact effectiveness of guarding dogs primarily because research on their effectiveness in deterring predators from killing livestock has primarily relied on testimonial evidence and producer-based reporting (Davidson and Gehring 2010). Studies show effectiveness from 11 percent to 93 percent reduction in livestock depredation from the use of guard dogs (Coppinger et al. 1998). However, the majority of this research focuses on coyote predation on sheep. One consideration for guarding dogs is that, in most cases, the government does not provide financial support for utilizing them. The livestock producer must incur all financial expenditures connected with using guarding dogs (Davidson and Gehring 2010).

There are some examples of costs associated with lethal versus nonlethal removal measures. In 2014 the Washington Department of Fish and Wildlife spent \$53,221 to manage the Huckleberry Wolf Pack depredation of sheep in Stevens County, Washington, using nonlethal and lethal take strategies (Landers 2014). The costs to mitigate the pack's attack on sheep was split almost evenly between nonlethal and lethal actions. However, nonlethal methods were slightly less costly than lethal take methods. The cost of lethal removal of wolves in states such as Idaho and Washington ranged from approximately \$3,000.00 to \$26,700.00 per wolf. In 2021, the Idaho Department of Fish and Game reportedly killed 22 wolves, incurring costs of a little over \$3,000 per wolf (Western Watersheds Project 2021). In the state of Washington, in 2012, Washington Department of Fish and Wildlife spent \$376,000 on wolf management, of which \$76,500 was for lethally removing six wolves (\$12,750 per wolf) from the Wedge Pack in Colville National Forest repeated livestock depredations (Stevens County Cattleman's Association 2012). In 2014, Washington Department of Fish and Wildlife paid \$26,671.00 to remove one wolf lethally, and in 2016, it spent \$135,000 to kill seven gray wolves (\$19,285.61 per wolf) from the Profanity Peak Pack for attacking 15 cattle, which was the most expensive lethal removal since the state adopted its wolf recovery plan.

Livestock producers may need to employ several nonlethal and lethal methods to mitigate wolf predation on their livestock. Since alternative 1 would authorize both lethal and nonlethal take, livestock producers would need to weigh the expenses of deploying various take tactics against the economic loss caused by livestock predation. The no-action alternative would prevent livestock producers from the take of wolves that repeatedly prey on their livestock, potentially becoming more costly to livestock producers than alternative 1, under which producers could employ lethal and nonlethal strategies.

#### **4.7.4 Alternative 2**

Under alternative 2, if there is an existing population of gray wolves in Colorado, the Service would issue a permit under section 10(a)(1)(A) of the ESA for the management of the population outside the section 10(j) experimental population boundary. A section 10(a)(1)(A) permit, like a section 10(j) rule, offers some management flexibility for populations. Within the 10(a)(1)(A) area, wolves would be listed as endangered, and certain nonlethal take would be allowed. However, no lethal take would be allowed in this boundary. The Service would establish the 10(j) experimental population boundary in those areas of the state not encompassed by the section 10(a)(1)(A) permit.

#### **Impact on Outdoor Recreation**

The impacts on outdoor recreation under alternative 2 would be the same as the impacts described under alternative 1.

#### **Impact on Agriculture and Livestock Production**

Under alternative 2, livestock operators within the limited territory of section 10(a)(1)(A) permit would experience impacts similar to those described under the no-action alternative. Ranchers would incur higher direct and indirect costs because they would have fewer take options to manage wolf predation on their livestock. Ranchers outside the 10(a)(1)(A) permit area would have more flexibility in managing conflicts with wolves and impacts in that area would be the same as those described under alternative 1. Like alternative 1, alternative 2 would allow for lethal and/or nonlethal take in most areas of the state except in parts of Jackson County and western Larimer County, where section 10(a)(1)(A) would apply. The 10(a)(1)(A) permit could apply to other areas of the state if the existing population of wolves is found to occupy other areas. Livestock producers in the section 10(a)(1)(A) permit area would only be allowed to use nonlethal forms of take to manage wolf depredation. As a result, these producers may disproportionately incur more direct and indirect costs from wolf depredation than those within the experimental population boundary.

### **4.8 ENVIRONMENTAL JUSTICE**

Sections 4.5, 4.6, and 4.7 assess the potential impacts of the alternatives to big game species, Tribal resources, and socioeconomic resources. The analysis in this section addresses whether the identified potential adverse impacts to these resource areas would be disproportionately borne by the low-income, minority, and Tribal environmental justice communities identified in section 3.6.

#### **4.8.1 Methodology**

Executive Order 12898 charges each federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States” (59 FR 7629 §1-101). A proposed action may result in adverse impacts to the entire population; however, factors that specifically affect minority, low-income, and other populations groups of concern (i.e., environmental justice communities) can result in these adverse impacts being disproportionately high and adverse for environmental justice communities. These factors could include limited access to financial resources, language or cultural barriers, increased exposure to the adverse effects of an action, or lack of inclusion in the planning process.

Environmental justice communities in the statewide study area are identified in section 3.6. Disproportionately high and adverse impacts to these communities are assessed based on the community’s potential exposure to the effects of an alternative. In this case, exposure is determined based on the potential for conflict with wolves that



would require management through take under the section 10(j) rule. Potential exposure is likely to be highest in the 21 focal counties that contain suitable ecological conditions to support gray wolves (see section 3.1 for additional discussion of the factors used to determine the focal counties). Focal counties with identified minority environmental justice communities include Eagle, Garfield, Huerfano, Saguache, and Montezuma. Focal counties with low-income environmental justice communities include Delta, Gunnison, Huerfano, La Plata, Larimer, Mesa, Moffat, Montezuma, Montrose, Rio Blanco, Saguache, and San Miguel. Within these counties and the other focal counties, other population groups of concern, including low-income and minority livestock producers and outfitters and guides, as well as members of American Indian Tribes, have a greater risk of experiencing potentially high and adverse impacts. Therefore, the effects analysis focuses primarily on the potential for disproportionately high and adverse impacts to these population groups of concern. While the focal counties are considered locations where conflicts are most likely to occur, the environmental justice analysis considers the entire statewide study area.

A disproportionately high and adverse impact is identified if an environmental justice community is exposed to potentially adverse effects of an alternative, and these impacts would be greater in severity for the environmental justice community compared to the general population in the reference community (i.e., the state of Colorado). For example, economic losses resulting from an alternative may result in the loss of a greater percentage of a low-income livestock producer's total farm-related income, compared to the percentage of total farm-related income lost for a producer with average or higher than average income. A disproportionately high and adverse impact is declared when the differences in severity are substantial enough to merit agency action such as mitigation. An impact may be considered disproportionately high and adverse without being considered a "significant" impact under NEPA. Based on current NEPA guidance, economic or social impacts of a proposed action are not considered significant unless they are interrelated with impacts to the natural or physical environment (Federal Interagency Working Group on Environmental Justice & NEPA Committee 2016).

The analysis of environmental justice impacts considers potential long-term impacts and assumes that wolves could occur in any county throughout the state but are most likely to occur in the focal counties. This EIS uses a population of 200 wolves as a planning estimate, which is the high-end threshold at which the State would delist the gray wolf and manage the species as a delisted, nongame species (see section 2.4). While environmental justice impacts may occur only as isolated incidents (e.g., one-time predation of livestock), the potential for impacts would occur over the long term; therefore, the impacts discussed in this section are considered to be long-term impacts.

#### **4.8.2 No-Action Alternative**

As noted in section 4.3, populations of elk, deer, and other big game ungulate species could decline below state or Tribal management objectives as a result of the State's reintroduction of wolves. Under the no-action alternative, gray wolves would be managed as an endangered species in Colorado, and the Service and Tribes would not have the ability to take wolves to promote conservation of big game ungulate species on Tribal lands (see section 2.4.2, table 2-1). Impacts to big game ungulate species could be long term and adverse at the local level. However, as noted in section 4.3, elk and deer populations may stabilize over the long term due to natural population fluctuation.

Changes in populations of ungulate species, as well as depredation of livestock, under the no-action alternative could affect Tribal resources. Potential impacts to Tribal resources are discussed in section 4.6 and could include economic costs as a result of livestock depredation and changes in ungulate herd movements or demand for hunting permits; effects to subsistence hunters; and effects to archaeological and historical resources or natural resources of cultural importance. Management of reintroduced wolves under the no-action alternative would not affect osprey, which are protected by the Southern Ute Indian Tribe or have population-level effects on the black

bear, which is honored by the Ute Mountain Ute and Southern Ute Indian Tribes. This alternative may affect archaeological or historical sites and the ability of Ute cultural practitioners to use these sites. Socioeconomic impacts to Tribes under this alternative would be similar to the impacts discussed below and in section 4.7. If wolves are present within the Brunot Area lands or on Tribal reservations, localized impacts could be disproportionately high and adverse for Tribal members, particularly those who rely economically on livestock production or hunting and those who rely on subsistence hunting.

The no-action alternative could also result in socioeconomic impacts to outfitters and guides who make their living through wildlife hunting because demand for hunting may shift to areas of the state where wolves are not present. An economic analysis of wolves in Montana concluded that, “overall, wolves have not had a significant economic effect on elk harvest in the state. Rather, demand for hunting shifted from the southwest region near Yellowstone [National Park] to areas farther away from where wolves were first introduced” (Center for Human-Carnivore Coexistence 2020b; Hazen 2012). The lack of regulatory flexibility for take under this alternative could result in greater long-term, localized impacts to outfitters and guides as a result of the potential for big game ungulate herds to be reduced below state or Tribal population goals, changes in the use of habitat by and movements of big game species, and redistribution of hunting demand to other areas of the state. These localized impacts could be disproportionately high and adverse for low-income and minority individuals and businesses that rely on hunting.

The impacts analysis for socioeconomic resources in section 4.7 notes that of the three alternatives, the no-action alternative would result in the highest commercial costs for ranchers because wolves would be managed as a federally listed endangered species, and take of wolves to mitigate repeated depredation of livestock, with the exception of non-injurious, opportunistic harassment that could be authorized under section 10(a)(1)(A) of the ESA, would be prohibited. Studies have found that livestock mortality caused by wolves is a small economic cost to the livestock production industry as a whole (Center for Human-Carnivore Coexistence 2020a; Muhly and Musiani 2009). In the northern Rocky Mountain region (Idaho, Montana, and Wyoming) between 1987 and 2003, the economic costs of livestock mortality caused by wolves accounted for less than 1 percent of annual gross income from livestock operations in the region. During this period gray wolves were managed as federally listed endangered species in the region (Muhly and Musiani 2009).

While wolf depredation in circumstances when take is prohibited results in a relatively small economic cost to the livestock industry, these costs are unevenly distributed and localized in places where wolves establish territories, and costs to individual producers as a result of depredation may be substantial (Center for Human-Carnivore Coexistence 2020a; Muhly and Musiani 2009). Potential direct and indirect costs to livestock producers that may result from depredation are discussed in section 4.7.2. Individual producers may experience economic costs greater than the average for the industry across Colorado as a result of wolf depredation of livestock and costs associated with implementing nonlethal, non-injurious take strategies. For low-income and minority livestock producers, these costs, as well as indirect economic costs such as those caused by decreased market weights and reduced rate of conception in livestock, could be substantial under the no-action alternative. Therefore, this alternative could result in disproportionately high and adverse impacts to low-income and minority livestock producers, particularly in the focal counties due to the presence of suitable ecological conditions for gray wolves. Under this alternative, these impacts would not be mitigated because reintroduced gray wolves would be managed as an endangered species under the ESA.

### **4.8.3 Alternative 1**

Under the statewide section 10(j) rule, gray wolves that would be reintroduced to Colorado would be managed as an experimental population under the section 10(j) rule. Under alternative 1, the final rule would include the provision allowing take of wolves to mitigate potential impacts to ungulate populations on Southern Ute Indian

Tribe and Ute Mountain Ute Tribe reservation lands. The Service and its designated agents would be able to manage reintroduced wolves using nonlethal and/or lethal take for the purposes of managing big game ungulate species consistent with established Tribal management objectives on reservation lands, if the respective Tribe has determined that wolf interactions are a major driver of population declines. This provision would not apply within the Brunot Area or on lands owned by Tribes outside the reservations, only on reservation lands. Therefore, under alternative 1 across most of the state, impacts on population groups of concern, including Tribes, subsistence hunters, and low-income and minority outfitters and guides would be similar to those described under the no-action alternative. Implementation of the ungulate provision specific to the reservation lands for the Tribes would require the Tribes to incur costs to complete a proposal supporting the need for wolf removal to address ungulate population declines. However, this provision could have a long-term, beneficial effect on big game ungulate species on reservation lands by mitigating the potential for ungulate species to decline below Tribal management objectives as a result of predation by gray wolves.

Under alternative 1, Tribes would be able to conduct wolf management as designated agents of the Service within the experimental population boundary on reservation lands or on those lands under the Tribe's jurisdiction. Tribes would be required to obtain prior approval from the Service before implementing certain management actions as outlined in Chapter 2. Implementation of the section 10(j) rule on reservation lands or lands under a Tribe's jurisdiction would reduce potential impacts if wolves depredated livestock on these lands. While socioeconomic effects on livestock producers still could occur under this alternative, these effects would be mitigated by involving affected Tribes in processes to manage reintroduced wolves in accordance with the section 10(j) rule. Disproportionately high and adverse effects on Tribes could still occur under alternative 1 as a result of potential effects on subsistence hunters and Tribal outfitters and guides; however, implementation of the section 10(j) rule would mitigate potential effects on Tribal livestock producers. With implementation of the provision to allow for the take of wolves impacts ungulates on Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands, disproportionately high and adverse effects on Tribes are not expected under alternative 1.

Disproportionately high and adverse effects could occur for low-income outfitters and guides in local areas, including Tribal members who use the Brunot Area for hunting, based on the factors discussed under the no-action alternative. Under alternative 1, these effects would be similar to the effects described for the no-action alternative.

Under alternative 1, the proposed section 10(j) rule would cover the entire state of Colorado and allow non-injurious, injurious, and lethal take under the conditions specified in table 2-2 to reduce conflicts and manage wolves that repeatedly depredate livestock. Direct costs to livestock producers over the long term resulting from depredation would be lower under this alternative, compared to the no-action alternative; however, implementation of alternative 1 may not fully mitigate against indirect economic losses caused by stresses to livestock (i.e., lower market weights and reduced rate of conception). Livestock producers would also incur costs (i.e., money, time, and labor) for implementing nonlethal take strategies, and these costs may be more substantial for low-income and minority livestock producers. Overall, implementation of alternative 1 would result in a long-term, beneficial impact to low-income and minority livestock producers compared to the no-action alternative. The potential for disproportionately high and adverse impacts to low-income or minority livestock producers would be reduced under this alternative compared to the no-action alternative because livestock producers would be able to implement a range of nonlethal and lethal take strategies to mitigate livestock depredation.

#### **4.8.4 Alternative 2**

Under alternative 2, potential effects to population groups of concern, including Tribal members, subsistence hunters, and low-income and minority outfitters and guides from the potential effects of wolves on ungulate populations would be the same as those described under alternative 1 within the proposed experimental

population boundary, which would cover most of the state. These effects could be disproportionately high and adverse under alternative 2 but could be mitigated in the experimental population area on Tribal reservation lands with the provision for the take of wolves impacting ungulates on reservation lands.

A portion of the state, potentially including most of Jackson County and the western part of Larimer County (areas within Colorado big game management units 161, 6, 7, 16, 17, and 171) would be covered under a section 10(a)(1)(A) permit that the Service would issue to the State of Colorado under alternative 2. The section 10(a)(1)(A) permit would not allow for lethal take of wolves, and effects to population groups of concern, including low-income and minority outfitters and guides, in the 10(a)(1)(A) permit area would be similar to those described under the no-action alternative and could be disproportionately high and adverse. There are no Tribal reservation lands in these areas, so disproportionately high and adverse impacts to Tribes or Tribal members in the 10(a)(1)(A) area are not expected.

Under alternative 2, impacts to low-income and minority livestock producers and Tribal members on Tribal reservation lands in areas within the section 10(j) experimental population boundary would be the same as those described for alternative 1. In areas covered under the section 10(a)(1)(A) permit, only nonlethal take measures, including injurious take and translocation, would be allowed to address depredation on livestock. Several incidents of the existing group of gray wolves in northern Colorado depredating livestock have been documented in Jackson County (Blumhardt 2022). Proactive, nonlethal strategies can reduce the potential for livestock depredation. However, some tactics, such as fladry (i.e., a nonlethal tool designed to protect livestock from predation by creating a visual barrier to wolves) or other physical or psychological barriers, may only be effective temporarily, and there are costs to planning and implementing these strategies. Low-income and minority livestock producers may have fewer financial resources available to implement nonlethal take strategies or may be less likely to use government programs to manage depredation risks. Within the section 10(a)(1)(A) permit boundary, impacts to low-income and minority livestock producers would be slightly reduced compared to the no-action alternative; however, these impacts may still be disproportionately high and adverse due to the cost of implementing nonlethal take measures.

## **4.9 CUMULATIVE IMPACTS AND OTHER CONSIDERATIONS**

### **4.9.1 Cumulative Impacts**

CEQ regulations stipulate that the cumulative effects analysis within an EIS should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions” (40 CFR 1508.7). CEQ interprets this regulation as referring only to the cumulative impact of the direct and indirect effects of the proposed action and its alternatives when added to the aggregate effects of past, present, and reasonably foreseeable future actions (CEQ 2005).

Cumulative impacts were determined by combining the impacts of each alternative with the impacts of other past, present, and reasonably foreseeable future actions. In other words, the proposed action by itself may not result in significant impacts. The cumulative impacts analysis asks the question, when the impacts of the proposed action are considered with the impacts of other actions in the area (the cumulative impact scenario), would there be significant impacts? Therefore, it was necessary to identify other past, ongoing, or reasonably foreseeable future projects and plans within the area of analysis, and if applicable, the surrounding region. Past actions are those that have occurred or have been occurring related to the gray wolf, and reasonably foreseeable future projects are those that are likely to occur within the life of the plan. Following CEQ guidance, past actions were included, “to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency

proposal for the actions and its alternatives may have a continuing, additive, and significant relationship to those effects” (CEQ 2005).

Relevant past, present, and reasonably foreseeable future actions that in combination with the proposed action have the potential for cumulative impacts are regulatory actions and reintroduction efforts related to wolf species in Colorado and the surrounding region. Actions, and a description of those actions that have been included in the cumulative impacts analysis are described in the following section. Other types of actions, including construction, transportation, energy and mineral extraction, and other development projects, have not been included in the analysis. The proposed action, as a regulatory action, would not have the potential to cause adverse cumulative impacts to the resources analyzed in this EIS with these types of actions. For instance, the State Plan to reintroduce and manage gray wolves in Colorado might result in cumulative effects to an elk population in combination with a proposed development project because of the added pressures on that population from increased predation and loss of habitat. However, take of individual wolves by the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe to mitigate predation impacts to elk populations would not contribute to adverse cumulative effects on that population.

The cumulative impact analysis used the following four steps:

- Step 1 — Identify Resources Affected

Fully identify resources affected by any of the alternatives. These include the resources addressed as impact topics in Chapters 3 and 4 (this chapter) of this document.

- Step 2 — Set Boundaries

Identify an appropriate spatial and temporal boundary for each resource. The temporal boundaries generally extend from when wolves were extirpated in Colorado through the life of the proposed action (limited to those future actions where impacts could be reasonably predicted). The spatial boundary may vary depending on the resource analyzed and the area affected by other past, present, and reasonably foreseeable actions. In many instances, the spatial boundary for the cumulative impacts analyzed below differ from the boundary analyzed in the scope of the EIS, going beyond Colorado. The USEPA’s *Consideration of Cumulative Impacts in EPA Review of NEPA Documents* states that “Generally, the scope of analysis will be broader than the scope of analysis used in assessing direct or indirect effects” (USEPA 1999). The spatial and temporal boundaries for each resource area are defined below.

- Step 3 — Identify Cumulative Action Scenario

Determine which past, present, and reasonably foreseeable future actions to include for each resource. Reasonably foreseeable future actions include those federal and non-federal activities not yet undertaken, but sufficiently likely to occur, that a reasonable official would take such activities into account in reaching a decision. These activities include, but are not limited to, activities for which there are existing decisions, funding, or proposals identified. Reasonably foreseeable future actions do not include those actions that are highly speculative or indefinite (43 CFR 46.30).

- Step 4 — Cumulative Impact Analysis

Assess impacts of these other actions plus impacts of each alternative, to arrive at the total cumulative impact of each alternative and each alternatives contribution. This analysis is included below. For this specific effort, the analysis below focuses on the Preferred Alternative, alternative 1. Generally, the differences in impacts between the two action alternatives evaluated in this EIS are not to an extent that the overall cumulative impact conclusions would be different. Conditions under the no-action alternative are equivalent to the State of Colorado’s wolf reintroduction effort, which is incorporated in the

cumulative impacts analysis as a separate action. Regardless of the alternative chosen, taking, or not taking a regulatory action would constitute a small part of the overall cumulative impact.

The analysis of cumulative impacts focuses on the resource areas of biological resources (gray wolf, species of special concern, and other species), ecosystem dynamics, Tribal resources, socioeconomics, and environmental justice. The analysis of cumulative impacts is descriptive rather than technical or analytical; this scale and scope is appropriate based on the proposed action being a relatively narrow in scope for which no significant adverse impacts are identified in any resource area.

The discussion of cumulative impacts in the sections below follows a different organization than that of the direct and indirect impact analyses earlier in this chapter. The following section first identifies the other past, present, and reasonably foreseeable future actions included in the cumulative impact analysis and briefly describes the actions on which the cumulative impact analysis is based. Following this description of the past, present, and reasonably foreseeable future actions, the cumulative impacts analysis in section 4.9.2 for each resource is presented. Under each of the resources analyzed, the spatial and temporal boundaries for the analysis are defined. Following this definition, the impact of each past, present and reasonably foreseeable future action is described. Once these individual actions are described, the impact of all of these actions is considered with the impact of the proposed action to describe the overall cumulative impact. This analysis is presented in the following subsections:

- *Spatial and Temporal Boundaries* identifies the boundaries for assessing cumulative impacts to that resource.
- *Impacts from the State Plan* defines the impacts to a resource that are expected to result from the State's reintroduction of gray wolves. These impacts are identified separately to assist decision-makers in understanding this action's contribution to cumulative impacts on a resource.
- *Impacts from Mexican Wolf Recovery* defines the impacts to a resource that are expected to result from the recovery of Mexican wolves in New Mexico and Arizona to illustrate this action's contribution to cumulative impacts.
- *Impacts from the Proposed Action* are summarized for the same reason, to illustrate the proposed action's contribution to cumulative impacts under the action alternatives.
- The *Cumulative Impact* subsection for each resource area analyzes the cumulative impacts to a resource expected to result from implementation of the proposed action (either of the action alternatives) in combination with the other past, present, and reasonably foreseeable actions identified below. The cumulative impact analysis considers the effects of each action and interactions between all of these actions.

## **Past, Present, and Reasonably Foreseeable Future Actions**

### *The State of Colorado Gray Wolf Reintroduction*

Proposition 114, now Colorado Revised Statute 33-2-105.8, which directs the CPW Commission to take the steps necessary to begin reintroductions of gray wolves to a portion of the species' historical range in Colorado by December 31, 2023, passed on November 3, 2020. The State Plan, approved by the CPW Commission in May 2023, details plans for the State's reintroduction effort, which CPW would undertake in cooperation with federal agencies; potentially affected Tribes; and the states of Idaho, Montana, Oregon, Washington, and/or Wyoming where wild wolves would be captured and transferred to Colorado via agreement. While the Service would not be part of this agreement, it would provide the regulatory mechanism, a 10(a)(1)(A) permit, for the relocation of wolves back to Colorado. The plan states that wolf reintroduction efforts would require the transfer of about 30 to 50 wolves over a 3- to 5-year period from the northern Rocky Mountain states, with assistance from other state wildlife management agencies. Based on the Technical Working Group recommendations, CPW would aim to

capture 10 to 15 wild wolves annually from several different packs over the course of 3 to 5 years by trapping, darting, or net gunning in the fall and winter. These captures may be done by agency staff, contractors, or private trappers. The total number of wolves relocated in any year and in total would depend on capture success, continued participation by the cooperating states, and the degree to which relocated animals remain in Colorado and survive. Post-release monitoring would occur and use GPS collars to inform managers on survival and dispersal, as well as inform future release protocols.

After the release of 30 to 50 animals over the 3-to 5-year timeframe, active reintroduction would stop, and post-release monitoring would inform State managers if the effort to establish a self-sustaining wolf population in Colorado has been successful. The following established set of benchmarks would be used to evaluate the short-term success of wolf reintroduction efforts:

- Reintroduced wolves demonstrate a high rate of survival in the first six months after release;
- Released wolves demonstrate low mortality rates over the initial two to three years post-release;
- Wolves remain in Colorado;
- Reintroduced wolves successfully form pairs and reproduce, establishing packs; and
- Wolves born in Colorado survive and also successfully reproduce.

If parameters are measured that indicate a growing population that no longer needs supplemental active reintroductions and the wolf population demonstrates a positive growth rate from natural reproduction, the wolf population would be managed to grow naturally toward recovery levels as stated in Chapter 4 of the State Plan. If population growth is stable or negative, or a high rate of mortality is documented, active augmentation would be reinitiated (after evaluating what led to the initial unsuccessful result).

The State Plan proposes management of wolves based on a phased approach, based on the number of animals present in the state. There are three phases of management with wolves listed as State endangered in phase 1, State threatened in phase 2, and State delisted in phase 3. Throughout these phases the State will focus on using “impact-based” management within an adaptive management framework that would allow the State the maximum flexibility to manage wolves while learning how they affect Colorado’s ecosystems. Table 3 in the State Plan details a range of management tools that could be used in impact-based management, including detailing proposed compensation for livestock producers that experience wolf depredation of livestock.

### *Mexican Wolf Recovery*

The Mexican wolf, a subspecies of gray wolf, evolved in the high-elevation mountains of Mexico and small island mountain habitats of the desert southwest; mostly separated from other wolf subspecies to the north by fragmented habitat and discontinuous prey distribution (Heffelfinger et al. 2017a,b). The Mexican wolf is listed as an endangered species protected by the ESA. In 2015, the Service changed the status of the Mexican wolf from being listed together with all other subspecies of gray wolf to being listed as endangered as a separate entity under the ESA. The separate listing of the Mexican wolf is supported by all genetic (Vila et al. 1999; vonHoldt et al. 2011) and physical morphometric analyses conducted (Bogan and Mehlhop 1983; Hoffmeister 1986; Nowak 1995). In the United States, the Service is the federal agency responsible for the recovery of the Mexican wolf. A central focus of recovery efforts for the Mexican wolf has been the reintroduction of the Mexican wolf to the wild from captivity due to the extirpation of the Mexican wolf in the wild prior to ESA protection.

Historically, Mexican wolves were associated with montane woodlands characterized by sparsely to densely forested mountainous terrain and adjacent grasslands in habitats found at elevations of 4,500 to 5,000 feet. Mexican wolves were known to occupy habitats ranging from foothills characterized by evergreen oaks (*Quercus* spp.) or pinyon (*Pinus edulis*) and juniper (*Juniperus* spp.) to higher elevation pine (*Pinus* spp.) and mixed conifer

forests. Factors making these habitats attractive to Mexican wolves likely included prey and water availability. White-tailed deer and mule deer were believed to be the primary sources of prey (Bailey 1931; Leopold 1959; Bednarz 1988), and Mexican wolves may have consumed more vegetative material and smaller animals than gray wolves in other areas, similar to coyotes in southern latitudes (Hidalgo-Mihart et al. 2001). Currently, elk are the primary prey of Mexican wolves, and the difference between historical versus current prey preference in the United States is likely due to the lack of elk in large portions of historical Mexican wolf range.

Mexican wolf historical range (Nelson and Goldman 1929; Young and Goldman 1944; Nowak 1979, 1995, 2003), is supported by best available science on ecological relationships, physiography, wolf morphology, and the principles of population genetics (Heffelfinger et al. 2017a; Martinez-Meyer et al. 2021). The northern boundary of Mexican wolf probable historical range was previously considered to extend just over the present-day border between Mexico and the United States (Heffelfinger et al. 2017a). An expanded Mexican wolf probable historical range map developed by Parsons (1996) added a 200-mile northward extension of the core historical range and was adopted and included in the 1996 Final EIS (USFWS 1996) prior to the release of the first Mexican wolves in the United States. The Service acknowledges that intergradation zones between Mexican wolves and other gray wolf populations likely occurred in central Arizona and New Mexico (Bogan and Mehlhop 1983; Heffelfinger et al. 2017a) as reflected in the expanded historical range map developed by Parsons (1996). The Service continues to recognize the concordance in the scientific literature depicting the Sierra Madre of Mexico and southern Arizona and New Mexico as Mexican wolf core historical range and will continue to recognize the expanded range as per Parsons (1996) that extends into central New Mexico and Arizona (USFWS 1996).

Mexican wolf recovery in the United States is currently occurring in areas approximately 200 miles north of the Mexican wolf core historical range (USFWS 1996). In 2015, the Service revised the Mexican wolf 10(j) area and expanded the area of Mexican wolf recovery to include all of Arizona and New Mexico south of Interstate 40 to the Mexican border (USFWS 2015). The Service is conducting the recovery of the Mexican wolf under section 10(j) of the ESA and regulations at 50 CFR 10 17.81. The Service began reintroducing captive-bred Mexican wolves into the Mexican Wolf Experimental Population Area (MWEPA) in Arizona and New Mexico in 1998 pursuant to its January 12, 1998, rule (63 FR 1752; see figure 41).

In 2022, the Service finalized the *Mexican Wolf Recovery Plan, Second Revision* (revised recovery plan; USFWS 2022g) in coordination with federal agencies in Mexico and state, federal, and Tribal agencies in the United States. Participation from independent scientists and academic institutions was central to the development of the revised recovery plan to ensure representation of the best available science. The revised recovery plan specifies that the recovery goal for the species is “to conserve and protect the Mexican wolf and its habitat so that its long-term survival is secured, populations are capable of enduring threats, and it can be removed from the list of threatened and endangered species” (USFWS 2022g). Recovery objectives for the Mexican wolf as identified in the plan are as follows:

1. Increase the size of two Mexican wolf populations;
2. Improve gene diversity and maintain the health of Mexican wolves;
3. Ensure adequate habitat availability to support viable Mexican wolf populations;
4. Maintain the Mexican Wolf Species Survival Plan captive breeding program to improve the status of wild populations;
5. Promote Mexican wolf conservation through education and outreach programs; and
6. Ensure recovery success.



The revised recovery plan provides a strategy, criteria, and actions to recover the Mexican wolf and solidifies the significant role of the MWEPA in the recovery of the Mexican wolf. The revised recovery plan clarifies the specific contribution needed from the MWEPA for the rangewide recovery of the Mexican wolf by establishing demographic, genetic, and regulatory recovery criteria for a population of Mexican wolves in the United States. The revised recovery plan also calls for a second population of Mexican wolves in Mexico and provides criteria for that population (USFWS 2022g).

The status of the Mexican wolf population in the MWEPA has improved under the 2015 10(j) rule. The end of year census for 2022 generated a minimum abundance of 241 Mexican wolves in the wild (136 in New Mexico and 105 in Arizona). This was a 23 percent increase in the population from the 2021 end of year census (USFWS 2023). Mexican wolves have expanded their range under the 2015 10(j) rule, from 7,255 square miles (18,790 square kilometers) in 2014 to 19,495 square miles (50,492 square kilometers) in 2020. Based on this numeric and geographic expansion, the Service considers the MWEPA population to be stable and growing steadily, which is consistent with the ongoing demographic recovery needs of the Mexican wolf. Illegal killing of Mexican wolves continues to occur in the MWEPA, but population growth has been robust in recent years despite these losses. The Service, as well as state wildlife agencies in New Mexico and Arizona, continues to investigate illegal killings, increase the presence of law enforcement, and conduct community outreach and education to address this problem (USFWS 2022h).

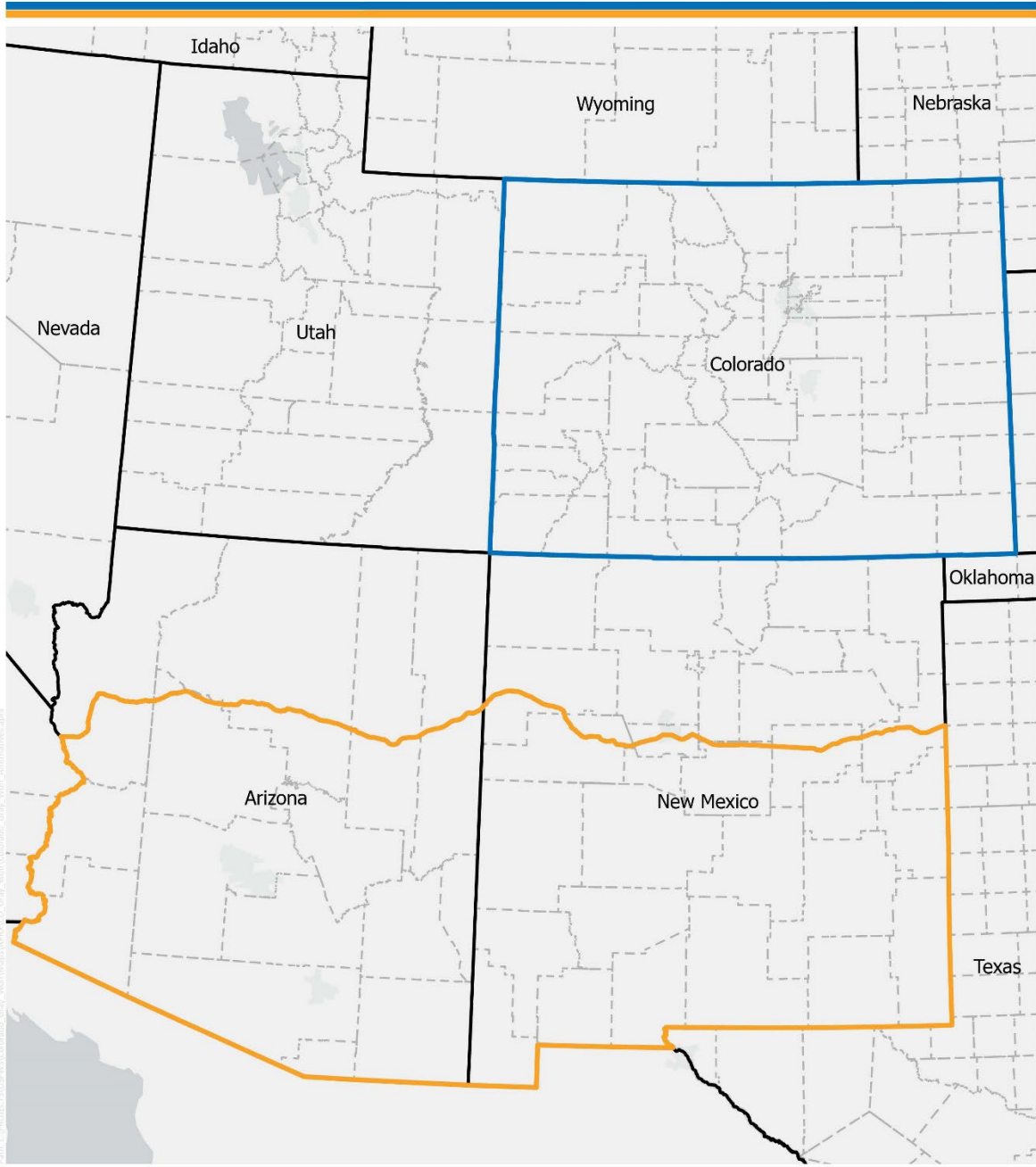
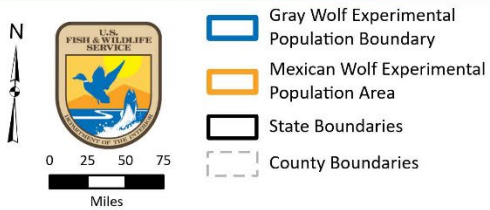


Photo: USFWS/CC BY/ND/CO/Colorado, Gray Wolf/Mexican Wolf, CO, Gray Wolf/Colorado, Gray Wolf, Altamirano.com



**Figure 4-1**  
 Gray Wolf Experimental Population  
 Boundary and Mexican Wolf  
 Experimental Population Area  
 CO, NM, AZ

**Colorado Gray Wolf 10(j) Rulemaking EIS**

## 4.9.2 Cumulative Impacts Analysis

### Biological Resources (Gray Wolves, Special Status Species and Other Wildlife)

#### *Spatial and Temporal Boundaries*

The spatial boundary for cumulative impacts to biological resources (including gray wolves, special status species, and other wildlife) includes Colorado and neighboring states, specifically Arizona and New Mexico, which encompass the MWEPA. The temporal boundary extends from the beginning of the Service's Mexican wolf recovery effort in 1998 through the life of the proposed action.

#### *Impacts from the State Plan*

The State of Colorado's reintroduction of the gray wolf would benefit the species, which was extirpated from Colorado by the mid-1940s by government-sponsored predator control programs (Ditmer et al. 2022). Reintroducing the gray wolf, a federally endangered species in 44 states, into a portion of its native historical range in Colorado would promote recovery by increasing connectivity across different regions that were historically and are currently occupied by wolves, resulting in long-term, beneficial impacts to the species. Reintroducing gray wolves in Colorado could also affect other wildlife, including other federally listed species, state-listed species, and other SGCN. Wolves are apex predators, meaning that they occupy the top trophic level in food webs. The reintroduction of wolves could affect other species in the state directly, through predation and competition, or indirectly through behavioral changes. Effects could be both adverse and beneficial.

The preferred donor population for the proposed reintroduction of gray wolves to Colorado is the delisted northern Rocky Mountains population, found in Idaho, Montana, eastern Oregon, eastern Washington, and Wyoming. Gray wolves in these states are managed by State fish and wildlife agencies and Tribes. These wolves are an appropriate source for the Colorado reintroduction because of similarities in habitat and preferred prey; at least one member of the current pack in Colorado dispersed from the northern Rocky Mountains population; and the northern Rocky Mountains population reached numerical, spatial, and temporal recovery goals by the end of 2002 (USFWS 2020d). The northern Rocky Mountains wolf population continues to demonstrate stable to slightly increasing demographic trends, with an estimated 1,337 wolves in Idaho as of August 2022 (Idaho Department of Fish and Game 2023) and an estimated 1,087 gray wolves in Montana at the end of the 2022 (Parks et al. 2023). In addition, the most recent year-end minimum counts for 2022 indicated at least 338 gray wolves in Wyoming, 216 wolves in Washington, 178 wolves in Oregon, and 18 in California (California Department of Fish and Wildlife 2022; Oregon DFW 2023; Washington DFW et al. 2023; Wyoming GFD et al. 2023). Further, the northern Rocky Mountains population is part of a larger metapopulation of wolves that encompasses all of western Canada (USFWS 2020d). Given the demonstrated resilience and recovery trajectory of the northern Rocky Mountains population and limited number of animals that would be collected, negligible negative impacts on the donor population are expected.

If donor wolves from the western United States are not available, another possible source of gray wolves for the Colorado reintroduction may be the wolf population in the western Great Lake states of Michigan, Minnesota, or Wisconsin. Wolves in Minnesota are currently listed as threatened under the ESA, while wolves in Michigan and Wisconsin are listed as endangered. The western Great Lakes region has nearly 4,400 wolves (Erb and Humpal 2021; Michigan DNR 2022; Wisconsin DNR 2022) and are part of a larger metapopulation of wolves that extends into central and eastern Canada. As a result, the capture, transport, and reintroduction to Colorado of approximately 30 to 45 gray wolves over a 2- to 3-year period would have little to no effect on the wolf population in Michigan, Minnesota, or Wisconsin.

Wolves are native to Colorado and their reintroduction could benefit some species, such as small mammals and birds, by indirectly reducing predation pressure through competition or interactions with other predators, such as

coyotes (Smith et al. 2003; Ripple and Beschta 2012). Wolves may compete with other predators for food resources, hunting territory or home range, or other limiting resources. In the presence of wolves, other predators may change their behaviors (e.g., prey selection and hunting ranges) to avoid areas where wolves are present, as was observed in mountain lions following the reintroduction of wolves at Yellowstone National Park (Bartnick et al. 2013). However, because wolves are also predators, their reintroduction could place additional predation pressure on some species, especially ungulates such as elk, deer, and moose. Wolf presence may or may not influence changes in ungulate population dynamics. Prey populations naturally vary through time in response to environmental factors (e.g., severe winters, natural mortality), predation pressure by carnivores (in Colorado, wolves would compete primarily with black bears and mountain lions), hunter harvest pressure, and habitat conditions. Ungulate populations could experience localized population declines in the short term due to increased predation pressure from wolves. However, it is likely that populations would stabilize over the long term, as was observed at Yellowstone National Park in the years following gray wolf reintroduction (Smith et al. 2003), so long-term, adverse effects are not anticipated. In parts of Europe and Asia, wolves have been reported to prey on wild horses (Van Duyne et al. 2009; Dorj and Namkhai 2013; López-Bao et al. 2013). However, wolves tend to target wild horses when prey resources (e.g., smaller ungulates) are depleted (Van Duyne et al. 2009). Because elk and deer, the preferred prey species for gray wolves in the northern Rocky Mountains, are abundant in Colorado, impacts on wild horses are not expected.

Reintroducing gray wolves in Colorado could place additional pressure on some federally listed species, including Gunnison sage-grouse and Canada lynx, through predation and competition. However, the TWG concluded in its final recommendations to CPW that, “The presence of wolves will not have an impact on populations of threatened and endangered species in Colorado, specifically lynx and Gunnison sage grouse” (TWG 2022c). Cooperating agencies in the development of this EIS expressed concern that gray wolves reintroduced to Colorado under the State Plan could adversely affect Mexican wolf populations in neighboring Arizona and New Mexico if gray wolves disperse outside Colorado. Potential effects of the State Plan on these species are described below.

Reintroducing gray wolves in Colorado could place additional predation pressure on ground-nesting birds including the federally threatened Gunnison sage-grouse. Sage-grouse populations in Colorado (both Gunnison sage-grouse and greater sage-grouse) have declined sharply since 1980 in the absence of wolves. The main drivers of population decline are believed to be habitat loss, fragmentation, and degradation (Braun 1998; USFWS 2019). As noted in the Service’s 2019 Species Status Assessment Report for Gunnison Sage-grouse (USFWS 2019), predation is a cause of mortality of young age classes and adults on leks, on nests, and during winter. Common predators include raptors, ravens, foxes, coyotes, ground squirrels, weasels, and other birds and small mammals (Young et al. 2015a; USFWS 2019). However, Gunnison sage-grouse have co-evolved with a variety of predators, and their cryptic plumage and behavioral adaptations have allowed them to persist despite this mortality factor (Schroeder et al. 1999; USFWS 2019). Although predation could have localized impacts, it has not been documented as a primary driver of Gunnison sage-grouse population decline and is not considered to be a barrier to recovery success (Gunnison Sage-grouse Rangewide Steering Committee 2005; USFWS 2020c). Gray wolves are not known to target Gunnison sage-grouse as prey.

Gray wolves may compete with Canada lynx, which is also a native predator in Colorado, for prey and hunting territory and are also considered to be potential predators of lynx (USFWS 2017b). Although empirical data are lacking and would be difficult to acquire, the lynx’s physical adaptations are thought to provide a seasonal advantage over potential terrestrial competitors and predators that generally have higher foot-loading, causing them to sink into the snow more than lynx (Buskirk et al. 2000; USFWS 2017b). The ranges of wolves and lynx overlap considerably worldwide; however, interactions between the two species have rarely been documented, making it difficult to predict the effects of wolf reintroduction (Ballard et al. 2003). Although Canada lynx are

rare at Yellowstone National Park, this is not believed to be related to the reintroduction of wolves, but rather a reflection of prey abundance and distribution (Murphy et al. 2006; Hodges et al. 2009). Canada lynx are obligate predators of snowshoe hare. Thus, lynx population and distribution are strongly correlated with snowshoe hare abundance throughout their range. Snowshoe hares are rare at Yellowstone National Park, and their distribution is patchy based on the limited distribution of suitable habitat in the park, which is reflected in the park's lynx population (Murphy et al. 2006; Hodges et al. 2009). The Service listed the Canada Lynx Contiguous U.S. Distinct Population Segment, which includes Colorado, as threatened in 2000 because of the potential for impacts to lynx habitat conditions and the availability of snowshoe hare and other prey populations (USFWS 2017a). The extent to which predation and competition may influence lynx populations in the Distinct Population Segment remains uncertain (USFWS 2017b). However, predation and competition have not been documented as driving factors for lynx population decline and are not considered barriers to recovery success (USFWS 2017a).

Establishing an experimental population of northern gray wolves in Colorado would increase the connectivity of northern gray wolves to Mexican wolves if the ranges of both species expand and eventually overlap. Gray wolves reintroduced to Colorado under the State Plan could disperse outside Colorado, potentially resulting in adverse impacts to endangered Mexican wolves from competition or interbreeding (hybridization) (Odell et al. 2018). Mexican wolves have been reintroduced to Arizona and New Mexico. If the ranges of the species overlap, gray wolves would likely dominate Mexican wolves, which are physically smaller, and gray wolves (and their hybrid offspring) would occupy breeding positions, particularly in areas where elk is the primary prey (MacNulty et al. 2009; Odell et al. 2018). Interbreeding between gray wolves and Mexican wolves could result in genetic swamping (gene flow from gray wolves to Mexican wolves, resulting in hybridization) of the Mexican wolf population, potentially threatening the genetic integrity of the Mexican wolf population (Odell et al. 2018).

Although wolves are noted for long-range movements and genetic interchange among distant populations, even as far as 678 miles (Wabakken et al. 2007), few wolves originating from the north have been documented in northern Arizona and New Mexico (Jimenez et al. 2017). To date, at least two gray wolves have dispersed into northern Arizona and New Mexico from more northerly breeding populations. In October 2014, a 2-year-old female wolf collared near Cody, Wyoming, was documented on the Kaibab Plateau in northern Arizona. In July 2008, a wolf with black pelage (fur) was documented near the Vermejo Park Ranch in northern New Mexico that was assumed to be a wolf from the northern Rocky Mountains since no black-phase (black-furred) Mexican wolf has ever been documented. The Vermejo Park Ranch and surrounding public land has been proposed as a Mexican wolf recovery area (Odell et al. 2018).

If gray wolf reintroduction efforts in Colorado are successful, higher numbers of breeding pairs in Colorado would increase the potential for dispersal outside the state. The wild Mexican wolf population in the United States is approximately 350 miles from the proposed population release sites in Colorado, a distance that is within the known travel distance for wolves (Jimenez et al. 2017).

Maintaining genetic integrity has been a critical challenge for other endangered canids, notably the eastern red wolf (*C. rufus*, Kelly et al. 1999). The loss of genetic integrity of Mexican wolves by hybridization with northern wolves would impede recovery efforts of the separately listed Mexican wolf. Best available information suggests the risk of loss of genetic integrity is particularly high during early phases of Mexican wolf recovery, when the number of wolves on the ground in recovery areas is relatively small. Dispersing gray wolves will either find a mate and form a new pack (Jimenez et al. 2017) or are adopted into existing packs (Boyd et al. 1995) and can assume vacant breeding positions (Fritts and Mech 1981; Stahler et al. 2002; vonHoldt et al. 2008; Sparkman et al. 2012), usurp an existing breeder (Messier 1985; vonHoldt et al. 2008), or bide their time to ascend to breeding positions (vonHoldt et al. 2008). Body size is an important determinant of individual fitness and a driving evolutionary force (Baker et al. 2015). Stahler et al. (2013) demonstrated that body mass of breeders was the main determinant of litter size and survival of the litter. Hunting success is also tied directly to larger body size, which

has obvious fitness advantages (MacNulty et al. 2009). This physical superiority offers an advantage for northern wolves obtaining and defending breeding positions in the small Mexican wolf population.

In addition to a body size differential, several demographic characteristics of the current wild Mexican wolf populations make them vulnerable to loss of genetic integrity by admixture of northern wolves. When wolf populations have high rates of mortality, the social turmoil results in a higher rate of acceptance of wolves dispersing from other packs (Ballard et al. 1987; Mech and Boitani 2003). Ballard et al. (1987) noted that 21 percent of dispersing wolves were accepted into other packs. Immigrating wolves are also more readily adopted by smaller packs where additional individuals, especially males, increase hunting efficiency and survival of existing pack members (Fritts and Mech 1981; Ballard et al. 1987; Cassidy et al. 2015). The wild U.S. population of Mexican wolves has consistently maintained a relatively small pack size (mean = 4.1, 1998–2016, USFWS 2017c). At the end of the last published reporting period (December 31, 2021), mean pack size was 4.3 wolves (USFWS 2022f). This suggests that Mexican wolves may more readily accept immigrating wolves from the north. Inbreeding avoidance in wolves has been well-documented, where wolves more readily mate with unrelated wolves (vonHoldt et al. 2008; Geffen et al. 2011; Sparkman et al. 2012). The current wild populations of Mexican wolves have inbreeding levels higher than most wolf populations (USFWS 2017c), which means a new wolf immigrant, unrelated to all Mexican wolves, would have a disproportionately high probability of attaining a breeding position (vonHoldt et al. 2008; Geffen et al. 2011; Åkesson et al. 2016).

Potential impacts of the State Plan on Mexican wolves depend on assumptions of dispersal of gray and Mexican wolves, gray wolf reintroduction success and method in Colorado, the ability to track wolves in both populations, growth rates of both populations, and management strategies that are implemented to keep gray and Mexican wolf populations separate. The State of Colorado released its final plan (State Plan) on May 3, 2023; the plan states that release sites of reintroduced wolves would be located a minimum of 60 miles from the borders of Wyoming, Utah, New Mexico, and sovereign Tribal lands in southwest Colorado to reduce the risk of immediate post-release long-distance dispersals (CPW 2023a), which has been documented elsewhere (Fritts et al. 2001). However, because of uncertainties related to wolf dispersal, it is difficult to determine with any degree of certainty the timing and extent of future dispersal contact that may occur between gray wolves and Mexican wolves. Both male and female wolves have been recorded dispersing in all directions, in all seasons, and over various distances (Jimenez et al. 2017).

To support Mexican wolf recovery, the Service is working with CPW and neighboring states to address management of wolves should the wolves expand outside Colorado toward the range of the Mexican wolf. Any take of gray wolves that expand outside Colorado will be addressed through a 10(a)(1)(A) permit in support of an memorandum of understanding between the neighboring states and the State of Colorado. The Service will be a signatory to this memorandum of understanding. These efforts are part of the Mexican wolf recovery that will minimize interactions and protect the genetic integrity of Mexican wolves. The Service's simultaneous issuance of a 10(a)(1)(A) permit to be held by the Service is a separate action, authorizing state, federal, and Tribal partners to assist in the capture and return of wolves originating from the Colorado experimental population. (See section 1.7.1).

#### *Impacts from Mexican Wolf Recovery*

The reintroduction of the Mexican wolf would result in direct beneficial impacts to the Mexican wolf population, consistent with the species recovery goal of the revised recovery plan (USFWS 2022g). As described above, if the ranges of gray wolves and Mexican wolves expanded and eventually overlapped, the Mexican wolf population could be adversely affected by interspecific competition and hybridization (Odell et al. 2018). Mexican wolf recovery has been limited to the species' historical range, which includes portions of Arizona and New Mexico. Colorado is outside this historical range. If Mexican wolves disperse northward of their historical range, or if gray wolves disperse southward, competition or interbreeding could occur. However, the Service will work with states

to minimize impacts to Mexican wolf recovery, including federal permitting mechanisms or other tools. Therefore, adverse impacts to the Mexican wolf population are not expected.

The 2022 *Final Supplemental EIS for the Proposed Revision to the Regulations for the Nonessential Experimental Population of the Mexican Wolf* reports that increased predation pressure from Mexican wolves could adversely affect ungulate populations but finds that these impacts would be less than significant. The 2022 EIS reports at the time of publication that there were no data suggesting that Mexican wolves were currently having a significant or observable negative impact on prey populations (USFWS 2022h); therefore, it is expected that such impacts may occur at larger Mexican wolf population sizes and higher wolf densities than the current situation. The 2022 EIS did not evaluate effects to other wildlife including other federally or state-listed species.

#### *Impacts from the Proposed Action*

Under the proposed action, gray wolves that are reintroduced to Colorado would be designated across the entire state of Colorado as an experimental population under section 10(j) of the ESA. If the population is designated as nonessential, take prohibitions and consultation requirements under the ESA would be relaxed, such that allowable take would include non-injurious, nonlethal conflict minimization practices, potentially injurious hazing techniques, translocation, and lethal take. Alternative 1 could result in adverse impacts to individual wolves through regulated take and could delay recovery in the short term but is not expected to hinder recovery or have adverse population-level effects in the long term. The management approach would support wolf reintroduction goals while resolving conflicts when and where they occur.

Allowing nonlethal and lethal take of wolves in limited circumstances as proposed under alternatives 1 and 2 is not expected to negatively affect gray wolf habitat and connectivity outside Colorado because there would continue to be natural emigration and immigration from packs in the northern Rockies. It is likely that individual wolves from adjacent populations would continue to disperse into Colorado, where they would be managed under the regulations of section 10(j). Some wolves may naturally disperse out of Colorado to states where they may or may not remain federally listed as an endangered species, depending on the listing status of the state to which they disperse. However, given the amount of ecologically suitable habitat and prey availability in Colorado, ongoing management actions (lethal and nonlethal) under alternative 1 are not expected to have population-level impacts in the long term.

Management flexibility for wolves that would be reintroduced to Colorado under the proposed action, which includes the use of a section 10(j) rule, would not include provisions for the take of wolves for the purposes of protecting or managing species of special concern. As such, there is potential that the reintroduction of wolves could affect biological resources including other wildlife species of special concern. However, the proposed action is not likely to adversely affect species of special concern because substantial population declines of species of special concern have not been documented as a result of previous wolf reintroductions elsewhere in North America. The Service would work with states to minimize impacts to Mexican wolf recovery, including federal permitting mechanisms or other tools. To minimize interactions and protect Mexican wolf genetic integrity, the Service would simultaneously issue a 10(a)(1)(A) permit to be held by the Service as a separate action, authorizing state, federal, and Tribal partners to assist in the capture and return of wolves originating from the Colorado experimental population. As noted in Chapter 1, this action is outside the scope of the EIS, but was considered in the analysis of cumulative impacts.

Ungulate populations could decline in response to unmanaged predation and other pressures as a result of wolf reintroduction. Under alternatives 1 and 2, the final rule would include the provision allowing take of wolves to mitigate potential impacts to ungulate populations on Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands. The Service and its designated agents would be able to manage reintroduced wolves using nonlethal and/or lethal take for the purposes of managing big game ungulate species consistent with established

Tribal management objectives on reservation lands, if the respective Tribe has determined that wolf interactions are a major driver of population declines. Outside reservation lands, there could be short- or long-term, adverse impacts to prey populations because the Service and its designated agents would not have the ability to manage wolves for the purposes of managing other wildlife populations for conservation, and declines could result in ungulate populations stabilizing below management objectives in the short and/or long term. However, it is possible that no adverse effects would occur because although elk and deer populations may decline in the short term at the local level in response to wolf predation, it is likely these populations would stabilize at the population objectives over the long term (due to natural fluctuations), as was observed at Yellowstone National Park in the years following gray wolf reintroduction (Smith et al. 2003).

#### *Cumulative Impact*

When the impacts of the proposed action are combined with the impacts of other past, present, and reasonably foreseeable future actions, direct and indirect impacts on biological resources would be mostly beneficial. Wolves may reduce predation pressure on some prey species by causing other predators to change their hunting behaviors. Wolves would predate wild ungulate species and could cause their populations to decline in local areas. The proposed action would not contribute to adverse cumulative effects on ungulate species.

### **Ecosystem Dynamics**

#### *Spatial and Temporal Boundaries*

The spatial boundary for cumulative impacts to ecosystem dynamics (including gray wolves, special status species, and other wildlife) includes Colorado and neighboring states, specifically Arizona and New Mexico, which encompass the MWEPA. The temporal boundary extends from the beginning of the Service's Mexican wolf recovery effort in 1998 through the life of the proposed action.

#### *Impacts from the State Plan*

Reintroduction of the gray wolf in Colorado could affect community structure and ecosystem dynamics in the state. As an apex predator, wolves can have a strong top-down effect on the trophic structure of ecosystems by regulating other wildlife populations through predation and behavioral responses, potentially resulting in trophic cascades (Estes et al. 2011; Ripple and Beschta 2012; Ripple et al. 2014). This process is described in greater detail in section 3.2.1. Beneficial changes in ecosystem structure and dynamics following reintroduction or natural recolonization of wolves have been observed in other ecosystems in the United States and Canada (McLaren and Peterson 1994; Hebblewhite et al. 2005; Callan et al. 2013). However, the role of wolves in these observed changes is a matter of debate. Reintroducing wolves to Colorado could directly and indirectly benefit ecosystem dynamics over the long term, as has been observed in other ecosystems where wolves have been reintroduced or naturally recolonized. However, because ecosystems in which wolf reintroduction has previously occurred differ greatly, and because there is no precedent for reintroduction of wolves on a statewide scale, there is a great deal of uncertainty surrounding the potential effects of the State Plan on ecosystem dynamics throughout Colorado.

#### *Impacts from Mexican Wolf Recovery*

The 2022 *Final Supplemental EIS for the Proposed Revision to the Regulations for the Nonessential Experimental Population of the Mexican Wolf* does not evaluate impacts on ecosystem dynamics as a stand-alone resource topic. However, the supplemental EIS does state that Mexican wolves may have competitive interactions with other predators and mesopredators that compete with the Mexican wolf for food such as mountain lions, bears, coyotes, bobcats, and foxes. It also notes that scavenger species such as ravens, eagles, coyotes, and bears may be indirectly affected by Mexican wolves through wolf-killed carcasses resulting from predation.



### *Impacts from the Proposed Action*

Flexibility for the management of reintroduced gray wolves as an experimental population would not affect ecosystem dynamics because potential effects on ecosystem dynamics would occur as a result of the State action, regardless of the management option selected.

### *Cumulative Impact*

When the impacts of the proposed action are combined with the impacts of other past, present, and reasonably foreseeable future actions, direct and indirect impacts on ecosystem dynamics may be beneficial. The presence of wolves in Colorado could restore a more natural ecosystem structure by controlling prey populations, regulating predation by coyotes and other mesopredators, and influencing vegetation community structure and succession. However, there is a great deal of uncertainty surrounding the potential effects of wolf reintroduction on ecosystem dynamics throughout Colorado.

## **Tribal Resources**

### *Spatial and Temporal Boundaries*

The spatial boundary for cumulative impacts to Tribal resources includes the state of Colorado. The temporal boundary extends from when wolves were extirpated in Colorado through the life of the proposed action.

### *Impacts from the State Plan*

Colorado Revised Statute 33-2-105.8 directs the CPW Commission to develop a plan to introduce gray wolves in Colorado, during which CPW would continue to work with Tribes in the development of the plan. Section 3.4.4, discusses the Tribes' concerns regarding the State's reintroduction efforts. The impacts associated with the State Plan are similar to those noted in section 4.6.1 for the no-action alternative. As shown in this section, impacts could occur to natural resources of cultural importance to Tribes. Due to the limited management options, specific management goals would need to be addressed for these resources in the final plan to reduce potential impacts. In addition, impacts are anticipated on hunting resources and livestock. As shown in section 4.6.1 and in the discussion of biological resources, hunting-related benefits are not anticipated to decline across the state, although impacts may be experienced at a local level, where wolves may contribute to declines in big game herds. No take provisions would be included, lethal or nonlethal, in the initial phases of reintroduction to address wolves if they reduce the population of big game ungulates below Tribal management objectives with implementation of the State Plan. The State may authorize take of wolves under phase 3 of the State Plan, under which the State would manage gray wolves as a nongame species to mitigate impacts to populations of ungulates (CPW 2022a). This assumes that the species would be federally delisted.

As noted in section 4.7.1, in the short term, wolf depredation on domestic livestock would likely be minimal, but after wolf recovery levels are approached, depredations are anticipated to increase. As part of its Gray Wolf Management Plan, CPW outlined a compensation program to alleviate some financial burden incurred by producers due to wolf-livestock conflicts.

### *Impacts from Mexican Wolf*

The effects of the recovery of the Mexican wolf on Tribal resources are evaluated as part of the environmental justice discussion in the 2022 *Final Supplemental EIS for the Proposed Revision to the Regulations for the Nonessential Experimental Population of the Mexican Wolf* (USFWS 2022h). This evaluation considers the potential impacts to the White Mountain Apache Tribe, San Carlos Apache Tribe, the Navajo Nation (including Ramah Navajo and the Alamo Band), Mescalero Apache Tribe, Pueblo of Zuni, Pueblo of Acoma, Pueblo of Isleta, and the Pueblo of Laguna. It largely focuses on areas within Arizona and New Mexico. The EIS considers ranching/livestock production and big game hunting. The analysis accounts for a source-pathway-resources-

acceptance approach, in which wolf behavior (depredation, predation, and nuisance behavior) and loss of access to resources was considered (USFWS 2022h).

As noted in the EIS for the Mexican wolf, Tribal governments would have the option to enter into management agreements with the Service to manage Mexican wolves on their Tribal trust lands. The EIS indicates that impacts would occur and could be disproportionate to the Tribes, but with the potential for management agreements to be established, these impacts would be reduced. The EIS cites the White Mountain Apache Tribe as a Tribe that experienced low costs from depredation and insignificant impacts to big game populations due to the presence of wolves on the Fort Apache Indian Reservation (USFWS 2022h).

#### *Impacts from the Proposed Action*

Under the proposed action, which includes the use of a section 10(j) rule, the reintroduction of wolves could affect natural resources of importance to Tribes in part due to competition resulting in changes to predation habits or habitat selection. The reintroduction of wolves could affect wildlife species that are hunted or used by the Tribes, such as elk, deer, and other ungulates. As shown in the discussion of biological resources, elk and deer populations could decline in response to unmanaged predation and other pressures as a result of wolf reintroduction. With the provision to allow take of wolves to address potential impacts to ungulates on Tribal reservation lands, the proposed action would provide the Service and its designated agents flexibility in managing wolves to limit elk and deer population decline or to facilitate recovery; the same could occur for pronghorn, wild sheep, and moose.

Potential impacts associated with wolf depredation on domestic livestock also could occur under the proposed action. However, the Service and its designated agents would have management options to address or assist in the reduction of these impacts.

#### *Cumulative Impact*

When the impacts of the proposed action are combined with the impacts of other past, present, and reasonably foreseeable future actions, impacts on Tribal resources as they relate to hunting and to livestock are anticipated. Cumulative impacts would generally be associated with the placement of wolves within the landscape, as well as for those already living in and naturally dispersing to Colorado, and their potential interactions with animals hunted by Tribal members and livestock. The proposed action would make up a small portion of the impact because it would provide benefits that would address adverse cumulative impacts to livestock and may provide benefits that address adverse impacts to ungulate populations on Tribal reservation lands.

With implementation of the proposed action, reintroduced wolves would be managed to reduce adverse effects to livestock as described in sections 4.5, 4.7, and 4.8 of this EIS. As noted in the discussion of biological resources, above, wolves could cause wild ungulate populations to decline. The final rule would allow take of wolves to address potential impacts to ungulate populations only on Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands in Colorado. With implementation of this provision, if ungulate populations declined below established management goals, the Service and its designated agents within the Tribes would have the flexibility to manage wolves using nonlethal and/or lethal take for the conservation of wild ungulates on Tribal reservation lands in Colorado. Similar management options are available for the Mexican wolf through the implementation of the Mexican wolf 10(j) rule, some of which address migrating wolves and relocation. In this manner, cumulative impacts to hunting resources (e.g., ungulates) would occur, and the management actions associated with the proposed action would contribute to these cumulative impacts because the take provision related to ungulates would be limited and would not apply statewide.

As shown below for socioeconomics and environmental justice, the long-term, beneficial impacts from increased management flexibility under the proposed action and compensation programs implemented as part of the State

Plan would reduce the potential for substantial economic costs to livestock producers, which would include Tribal members. Implementation of the management tools available under the proposed action (e.g., lethal or nonlethal take) would reduce the potential for cumulative impacts to occur to livestock producers.

## **Socioeconomics**

### *Spatial and Temporal Boundaries*

The spatial boundary for cumulative impacts on socioeconomic resources includes Colorado and neighboring states. The temporal boundary extends from when wolves were extirpated in Colorado through the life of the proposed action.

### *Impacts from the State Plan*

Impacts from the State Plan would result from the reintroduction of wolves and the implementation and management of the reintroduction. Impacts from the State Plan were considered without the 10(j) rule in place and are discussed in this EIS under the no-action alternative, including limited management flexibility that would result in long-term, adverse impacts to outfitters and livestock producers.

### *Impacts from Mexican Wolf Recovery*

The recovery of the Mexican wolf is expected to have direct effects on socioeconomics from cattle depredations in addition to the indirect effects to reduce the likelihood of depredations. The 2022 *Final Supplemental EIS for the Proposed Revision to the Regulations for the Nonessential Experimental Population of the Mexican Wolf* found that the overall loss of livestock attributable to wolf depredations is estimated to have been over \$3.6 million (\$2020) between 1998 and 2019. While the overall market impact of wolf depredations is minimal compared to the total annual value of Arizona and New Mexico cattle operations, the impacts felt by ranches that incur actual depredations on their herds can be more substantial. The EIS also found that while there could be impacts to ungulates and big game hunting, these impacts would be mitigated though the removal of wolves causing unacceptable impacts, resulting in less than significant adverse impacts (USFWS 2022h).

### *Impacts from the Proposed Action*

The proposed action would have long-term, beneficial impacts on livestock producers in Colorado because the allowable lethal and nonlethal take would provide management flexibility and help mitigate economic losses to this group. Livestock producers would be able to address repeated depredation through lethal and nonlethal measures to reduce the financial impact. Although the 10(j) rule would mitigate impacts, livestock producers may still experience some adverse impacts related to depredation of livestock.

Under alternatives 1 and 2, the final rule would allow take of wolves to mitigate potential impacts to ungulate populations on Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands. The Service and its designated agents would be able to manage reintroduced wolves using nonlethal and/or lethal take for the purposes of managing big game ungulate species consistent with established Tribal management objectives on reservation lands, if the respective Tribe has determined that wolf interactions are a driver of population declines, and the Service concurs with this determination.

### *Cumulative Impact*

When the impacts of the proposed action are combined with the impacts of other past, present, and reasonably foreseeable future actions, direct and indirect effects on socioeconomics could result in long-term, adverse impacts to outfitters and livestock producers as a result of the effects that reintroduction of wolves could have on big game ungulate species and depredation of domestic livestock. The Service and its designated agents would be able to use nonlethal and/or lethal take to address depredation of livestock. The long-term, beneficial impacts from increased management flexibility under the proposed action and compensation programs implemented as

part of the State Plan would reduce the potential for substantial economic costs to livestock producers. However, some financial losses would likely still occur because compensation programs may only partially cover the direct and indirect financial loss suffered by livestock producers from wolf depredation of their livestock.

The final rule as written would allow take of wolves to address potential impacts on ungulate populations on Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands, which may partially mitigate potential adverse effects to outfitters and guides. Implementation of this provision would allow take of wolves by designated agents on Tribal reservation lands in Colorado if wolves were determined to be a major cause of ungulate populations not meeting established Tribal population goals or objectives. Based on the above, the proposed action would partially mitigate potential adverse effects from implementation of the State Plan and would not contribute to adverse cumulative effects on hunters, guides, and outfitters.

Reintroduced Mexican wolves are unlikely to become established in Colorado. According to the Service, any Mexican wolves that disperse outside the MWEPA in New Mexico and Arizona would be removed or relocated back within the boundary (USFWS 2022h). Therefore, Mexican wolves are unlikely to have cumulative impacts on hunters, guides, outfitters, and livestock producers in Colorado.

The dispersal of wolves from Colorado into neighboring states carries potential socioeconomic impacts that could affect various stakeholders and businesses. One particular area of concern is the predation on livestock, which could result in economic losses and increased costs for livestock producers.

The potential for predation poses a challenge for agricultural communities. As wolves venture into agricultural areas, there is an increased risk of conflicts between them and livestock. Such conflicts can lead to financial losses for livestock producers. Instances of wolf predation can result in the death or injury of livestock, which can affect the profitability of farming and ranching operations. In response, livestock producers may have to incur additional expenses for preventive measures like reinforced fencing, guard animals, or increased surveillance, further straining their resources.

The impact of livestock predation extends beyond the agricultural sector to the broader local economies. Reduced profitability and higher costs for livestock producers may result in increased prices for consumers. This economic strain can compromise the viability of rural communities that rely on livestock production, potentially leading to job losses and negatively affecting local businesses that depend on the agricultural industry. Moreover, livestock producers in areas prone to wolf predation may face rising insurance premiums, increasing their financial burdens.

## **Environmental Justice**

### *Spatial and Temporal Boundaries*

The spatial boundary for cumulative impacts on environmental justice communities includes Colorado and neighboring states. The temporal boundary extends from when wolves were extirpated in Colorado through the life of the proposed action.

### *Impacts from the State Plan*

Impacts from the State Plan would result from the reintroduction of wolves and implementation and management of the reintroduction. Impacts from the State Plan were considered without the section 10(j) rule in place, and are discussed in this EIS under the no-action alternative. As discussed in section 4.8.2, under the no-action alternative, predation on elk and other big game ungulate species could reduce herds below state or Tribal population goals, change the use of habitat by and movements of big game species, and redistribute hunting demand to other areas of the state. While impacts statewide are not likely to result in substantial economic effects, localized impacts could be disproportionately high and adverse for members of Native American Tribes and low-income and minority individuals and businesses that rely on hunting.

Similarly, impacts to livestock producers, including Tribal producers, from wolf depredation of livestock would be unevenly distributed and localized. Individual producers may experience economic costs greater than the average for the industry across Colorado. For low-income and minority livestock producers these costs, as well as indirect economic costs, could be substantial under the no-action alternative. Therefore, implementation of the State Plan could result in disproportionately high and adverse impacts to low-income and minority livestock producers, particularly in the focal counties.

As part of the State Plan, Colorado has developed policies to compensate livestock producers whose livestock have been depredated by reintroduced gray wolves. Compensation by the State would mitigate potential economic effects to minority or low-income livestock producers. Depending on the level of compensation provided by the State, these economic effects may not be fully mitigated.

#### *Impacts from Mexican Wolf*

The 2022 *Final Supplemental EIS for the Proposed Revision to the Regulations for the Nonessential Experimental Population of the Mexican Wolf* considers the impacts to environmental justice populations in Arizona and New Mexico and found that small ranch operations that are marginally most at risk from economic losses and that have a high percentage of focus minority groups identified as principal operators could suffer high and disproportionate adverse impacts from implementation of the proposed action and alternatives. The final EIS further notes that disproportionate and adverse impacts could occur because some Tribal members subsist on big game. Populations with smaller land bases and lower big game densities could be further impacted. This effort would have minimal adverse effects on Tribes because Tribal governments could request wolf removal at any time. However, Tribes as population groups of concern are marginally more at risk from economic losses that may affect their primary source of income. Furthermore, for some Tribes and Tribal members, livestock are used for subsistence. For these reasons, the final EIS concludes that Tribal population groups of concern could experience high and disproportionate adverse impacts from revision of the regulations for the nonessential experimental population of the Mexican wolf.

#### *Impacts from the Proposed Action*

The final rule would include the provision allowing take of wolves to mitigate potential impacts to ungulate populations on Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands, which could have a long-term, beneficial impact on big game species because the Service and the Tribes would be able to manage reintroduced wolves using nonlethal and/or lethal take to mitigate population declines below Tribal management objectives. The proposed action could result in disproportionately high and adverse impacts to people who rely on hunting for subsistence outside reservation lands, including members of Native American Tribes who hunt in the Brunot Area.

Disproportionately high and adverse impacts could occur for low-income outfitters and guides in local areas due to the potential for a shift in demand for hunting permits away from areas where wolves are present and changes in the use of habitat by or movements of big game species (see section 4.8.2).

The proposed section 10(j) rule would allow non-injurious, injurious, and lethal take under the conditions specified in table 2-2 to reduce conflicts and manage wolves that repeatedly depredate livestock. Implementation of alternative 1 may not fully mitigate against indirect economic losses caused by stresses to livestock (i.e., lower market weights and reduced rate of conception). Livestock producers also would incur costs (i.e., money, time, and labor) for implementing nonlethal take strategies, and these costs may be more substantial for low-income and minority livestock producers. Overall, implementation of the proposed action would result in a long-term, beneficial impact to low-income and minority livestock producers.

### *Cumulative Impact*

The proposed action would partially mitigate the adverse effects of implementation of the State Plan on low-income and minority environmental justice population groups of concern. Reintroduced wolves on Southern Ute Indian Tribe and Ute Mountain Ute Tribe reservation lands could be managed to reduce adverse effects to big game ungulate species, which could mitigate the potential adverse effects of wolf reintroduction on ungulate populations on these reservation lands. Reintroduced wolves would be managed to reduce adverse effects on livestock as described in section 4.8 of this EIS. The proposed action would not result in cumulatively greater adverse effects to minority or low-income population groups of concern in combination with the State Plan.

Additionally, as part of the State Plan, Colorado has developed policies for compensation to livestock producers whose livestock have been depredated by reintroduced gray wolves. Along with the management flexibility that would be provided under the section 10(j) rule, compensation would mitigate potential economic effects to minority or low-income livestock producers. Depending on the level of compensation provided by the State, these economic effects may not be fully mitigated.

The study area for recovery of a nonessential experimental population of the Mexican wolf includes the states of New Mexico and Arizona. The experimental population boundary for reintroduced Mexican wolves (the MWEPA) is bounded on the north by Interstate 40, on the east by the eastern state line of New Mexico, on the west by the western state line of Arizona, and on the south by the international border with New Mexico. The Service is proposing to remove or relocate back into the MWEPA any Mexican wolves that disperse outside this boundary (USFWS 2022h). Therefore, it is unlikely that reintroduced Mexican wolves would become established in Colorado, and cumulative effects to minority or low-income population groups of concern in Colorado are not anticipated.

Wolves that disperse outside Colorado would be managed under the federal or state regulations that apply in the area where they are found (for example, wolves would be managed as endangered in most of Utah and as a federally delisted species in Wyoming) or may be relocated back to Colorado as discussed previously in this section. Reintroduction of gray wolves by the State of Colorado could impact minority and low-income population groups of concern in neighboring states, and these impacts could be similar to the impacts described in section 4.8 of this EIS. However, the proposed action would not contribute cumulatively to these impacts because the proposed action would not be implemented or have effects outside Colorado.

When the impacts of the proposed action are combined with the impacts of other past, present, and reasonably foreseeable future actions, direct and indirect impacts on minority and low-income population groups of concern in Colorado could be disproportionately high and adverse but would partially be mitigated. Increased management flexibility under the proposed action and compensation programs implemented as part of the State Plan would reduce the potential for substantial economic costs to low-income and minority population groups of concern in Colorado, including livestock producers. Inclusion of the provision to mitigate potential impacts to ungulate populations on the reservation lands of the Southern Ute Indian Tribe and Ute Mountain Ute Tribe in Colorado would reduce the potential for substantial economic costs to Tribal members who are employed as outfitters and guides on reservation lands and those Tribal members who rely on subsistence hunting.

### **4.9.3 Regulatory Compliance and Consistency with Approved State or Local Plans or Laws**

This EIS was prepared in compliance with the federal acts and executive orders as described in Appendix B as well as the: Administrative Procedures Act of 1946; ESA of 1973; Federal Land Policy and Management Act of 1976; Fish and Wildlife Coordination Act; NEPA of 1969; National Forest Management Act of 1976; National Historic Preservation Act of 1966; Regulatory Flexibility Act 21 of 1980; Unfunded Mandates Reform Act of 1995; Wilderness Act of 1964; Executive Order 12372, *Intergovernmental Review of Federal Programs*;

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*; Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety*; and Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*.

These included plans or laws such as state statutes and regulations related to the release or management of predators, Natural Resource Conservation District long-range plans, and Soil and Water Conservation District resolutions related to the reintroduction of endangered predators. NEPA's intent and governing regulations direct federal agencies to "cooperate, consult and coordinate" with the county or conservation district in the development of plans, decisions, activities or actions which may affect the county, the district or its residents, especially related to early and ongoing planning, coordination, and consultation with state and local governments and stakeholders (40 CFR 1501.8, 1501.9). During the development of this EIS, the Service worked with cooperating agencies to determine whether additional local plans or laws should be considered based on the scope of our proposed action and alternatives.

Additional relevant State plans or laws include:

- Colorado Code § 33-2-105.5 (2021)
- Colorado Code § 33-6-203 (2021)
- Colorado Code § 33-6-207 (2021)
- Colorado Constitution Article 18 § 12b (2021)
- Colorado Wildlife Commission Regulation 2 CCR 406-17-XII-17122 (2020)

To the extent that any of these plans or laws establish a local (state or county) process to request management action by the Service or a designated agency to address wolf-human conflicts and that this process is consistent with, or not in conflict with (e.g., placing restrictions on or asserting local government authority over federal law) our proposed action, we do not find any inconsistency between the plans or laws and our actions taken in accordance with the ESA and state or local actions. Similarly, to the extent that any of these plans or laws request action from the State of Colorado or Colorado Congressional delegation that is not in conflict with our proposed action, we do not find any inconsistency. To the extent that any of the documents above establish or include reference to policies or ordinances prohibiting the import or release of certain wildlife, specifically gray wolves, the provisions of the section 10(j) rule would provide management flexibility for designated agents to address conflicts between gray wolves and existing land uses and economic activities. The Service recognizes that options to reduce or resolve conflict in specific instances may be available to the Service and the State of Colorado by working with local governments to address safety concerns, select release sites, and provide information to local communities. The Service also recognizes the interest held by local governments and communities, including livestock permittees and private landowners, in the management of gray wolves in Colorado west of the Continental Divide. To that end, collaboration with local entities as well as communication with local communities would be incorporated in the development of this 10(j) rule.

The proposed federal regulatory frameworks under alternatives 1 and 2 may allow activities that are inconsistent with local plans or laws. These activities could include discharge of firearms outside allowed hunting activities and operation of noise-emitting equipment during hazing (non-injurious, nonlethal take) of wolves, which could occur at night. These activities may be inconsistent with local noise regulations. Regardless of the alternative selected, the proposed action would be consistent with local public safety regulations and would not preempt State and local ordinances and laws. Take of wolves to protect human life and safety would be permitted under all alternatives, as noted in table 2-4.

Through the public scoping and review of the draft EIS, other state and local entities noted the presence of comprehensive, land use, and wildlife management plans, including the State of Utah, the State of New Mexico, the State of Arizona, Garfield County, Mesa County, and Moffatt County, and requested that the Service consider conflicts with these plans. These entities are cooperating agencies in the EIS process, and consistency with these planning documents was considered throughout the planning process.

#### **4.9.4 Relationship Between Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity**

NEPA requires an analysis of the relationship between a project's short-term uses of the human environment and the effects that this use may have on the maintenance and enhancement of long-term productivity (40 CFR 1502.6).

##### **No-Action Alternative**

Under the no-action alternative, no short- or long-term commitment of human resources would occur because no regulatory framework would be put in place, and no resources would be needed to implement and manage that framework. The introduction of the gray wolf to Colorado could result in protection of the long-term productivity of the overall ecosystem and the sustainable use of resources, which is not a direct impact of the regulatory framework, but is discussed in further detail under section 4.9.1, *Cumulative Impacts*.

##### **Alternatives 1 and 2**

Under the action alternatives, a short- and long-term commitment of human resources and short-term impacts from time and resources required to implement a regulatory framework under the section 10(j) rule to a whole or a portion of the state of Colorado would occur. The introduction of the gray wolf to Colorado could result in protection of the long-term productivity of the overall ecosystem and the sustainable use of resources, which is not a direct impact of the regulatory framework, but is discussed in further detail under section 4.9.1, *Cumulative Impacts*.

The presence of gray wolves on federal lands would conform with federal agency land use and resource management plans. On non-federal land, gray wolf presence would be managed through the allowable management actions under the 10(j) rule, or in the case of alternative 2, the 10(a)(1)(A) permit in a smaller portion of the state. With this action, the Service is not proposing to designate critical habitat, and it is not expected that implementation of the action alternatives would change the character of the federal and non-federal land use within the study area, its long-term productivity, or its availability for other beneficial uses.

The proposed action would provide a regulatory framework for the State-led reintroduction of the gray wolf to provide management flexibility and provide for conservation of the species. The EIS analyzes the impacts of the proposed take provisions. Although these alternatives may lead to different impacts across resource areas, the relationship between short-term uses and long-term productivity would not be appreciably different from one alternative to another. The potential for take provisions under either alternative would not alter the characteristic uses of the land or resources in the project area. Short-term economic impacts may be sustained by individual ranchers/livestock producers, but with the mitigations offered by the proposed regulatory framework, long-term effects on overall livestock production in the study area are not expected. There could be localized, short-term impacts to ungulates or the related economy of big game hunting from the action alternatives. In conclusion, implementation of the action alternatives is not expected to permanently narrow the range of beneficial uses of the human environment or adversely affect the long-term productivity of the project area.



#### **4.9.5 Irreversible and Irretrievable Commitment of Resources**

An irreversible and irretrievable commitment of resources refers to the use of those resources that would be involved in the proposal should it be implemented (40 CFR 1502.16). Irreversible impacts are those that cause, through direct or indirect effects, use or consumption of resources in such a way that they cannot be restored or returned to their original condition despite mitigation. An irretrievable impact or commitment of resources occurs when a resource is removed or consumed. The commitment of resources refers primarily to the use of nonrenewable or depletable resources such as fossil fuels, water, labor, and electricity. Costs borne by the Service associated with the proposed section 10(j) rule would include limited costs related to administrative oversight related to permit issuance and/or annual review of memoranda of agreement if those tools are used. Under all alternatives, the provision of a regulatory framework to provide management flexibility to the Service and its designated agents would not affect climate change.

##### **No-Action Alternative**

Under the no-action alternative, the absence of a regulatory framework to provide management flexibility for the State of Colorado's gray wolf reintroduction efforts would not require the Service to put forth resources, and from that standpoint, would not have an irreversible and irretrievable commitment of resources. However, under all alternatives, there could be impacts to ungulates and livestock from the reintroduction of wolves. Without a regulatory framework to provide mitigation for these losses in the form of management measures to deter wolves from depredation, these losses are expected to be greater under the no-action alternative. While there would be a loss of ungulates and livestock, loss of either is not an irreversible or irretrievable commitment of resources because both are abundant, renewable resources.

##### **Alternatives 1 and 2**

The Service expects an incremental increase in costs over time from implementation of either action alternative as the number and geographic distribution of gray wolves in Colorado increases. Alternatives 1 and 2 provide for a regulatory framework to address losses to livestock and impacts to ungulate populations related to the gray wolf reintroduction. It is assumed that as wolf populations increase, the need to implement regulatory flexibility would also increase. Over time, this would result in additional consumption of labor and nonrenewable use of equipment, materials, supplies, and fuel.

Based on the above assessment of impacts to biological resources, Tribal resources, socioeconomics, and environmental justice, the Service does not expect that implementation of either action alternative would result in a significant irreversible or irretrievable commitment of resources. Some degree of adverse impact to wild prey (primarily ungulates) and livestock due to the introduction of wolves is expected, but the action alternatives would mitigate these impacts. While there would be a loss of ungulates and livestock, loss of either is not an irreversible or irretrievable commitment of resources because both are abundant, renewable resources. Labor associated with the implementation of proactive management to decrease the likelihood of livestock depredations may occur, or to address the consequences of depredation (such as building additional fencing, or paperwork associated with depredation claims); however, these impacts and commitments can be restored or returned to their prior condition with mitigation such as successful implementation of proactive measures or receipt of depredation compensation.

## CHAPTER 5 CONSULTATION AND COORDINATION

### 5.1 INTRODUCTION

NEPA requires federal agencies to make diligent efforts to involve other agencies and the public whenever possible (40 CFR 1506.6). This chapter provides a summary of the opportunities that have been made for public involvement, including government and non-government agencies or organizations in the development of this EIS.

### 5.2 PUBLIC INVOLVEMENT STRATEGY

The public involvement strategy for this EIS incorporated the following elements:

- **Public scoping.** The Service conducted a 30-day public scoping period through the publication of a notice of intent to prepare an EIS statement in the *Federal Register* on July 21, 2022 (87 FR 43489). Issues raised during public scoping are summarized in section 2.3 and Appendix C of this EIS.
- **Coordination and consultation.** The Service engaged with multiple federal and state agencies, Tribal governments, and local governments through the establishment of cooperating agency status, ongoing partner collaboration, and participation in Tribal working groups and Tribal coordination meetings.
  - Twenty-three entities were invited to serve as cooperating agencies, of which 20 confirmed participation via signature of a memorandum of understanding to participate in the development of an EIS. Cooperating agency meetings were held via virtual meetings on August 18, 23, and 31, 2022, September 28, 2022, October 5, 2022, October 26, 2022, December 16, 2022, January 12, 2023, February 22, 2023, and July 17 and 27, 2023.
  - Tribal governments were invited to request government-to-government consultation on the proposed rule and EIS with the Service via letters sent in July 2022 and followed up with phone and email communications. The Service met with the Ute Mountain Ute via teleconference on January 24, 2023, for an initial conversation regarding the consultation process. On January 13, 2023, via telephone, the Pawnee Nation representative noted that they would like to be kept informed of the process but did not require a meeting at this time. During review of the draft EIS, the Navajo Nation requested to be involved in government-to-government consultation with the Service, which is ongoing. Likewise, the Southern Ute Indian Tribe requested to be involved in government-to-government consultation with the Service, which is ongoing.
  - In addition to government-to-government consultation, the Service has been actively engaged with informal coordination with Tribal members including the Southern Ute Indian Tribe and Navajo Nation.
  - The Service presented at the Native American Fish and Wildlife Society Southwest Chapter Annual meeting in August 2022 and hosted a virtual informal meeting with Tribes from Arizona, Colorado, Oklahoma, New Mexico, and Utah on October 11, 2022.
  - The Service is in regular communication with federal agencies, and several are formal cooperating agencies, including NPS, the Bureau of Land Management, U.S. Forest Service, and the USDA-Animal and Plant Health Inspection Service Wildlife Services.
  - The Service was an active participant in the State of Colorado's process to develop a state management plan including formal representation on the TWG and regular participation in the SAG throughout 2022 and continued to coordinate with the State into 2023 to ensure consistency

with the State Plan. The Service and CPW hold biweekly coordination meetings which are expected to continue at least until the end of calendar year 2023.

- In April 2023, the Service and neighboring states (Utah, Arizona, and New Mexico) began meeting weekly to coordinate on how potential conflicts with gray wolves released in Colorado would be addressed. These discussions included developing a memorandum of understanding for how conflicts between gray wolves and Mexican wolves would be addressed and a general permitting approach to address potential conflicts. These weekly meetings occurred between April 2023 and September 2023.
- **Multi-media communication.** Communication with the stakeholders, cooperating agencies, Tribes, organizations, academics, and the general public was conducted in multiple formats, including email, Microsoft Teams video or Zoom web meetings, teleconferences, newspaper notices/advertisements, *Federal Register* notices, news releases, and websites. A website was developed for the public with information about the process and times, locations, and registration links for in-person and virtual public meetings.
- **Public meetings and information sessions.**
  - **Public Scoping:** In-person public information sessions and meetings were held during the 30-day public comment period on the notice of intent for the proposed 10(j) rule on August 2, 2022, August 3, 2022, and August 4, 2022; a virtual public information session and meeting was held on August 10, 2022.
  - **Review of the Draft EIS:** The proposed rule and draft EIS were made available to the public for a 60-day review period from February 17, to April 18, 2023. During this time, three in-person public meetings were held on the Western Slope of Colorado (March 14-16, 2023), one meeting was held in Lakewood, Colorado (March 28, 2023), and a virtual meeting was held on March 22, 2023. The responses to public comments on the proposed rule and EIS are provided in Appendix D.

### 5.3 LIST OF RECIPIENTS OF THE FINAL ENVIRONMENTAL IMPACT STATEMENT

Upon publication of the notice of availability of the final EIS in the *Federal Register*, a news release will be provided to the media outlets who received the news release announcing the Notice of Intent in July of 2022 and the draft EIS in February 2023. Notice will be provided to media, interested individuals, and organizations via the Service's standard mailing/distribution lists, as well as the following:

- The Service will use the lists generated from the public scoping and draft EIS public meetings.
- The Service will use its news distribution service (Meltwater) to share the news release with instructions on accessing the final plan/EIS with local (Colorado), regional and national media.
- The Service will contact state and federal agency partners, Tribes, county commissioners, Congressional members' offices, state legislators, local non-governmental organizations, and other potential stakeholders electronically with the news release, along with instructions on accessing the final EIS.
- The news release will be posted on the Service and CPW websites with links and information on accessing the final EIS.

## CHAPTER 6 SUMMARY OF IMPACTS

Table 6-1 compares the potential environmental impacts of the alternatives. For a more detailed analysis of the environmental impacts of each alternative, see Chapter 4 of the EIS.

Based on consideration of the purpose and need for the proposed action and the potential environmental impacts of the alternatives, the Service has selected alternative 1, Apply Section 10(j) Rule to the Gray Wolf in Colorado, as its Preferred Alternative.

**Table 6-1. Comparison of the Potential Environmental Impacts of the Alternatives**

Environmental Resource	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Biological Resources – Species of Special Concern – Wolves	Under the no-action alternative, wolves would remain listed as endangered, and regulated take would be limited to instances where wolves pose a threat to human life or safety. The wolf population is expected to increase in size and distribution in areas where habitat suitability is high (i.e., sufficient wild prey and limited contact with humans).	Alternative 1 could have adverse environmental impacts to individual wolves through regulated take but is not expected to hinder recovery or have population-level effects in the long term. Alternative 1 would provide management flexibility, which would contribute in the long term to achieving statewide management objectives for wolves.	Alternative 2 would provide added protection for wolves in the 10(a)(1)(A) permit area, which may lead to an increase in growth and distribution of the reintroduced wolf population in the short term. In the long term, the potential environmental impacts would be the same as under alternative 1 because of natural dispersal outside the 10(a)(1)(A) permit area.
Biological Resources – Other Species of Special Concern (Including Other Federally Listed and State-listed Species)	There would be no flexibility for the management of reintroduced wolves for the purposes of conserving other species of special concern, potentially resulting in short- or long-term, adverse effects on prey species. However, adverse impacts to species of special concern are not likely because substantial population declines of species of special concern have not been documented as a result of previous wolf reintroductions elsewhere in North America.	Potential environmental impacts would be the same as those described under the no-action alternative because management flexibility for reintroduced wolves under alternative 1 would not include provisions for the take of wolves for the purposes of protecting or managing species of special concern. Like under the no-action alternative, alternative 1 is not likely to result in adverse effects on species of special concern.	Potential environmental impacts would be the same as under alternative 1.
Biological Resources – Other Wildlife (Elk, Deer, and Other Ungulates)	There would be no flexibility for the management of reintroduced wolves for the purposes of managing other wildlife populations for conservation, potentially resulting in short- or long-term, adverse impacts to prey populations.	Potential impacts to prey populations would be similar to those described under the no-action alternative because management flexibility for reintroduced wolves for the purposes of managing ungulate populations would be limited to reservation lands for the Ute Mountain Ute and Southern Ute Indian Tribes within Colorado. Because these lands make up a relatively small portion of the state’s geographic area, potential take of wolves for the management of ungulates on reservations lands is not likely to result in measurable effects on statewide elk and deer populations.	Potential impacts to prey populations would be the same as under alternative 1.

Environmental Resource	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Cultural Resources – Tribal Resources	<p>Under this alternative, damage to archaeological and historical resources may occur in locations where the presence of wolves coincides with these resources. For instance, denning activities may damage surface or subsurface resources if these locations are used by wolves, and the presence of wolves may inhibit the potential for Tribal access to these resources.</p> <p>The reintroduction of wolves could also affect natural resources (e.g., wildlife) of importance to traditional cultural practices in part due to competition, resulting in changes to predation habits or habitat selection.</p> <p>The reintroduction of wolves could affect wildlife species that are hunted or used by the Tribes as part of traditional cultural practices, such as elk, deer, and other ungulates. Elk, deer, and other ungulate populations could decline in response to unmanaged predation and other pressures as a result of wolf reintroduction and result in a disruption to traditional cultural practices.</p>	<p>Potential impacts on Tribal resources would be similar to those described for the no-action alternative, although for some resources, including livestock, potential impacts could be reduced as a result of the management flexibility available under the 10(j) rule. Under alternative 1, the Southern Ute Indian Tribe and Ute Mountain Ute Tribe would have the ability to take wolves if populations of big game ungulates decline below established Tribal management goals as a result of wolf reintroduction. Therefore, alternative 1 could have a beneficial impact on ungulate populations and the traditional cultural practices related to these populations on reservation lands over the long term, compared to the no-action alternative.</p>	<p>Potential impacts on Tribal resources would be similar to those described for alternative 1 as a result of the management flexibility that would be provided by the section 10(j) rule. If an existing population were identified within a reservation, lethal take of wolves would be prohibited within the section 10(a)(1)(A) permit boundary. Alternative 2 would still provide the designated agents, including Tribes, flexibility to manage an existing population of gray wolves to mitigate impacts on livestock. The Southern Ute Indian Tribe and Ute Mountain Ute Tribe also would have the management flexibility to address decreases in ungulate populations below Tribal goals on reservation lands within the experimental population boundary, which could reduce impacts on the traditional cultural practices associated with species.</p>

Environmental Resource	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Socioeconomic Resources	<p>Due to the lack of management options under the no-action alternative, outdoor recreation, agriculture, and livestock producers would experience the most socioeconomic impacts. Lethal or nonlethal methods to address wolves if they reduce the population of ungulates below state or Tribal management objectives would not be available as a management tool. Outfitters and guides could experience long-term localized consequences from the lack of flexibility for take. A decline in hunting applications could lead to decreased wildlife revenue for CPW.</p> <p>An estimated 103–916 cattle and 26–298 sheep statewide, and 29–256 cattle and 15–164 sheep in the 21 focal counties could be killed or injured assuming a population of 200 wolves. This would result in estimated inflation-adjusted loss of up to \$1,588,709.50 in the statewide study area and up to \$365,013.13 in the 21 focal counties annually under the no-action alternative, which represents 0.0311 percent (Colorado) and 0.0071 percent (21 focal counties) of the total market value of cattle and sheep in Colorado.</p>	<p>Under alternative 1, the Service and its designated agents would manage the reintroduction of wolves with the greatest degree of flexibility. Alternative 1 would result in fewer direct long-term costs to livestock producers. Implementation of alternative 1 may not fully offset indirect economic losses caused by livestock stress from wolf predation. Additionally, livestock producers could incur costs for implementing nonlethal take strategies. Impacts to outdoor recreation outfitters would be similar to those under the no-action alternative under the proposed rule as written. Because there would be no statewide provision to address the management of wolves to address ungulate impacts on Colorado recreation outfitters, impacts would be the same as under the no-action alternative—long term, localized, and adverse. Implementation of the ungulate provision on Southern Ute and Ute Mountain Ute reservation lands could mitigate adverse economic effects to Tribes and outfitters by maintaining ungulate populations at a higher level than under the no-action alternative.</p>	<p>The socioeconomic impacts under alternative 2 within the experimental population boundary would be the same as those described for alternative 1. The impacts for outfitters and guides would be similar to those described in the no-action alternative within the 10(a)(1)(A) permit area. Due to the limited options for implementing management, big game hunting demand may shift to areas without gray wolves. Alternative 2 would allow for lethal and/or nonlethal take under the provisions of the section 10(j) rule in most areas of the state, except for Jackson County and western Larimer County, which would be subject to a section 10(a)(1)(A) permit (see table ES-1). Under alternative 2, livestock producers within the section 10(a)(1)(A) permit boundary may face disproportionately higher direct and indirect costs from wolf depredation.</p>

Environmental Resource	Alternatives		
	No-Action Alternative	Alternative 1 (Preferred Alternative)	Alternative 2
Environmental Justice	<p>Under the no-action alternative, if wolves are present within the Brunot Area lands or on Tribal reservations, localized impacts could be disproportionately high and adverse for Tribal members, particularly those who rely economically on livestock production or hunting and those who rely on subsistence hunting. This alternative could result in localized disproportionately high and adverse impacts to low-income and minority livestock producers and outfitters and guides, particularly in the focal counties due to the presence of suitable ecological conditions for gray wolves. Under this alternative, these impacts would not be mitigated because reintroduced gray wolves would be managed as an endangered species under the ESA.</p>	<p>Disproportionately high and adverse impacts could occur on low-income outfitters and guides, subsistence hunters, and Tribes in local areas across most of the state based on the factors discussed under the no-action alternative. Implementation of the ungulate provision on Southern Ute and Ute Mountain Ute reservation lands could have a long-term, beneficial impact on big game ungulate species by mitigating the potential for ungulate populations to decline below Tribal management objectives. Direct costs to livestock producers over the long term resulting from depredation would be lower under this alternative, compared to the no-action alternative.</p> <p>Implementation of alternative 1 may not fully mitigate indirect economic losses or incurred costs to implement nonlethal take strategies. However, the potential for disproportionately high and adverse impacts would be reduced under alternative 1 compared to the no-action alternative.</p>	<p>Under alternative 2, potential impacts to population groups of concern would be the same as described under alternative 1 for areas within the proposed experimental population boundary, which would cover most of the state.</p> <p>While lethal take of wolves would be prohibited within the section 10(a)(1)(A) permit boundary, alternative 2 would still provide the Service and its designated agents flexibility to manage an existing population of gray wolves to address livestock depredation. Within the section 10(a)(1)(A) permit boundary, impacts to low-income and minority livestock producers would be slightly reduced compared to the no-action alternative; however, these impacts may still be disproportionately high and adverse due to the cost of implementing nonlethal take measures. Impacts to outfitters and guides and subsistence hunters would be similar to impacts described under alternative 1.</p>



## CHAPTER 7 LIST OF PREPARERS

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## **APPENDIX A: GLOSSARY**

## GLOSSARY

Term	Definition
Active den site	A den or a specific aboveground site that is being used on a daily basis by wolves to raise newborn pups from April 1 to June 30.
Breeding pair	An adult male and an adult female wolf that, during the previous breeding season, produced at least two pups that survived until December 31 of the year of their birth.
Compensatory mortality	The principle of compensatory mortality indicates that wolves that are not killed by anthropogenic causes (e.g., legal harvest, illegal take, accidents) are at risk of dying from natural causes (e.g., intraspecific strife, disease, starvation), but they cannot be killed by both, and survival may improve for the remaining wolves due to increased food availability, reduced conflicts, and higher litter sizes (Mech 2001; Fuller 2003).
Designated agent	An employee of a Federal, State, or Tribal agency that is authorized or directed by the Service to conduct gray wolf management. A prospective designated agent submits a letter to the Service requesting designated agent status. The letter includes a proposal for the work to be completed and resume of qualifications for the work they wish to perform. The Service will then respond to the requester with a letter authorizing them to complete the work.
Disperse/dispersal	Natural movement of an individual wolf from its birthplace to the place it reproduces.
Domestic animals	Animals that have been selectively bred over many generations to enhance specific traits for their use by humans. This includes livestock (as defined below) and guarding and herding dogs.
Experimental population	Under section 10(j) the Service may designate a population of a species listed under the Endangered Species Act (ESA) as experimental if it will be released into suitable natural habitat outside the species' current range. An experimental population is a special designation for a group of plants or animals that will be reintroduced in an area that is geographically isolated from other populations of the species. A population designated as experimental is treated as threatened under the ESA, regardless of the species' designation elsewhere in its range. An experimental population may be considered essential or nonessential.
Experimental population boundary	The area covered by the section 10(j) designation. Under alternative 1, this would be the entire state of Colorado. Under alternative 2, this would be the entire state of Colorado, except for the portion of the state with an existing population before a section 10(j) rule is finalized, which would be managed under a section 10(a)1(A) permit.
Gray wolf	<i>Canis lupus</i> is a large canine native to Eurasia and North America. Gray wolf does not refer to the Mexican wolf ( <i>Canis lupus baileyi</i> ) subspecies, which is listed separately under the ESA as an endangered subspecies.
In the act of attacking	The actual biting, wounding, grasping, or killing of livestock or dogs, or chasing, molesting, or harassing by wolves that would indicate to a reasonable person that such biting, wounding, grasping, or killing of livestock or dogs is likely to occur at any moment. Does not apply if there is evidence of unusual attractants or artificial or intentional feeding.

Term	Definition
Incidental take	Take of a gray wolf that is accidental and incidental to an otherwise lawful activity if reasonable due care was practiced to avoid such take and such take is reported to the Service or designated agent within 24 hours (the Service may allow additional time if access to the site of the take is limited).
Injurious, nonlethal take	Harassment that may cause either temporary or permanent injury.
Intentional harassment	The deliberate harassment of wolves, including by less-than-lethal munitions (such as 12-gauge shotgun rubber pellets and bean-bag shells) that are designed to cause physical discomfort and temporary physical injury but not death. The wolf may have been tracked, waited for, chased, or searched out and then harassed. Does not apply if there is evidence of unusual attractants or artificial or intentional feeding.
Landowner	An owner or lessee of private land, or their immediate family members, or the owner's employees, contractors, or volunteers who are currently employed to actively work on that private land. In addition, the owner(s) (or their employees or contractors) of livestock that are currently and legally grazed on that private land and other lease-holders on that private land (such as outfitters or guides who lease hunting rights from private landowners) are considered landowners on that private land for the purposes of this regulation. Private land, under this regulation, also includes all non-federal land and land within Tribal reservations. Individuals legally using Tribal lands in the State of Colorado with wolf management plans are considered landowners for the purposes of this rule. "Landowner" in this regulation includes legal grazing permittees or their current employees on State, county, city public, or Tribal grazing lands.
Livestock	Cattle, sheep, pigs, horses, mules, goats, domestic bison, and herding and guarding animals (alpacas, llamas, donkeys, and certain breeds of dogs commonly used for herding or guarding livestock). Livestock excludes dogs that are not being used for livestock guarding or herding.
Livestock Producer	A person that is actively engaged in farming/ranching who receives income from the production of livestock.
Mexican wolf	<i>Canis lupus baileyi</i> is a subspecies of the gray wolf ( <i>Canis lupus</i> ) and is listed separately under the ESA as an endangered subspecies.
Multiplier effect	A measure of the aggregate effect that a change in economic activity has on the economy.
Non-injurious	Does not cause either temporary or permanent physical damage or death.
Opportunistic harassment	Harassment without the conduct of prior purposeful actions to attract, track, wait for, or search out the wolf. Opportunistic harassment includes scaring wolves with noise (yelling or shooting firearms into the air), movement (running or driving toward the wolf), or objects (throwing a rock at a wolf or releasing bear pepper spray).
Private land	All land other than that under federal government ownership and administration and including Tribal reservations.
Public land	Federal land such as that administered by the National Park Service, Service, Bureau of Land Management, U.S. Forest Service, Bureau of Reclamation, Department of Defense, or other agencies of the federal government.

<b>Term</b>	<b>Definition</b>
Public land permittee	A person or that person's employee who has an active, valid federal land-use permit to use specific federal lands to graze livestock or operate an outfitter or guiding business that uses livestock. This definition does not include private individuals or organizations who have federal permits for other activities on public land such as collecting firewood, mushrooms, antlers, Christmas trees, or logging, mining, oil or gas development, or other uses that do not require livestock. In recognition of the special and unique authorities of Tribes and their relationship with the U.S. Government, for the purposes of this rule, the definition includes Tribal members who legally graze their livestock on ceded public lands under recognized Tribal treaty rights.
Reasonable due care	The care that an ordinarily reasonable and prudent person would use under the same or similar circumstances.
Remove	Place in captivity, relocate to another location, or kill.
Repeatedly depredate wolves	Wolves that the Service or designated agents confirm to have attacked domestic animals two or more times within a calendar.
Research	Scientific studies resulting in data that will lend to enhancement of the survival of the gray wolf.
State land	Lands owned, managed, and leased by the State of Colorado for the purpose of generating revenue for the support of Colorado public schools.
Take	To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect species listed under the ESA, or to attempt to engage in such conduct.
Unacceptable impact	Tribally determined decline in a wild ungulate population or herd, where wolf predation is a major cause, of the population or herd not meeting established Tribal management goals on Tribal land. The Tribal determination must be peer-reviewed and reviewed and commented on by the public, prior to a final, written determination by the Service that an unacceptable impact has occurred, and that wolf removal will benefit the affected ungulate herd or population.
Ungulate population or herd	An assemblage of wild ungulates living in a given area.
Working dogs	Guard or herding dogs typically used in livestock production.
Wounded	Exhibiting scraped or torn hide or flesh, bleeding, or other evidence of physical damage caused by a wolf or wolves.
Wolf population	At least two breeding pairs of wild wolves successfully raising at least two young each year (until December 31 of the year of their birth), for two consecutive years.

## **APPENDIX B: RELATED LAWS AND POLICIES**

## **RELATED LAWS AND POLICIES**

The following sections describes the federal, state, and international laws, policies, and treaties that are relevant to the proposed action.

### **Endangered Species Act**

The Endangered Species Act (ESA), signed into law in 1973, recognizes the aesthetic, ecological, educational, historical, recreational, and scientific value of the nation's wildlife and plant species. The purpose of the ESA is to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide a program for the conservation of such species. The act directs the U.S. Fish and Wildlife Service (Service) and all federal agencies to participate in conserving threatened and endangered species.

Section 7(a)(2) of the ESA requires federal agencies to ensure their activities are not likely to jeopardize the continued existence of federally listed species or destroy or adversely modify designated critical habitat. Federal agencies, including the Service, must complete consultation under section 7 when any project or action they authorize, fund, or carry out may affect a listed species or designated critical habitat.

Section 10(j) of the ESA states that the Secretary of the Interior may designate a population of a listed species as experimental. An experimental population is a special designation for a group of plants or animals that will be reintroduced in an area that is geographically isolated from other populations of the species. With the experimental population designation, the specified population is treated as a threatened or candidate species under the ESA, regardless of the species' designation elsewhere in its range. This designation allows the Service the discretion to devise management programs and special regulations for an experimental population to ease the regulatory burden on landowners and managers associated with endangered species (USFWS 2018).

### **Animal Damage Control Act of 1931**

The Animal Damage Control Act of 1931 states, in part, "the Secretary...is authorized to conduct such investigations, experiments, and tests as he may deem necessary...on public domain, State,...and privately owned lands of...animals injurious to agriculture,...forestry,...wild game animals,...and for the protection of stock...and to conduct...control...of such animals...and may cooperate with States, individual and public and private agencies, organizations and institutions" (USFWS 1994). The act provides broad authority for investigation and control of injurious, or harmful, species of wildlife. Public Law 99-19, approved in 1985, transferred administration of the act from the Secretary of the Interior to the Secretary of Agriculture (USFWS n.d.). The U.S. Department of Agriculture's Animal and Plant Health Inspection Service Wildlife Services "[provides] Federal leadership and expertise [in resolving] wildlife conflicts to allow people and wildlife to coexist" (USDA-APHIS n.d.).

### **Wilderness Act of 1964**

The Wilderness Act of 1964 establishes the National Wilderness Preservation System and directs federal land management agencies to manage these wilderness areas to preserve wilderness character. Wilderness areas are managed by the Service, National Park Service, Bureau of Land Management, and U.S. Forest Service (NPS n.d.). The Wilderness Act defines wilderness as "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed...to preserve its natural conditions and which:

1. Generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable,
2. Has outstanding opportunities for solitude or a primitive and unconfined type of recreation,
3. Has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition, and
4. May also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.”

### **National Environmental Policy Act of 1969**

The National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321–4347) requires federal agencies to undertake an assessment of environmental effects of any proposed action prior to making a final decision and implementing it. NEPA requirements apply to any federal project, decision, or action that may have a significant impact on the quality of the human environment. NEPA also established the Council on Environmental Quality (CEQ), which issued regulations implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] parts 1500–1508). The Service has regulatory authority under the ESA to manage the conservation and recovery of listed species, including creating rules and regulations and permitting legitimate activities that would otherwise be prohibited by federal law. Promulgating a 10(j) rule for designation of an experimental population of a species is considered a major Federal action requiring review under NEPA.

### **National Historic Preservation Act of 1966**

Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.) and its implementing regulations under 36 CFR Part 800 require all federal agencies to consider effects of federal actions on historic properties, including historic structures, districts, cultural landscapes, and archaeological sites eligible for or listed in the National Register of Historic Places.

### **Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations**

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued by President Clinton in 1994. This executive order requires each federal agency to make environmental justice part of its mission. Agencies are required to identify and address disproportionately high adverse human health or environmental effects of their activities on minority populations and low-income populations. Minority populations are defined as individuals who are members of the following population groups: American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, Black, or African American, two or more races, or Hispanic. Low-income is defined as a median household income at or below the Department of Health and Human Services' poverty guidelines.

### **Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments**

Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*, was issued by President Clinton in 2000. The executive order recognizes Tribal rights of self-government and sovereignty and requires federal government agencies to work with Native American governments on a government-to-government basis. Federal agencies are required to consult with Tribal officials before promulgating a proposed rule that (1) has Tribal implications, or (2) would impose substantial direct



compliance costs on Tribal governments and is not required by statute. If a rule would impose substantial direct compliance costs on a Tribal government and is not required by statute, the agency must provide funds to pay the direct compliance costs of the Tribal government (USEPA 2021).

### **Brunot Agreement of 1873**

The Brunot Agreement of 1873, signed by Chief Ouray and Commissioner Felix Brunot, created the current boundaries of the Southern Ute Reservation and relinquished a large portion of the previous 1868 Southern Ute Reservation, consisting of 5,780 square miles in the western part of Colorado, to the United States. As part of this treaty, Tribal members were given full hunting rights within the relinquished lands, which include the right to fish and hunt waterfowl. In 2008, the Southern Ute Indian Tribe entered a Memorandum of Understanding with the State of Colorado addressing the Tribe's hunting and fishing rights in the Brunot Area and establishing a cooperative approach to hunting, fishing, and wildlife law enforcement.

### **Colorado State Law**

The Colorado Nongame, Endangered, or Threatened Species Conservation Act (Colorado Revised Statutes Annotated §33-2-101–108) states that species and subspecies of wildlife that are indigenous, or native, to Colorado and found to be endangered or threatened in the State “should be accorded protection in order to maintain and enhance their numbers to the extent possible.” The act directs the Colorado Parks and Wildlife (CPW) Commission to establish a list of threatened and endangered species in the state and review this list at least once every five years to determine if a change in the status of any listed species is needed. The gray wolf is listed as an endangered species by the state. Under the act, it is illegal for any person to take, possess, transport, export, process, sell or offer for sale, or ship any species determined by the state to be endangered. The act authorizes CPW to carry out management programs for threatened and endangered and nongame wildlife species, including acquisition of land or aquatic habitat, establishing agreements with federal or state agencies or private individuals, and management of wildlife to alleviate damage to property or protect human health.

State statute 33-2-105.8 requires the CPW Commission to develop a plan to restore and manage gray wolves in Colorado, using the best scientific data available, and begin reintroductions of gray wolves by December 31, 2023, only on designated lands. According to the statute, the state's plan to restore and manage gray wolves must include:

- The selection of donor populations of gray wolves;
- The places, manner, and scheduling of reintroductions of gray wolves by CPW, with reintroductions restricted to designated lands;
- Details for the reintroduction and management of gray wolves, including actions necessary or beneficial for establishing and maintaining a self-sustaining population; and
- Methodologies for determining when the gray wolf population is sustaining itself successfully and when to remove the gray wolf from the list of endangered or threatened species.

State statute 35-40-101 articulates that it is the duty of the Commissioner of Agriculture to control depredating animals within the state of Colorado to reduce economic losses to agricultural products or resources. The Commissioner has exclusive jurisdiction over the control of depredating animals through rule making done in consultation with the CPW Commission with the exception of controlling state-threatened or endangered depredating animals. The CPW Commission must approve any rules concerning

the taking of state-threatened or endangered depredating animals prior to the adoption of such rules by the Commissioner of Agriculture.

## International Treaties

Several international treaties affect how the federal government manages federal land and wildlife (including federally listed threatened and endangered species) under federal authorities, including the Convention of Nature Protection and Wildlife Preservation in the Western Hemisphere and Convention on International Trade in Endangered Species of Wild Fauna and Flora. These treaties differ in emphasis and species of primary concern but collectively provide clear mandates for identifying and protecting important habitats and ecosystems and protecting and managing individual species.

## References

### National Park Service (NPS)

- n.d. Law & Policy. Accessed September 23, 2022. Available at: <https://www.nps.gov/subjects/wilderness/law-and-policy.htm> -  
:~:text=The%20Wilderness%20Act%20of%201964%20established%20the%20National, Forest%20Service.%20NPS%20Policy%20Helps%20Support%20the%20Law

### U.S. Department of Agriculture-Animal and Plant Health Inspection Service (USDA-APHIS)

- n.d. Wildlife Damage. Accessed September 23, 2022. Available at: <https://www.aphis.usda.gov/aphis/ourfocus/wildlifedamage>

### U.S. Environmental Protection Agency (USEPA)

- 2021 Summary of Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments. Accessed September 23, 2022. Available at: <https://www.epa.gov/laws-regulations/summary-executive-order-13175-consultation-and-coordination-indian-tribal>

### U.S. Fish and Wildlife Service (USFWS)

- n.d. Animal Damage Control Act. Accessed September 23, 2022. Available at: <https://fws.gov/law/animal-damage-control-act>
- 1994 *The Reintroduction of Gray Wolves to Yellowstone National Park and Central Idaho. Final Environmental Impact Statement.* Prepared by the U.S. Department of the Interior Fish and Wildlife Service, Helena MT. May 1994. 414 pp.
- 2018 “What is a 10(j) Rule?” Accessed September 23, 2022. Available at: <https://www.fws.gov/sites/default/files/documents/ESA-section10%28j%29-fact-sheet.pdf>

**APPENDIX C: FINAL PUBLIC SCOPING COMMENT ANALYSIS  
REPORT**



# **Colorado Gray Wolf 10(j) Rulemaking Environmental Impact Statement**

## ***Final Public Scoping Comment Analysis Report***

**September 2022**

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# INTRODUCTION

Public scoping is the process by which the U.S. Fish and Wildlife Service (the Service) solicits public input on the scope of issues and alternatives to be addressed in a National Environmental Policy Act (NEPA) document, such as an environmental impact statement (EIS). It is a process open to the public that is conducted early in the NEPA planning process. Public scoping can include meetings and notifications to inform the public on the project and on the planning process guiding the preparation of an EIS. This process also instructs members of the public on how to provide comments on the project. After the public scoping period ends, public comments are analyzed and summarized. The summary—in addition to other relevant law, policy, planning documents, and scientific literature—is used to identify key issues, develop alternatives, and further help define potential environmental impacts.

The Service held a public scoping period for the Colorado Gray Wolf 10(j) Rulemaking EIS from July 21, 2022, to August 22, 2022. During the public scoping period, three in-person open house meetings were held in Gunnison, Silverthorne, and Craig, Colorado, on August 2, August 3, and August 4, 2022, respectively. A virtual public meeting was held on August 10, 2022. Members of the public were encouraged to submit comments online through <https://www.regulations.gov> (following instructions to submit comments to Docket No. FWS-R6-ES-2022-0100). Written comments were also accepted at the meetings and by mail. Approximately 900 pieces of correspondence were received during the public scoping period for this EIS. Additional detail is provided in this report. This report describes the public scoping process for this EIS and presents the analysis and summary of public comments received.

## PUBLIC SCOPING FOR THE COLORADO GRAY WOLF 10(j) RULEMAKING

The public scoping period was open for approximately five weeks between July 21, 2022, and August 22, 2022. The Service issued a press release to media outlets and published the press release on the Colorado Ecological Services Field Office website on July 19, 2022, announcing the dates, times, and places of the public scoping meetings. The Service opened the public comment period for initial scoping on July 21, 2022. On that date, letters were sent to Tribes and other stakeholders notifying them of the public scoping meetings and offering to brief them on the process, and the webpage for Docket No. FWS-R6-ES-2022-0100 on <https://www.regulations.gov> was activated for the public to submit comments. The Notice of Intent was published in the *Federal Register* on July 21, 2022. Three in-person public scoping meetings were held during the comment period at the following locations:

- August 2, 2022: Gunnison County Fairgrounds, Gunnison, Colorado
- August 3, 2022: Silverthorne Pavilion, Silverthorne, Colorado
- August 4, 2022: Moffat County High School, Craig, Colorado

Additionally, the Service held a virtual public scoping meeting on August 10, 2022.

Approximately 100 people attended the three in-person meetings and virtual meeting (approximately 25 people attended the meeting in Gunnison, approximately 11 people attended the meeting in Silverthorne, approximately 67 people attended the meeting in Craig, and approximately 50 people attended the virtual meeting).

At each meeting, handouts of the public scoping newsletter were available that included information about the background of the project, the proposed purpose and need, preliminary draft alternative concepts, potential issue topics, a description of the NEPA process, and information on how to submit



comments online or via mail. This information was also displayed on banners at each in-person meeting venue and presented in a PowerPoint presentation during the virtual meeting. Service personnel, as well as staff from Colorado Parks and Wildlife (at the in-person meetings only), were available to answer questions and provide additional information to meeting attendees.

Writing stations available at each in-person public meeting provided areas where attendees could sit, write comments, and submit a comment form into a box. Attendees who prepared written comments before the meeting could submit those comments to the comment box provided. Attendees had the option to take comment forms and mail them later. During the scoping period, approximately 900 pieces of correspondence were received.

Interested parties were encouraged to enter their comments directly on <https://www.regulations.gov/>. Hard copy correspondence received at the public meetings or by mail was also collected for analysis. All correspondence was entered into a web-based system, DiscoverText, for coding and analysis. DiscoverText is a text analytics software system that supports sorting and analysis of written comments.

## DEFINITION OF TERMS

Primary terms used in the document are defined below.

**Correspondence:** A correspondence is the entire document received from a commenter. This includes letters; written comment forms; comments submitted directly on <https://www.regulations.gov/>; and any other written comments provided either at the public scoping meetings or by mail.

**Comment:** A comment is a portion of the text within a correspondence that addresses a single subject. It could include such information as an expression of support or opposition for an alternative, additional data regarding existing conditions, or suggestions for resource topics, alternatives, or alternative elements to be considered.

**Code:** A code is a grouping centered on a common subject. The codes were developed during the scoping process and are used to track major subjects.

**Concern:** Concerns are statements that summarize the issues identified under each code. Each code was further characterized by concern statements to provide a better focus on the content of comments. Some codes required multiple concern statements, while others did not. In cases where no comments were received on an issue, the code was not identified or discussed in this report.

**Quotes:** Representative quotes have been taken directly from the text of the comments received from the public and further clarify the concern statements. Quotes have not been edited for grammar.

## COMMENT ANALYSIS METHODOLOGY

Correspondence was received by hard-copy letter via mail, on comment sheets submitted at the public meetings, or correspondence entered directly into <https://www.regulations.gov/>. Letters received by email or through the U.S. mail, as well as the comments received from the public meetings, are included in the analysis.

Once all the correspondence was entered into DiscoverText, each was read, and specific comments within each unique correspondence were identified. Over 900 comments were derived from the correspondence

received. When identifying comments, every attempt was made to capture the full breadth of comments submitted.

To categorize comments, each comment was assigned one or multiple codes to identify the general content of a comment and to group similar comments. Thirteen codes were used to categorize the public scoping comments received. Examples of codes developed for this project are *Alternatives*, *Support or Oppose*, and *Special Status Species*. In some cases, the same comment may be categorized under more than one code, reflecting the fact that the comment may address more than one issue or idea. It should be noted that the impact topics brought up in the public scoping comments are unlikely to be the only topics considered in the EIS. Impact topics to be considered in the EIS will be informed by a number of other factors in addition to public comments.

## **GUIDE TO THE CONCERN REPORT**

The *Concern Report* is provided in the following section of this document. This report summarizes the comments received during the public scoping process. In the report, comments are organized by codes and further organized into concern statements. Representative quotes are provided for each concern statement. A list of concern statements, in table format, is provided at the beginning of the *Concern Report* section for quick reference (refer to table 1).

## **HOW WILL MY COMMENT BE USED?**

As described above, all comments are categorized into concern statements, such as “Commenters requested that the Bureau of Land Management and U.S. Forest Service be cooperating agencies for the DEIS” and “Commenters requested that the DEIS look at impacts and interactions with the Mexican gray wolf.” These concerns are listed in table 1 in the *Concern Report* section of this document. These concerns will guide the alternatives, issues, impact topics, and references to be considered during drafting of the EIS.

This report is a summary of public comments received during the public scoping period for the EIS. This report, including the comments in this report, has not been screened for consistency with federal law and policy, or for whether a particular comment is within the scope of the EIS.

## CONCERN REPORT

As described above, this report summarizes the comments received during the public scoping period for the 10(j) Rulemaking EIS in support of the State of Colorado’s reintroduction of the gray wolf. Table 1 provides a concise list of concern statements by code for quick reference. It is followed by the full concern report, which includes representative quotes.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

<b>AL100 - Preliminary Alternatives:</b>	
Concern 1	Some commenters were in favor of incorporating trapping into an alternative as a management tool for gray wolves. One commenter noted that Colorado’s Amendment 14 that banned the use of leghold traps does not apply to federal agencies and suggested that leghold traps be used in gray wolf management. Some commenters posited that traps could enable use of radio collars to monitor wolves and could be a valuable tool in nonlethal management.
Concern 2	Commenters expressed approval for an alternative with maximum management flexibility. Many commenters approved of management flexibility to reduce conflicts between wolves and livestock and domestic animals. Some commenters noted that changes in habitat, rising human populations, and development have changed the Colorado landscape and require the Service to have the ability to adjust its management approach after introduction depending on outcomes. One commenter was strongly in favor of management flexibility, as long as a wolf hunting season would not be implemented. Other commenters were strongly in favor of management flexibility because it could allow for hunting if the wolf population were to become overly abundant or if the gray wolf were to be delisted. One commenter said that management flexibility afforded by the 10(j) could help reduce the potential economic impacts of wolves. Case-by-case management was favored by several commenters, who are worried about unforeseen regulatory needs following reintroduction. Many commenters were in favor of the flexibility to control wolves lethally and nonlethally depending on their impacts. Others asked the Service to be consistent with the management of the Northern Rocky Mountain population.
Concern 3	Management of Mexican wolves and other gray wolf subspecies was a subject of concern for commenters. Some commenters asked for the 10(j) rule to apply to all gray wolf subspecies, including the Mexican gray wolf. Commenters argued that including all subspecies under the 10(j) rule would enhance connectivity among populations. Several commenters requested that a subpopulation of Mexican wolves be introduced in southwestern Colorado, arguing that introducing the subspecies would improve genetic diversity and connectivity. Conversely, one commenter worried about preserving the genetic integrity of Mexican wolves.
Concern 4	Some commenters asked that the chosen alternative designate gray wolves as non-essential. Commenters pointed out delisted wolf populations in other states as justification for a non-essential designation, since the experimental population would not be vital to the survival of the gray wolf species. A few commenters also asked that the Service designate Mexican wolves as non-essential.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

Concern 5	Several commenters requested that the Service integrate existing planning efforts and reports (e.g., Colorado Parks & Wildlife [CPW] Report, Colorado Wolf Report, WildEarth Guardians Proposal and Wolf Restoration Plan, the Stakeholder Advisory Group recommendations, CPW resources on other species, and CPW big game management plans) into the selected alternative. Some commenters specified that the CPW plan should only be integrated into the Service's rule to the extent that it furthers gray wolf recovery and aligns with the best available science. Other commenters asked for the Service to assess the long- and short-term costs associated with the various plans and identify who would bear those costs. Commenters also asked that the Service incorporate best available science and peer-reviewed research into the plan. Others suggested considering the wolf restoration experiences of other states in determining the best alternative.
Concern 6	Commenters asked for allowances in the management plan for accidental or incidental lethal take of wolves. Commenters requested no punitive action against people who kill a wolf they have mistaken for a coyote. Commenters also requested protection from punitive action if working dogs or burros injure or kill a wolf. One commenter asked the Service to allow aggressive hazing of wolves to protect humans and livestock and asked that resulting accidental killings of wolves not be punished.
Concern 7	Some commenters requested that the Service designate the experimental population as essential in the rule.
Concern 8	Commenters requested that the management plan include education for ranchers and livestock operators to reduce conflicts with wolves. Topics for education included adjusting calving timing and location, increasing human watch over livestock, using guardian dogs, removing or destroying livestock carcasses, installing predator-resistant fencing, removing sick animals, using lights, and other nonlethal hazing techniques. Many commenters theorized teaching livestock operators about nonlethal techniques to avoid wolf predation would reduce conflicts with livestock.
Concern 9	Commenters requested that the Service include public education in its management plan. Some comments concerned teaching the public about the ecological importance of wolves to discourage lethal take. Other comments focused on educating citizens on wolf management, co-existence with wolves, and how to avoid wolf conflicts.
Concern 10	Commenters had a few creative recommendations for the Service to implement in its preferred alternative. One commenter suggested translocating or removing wolves that are proven to be responsible for a marked decline in ungulate populations. Another commenter recommended that the Service create a limit on the number of wolf fatalities allowed in Colorado and to stop reintroductions of wolves if the threshold is met to preserve the species. A commenter suggested spaying and neutering the reintroduced wolves, arguing that the Service should prevent wolf reproduction because the population would be experimental. Another commenter asked the Service to consider removing livestock from public lands to reduce conflicts with wolves.
Concern 11	Some commenters asked the Service to implement ecosystem recovery goals in the preferred alternative. A commenter suggested the Service use full recovery of riparian zones as an indicator of reaching the preferred population of wolves in the state. Another commenter requested that recovery goals and delisting be determined by the amount of suitable habitat the wolves occupy in the state, rather than a wolf population target. The commenter noted that having a hard population recovery goal would increase hostility toward wolves when the goal is reached and argued that management should be based on ecological carrying capacity instead.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

Concern 12	Several comments were related to the boundaries of the Service's action. Some commenters expressed concern about applying different rules to the same species in the state based on whether they were introduced or had migrated into the state. Several commenters requested that wolves be managed under the same rules within the experimental population boundary as outside the boundary, while others asked that the rule cover the entire state to reduce confusion. One commenter asked that wolves found in other states beyond the 10(j) boundary, including Utah and Arizona, be relocated back to Colorado. A commenter also asked that wolves be released a minimum of 150 kilometers inside the 10(j) boundary. Another commenter suggested that the Service extend the 10(j) boundary to include a buffer zone around Colorado's state borders to protect the population from unregulated take where wolves lack Endangered Species Act (ESA) protection. Several commenters requested that the Service limit where wolves could be reintroduced with suggestions including west of the Continental Divide or north of US Highway 50. Many commenters opposed boundaries in general and asked that wolves be permitted to roam freely inside and outside Colorado without lethal take or translocation.
Concern 13	Several commenters specifically requested that the 10(j) rule apply to both introduced and migratory wolves.
Concern 14	Commenters expressed support for alternative 1. Commenters were in favor of the regulatory flexibility afforded by the alternative and were also supportive of designating reintroduced wolves as an "experimental population."
Concern 15	Commenters expressed opposition to any lethal take of wolves. Some commenters cited ethical reasons for opposing lethal management; others noted ecological impacts of lethal control, particularly in riparian zones. Several commenters cited studies that show that lethal control is less effective than proactive nonlethal management in minimizing conflicts with livestock. Commenters argued that wolves can regulate their own population based on food and habitat availability. Many commenters qualified their statements opposing lethal control in the case of immediate defense of life.
Concern 16	Commenters were opposed to elements of alternative 2, including the Safe Harbor Rule, and suggested that the alternative could restrict the management tools needed to control livestock predation.
Concern 17	Commenters were against the no-action alternative, noting that the alternative would limit CPW's ability to regulate livestock predation and could have economic effects on livestock operators.
Concern 18	Commenters were concerned about having federal entities control the management of wolves and asked the Service to cede management to the state. Other commenters were concerned about giving too much control to the state. Commenters suggested that the 10(j) rule have simple criteria for management changes to allow for a seamless transition between state-managed species and federally managed species.
Concern 19	Commenters expressed concern about translocating wolves. Some commenters requested that the 10(j) rule provide options for relocating wolves that impact human safety, wildlife populations, or livestock. Other commenters argued that wolves should be allowed to roam freely without fear of translocation to reestablish habitat connectivity from the northern Rockies to the Southwest. One comment requested that translocations only occur with the consent of local governments and Tribes.
Concern 20	Commenters expressed support for allowing lethal take of wolves. Commenters were in favor of lethal take to protect livestock, pets, property, and working dogs. Some commenters noted the cost-effectiveness of lethal take and suggested that non-lethal methods would be more expensive to agencies and individuals. Other commenters were in favor of having a hunting season for wolves. One commenter noted that other predators, like black bears and cougars, are partially managed through hunting and that wolves should be similarly managed to avoid favoritism among species. One comment suggested that the Service implement an "escape clause" to lethally take all wolves in the experimental population if the non-essential status is at risk.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

Concern 21	Commenters suggested that lethal and/or nonlethal take be forbidden on public lands. Commenters argued that banning take on public lands would help restore ecosystems while allowing livestock operators to protect their property.
Concern 22	Commenters asked the Service to define specific recovery criteria in the plan. They asked for set population targets, timelines, and goals for down-listing and delisting the species. Commenters also requested that the Service define how the experimental population would contribute to wolf conservation and recovery.
Concern 23	Commenters asked that the Service specifically protect access to recreation, including motorized recreation, in the 10(j) area.
Concern 24	Commenters requested that reintroduced wolves be managed under the ESA as endangered or threatened. Commenters were in favor of managing all wolves in Colorado under the ESA to avoid subjecting wolves to human-defined boundaries where they might be safe in one area and subject to lethal take in another. Commenters argued that maintaining ESA protection would help prevent poaching and could help wolf subspecies thrive. One commenter suggested designating the reintroduced wolves as endangered and specifically releasing them in national parks. Commenters were concerned about lack of habitat protection under a 10(j) rule and favored reintroducing the species as endangered to allow for designation of critical habitat under the ESA.
Concern 25	Commenters suggested collaring all released wolves, or just one wolf per pack, to track their location and avoid livestock conflicts. A commenter also proposed implementing a reporting system for individuals who encounter wolves.
Concern 26	Commenters asked the Service to include provisions for lethal take under specific conditions. Several commenters asked that lethal take be permitted if the wolf was actively attacking livestock, pets, or working dogs. Other commenters suggested allowing lethal take only on private property. One commenter suggested requiring anyone shooting a wolf to have a camera installed on their gun to prove the wolf was in the act of killing livestock. Other commenters asked that lethal control be allowed if a wolf had shown a pattern of attacking livestock and had not responded to nonlethal deterrence strategies. One commenter asked that individuals not be penalized for shooting a wolf they had mistaken for a coyote. One commenter asked that wolf population control through lethal management be done with in consultation with biologists and an understanding of pack structure. Other suggestions included allowing lethal take up to a defined number of wolves or allowing hunting of wolves when they meet the 2, 2, 2 rule.
Concern 27	Commenters were in favor of the Service issuing a section 10(a)(1)(A). Some commenters requested that the entire state be managed under section 10(a)(1)(A) rather than a 10(j). Commenters noted that the existing wolves in Colorado mean that the introduced wolves would not be an experiment and a 10(j) would not be appropriate. One commenter suggested reintroducing wolves under a 10(a)(1)(A) permit throughout the state, keeping the wolves listed as endangered, and using Incidental Take Permits and Safe Harbor Agreements to provide regulatory flexibility. One commenter requested that the 10(a)(1)(A) permit not be used to justify removing or translocating wolves that roam outside the 10(j) area. Some commenters requested that the Service consider using section 10(a)(1)(B) to allow for maximum flexibility in management.
<b>Ecosystem Dynamics</b>	
Concern 28	Commenters requested that the EIS consider the interaction between resources, noting that these interactions are complex. Commenters provided specific examples, including upsetting predatory/prey relationships to the extent that soils, water, and vegetation are negatively impacted. Some commenters requested consideration of the ecological benefits from having wolves on the landscape. One commenter noted that the loss of sheep from wolf depredation could affect the ecosystem.
Concern 29	Commenters suggested that the 10(j) rule include a prohibition on lethal control to the extent that these action would inhibit trophic cascades.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

<b>Environmental Justice</b>	
Concern 30	Commenters noted that the EIS should assess the role of gray wolves in mitigating climate change and the potential effects of climate change on gray wolves and other affected resources.
<b>NEPA</b>	
Concern 31	Commenters requested that the Bureau of Land Management (BLM) and Forest Service be cooperating agencies for the EIS. They noted that these agencies should consider amending their Resource Management Plans (RMPs) and Forest Plan with regard to grazing-related decisions, specifically asking for vacant or marginal grazing allotments to be made available and for the removal of seasonal restrictions when game species are most prevalent.
Concern 32	Commenters noted that since wolves do not stay in one place, that the analysis consider reintroduced wolves and those that have migrated in from other areas. Similarly, they requested that because wolves will migrate to adjacent states, the impact to these states should be considered.
Concern 33	Commenters requested that the EIS evaluate indirect impacts of the potential decline in elk and deer herds from wolf reintroduction.
Concern 34	Commenters requested the purpose and need statement be focused on having reintroduction as the dominant priority and focus on the legislative mandate to reintroduce wolves.
Concern 35	Commenters requested that the National Environmental Policy Act (NEPA) analysis use peer-reviewed science to the greatest extent possible. Commenters also noted that the Service should evaluate potential impacts on other resources as well as impacts on weather, human uses such as recreation, domestic livestock grazing, and recreation (including hunting). Some commenters requested that the beneficial impact of wolves be addressed, including contributing to enhancing biodiversity; improving ecosystem processes and function, mitigating climate warming and enhancing resilience to climate warming; improving ungulate population health by selectively removing old and diseased individuals (including individuals infected with chronic wasting disease with research indicating that wolf predation may suppress disease emergence or limit prevalence); and infusing local tourism economies.
Concern 36	Commenters noted other related planning processes that should be included in the Service's planning process such as the State of Colorado's wolf management planning, the wolf reintroduction plan developed by a non-profit group, and past wolf managing efforts in other Western states. Specific resources from these agencies were suggested such as the CPW Species Activity Mapping and CPW estimates of the costs related to the reintroduction and management of wolves.
Concern 37	Commenters stated that this planning process cannot be rushed, with some expressing concern about the accelerated effort.
Concern 38	Commenters stated that the decision of the State of Colorado to reintroduce wolves, or not, is a major federal action requiring NEPA analysis.
Concern 39	Commenters requested that the NEPA analysis include a population viability analysis, stating that unless the population is a certain size, the reintroduction will not be successful. They further requested the NEPA analysis address the 3 R's - resiliency, redundancy, and representation, to determine when the gray wolf is ready for delisting.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

Concern 40	Commenters requested that the NEPA process consider the full range of alternatives such as lethal take, the geographic boundaries, and compensation programs. One specific alternative suggested was to evaluate two scenarios: (1) federal management of the gray wolf in Colorado as a fully protected endangered species, without an ESA 10(j) designation; and (2) cooperative, intergovernmental management of the gray wolf in Colorado as a designated non-essential experimental population under an ESA 10(j) designation.
Concern 41	Commenters requested that the EIS thoroughly document all costs to agencies and individuals of using non-lethal deterrents vs. lethal take. They expressed concern that non-lethal deterrents cost more and are not as effective. Others noted that the costs of reintroduction are relevant to the 10(j) process and should be discussed.
Concern 42	Commenters stated that this process should not move forward until the gray wolf is delisted in the State of Utah.
Concern 43	Commenters stated that the Service has a legal obligation to consult with appropriate state fish and wildlife agencies, local government entities, affected federal agencies, and affected private landowners during the development and implementation of experimental population rules. They noted that the plans developed by the Service need to be consistent with state and local plans. The State of Utah noted that it has a state Resource Management Plan (SRMP) and that all 29 counties in the state have adopted County Resource Management Plans (CRMPs) that should be considered in the planning process. Garfield County also requested consistency with its land use planning efforts. Cooperating agencies further requested the ability to coordinate during the development of the 10(j) rule.
Concern 44	One commenter requested that the EIS process be put on hold until there is a decision on the petition to delist the gray wolf.
Concern 45	Commenters asked that the EIS take a hard look at lethal control and its impacts and efficacy. They cited studies stating that livestock depredation may actually increase after lethal control. They also requested the EIS look at the role wolves play in livestock deaths, stating that they are not a large factor in mortality.
<b>Other</b>	
Concern 46	Commenters stated that the 10(j) rule should reflect a public desire for stricter protections and low support for recreational hunting.
Concern 47	Commenters stated that the 10(j) rule should include a subpopulation of Mexican gray wolves in southern Colorado to connect the existing population to a subpopulation and increase genetic diversity.
Concern 48	Commenters noted the regulatory responsibility of the Service in addressing translocated wolves. These included addressing how any translocated wolves would affect wolves already in Colorado and how they would affect the Mexican gray wolf.
Concern 49	Commenters suggested studies that could be considered in the EIS process include those related to wolf densities and other reintroduction efforts such as Isle Royale National Park and the Northern Rockies.
Concern 50	Commenters were concerned for human health and safety due to the presence of wolves on the landscape.
Concern 51	Commenters requested the EIS discuss the impacts to recreation from wolf reintroduction, stating that past reintroduction efforts have not found negative impacts to recreation. Other commenters requested the Service state how impacts to recreation would be avoided.
Concern 52	Commenters questioned if the reintroduced population would be "wholly separate" from existing populations and questioned if the Service has appropriate legal authority under section 10(j) for this effort.



**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

<b>Other Wildlife</b>	
Concern 53	Commenters raised concerns that the presence of wolves on the landscape would impact other species, mainly prey species such as elk, deer, and moose. They noted that CPW has restored these populations and were concerned this progress would be impacted by wolf reintroduction. Some commenters noted that the large ungulate populations in Colorado would provide adequate prey species for wolves. Commenters asked that stress levels in ungulates also be considered, in addition to direct mortality.
<b>Socioeconomic Resources</b>	
Concern 54	Commenters noted that management measures should be designed to avoid or mitigate impacts to recreation that could cause economic losses.
Concern 55	Commenters noted the potential economic benefits or adverse impacts of the State's plan to reintroduce gray wolves.
Concern 56	Commenters noted the EIS should consider potential socioeconomic impacts, including impacts to small businesses, including livestock producers, hunting-related businesses, and rural communities with and without implementation of a section 10(j) rule. They noted that these producers already see impacts from other wildlife.
Concern 57	Commenters noted the EIS should consider potential costs for reintroduction and management of gray wolves.
Concern 58	Commenters noted the Service should involve local counties in analyzing socioeconomic impacts to rural communities and livestock producers.
Concern 59	Commenters noted that allowing flexible management options under the section 10(j) rule is needed to mitigate socioeconomic impacts.
Concern 60	Commenters requested that the Service complete an economic study related to the State's planned reintroduction of gray wolves.
Concern 61	Commenters requested that the Service consider the potential effects of the State's plan to reintroduce gray wolves on tourism, hunting, and fishing revenues.
Concern 62	Commenters requested that the Service consider potential socioeconomic impacts on a local, rather than statewide, basis.
Concern 63	Commenters requested that the Service consider implementing a section 10(a)(1)(A) permit to allow the state to manage wolves that depredate livestock and working dogs.
Concern 64	Commenters noted that the section 10(j) rule should allow flexibility to address direct and indirect socioeconomic impacts of reintroduced gray wolves.
Concern 65	Commenters noted the EIS should document the costs of implementing non-lethal and lethal take strategies.
<b>Special Status Species</b>	
Concern 66	Commenters stated that they do not believe the gray wolf should be an endangered species. Some suggested that since there are already wolves in Colorado, a threatened designation would be a more appropriate.
Concern 67	Commenters requested that the EIS look at impacts and interactions with the Mexican gray wolf. Commenters also expressed concern that the release of the gray wolf would jeopardize the recovery of the Mexican wolf, with a risk of genetic swamping of the Mexican wolf.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

Concern 68	Commenters expressed concern about the impact of lethal removal on the gray wolf, noting that studies show when lethal removal is allowed, poaching increases. Commenters noted that lethal management of wolves in Wyoming has had negative impacts by severing population connectivity and inhibiting gene flow.
Concern 69	Commenters expressed concern that a 10(j) rule would preclude the designation of critical habitat for the enhancement of recovery efforts. Specific concerns included potential future habitat modifications like the addition or closure of roads, or opening up areas to motorized use.
<b>Support or Oppose</b>	
Concern 70	Commenters stated support for the presence of wolves in Colorado and the 10(j) process, with most stating that increased management flexibility is needed to address potential impacts from the reintroduction.
Concern 71	Commenters stated opposition to the 10(j) process, stating that it lowers protection for wolves; reclassifying them as "non-essential" and "experimental" allows them to be killed.
<b>Tribal Resources</b>	
Concern 72	Commenters stated that the Service should consult with Tribal representatives and draw on and use traditional ecological knowledge in the development of the 10(j) rule. Commenters specifically noted the Service should consult with the Global Indigenous Council in this process. Commenters were concerned with potential impacts to Tribal cultural values.
Concern 73	Commenters stated that the Service should develop a management agreement with Tribes and indicated that the Service should consult with the Southern Ute, Ute Mountain Ute, Arapaho, Cheyenne, Kiowa, Comanche, Apache, Navajo and Shoshone Tribes.
Concern 74	Tribal representatives from the Southern Ute stated concern that wolf reintroduction would lead to conflicts with livestock and wildlife/hunting-related interests, both of which are an important and integral part of the Tribe's social, economic, and cultural fabric. They also expressed concern for wolf dispersal to Tribal trust lands of their reservation, as well as Brunot Area lands where the Tribe retains off-reservation hunting rights for its members. The Tribe noted that prior to wolf releases, it expects to develop a wolf management plan in consultation with appropriate agencies to minimize wolf-related impacts to the Tribe and its members.
Concern 75	The Southern Ute Tribe affirmed its intention to engage in government-to-government consultation.
Concern 76	Commenters suggested that no agreement between the Service and the Tribe is necessary to capture and remove wolves from Tribal trust lands.

## PUBLIC SCOPING COMMENT SUMMARY

The following report is organized by codes and then concern statements. Representative quotes are provided for each concern statement.

Representative quotes are presented exactly as they were submitted by the commenters. Grammar and spelling have not been changed. These representative quotes are not the only comments received under a particular concern statement; rather, these quotes have been chosen to represent those comments categorized under each concern statement.

### ***AL100 - PRELIMINARY ALTERNATIVES:***

**CONCERN STATEMENT:** Some commenters were in favor of incorporating trapping into an alternative as a management tool for gray wolves. One commenter noted that Colorado's Amendment 14 that banned the use of leghold traps does not apply to federal agencies and suggested that leghold traps be used in gray wolf management. Some commenters posited that traps could enable use of radio collars to monitor wolves and could be a valuable tool in nonlethal management.

**Representative Quote:** The 10J designation needs to include trapping as a management option for wolves. Colorado's Amendment 14 that banned the use of leghold traps does not apply to federal agencies in Colorado.

**Representative Quote:** All other states except California use trapping as a management tool. Without this effective management tool, Colorado's wolf population will reach a point of excessive growth with unmitigated impacts to livestock, big game, and other wildlife species. Look no further than the Bureau of Land Management's failure to control the feral horse population for the unintended consequences of unchecked growth of a high impact species.

**Representative Quote:** It has been proven that trapping is a great management tool. I would ask that the 10J designation includes trapping as a management option for wolves. Colorado's Amendment 14 banned the usage of leg holds traps does not apply to federal agencies in Colorado. The Colorado wolf management plan and the future state delisting of wolves are both predicated on population numbers. Trapping will enable to radio collars to be utilized to monitor each pack and their numbers and movements. This tool will aid in non-lethal deterrent usage. I feel it is imperative to know where each pack is, how many there are in the pack to mitigate conflict as well as identify depredating wolves for lethal removal. All other states with the exception of California use trapping as a management tool. Without this effective management tool, Colorado's wolf population will reach a point of excessive growth with detrimental impacts to livestock, big game, other wildlife species and our human and pet Colorado outdoor experience.

**CONCERN STATEMENT:** Commenters expressed approval for an alternative with maximum management flexibility. Many commenters approved of management flexibility to reduce conflicts between wolves and livestock and domestic animals. Some commenters noted that changes in habitat, rising human populations, and development have changed the Colorado landscape and require the Service to have the ability to adjust its management approach after introduction depending on outcomes. One commenter was strongly in favor of management flexibility, as long as a wolf hunting season would not be implemented. Other commenters were strongly in favor of management flexibility because it could allow for hunting if the wolf population were to become overly abundant or if the gray wolf were to be delisted. One commenter said that management flexibility afforded by the 10(j) could help reduce the potential economic impacts of wolves. Case-by-case management was favored by

several commenters, who are worried about unforeseen regulatory needs following reintroduction. Many commenters were in favor of the flexibility to control wolves lethally and nonlethally depending on their impacts. Others asked the Service to be consistent with the management of the Northern Rocky Mountain population.

**Representative Quote:** We support the flexible approach being proposed for Colorado. It is important not to handcuff our Colorado Parks and Wildlife so they can use the expertise of their wildlife biologists and range managers to manage the balance of wildlife given the imprint that man puts on nature with population growth, traffic and the need to grow food.

**Representative Quote:** I support the management flexibility provided with the 10(j) rule for Colorado. To achieve the best management outcome possible, wolves under the 10(j) rule should be classified as non-essential, experimental population.

**Representative Quote:** Considering wolves are naturally migrating from Wyoming, a state where wolves are delisted and allows unpermitted "takes", Colorado's management of gray wolves under Section 1 O(j) should be consistent with the management of the Northern Rocky Mountain population. This would include using the Section 1 O(j) management and flexibility to allow for regulated hunting of gray wolves as populations grow and the wolves become delisted. Further, there should be minimal complexity involved in the triggers for management of gray wolves, and State and private reporting. The private landowners should not bear the cost of managing the gray wolf reintroduction in Colorado.

**CONCERN STATEMENT:** Management of Mexican wolves and other gray wolf subspecies was a subject of concern for commenters. Some commenters asked for the 10(j) rule to apply to all gray wolf subspecies, including the Mexican gray wolf. Commenters argued that including all subspecies under the 10(j) rule would enhance connectivity among populations. Several commenters requested that a subpopulation of Mexican wolves be introduced in southwestern Colorado, arguing that introducing the subspecies would improve genetic diversity and connectivity. Conversely, one commenter worried about preserving the genetic integrity of Mexican wolves.

**Representative Quote:** The FWS rule for managing wolves in Colorado should be inclusive of all gray wolf subspecies. Gray wolf recovery should include full connectivity of the species from the northern Rockies population to the Mexican gray wolf population to the south. The rule should allow for the presence of any gray wolves that may one day migrate into the state from neighboring populations to allow for future connectivity of these populations. Gray wolf subspecies which find themselves in Colorado should be allowed to live where they find suitable habitat and native prey.

**Representative Quote:** As recommended by wolf biologists who advise Mexican wolf recovery, the Colorado management rule should include the introduction of a subpopulation of Mexican gray wolves in the southern region of Colorado. Such a subpopulation would be able to successfully connect to the existing population within the Mexican gray wolf experimental population area and would provide this critically endangered subspecies with much-needed genetic diversity and resiliency.

**Representative Quote:** Additionally, the Commission believes the establishment of a statewide Nonessential Experimental Population should be performed with two important safeguards: 1) Preservation of the genetic integrity of Mexican wolf is considered; and 2) Impacts to recovery of Mexican wolves are considered.

**CONCERN STATEMENT:** Some commenters asked that the chosen alternative designate gray wolves as non-essential. Commenters pointed out delisted wolf populations in other states as justification for a non-essential designation, since the experimental population would not be vital to the survival of the

gray wolf species. A few commenters also asked that the Service designate Mexican wolves as non-essential.

**Representative Quote:** My family ranching operation supports a 10J NONESSENTIAL experimental population designation for gray wolves in Colorado that have either migrated into the state or are released by CPW; and for any Mexican wolves that may migrate into the state.

**Representative Quote:** It is imperative that the 10(j) rule classify the wolf population in Colorado as non-essential and experimental. In 1994, the United States Fish and Wildlife Service in cooperation with the University of Wyoming Fish and Wildlife Cooperative Research Unit released a Biological Feasibility Study which deemed 4 of the 7 potential wolf recovery areas (PWRAs) has having potential conflict due either to human or livestock population. Because the proposed introduction area falls within these PWRAs, it is incredibly important that the wolf population, whether migrating or introduced, be classified as non-essential and experimental opening the door for more effective management techniques, such as lethal force, should certain wolf-human or wolf-livestock situations occur.

**Representative Quote:** Before the FWS designates an experimental population of gray wolf in Colorado, it must determine whether the population is essential or nonessential to the continued existence of the endangered gray wolf. 16 U.S.C. Â§ 1539(j)(2)(B); 50 C.F.R. Â§ 17.81(c)(2). An essential experimental population means an experimental population whose loss would be likely to appreciably reduce the likelihood of the survival of the species in the wild. 50 C.F.R. 17.80(b). The introduction of an experimental population of gray wolves in Colorado may help with the conservation of the species (16 U.S.C. Â§ 1539(j)(2)(A); 50 C.F.R. Â§ 17.81(b)), but it is not essential to the continued existence of gray wolves. There are a number of gray wolves located in other states, with some of the populations no longer listed under the Endangered Species Act (ESA). The gray wolf population in the Great Lakes area total more than 4,200 wolves. 85 Fed. Reg. 69778, 69788 (Nov. 30, 2020). The gray wolves in the Northern Rocky Mountain area (Idaho, Montana, Wyoming, and portions of Oregon, Washington and Utah) total about 2,386 wolves and growing. Id. The Northern Rocky Mountain gray wolf population has been delisted. See id. at 69780. The wolves from this distinct population segment have also made it into northwest Colorado, Oregon, and California. Id. at 69784, 69788-69789, 69792. While the larger grey wolf populations are located outside of Colorado, the FWS has recognized that these growing populations warranted delisting the gray wolf across the United States. See 85 Fed. Reg. 69778. A federal court vacated the FWS decision to delist the gray wolf because the FWS failed to adequately consider threats to gray wolves outside of the core population areas and the potential loss of the historical range. *Defenders of Wildlife v. U.S. Fish & Wildlife*, 2022 WL 499838, at \*7-11 (N.D. Cal. Feb. 10, 2022). However, the continued growth of the gray wolf populations in the Great Lakes and Northern Rocky Mountain areas show that an experimental population in Colorado is not essential to the survival of the gray wolf species.

**CONCERN STATEMENT:** Several commenters requested that the Service integrate existing planning efforts and reports (e.g., Colorado Parks & Wildlife [CPW] Report, Colorado Wolf Report, WildEarth Guardians Proposal and Wolf Restoration Plan, the Stakeholder Advisory Group recommendations, CPW resources on other species, and CPW big game management plans) into the selected alternative. Some commenters specified that the CPW plan should only be integrated into the Service's rule to the extent that it furthers gray wolf recovery and aligns with the best available science. Other commenters asked for the Service to assess the long- and short-term costs associated with the various plans and identify who would bear those costs. Commenters also asked that the Service incorporate best available science and peer-reviewed research into the plan. Others suggested considering the wolf restoration experiences of other states in determining the best alternative.

**Representative Quote:** United States Fish and Wildlife Service (USFWS) should integrate the CPW developed plan into the proposed 10(j) management rule framework only to the extent that such plan complies with the best available science.

**Representative Quote:** The USFWS should evaluate both the Colorado wolf management plan and CPW's existing plans for big game management.

**Representative Quote:** I urge FWS to adhere to the proposal outlined by WildEarth Guardians, (501-c3) which is science-based and has the well being of wildlife and the environment as its main concern.

**Representative Quote:** The potential costs to comply with the actions under consideration, including those that would be borne by the Federal Government and private sectors. USFWS should consider the initial estimates of costs related to reintroduction and longer-term management of wolves developed by CPW.

**CONCERN STATEMENT:** Commenters asked for allowances in the management plan for accidental or incidental lethal take of wolves. Commenters requested no punitive action against people who kill a wolf they have mistaken for a coyote. Commenters also requested protection from punitive action if working dogs or burros injure or kill a wolf. One commenter asked the Service to allow aggressive hazing of wolves to protect humans and livestock and asked that resulting accidental killings of wolves not be punished.

**Representative Quote:** A 10J designation needs to have a comprehensive and flexible incidental take section. Our livestock guardian dogs are effective deterrents for coyote, bear and lion attacks but are typically no match for wolves. In the unlikely event that a guardian dog, burro, etc. does injure or kill a wolf, there should be no punitive action taken against the owner/agent. I feel there should be no punitive action taken if an owner of livestock or dog needs to harass which could result in injury/death of the wolf to stop an attack or encounter. Punitive action should also not be levied against a person who inadvertently mistakes a wolf with a coyote or a wolf hybrid.

**Representative Quote:** A law allowing very aggressive hazing of gray wolves so they will fear humans and leave cattle alone is necessary. Thankfully the Colorado Parks and Wildlife Commission gave ranchers permission to haze wolves last month, however, we think a law exempting ranchers from accidentally injuring or killing a wolf would be appropriate, as ranchers did not ask for this added responsibility. If wildlife managers are truly concerned that ranchers will injure or kill too many wolves then, they should be out on this land managing the packs themselves. Ranchers should be given a tax credit to reimburse them for 100% of the cost of hazing tools. Colorado law also should be amended so that a rancher who has documented repeated loss of livestock or working animals can apply for a permit to kill an aggressive wolf on his or her property and give the carcass to Parks and Wildlife.

**CONCERN STATEMENT:** Some commenters requested that the Service designate the experimental population as essential in the rule.

**Representative Quote:** Properly designate the experimental population as "essential."

**CONCERN STATEMENT:** Commenters requested that the management plan include education for ranchers and livestock operators to reduce conflicts with wolves. Topics for education included adjusting calving timing and location, increasing human watch over livestock, using guardian dogs, removing or destroying livestock carcasses, installing predator-resistant fencing, removing sick animals,

using lights, and other nonlethal hazing techniques. Many commenters theorized teaching livestock operators about nonlethal techniques to avoid wolf predation would reduce conflicts with livestock.

**Representative Quote:** Specifically, animal husbandry practices such as adjusting calving timing and location, increased human supervision by range riding over large grazing areas, and livestock guardian dogs have been proven effective at minimizing livestock losses (Bruns et al., 2020, Moreira-Arce et al. 2017).

**Representative Quote:** I support the reintroduction of the Gray Wolf in Colorado without boundaries and they should be permitted to live where they find suitable habitat. To mitigate conflict with humans such as preying on livestock by Grey Wolves, human ranchers and farmers should be properly educated about protecting cattle.

**Representative Quote:** Conversely, research directs that lethal management of wolves does not build tolerance for wolves. Researchers found that granting management flexibility (killing) for endangered species to address illegal behavior (poaching) may instead promote such behavior. Chapron and Treves (2016) show that allowing wolf (*Canis lupus*) culling was substantially more likely to increase poaching than reduce it: when the government kills a protected species, the perceived value of each individual of that species may decline and may instead promote such illegal behavior. Thus, on public land, livestock producers should be required to implement conflict avoidance and coexistence strategies. Livestock should be guarded, especially during calving and lambing; and livestock carcasses that die of unrelated matters should be removed to prevent wolves from being attracted and scavenging.

**CONCERN STATEMENT:** Commenters requested that the Service include public education in its management plan. Some comments concerned teaching the public about the ecological importance of wolves to discourage lethal take. Other comments focused on educating citizens on wolf management, co-existence with wolves, and how to avoid wolf conflicts.

**Representative Quote:** 7. There is a huge need for educational materials for all types of public activities that might come into contact with wolves in Colorado. This must be a strong component of any designation made under ESA requirements.

**Representative Quote:** Additionally, any rule that FWS promulgates should be adaptable, flexible, and responsive to the situation on the ground. This should also be paired with a public education campaign to explain how important wolves are to the Rocky Mountains, and why wolves are not the enemy of humans. Much of the discussion in Colorado has focused on why wolves will be a problem, and not on the positive impact wolves have on their ecosystems. These attitudes still prevail today, particularly among those who slaughter animals for a living, and among those in industries who were a large reason why gray wolves were eliminated from Colorado in the first place. If we continue the same attitude and low valuation of a wolf's life, then this reintroduction plan will not succeed, and the will of Colorado voters will not be met.

**Representative Quote:** USFWS must meet their responsibility to educate the public, ranchers, about non-lethal methods in caring for, management of wolves, conflicts, to help the wolves survive.

**CONCERN STATEMENT:** Commenters had a few creative recommendations for the Service to implement in its preferred alternative. One commenter suggested translocating or removing wolves that are proven to be responsible for a marked decline in ungulate populations. Another commenter recommended that the Service create a limit on the number of wolf fatalities allowed in Colorado and to stop reintroductions of wolves if the threshold is met to preserve the species. A commenter

suggested spaying and neutering the reintroduced wolves, arguing that the Service should prevent wolf reproduction because the population would be experimental. Another commenter asked the Service to consider removing livestock from public lands to reduce conflicts with wolves.

**Representative Quote:** Grey wolves prey on the elk, deer and other ungulates, so big game populations within experimental population's boundaries will be impacted by the reintroduction of gray wolves. This can be particularly concerning if the non-essential experimental population boundary overlaps with winter habitat, migration corridors, or trophy hunting management units. Other Section 10(j) designations for gray wolves have allowed for the removal or translocation of wolves after it was documented that they were the primary cause for an ungulate population decline. The Districts respectfully request a similar wolf damage management strategy for this Section 10(j) designation.

**Representative Quote:** To prevent wolves from being removed from safe habitats in other places, then released only to be killed in Colorado, I urge the setting of a federal limit on wolf fatalities in Colorado. If that threshold is exceeded, then Colorado should be required to cease its reintroduction effort for the preservation of the species.

**Representative Quote:** Removal of invasive species (livestock) should be considered before using tax payer funds to kill wolves on public land in extreme cases where non-lethal management fails.

Representative Quote: All one has to do is look to WY, ID, and MO. I applaud this thoughtful and measured action and hope that if and wolves are introduced that thought be given to spaying and neutering them. If this is indeed an "experimental release", then why not prevent procreation until the experiment is complete and the data is in?

**CONCERN STATEMENT:** Some commenters asked the Service to implement ecosystem recovery goals in the preferred alternative. A commenter suggested the Service use full recovery of riparian zones as an indicator of reaching the preferred population of wolves in the state. Another commenter requested that recovery goals and delisting be determined by the amount of suitable habitat the wolves occupy in the state, rather than a wolf population target. The commenter noted that having a hard population recovery goal would increase hostility toward wolves when the goal is reached and argued that management should be based on ecological carrying capacity instead.

**Representative Quote:** Rather than setting a population cap at which wolves are no longer protected by the endangered species act, recovery goals should be determined by the following: geographic distribution, meaning wolves are allowed to populate any habitat in the state that they deem fit to inhabit and a "limit" is set when wolves have populated all geographically sustainable areas in the state; populations have reached a density that can withstand the common losses wolves face, such as pack to pack fights/disease/starvation/poaching; and allowing wolves to not only permanently inhabit areas in Colorado but move freely through the state to re-connect wolves from the North to the South.

**Representative Quote:** I am writing to you in support of reintroducing wolves in Colorado under the 10j ruling. I ask that no specific subspecies of gray wolf is defined for the reintroduction in order to allow any wolf subspecies (*Occidentalis* or *baileyi*) to live and roam wherever they find suitable habitat in Colorado. This will help ensure long term survival of species and increase genetic diversity. There should be no hard recovery population goal, as having a hard number has shown to increase hostility towards wolves once that number is reached. Instead, wolf management should be adaptive and based off of ecological carrying capacity.



**Representative Quote:** The population of wolves should be large enough and sufficiently well-distributed throughout western Colorado so as to influence the behavior and/or distribution of elk sufficient to restore or nearly restore (with an explanation as to why wolves cannot fully restore) the natural riparian and hydrological functioning of significant stretches (that the Service should identify in the final 10(j) rule after taking public comment on the draft EIS) of the state's rivers, streams and other wetland habitats.

**CONCERN STATEMENT:** Several comments were related to the boundaries of the Service's action. Some commenters expressed concern about applying different rules to the same species in the state based on whether they were introduced or had migrated into the state. Several commenters requested that wolves be managed under the same rules within the experimental population boundary as outside the boundary, while others asked that the rule cover the entire state to reduce confusion. One commenter asked that wolves found in other states beyond the 10(j) boundary, including Utah and Arizona, be relocated back to Colorado. A commenter also asked that wolves be released a minimum of 150 kilometers inside the 10(j) boundary. Another commenter suggested that the Service extend the 10(j) boundary to include a buffer zone around Colorado's state borders to protect the population from unregulated take where wolves lack Endangered Species Act (ESA) protection. Several commenters requested that the Service limit where wolves could be reintroduced with suggestions including west of the Continental Divide or north of US Highway 50. Many commenters opposed boundaries in general and asked that wolves be permitted to roam freely inside and outside Colorado without lethal take or translocation.

**Representative Quote:** Furthermore, the Commission believes that the establishment of this statewide Nonessential Experimental Population is contingent upon two critical components: 1) No initial releases or translocations south of U.S. Highway 50. 2) Any wolf that moves south or west of the Colorado statewide 10(j) area, regardless of origin, must be returned to the 10(j) area north of U.S. Highway 50 as soon as practicable and before it becomes established.

**Representative Quote:** Given the aforementioned concerns, the State recommend Colorado's state line form the boundary of the 10(j). Like other 10(j) populations, including Mexican wolves, red wolves, black-footed ferrets, whooping cranes, California condors, Aplomado falcons, and wood bison, wolves that leave the boundary should be trapped and returned to Colorado, another western 10(j) population or the Northern Rocky Mountain (NRM) delisted area. Any wolf found in listed areas of Utah would be presumed to originate from the experimental population and be relocated. To mitigate the likelihood of wolves dispersing beyond the boundaries of the 10(j), releases should only be authorized greater than 150 km, the median dispersal distance of NRM wolves, from the 10(j) boundary.

**Representative Quote:** - If wolves are restored as an experimental population under section 10(j) of the Endangered Species Act, consider extending the boundary of the potential 10(j) experimental population area beyond Colorado's state borders to create a buffer zone protecting the experimental population from unregulated take in areas where wolves currently lack ESA protections. In particular, consider aligning the 10(j) boundary with Colorado's state borders except that it should also include the northwest portion of Utah that falls within the Northern Rocky Mountains Distinct Population Segment, as well as extend past the northern border of Colorado into Wyoming up to Interstate 80 (I-80). Extending the 10(j) boundary into Wyoming will help create a buffer zone where wolves cannot be killed to protect members of the experimental population who cross Colorado's invisible state line. Currently wolves in southern Wyoming are considered "predators" and can be killed year-round by any legal means. W.S. 1977 section 11-6-302. Creating a buffer zone not only protects wolves and promotes wolf recovery and conservation, but also protects the Service's and Colorado's investment in wolf restoration. Without a buffer zone, even wolves living inside national

parks have been decimated just outside those protective boundaries, a 20-year National Park Service study concluded

**Representative Quote:** AZSFWC asserts that the following criteria should be incorporated into the draft rule: 1. The southern boundary of the 10(j) area should be located well north of the Arizona state line. US Highway 50 appears to represent a suitable line of demarcation. 2. There will be no releases or translocations of wolves outside the 10(j) area. 3. Wolves that disperse outside the 10(j) area will be captured and returned to the 10(j) area. 4. The cost of any such captures that occur outside the state of Colorado will be borne by the Service and not the responsibility of wildlife managers in neighboring states. 5. All recovery efforts in Colorado will be closely coordinated with state wildlife agencies in the neighboring states.

**CONCERN STATEMENT:** Several commenters specifically requested that the 10(j) rule apply to both introduced and migratory wolves.

**Representative Quote:** I think the 10 (j) rule should be implemented and it should apply to all migrating and introduced wolves in Colorado. Economic impact of wolves is significant in rural sectors of Colorado and we need the flexibility afforded by the 10 (j) rule.

**Representative Quote:** As a fourth generation cattle rancher in Colorado I would like to see the 10j rule implemented in Colorado and the wolves be classified as nonessential experimental populations. I also believe the 10j rule should be applied to all of Colorado to include migrating and introduced wolves.

**CONCERN STATEMENT:** Commenters expressed support for alternative 1. Commenters were in favor of the regulatory flexibility afforded by the alternative and were also supportive of designating reintroduced wolves as an “experimental population.”

**Representative Quote:** All of the non lethal controls are not effective in the case of wolves that have habitually kill and maim livestock. Therefore, we are urging you to choose Alternative number 1 in your report, so that CPW and local ranchers are allowed flexibility in controlling lethally all wolves across the state that become habitual predators of livestock.

**Representative Quote:** Please apply the Section 10(j) Rule as described in your "Alternative Concept #1" to ALL wolves in Colorado and allow CPW the proper tools to manage wolves, along with all other Big Game effectively for ALL Coloradans!

**Representative Quote:** I support the EIS for wolves in Colorado to focus on the impacts of a statewide 10(j) status for the species. Alternative Concept 1 would provide this flexibility and allow for the best chance of success for the species and those communities and individuals who will inevitably experience negative impacts from the introduction. Only through impact-based management will Colorado be able to successfully balance the needs of wolves, prey species, and social/cultural/economic impacts. To allow for true impact-based management, wolves must be recognized as a non-essential, experimental population across the entire state.

**CONCERN STATEMENT:** Commenters expressed opposition to any lethal take of wolves. Some commenters cited ethical reasons for opposing lethal management; others noted ecological impacts of lethal control, particularly in riparian zones. Several commenters cited studies that show that lethal control is less effective than proactive nonlethal management in minimizing conflicts with livestock. Commenters argued that wolves can regulate their own population based on food and habitat availability. Many commenters qualified their statements opposing lethal control in the case of immediate defense of life.

**Representative Quote:** The DEIS should also analyze the many feasible non-lethal and conflict avoidance measures that can be used to greatly minimize the risk for wolf predation on livestock.

**Representative Quote:** Please ensure that the focus of your future plans is on the welfare of the wolves, along with using non-lethal measures that promote coexistence between humans, domestic animals and wolves.

**Representative Quote:** The 10(j) management rule should strictly curtail any lethal management or recreational hunting of wolves. Lethal management often fails to provide a long-term solution to wolf-livestock conflict and has the highest variability of success when compared to non-lethal practices. In addition, there is significant evidence showing that lethal management of wolves may be less functionally effective at mitigating subsequent livestock losses than non-lethal deterrents. Lethal management of wolves should not be permitted except in extremely rare circumstances of immediate defense of life.

**Representative Quote:** The 10(j) management rule should reflect broad public values that support stricter protections for wolves and reflect very low support for recreational hunting.

**Representative Quote:** The 10(j) management rule should strictly curtail any lethal management or recreational hunting of wolves. Lethal management often fails to provide a long-term solution to wolf-livestock conflict and has the highest variability of success when compared to non-lethal practices. In addition, there is significant evidence showing that lethal management of wolves may be less functionally effective at mitigating subsequent livestock losses than non-lethal deterrents. A substantial body of research documenting human-caused mortality in North American wolves has found that policies that allow for the liberalized killing of wolves result in a direct increase in the hazard and incidence of illegal killings (Louchouart et al. 2021, Santiago-Ávila et al. 2022, Santiago-Ávila et al. 2020, Treves et al. 2021). Lethal management of wolves should not be permitted except in extremely rare circumstances of immediate defense of life. As recommended by wolf biologists who advise Mexican wolf recovery, the Colorado 10(j) management rule should include the introduction of a subpopulation of Mexican gray wolves in the southern region of Colorado.

**CONCERN STATEMENT:** Commenters were opposed to elements of alternative 2, including the Safe Harbor Rule, and suggested that the alternative could restrict the management tools needed to control livestock predation.

**Representative Quote:** Alternative 2 will apply the 10(j) rule to the Gray wolf in the reintroduced areas and establish a Safe Harbor rule for the Gray Wolf population where they have migrated in and already exist. This in my opinion becomes problematic as not all management tools needed would be available for the wolves that have already migrated here from surrounding states (mainly documented from Wyoming). Therefore, a safe harbor rule doesn't allow lethal control of wolves that habitually attack livestock, working dogs and pets.

**Representative Quote:** Alternative 2 and its Safe Harbor provision is not a viable option as it does not provide all the management tools needed to manage wolves who have migrated to Jackson County naturally. As stated above, Jackson County is already dealing with livestock predation from an existing wolf pack.

**CONCERN STATEMENT:** Commenters were against the no-action alternative, noting that the alternative would limit CPW's ability to regulate livestock predation and could have economic effects on livestock operators.

**Representative Quote:** 3. Alternative 3 is also not a viable option as there would be no regulatory response when issues like livestock predation occur. The livelihood of our ranching community is crucial to our community and Jackson County at large.

**Representative Quote:** Alternative 3 no-action, a bad decision in my opinion, as there would be no regulatory response for the CPW when issues like livestock predation occur. It is kind of like “Who Cares”.

**CONCERN STATEMENT:** Commenters were concerned about having federal entities control the management of wolves and asked the Service to cede management to the state. Other commenters were concerned about giving too much control to the state. Commenters suggested that the 10(j) rule have simple criteria for management changes to allow for a seamless transition between state-managed species and federally managed species.

**Representative Quote:** Rule 10(j) should be imposed to designate the introduction as non essential. Our state wildlife agencies and its stakeholders should have the most management powers and not simply hand it over to federal entities.

**Representative Quote:** Considering wolves are naturally migrating from Wyoming, a state where wolves are delisted and allows unpermitted takes, Colorado’s management of gray wolves under Section 10(j) should be consistent with the management of the Northern Rocky Mountain population. This would include using the Section 10(j) management and flexibility to allow for regulated hunting of gray wolves as populations grow and the wolves become delisted. Further, there should be minimal complexity involved in the triggers for management of gray wolves, and State and private reporting.

**Representative Quote:** I believe if this reintroduction must occur, you should be able to control the population on a state level without the USFWS getting involved. No one will be more responsible with job than the people that live and work in the state of Colorado. Washington, DC has no business controlling those populations.

**Representative Quote:** This experiment should be kept to just that, an experiment. The CPW should have the control over management of the wolves in this state (the ones already here and the newly proposed)

**Representative Quote:** As wolf status protections can change with court orders and political administrations, and we request the USFWS provide the adaptive criteria to allow for seamless transition between State managed species and federally managed species, especially regarding population control as population objectives are met.

**CONCERN STATEMENT:** Commenters expressed concern about translocating wolves. Some commenters requested that the 10(j) rule provide options for relocating wolves that impact human safety, wildlife populations, or livestock. Other commenters argued that wolves should be allowed to roam freely without fear of translocation to reestablish habitat connectivity from the northern Rockies to the Southwest. One comment requested that translocations only occur with the consent of local governments and Tribes.

**Representative Quote:** Additionally, the 10J should provide options for relocating/removal of wolf packs negatively impacting livestock production, depressing wildlife populations, or creating human safety concerns.

**Representative Quote:** Wolves should be permitted to live with no boundaries where they find habitat as was decided in Colorado's 2004 wolf management plan. Allow wolves to utilize habitat across Colorado's Rocky Mountains which will help re-establish connectivity from the northern Rockies to the Southwest, which is vital to the long-term success of the species. Moreover, gray wolves should be permitted to roam beyond the borders of CO without persecution or threat of being captured and returned.

**Representative Quote:** Finally, translocation should not occur without the consent of affected local governments and tribes.

**CONCERN STATEMENT:** Commenters expressed support for allowing lethal take of wolves. Commenters were in favor of lethal take to protect livestock, pets, property, and working dogs. Some commenters noted the cost-effectiveness of lethal take and suggested that non-lethal methods would be more expensive to agencies and individuals. Other commenters were in favor of having a hunting season for wolves. One commenter noted that other predators, like black bears and cougars, are partially managed through hunting and that wolves should be similarly managed to avoid favoritism among species. One comment suggested that the Service implement an "escape clause" to lethally take all wolves in the experimental population if the non-essential status is at risk.

**Representative Quote:** I feel that any producers or business owners that rely on any working animals like horses to run a business to make a living should be entitled in the 10(j) rule to take lethal action when a wolf is caught in the act of chasing, biting or killing (attacking) livestock/business working animal independently of the CPW. CPW would be notified of the situation so an investigation could happen after the fact. To have our hands tied and watch a wolf " attack" our horses, guard dogs and cattle etc. while waiting on the CPW to show up and investigate is very unrealistic. There is not a human on the planet that would just be able to stand their and watch an animal that they treasure be destroyed. This is my recommendation on the verbiage needed on the 10(j) rule so that we can feel that wolves are not being placed on a pedestal above all other animal life.

**Representative Quote:** Lethal control by the landowner/livestock grower for any Grey Wolf caught in the act of livestock deprivation, including pets and working dogs.

**Representative Quote:** Finally, while still early in the process, the Service should evaluate and then include an escape clause that authorizes the State to lethally remove all members of the experimental population if its nonessential status is at risk. The Service included such escape clauses in numerous other experimental population rules. This provision is very appropriate here, given that the Service has recognized gray wolves across the lower 48 U.S. States as no longer endangered or threatened under the ESA. 85 Fed. Reg. 69778 (Nov. 3, 2020).

**Representative Quote:** I would hope that the 10j rule be used and the wolves be classified as non-essential experimental populations across the entire state. Without the opportunity to use lethal control the impact on livestock and wildlife will be enormous.

**Representative Quote:** The EIS needs to very thoroughly document the costs to agencies and individuals of using non-lethal deterrents vs. lethal take. Non-lethal deterrents are typically only effective for a short time and very expensive. The cost-effectiveness of lethal take needs to factor heavily into the management equation

**CONCERN STATEMENT:** Commenters suggested that lethal and/or nonlethal take be forbidden on public lands. Commenters argued that banning take on public lands would help restore ecosystems while allowing livestock operators to protect their property.

**Representative Quote:** If they come in contact with cattle they should not be killed either cattle do not belong on our public lands it is for our wildlife not domestic animals.

**Representative Quote:** Lethal take of Colorado's future wolf population should never be allowed on public land under any circumstance. That land belongs to everyone, not just the producers that lease it and negatively impact the health of those public lands. The residents of Colorado that voted to restore the wolves did so with the intent that wolves would be allowed the chance to thrive and remain protected on our public lands - their native lands. Lethal take should never be allowed on private land unless the landowner can show proof that a variety of nonlethal deterrents were attempted and all realistic steps to coexist were taken.

**Representative Quote:** There are different ways in which the 10(j) rule could be written to constrain and limit the killing of wolves sufficient to ensure a growing population of at least 750 wolves with immigration of wolves from north and south, and their reproduction in Colorado, at least once in two years; and many ways in which the rule could ensure that wolves change the behaviors of elk sufficient to conserve riparian areas and that wolves change the behaviors of coyotes sufficient to conserve pronghorn, swift fox, black-footed ferret, and Canada lynx. The most straight-forward and equitable way to achieve these goals (that we argue above stem logically from statute and regulation) would be for the 10(j) rule to not allow the killing of wolves if the reason for such contemplated wolf-killing was in response to wolves killing livestock on public lands.

**CONCERN STATEMENT:** Commenters asked the Service to define specific recovery criteria in the plan. They asked for set population targets, timelines, and goals for down-listing and delisting the species. Commenters also requested that the Service define how the experimental population would contribute to wolf conservation and recovery.

**Representative Quote:** Additionally, each alternative should commit to locations and timeframes for releases to ensure progress towards recovery. And while the Service should work with CPW towards recovery, it cannot and should not rely on the state to meet recovery benchmarks.

**Representative Quote:** In order to effectively conserve the future experimental population of wolves in Colorado, the 10(j) rule should define conservation goals, including the number of wolves inhabiting Colorado, and other aspirational conditions, that would represent a population no longer in danger of extirpation. The environmental impact statement should explain the basis for these conservation goals.

**Representative Quote:** SCI recommends that the Service evaluate and then adopt specific and measurable delisting criteria for the introduced wolf population. The Service must ensure it has provided metrics that will motivate the State and reduce the risk that delisting which recognizes the success of the introduction conservation program will be hijacked by litigation. Of course, these criteria should align with State goals where possible.

**CONCERN STATEMENT:** Commenters asked that the Service specifically protect access to recreation, including motorized recreation, in the 10(j) area.

**Representative Quote:** The Organizations are seeking the broadest and encompassing protections for all recreational access in the 10j designations that is stated in clear and unequivocal language, as after participating in ESA efforts for decades there is always an assertion that motorized recreation is

negatively impacting the species. This continues despite numerous species specific studies being developed and the decline of some species occurring even before motorized recreation was a concept and often impacts to activities like ours are summed up as unintended impacts of the listing. The Organizations submit a wide ranging protection for recreation would be a significant step towards avoiding unintended consequences of the protection and reintroduction and reflect a decision that is highly solidified in best available science, mainly that recreational access and wolves are basically unrelated.

**Representative Quote:** too often managers are still being told that multiple use recreation is unmanaged or is negatively impacting wildlife populations. Again the 50 years of management of our sport and interests provides a highly credible basis for the protections for recreation in the 10j Rule, as there is an entirely separate process from the ESA listing mandated on public lands to address recreational access. A broadly crafted 10j Rule would streamline the relationship between these efforts and allow recreation to thrive and resources to be protected.

**CONCERN STATEMENT:** Commenters requested that reintroduced wolves be managed under the ESA as endangered or threatened. Commenters were in favor of managing all wolves in Colorado under the ESA to avoid subjecting wolves to human-defined boundaries where they might be safe in one area and subject to lethal take in another. Commenters argued that maintaining ESA protection would help prevent poaching and could help wolf subspecies thrive. One commenter suggested designating the reintroduced wolves as endangered and specifically releasing them in national parks. Commenters were concerned about lack of habitat protection under a 10(j) rule and favored reintroducing the species as endangered to allow for designation of critical habitat under the ESA.

**Representative Quote:** If wolves are to be reintroduced in Colorado, as a majority of voters like myself voted to do, they need all the protections that endangered species, which they are, need and deserve. No full protection, no reintroduction! Respect and implement the will of the people expressed by passing the initiative in the first place.

**Representative Quote:** Section 10 designations often preclude the designation of Critical Habitat for the enhancement of recovery efforts. The designation of Critical Habitat entails the prevention of adverse modification of such habitats, conferring numerous conservation benefits (Congressional Research Service 2021: 23) unavailable to experimental, nonessential populations. Should the gray wolf in Colorado be reintroduced under an experimental, nonessential 10(j) rule, they would be deprived of such habitat protections, to the detriment of species recovery. This deprivation is particularly detrimental to the extent that new roads were to be constructed, or existing closed and gated roads were to be opened to motorized transit, offering opportunities for poachers to access heretofore secure habitats used during denning and at other sensitive times of year. By contrast endangered status (and the requisite designation of Critical Habitat) would present a legal bar to such adverse modification of wolf habitats.

**Representative Quote:** As a 7th generation Coloradan - the language of Proposition 114 did not contemplate an "experimental population", and the people of Colorado did not vote in favor of establishing an "experimental population". Colorado is unique in this process when compared to the northern Rockies Gray Wolf restoration and/or the USFWS efforts to restore the Mexican Wolf in the southwest. Everywhere else in the lower 48 where USFWS reintroduced wolves it was against the will of the people of those states, hence the need for the creation of the 10j rule. The 10j rule was created in an effort to appease the residents of the states where USFWS government over-reach potentially negatively affected the citizens of those states. That is NOT the case in Colorado. The people of Colorado have spoken and elections have consequences. The wolves reintroduced into Colorado by 12/2023 should fully protected with the full authority, weight, and protections afforded them under the ESA. They should NOT be "experimental". They are NOT "experimental". USFWS should NOT utilized the same failed methods implemented in restoring the Gray/Mexican

Wolf populations and should instead look to Colorado as an opportunity to press forward utilizing a different strategy because here in Colorado the people created and successfully passed a citizen's initiative taking control of what we want our landscape to look like moving forward.

**CONCERN STATEMENT:** Commenters suggested collaring all released wolves, or just one wolf per pack, to track their location and avoid livestock conflicts. A commenter also proposed implementing a reporting system for individuals who encounter wolves.

**Representative Quote:** I would suggest collaring each released wolf, as they do with the bighorn sheep, moose, deer and elk, to know their whereabouts and if they are in the area of a livestock owner's livestock.

**Representative Quote:** a tremendous amount of pressure is being placed on using non-lethal deterrents. None of these things are effective if you don't know where the wolves are, and how many wolves there are on the landscape. An individual wolf from each pack must be radio-collared in order to monitor the pack, and trapping is a tool needed to radio-collar wolves. It is also an important management tool needed to relocate wolves to avoid or mitigate conflict, and to target depredating wolves for lethal removal.

**Representative Quote:** I hope this program provides ample communication options for those who encounter the wolves. It would be important for violent people to know how to report an issue before resorting to killing the wolves. In fact, it should be a federal crime to kill these wolves without first reporting their presence to the program. Those caught poaching wolves should face severe punishment and financial penalties.

**CONCERN STATEMENT:** Commenters asked the Service to include provisions for lethal take under specific conditions. Several commenters asked that lethal take be permitted if the wolf was actively attacking livestock, pets, or working dogs. Other commenters suggested allowing lethal take only on private property. One commenter suggested requiring anyone shooting a wolf to have a camera installed on their gun to prove the wolf was in the act of killing livestock. Other commenters asked that lethal control be allowed if a wolf had shown a pattern of attacking livestock and had not responded to nonlethal deterrence strategies. One commenter asked that individuals not be penalized for shooting a wolf they had mistaken for a coyote. One commenter asked that wolf population control through lethal management be done with in consultation with biologists and an understanding of pack structure. Other suggestions included allowing lethal take up to a defined number of wolves or allowing hunting of wolves when they meet the 2, 2, 2 rule.

**Representative Quote:** I urge you to assure that the 10(j) permit specify protections for wolves and flexibility in managing conflicts. This would be in line with Colorado's state-level impact-based management approach, which outlines a live-and-let-live approach and includes management of conflicts on a case-by-case basis. The essence is to manage conflicts, rather than manage wolf populations at some predetermined level. As outlined in Colorado's draft impact-based management framework, wildlife managers should prioritize non-lethal methods over lethal. Lethal control is only appropriate when managers have earnestly tried non-lethal methods without success, and conflict has reached a chronic level.

**Representative Quote:** Lethal methods must only be employed if a problem wolf/pack continues to prey on such livestock and such kills must be proven.

**Representative Quote:** Coloradans want low emphasis placed on recreational hunting, a high emphasis placed on protections, and advocacy for non-lethal management! It is CPW's responsibility



to assist in non-lethal management techniques to promote coexistence, prevent livestock conflicts, and resolve issues nonlethally.

**Representative Quote:** Due to the importance of human tolerance in the success of wolf populations, we request that the 10(j) permit specify protections for wolves and provide flexibility in managing conflicts. Colorado's state-level planning effort is premised on an impact-based management approach, which outlines a live-and-let-live process and includes management, which results in the addressing of conflicts on a case-by-case basis, rather than managing wolf populations at some predetermined level. Non-lethal methods of conflict management should be prioritized over lethal approaches, which are only appropriate when managers have sincerely implemented non-lethal methods without success. Lethal control should always be the last resort.

**CONCERN STATEMENT:** Commenters were in favor of the Service issuing a section 10(a)(1)(A). Some commenters requested that the entire state be managed under section 10(a)(1)(A) rather than a 10(j). Commenters noted that the existing wolves in Colorado mean that the introduced wolves would not be an experiment and a 10(j) would not be appropriate. One commenter suggested reintroducing wolves under a 10(a)(1)(A) permit throughout the state, keeping the wolves listed as endangered, and using Incidental Take Permits and Safe Harbor Agreements to provide regulatory flexibility. One commenter requested that the 10(a)(1)(A) permit not be used to justify removing or translocating wolves that roam outside the 10(j) area. Some commenters requested that the Service consider using section 10(a)(1)(B) to allow for maximum flexibility in management.

**Representative Quote:** USFWS should not reintroduce wolves in Colorado pursuant to a 10(j) experimental population designation but rather a general 10(a)(1)(A) permit and allow reintroduced wolves to keep their protected status.

**Representative Quote:** Moffat County is one of the western slope counties that will be impacted by the reintroduction of gray wolves in Colorado and thus strongly supports the FWS designating this gray wolf population as a nonessential experimental population to provide the State with more flexibility in management. Moffat County also supports the FWS establishment of an assurance agreement and permit under Section 10(a)(1)(A) of the Endangered Species Act (ESA) for the existing population of gray wolves in northwestern Colorado, as well as other opportunities to manage wolves using Section 10(a)(1)(B) to allow for maximum flexibility in management.

**Representative Quote:** FWS should evaluate the potential impact of management in neighboring states on the establishment of wolves in Colorado. Any wolves found in neighboring states where ESA protections are in place including wolves that have dispersed from Colorado should be managed under ESA protection, not removed or returned to Colorado. As mentioned above, 10(a)(1)(A) is intended to promote recovery and is not intended to remove wolves from areas where they would otherwise be protected under the ESA.

**Representative Quote:** The Service should develop and fully analyze an alternative whereby it authorizes reintroductions using 10(a)(1)(A) recovery permits rather than a 10(j) rule. Such an alternative is reasonable and feasible: both the Service and the National Marine Fisheries Service have authorized reintroductions using only 10(a)(1)(A) recovery permits species include the California condor, Bay checkerspot butterfly, and Snake River sockeye salmon. Indeed, anything that can be permitted by the experimental population approach could be permitted under a 10(a)(1)(A) permit. But fully analyzing reintroductions using 10(a)(1)(A) will be important for considering what a decision should look like, whether using recovery permits or a 10(j) rule. Because Coloradans voted to reintroduce gray wolves into the state, the Service should not assume reluctance to accept reintroductions, the usual basis for using 10(j). A 10(a)(1)(A) alternative will allow the Service to evaluate a bottom-up approach of authorizing only the take necessary to introduce wolves into the state while otherwise maintaining existing federal protections. Such an alternative will

ensure the Service does not consider 10(j)'s automatic rollbacks of ESA protections as a given. A 10(a)(1)(A) alternative may also help the Service craft better-tailored reintroduction rules. For example, 10(a)(1)(A) reintroductions may be feasible in areas with less potential for wolf-human conflicts, whereas 10(j) rules may be more appropriate for reintroductions occurring near reluctant landowners. Such tailoring could allow for the reintroduction of fully protected wolves and designation of experimental population areas, potentially accelerating wolf recovery

## ***ECOSYSTEM DYNAMICS***

**CONCERN STATEMENT:** Commenters requested that the EIS consider the interaction between resources, noting that these interactions are complex. Commenters provided specific examples, including upsetting predatory/prey relationships to the extent that soils, water, and vegetation are negatively impacted. Some commenters requested consideration of the ecological benefits from having wolves on the landscape. One commenter noted that the loss of sheep from wolf depredation could affect the ecosystem.

**Representative Quote:** Considerations for evaluating the interactions between affected natural resources. Ecological interactions are complex and any evaluation must include all potential sources of impact, and not evaluate the potential impact of wolves in a vacuum without considering those other sources

**Representative Quote:** The wanton killing of such large numbers of apex predators has undoubtedly skewed the validity and overall health of related biological ecosystems. This has resulted in upsetting predator/prey relationships to the point where soils, water, native vegetation (e.g. riparian, open range and associated grasslands and shrubs, etc). are been negatively impacted!

**Representative Quote:** Considerations for evaluating the significance of impacts on gray wolves and other affected resources, such as other listed or sensitive wildlife and plant species, cultural resources, and socioeconomic resources or activities. USFWS should evaluate potential impacts on other resources but also other impacts such as weather, human uses such as recreation, domestic livestock grazing, and recreation (including hunting) on any specific resource.

**Representative Quote:** Wetland trees and shrubs, willows, cottonwoods, nesting songbirds and beavers that rely on trees wither under the intense browsing of sedentary elk. When the last wolf was slaughtered by wildlife services in Colorado an ecological disaster ensued. We are experiencing the effects of climate crisis in Colorado. Wolves are necessary to help repair our troubled ecosystem. The statute clearly states, "Once restored to Colorado gray wolves will help restore a critical balance in nature." In Doug Smith's words- "The return of wolves to ecosystems where they had been previously extirpated triggers cascading ecological shifts toward increased bird and mammal richness and diversity. Dr Francisco J. Santiago Avilla, questions modern Wildlife Service's model that, benefits humans-dismissing the needs and benefits of wild carnivores. This is causing ecological harm to our land and to human health, with increasing pollution of our water, soil, and air. Dr Avilla says his peer reviewed science research seems to be dismissed from wildlife commissions. Erik Molvar, Wolf Biologist, states that we must care about our public lands for our future. The USFWS commercial use of public lands is threatening our endangered species and livestock grazing is the biggest threat. We can do this by retiring all livestock grazing allotments and restoring our wolf and beaver populations.

**Representative Quote:** The loss of the Colorado sheep industry due to wolf predation, due to the inability to remove them when they become a problem is real. The sheep industry provides a very

important environmental service in forest fire mitigation by grazing public and private lands. Without sheep and cattle grazing forest fires will continue to increase in occurrence and scale.

**Representative Quote:** Not only must the upcoming 10(j) rule ensure the conservation of wolves in Colorado; it also must advance ecosystem conservation in Colorado. Accordingly, the upcoming DEIS must consider the scientific findings on wolves' positive effects on their ecosystems elsewhere, in particular wolves' influences on other species of animals and plants through trophic cascades, and incorporate into the 10(j) rule measures that would ensure similar benefits to ecosystems in Colorado. The DEIS should analyze how wolves' roles in ecosystems would be affected by different alternatives in the upcoming rule. As part of that analysis, the Service must address how the authorized killing of wolves under different circumstances would affect their ecosystems.

**CONCERN STATEMENT:** Commenters suggested that the 10(j) rule include a prohibition on lethal control to the extent that these action would inhibit trophic cascades.

**Representative Quote:** a proscription on killing wolves to the extent that such killings would inhibit trophic cascades and specifically conservation of riparian habitats, pronghorn, swift fox, black-footed ferret, and Canada lynx;

### ***ENVIRONMENTAL JUSTICE***

**CONCERN STATEMENT:** Commenters noted that the EIS should assess the role of gray wolves in mitigating climate change and the potential effects of climate change on gray wolves and other affected resources.

**Representative Quote:** Considerations for evaluating climate change effects to gray wolves and other affected resources. Note all species challenges due to climate change and habitat loss. Mitigate as necessary

#### **Representative Quote:**

Scientific research makes it increasingly clear that natural biodiversity is integral to the life support systems upon which we depend. Predators not only mitigate the cause of climate change (excess atmospheric carbon) but also influence “directly and indirectly” climate impacts on their prey and on entire ecological communities (Wilmers et al. 2013). Further, healthy, intact food webs make ecosystems more resilient to environmental changes (Willmers and Getz 2005). Thus, repatriating predators to their historic ranges has enormous potential not only to provide well-known ecological services, but also to improve ecosystem resilience to climate change and drive down atmospheric carbon levels (Wilmers et a. 2013). By moderating deer and moose populations, wolves have created massive carbon sinks that help trap CO2 emissions thereby combatting climate change. Wilmers and Schmitz (2016) estimated an increase in CO2 storage between 46 million and 99 million metric tons that is attributed to the work of wolves in our forests - equivalent to a year of tailpipe emissions from between 33 and 71 million cars.

**Representative Quote:** Research is showing that predators like wolves improve ecosystem resilience to climate change ( Wilmers et al. 2013)

### ***NEPA***

**CONCERN STATEMENT:** Commenters requested that the Bureau of Land Management (BLM) and Forest Service be cooperating agencies for the EIS. They noted that these agencies should consider

amending their Resource Management Plans (RMPs) and Forest Plan with regard to grazing-related decisions, specifically asking for vacant or marginal grazing allotments to be made available and for the removal of seasonal restrictions when game species are most prevalent.

**Representative Quote:** BLM and the Forest Service should consider being cooperative agencies on this DEIS. Where wolf and livestock conflicts may pose the highest risks, these federal land management agencies should consider amending RMP and Forest Plan grazing related decisions to reduce these risks. Vacant or marginal grazing allotments in these areas should be made unavailable for future grazing. In other allotments, seasonal restrictions should remove livestock during those times when game species are most prevalent. There are feasible solutions if people are sufficiently motivated to implement them.

**CONCERN STATEMENT:** Commenters noted that since wolves do not stay in one place, that the analysis consider reintroduced wolves and those that have migrated in from other areas. Similarly, they requested that because wolves will migrate to adjacent states, the impact to these states should be considered.

**Representative Quote:** While Proposition 114 mandates reintroductions west of the Continental Divide in Colorado, wolves are going to travel massive distances and any experimental designations and planning requirements should protect activities in all areas regardless of if the wolf was reintroduced or has naturally arrived in the area from other locations.

**Representative Quote:** AZSFWC focuses primarily on issues within our state; however, this particular action by the Service has enormous implications for the neighboring states of Arizona, New Mexico, and Utah. It is essential that state wildlife agencies and stakeholders across this area are fully involved in the process and their voices are heard.

**Representative Quote:** “de-facto” establishment of Gray wolves in Arizona in a manner that totally circumvents the public process and appropriate analysis by state and federal wildlife managers. These issues must be thoroughly analyzed in the forthcoming EIS

**CONCERN STATEMENT:** Commenters requested that the EIS evaluate indirect impacts of the potential decline in elk and deer herds from wolf reintroduction.

**Representative Quote:** The recreational community is very concerned about possible declines in elk and deer herds from the wolf reintroduction driving management decisions and restricting recreation access now and into the future. These types of indirect impacts from the reintroduction must be protected against in the planning process.

**CONCERN STATEMENT:** Commenters requested the purpose and need statement be focused on having reintroduction as the dominant priority and focus on the legislative mandate to reintroduce wolves.

**Representative Quote:** On scoping, the DEIS on the proposed rule should have a strong agency purpose and need statement to ensure that effective wolf reintroduction is the dominant priority.

**Representative Quote:** Key to the forthcoming EIS will be its purpose and need statement, which shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action. 40 C.F.R.1502.13. Though brief, the statement will drive the formulation and comparison of alternatives and their impacts. See id.1502.14. The purpose and need statement in the forthcoming EIS should reflect that the Service is not merely responding to a state request for a 10(j) rule, but to a legislative mandate to reintroduce

and maintain a self-sustaining population of wolves. Moreover, the purpose and need statement should also reflect the Service's independent obligation under the ESA to recover gray wolves.

**CONCERN STATEMENT:** Commenters requested that the National Environmental Policy Act (NEPA) analysis use peer-reviewed science to the greatest extent possible. Commenters also noted that the Service should evaluate potential impacts on other resources as well as impacts on weather, human uses such as recreation, domestic livestock grazing, and recreation (including hunting). Some commenters requested that the beneficial impact of wolves be addressed, including contributing to enhancing biodiversity; improving ecosystem processes and function, mitigating climate warming and enhancing resilience to climate warming; improving ungulate population health by selectively removing old and diseased individuals (including individuals infected with chronic wasting disease with research indicating that wolf predation may suppress disease emergence or limit prevalence); and infusing local tourism economies.

**Representative Quote:** In NEPA analyses, use peer reviewed scientific information to the greatest possible extent in the rule's development.

**Representative Quote:** Considerations for evaluating the significance of impacts on gray wolves and other affected resources, such as other listed or sensitive wildlife and plant species, cultural resources, and socioeconomic resources or activities. USFWS should evaluate potential impacts on other resources but also other impacts such as weather, human uses such as recreation, domestic livestock grazing, and recreation (including hunting) on any specific resource.

**Representative Quote:** Wolves should be classified as a non-essential, experimental population. It is crucial that the NEPA process not be accelerated in any way, and the impact of the alternative management concepts should be thoroughly studied, so that the correct concept is chosen. This will not only benefit the livestock industry, but the wolves as well. The decision needs to be backed by scientific data that has already been developed by other states. It would be a real missed opportunity to ignore the knowledge and experience that has been hard won by other states. Ecological systems are complicated and introducing an apex predator into that system can cause irreparable damage.

**Representative Quote:** Contemporary, peer-reviewed scientific data should provide the primary information used for the NEPA analysis for the proposed action. These data should include information on ecosystem process and function, biological diversity, ungulate and carnivore population health and landscape resilience to climate warming.

**Representative Quote:** Positive impacts of wolves, include their contribution to enhancing biodiversity (Smith et al. 2020); improving ecosystem processes and function (Berger et al. 2008), mitigation of climate warming and enhancing resilience to climate warming (Wilmers and Getz 2005, Wilmers et al., 2013); improving ungulate population health by selectively removing old and diseased individuals (Smith et al. 2020), including individuals infected with Chronic Wasting Disease with research indicating that wolf predation may suppress disease emergence or limit prevalence (Wild et al. 2011); and infusing local tourism economies with tens of millions of dollars (Duffield et al. 2006, Ripple et al., 2014).

**CONCERN STATEMENT:** Commenters noted other related planning processes that should be included in the Service's planning process such as the State of Colorado's wolf management planning, the wolf reintroduction plan developed by a non-profit group, and past wolf managing efforts in other Western states. Specific resources from these agencies were suggested such as the CPW Species Activity Mapping and CPW estimates of the costs related to the reintroduction and management of wolves.

**Representative Quote:** Also, the USFWS should consider the wolf restoration experience of other western states. All sources of impact should be considered in a holistic approach.

**Representative Quote:** Colorado has multiple sources of information on other resources, including wildlife species managed by CPW. CPW's Species Activity Mapping and management plans for big game species provide detailed information on those species; possible impact to big game populations has been one of the major areas of concern expressed by the public. Information from other states that have been managing big game and wolves, including Idaho, Montana, and Wyoming should also be considered as a basis for understanding the potential impacts in Colorado.

**Representative Quote:** CPW has developed initial estimates of the costs related to reintroduction and longer-term management of wolves that should be considered by USFWS.

**CONCERN STATEMENT:** Commenters stated that this planning process cannot be rushed, with some expressing concern about the accelerated effort.

**Representative Quote:** The USFWS and the State of Colorado cannot rush NEPA review and the introduction of gray wolves to the detriment of rural Colorado, the species itself, and other listed species. On March 10, 2020, Governor Polis and Colorado Attorney General Phil Weiser vehemently objected to NEPA streamlining in a nine-page letter to the Council on Environmental Quality. They admonished that tight time frames and page limits were harmful and unrealistic.<sup>3</sup> The Governor and Attorney General should take similar positions on this complex issue and support a thoughtful EIS no matter how long it takes, prior to translocation.

**Representative Quote:** A lot of time and energy has been spent by the technical group and the stakeholders group appointed by the CWP and stakeholders in research and making comments, in order, come up with a management plan. Please take that into consideration as you determine the 10 (j) designation and management plan.

**CONCERN STATEMENT:** Commenters stated that the decision of the State of Colorado to reintroduce wolves, or not, is a major federal action requiring NEPA analysis.

**Representative Quote:** Permission to translocate wolves (no matter the form) is a discretionary federal agency action subject to NEPA compliance. NEPA requires that federal agencies prepare an EIS on "proposals for major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(c); see also 40 C.F.R. § 1502.4; *WildEarth Guardians v. U.S. Fish & Wildlife Serv.*, 784 F.3d 677, 690 (10th Cir. 2015) (citing 42 U.S.C. § 4332(C)). In short, whatever action Colorado seeks to take to introduce wolves must be subject to both NEPA and an EIS.

**CONCERN STATEMENT:** Commenters requested that the NEPA analysis include a population viability analysis, stating that unless the population is a certain size, the reintroduction will not be successful. They further requested the NEPA analysis address the 3 R's - resiliency, redundancy, and representation, to determine when the gray wolf is ready for delisting.

**Representative Quote:** NEPA analysis should include Population Viability Analysis. Proposition 114 calls for a "self-sustaining population of gray wolves. Traill et al. (2007) standardized estimates of minimum viable population (MVP) size for 212 species, including the gray wolf, and documented a median MVP of 4,169 individuals with a 95 percent confidence interval of 2,261 to 5,095. Reed et al. (2003) used population viability analysis to estimate MVPs for 102 species, including the gray wolf, and estimates a minimum viable adult population size (MVPA) of 1,403 wolves and a minimum viable adult population size corrected to 40 generations worth of data (MVPC) of 6,322 wolves. No region of the U.S. has wolf populations of that size. Thus, wolves remain at risk of extinction until existing populations are connected through dispersal across the Rocky Mountain cordillera.

**Representative Quote:** The NEPA process should include the 3 Rs to guide implementation of the ESA. Representation- wolves need genetic diversity, abundant population, Ensuring habitat

quantity, and connectivity. Resiliency- Wolves need an increase habitat quality- -and wolves cannot be considered recovered without ecologically effective populations. Redundancy- Wolves need a wide distribution across CO to withstand catastrophic events which requires establishing multiple populations in each setting to increase species viability.

**CONCERN STATEMENT:** Commenters requested that the NEPA process consider the full range of alternatives such as lethal take, the geographic boundaries, and compensation programs. One specific alternative suggested was to evaluate two scenarios: (1) federal management of the gray wolf in Colorado as a fully protected endangered species, without an ESA 10(j) designation; and (2) cooperative, intergovernmental management of the gray wolf in Colorado as a designated non-essential experimental population under an ESA 10(j) designation.

**Representative Quote:** Finally, NMDA requests that USFWS consider the full suite of options for managing the experimental population when developing the EIS alternatives, including lethal take, geographic boundaries, and depredation compensation programs. The National Environmental Policy Act (NEPA) requires federal agencies to consider a reasonable range of alternatives in an EIS. Ultimately, a durable reintroduction and successful recovery of the species would depend on finding the right blend of tools for managing conflict and mitigating the economic hardships to impacted communities. To meet the purpose of the proposed action and to satisfy a reasonable range of alternatives under NEPA, all options for managing the wolf-livestock conflict must be evaluated.

**Representative Quote:** In developing an EIS for the proposed action, the Tribe believes that the Service should thoroughly analyze and compare the anticipated impacts of the reintroduced gray wolf under two general management approaches. These approaches are: (1) federal management of the gray wolf in Colorado as a fully protected endangered species, without an ESA JO(j) designation; and (2) cooperative, intergovernmental management of the gray wolf in Colorado as a designated nonessential experimental population under ESA JO(j).

**CONCERN STATEMENT:** Commenters requested that the EIS thoroughly document all costs to agencies and individuals of using non-lethal deterrents vs. lethal take. They expressed concern that non-lethal deterrents cost more and are not as effective. Others noted that the costs of reintroduction are relevant to the 10(j) process and should be discussed.

**Representative Quote:** The EIS needs to very thoroughly document all costs to both agencies as well as individuals of using non-lethal deterrents vs. lethal take. It is proven that non-lethal deterrents are typically only effective for a short time and very expensive to Implement and maintain. Cost - effectiveness of lethal take needs to factor heavily into wolf management equation. Wolf numbers prove they are thriving across the West. I feel this relisting is political, romantic and emotional and has nothing to do with the actual recovery. Wolves in Colorado has usurped scientific, biological input with urban voting populations that will not be affected. This has created a great conflict in our state rural vs urban.. and as such, every management tool needs to made available to utilize.

**Representative Quote:** While we are aware that costs are most directly an issue for CPW and the State of Colorado, the Organizations are concerned that the experiences with costs of the reintroduction are highly relevant to the 10j designation and process.

**CONCERN STATEMENT:** Commenters stated that this process should not move forward until the gray wolf is delisted in the State of Utah.

**Representative Quote:** The State does not ordinarily comment on state-specific measures, such as Colorado's plan to reintroduce gray wolves. However, the proposed reintroduction is very near Utah's border and carries tremendous potential consequences for the State. Moreover, the proposed rule at issue here is a major federal action designed to facilitate Colorado's reintroduction. The State

therefore has a significant interest in the proposed rule and adamantly opposes these reintroduction efforts unless and until wolves are delisted throughout Utah.

**Representative Quote:** A more reasonable approach would be to delist the wolves entirely and allow for Utah’s Wolf Management Plan<sup>2</sup> to take effect (sometimes referred to herein as the Plan). Pursuant to the Plan and in accordance with state law (Utah Code Ann. 23-14-1(2) and 23-14-3(2)), DWR will manage naturally established wolf populations on a sustainable basis post delisting. Specifically, wolves will be managed under the same management policies as the black bear and cougar “ species DWR has successfully managed on a sustainable basis for decades. The explicit goal of the Plan is “to manage, study, and conserve wolves moving into Utah while avoiding conflicts with the wildlife management objectives of the Ute Indian Tribe; preventing livestock depredation; and protecting the investment made in wildlife in Utah. The Plan is intended to be an interim plan, covering that time between statewide delisting and the development of two naturally occurring wolf packs in Utah. Nevertheless, it provides the State with a series of management objectives and strategies to manage wolves effectively and it was written to be adaptive in nature, so that, as conditions change, the Plan may adapt to those changes. Moreover, the two-pack establishment metric is not a population cap, but rather a trigger to plan for the next phase in wolf management. The Plan is therefore designed to ensure the conservation of naturally establishing wolves, while ensuring the protection of other interests throughout the State. However, Utah cannot manage in accordance with the Plan unless and until wolves are delisted throughout the Utah.

**CONCERN STATEMENT:** Commenters stated that the Service has a legal obligation to consult with appropriate state fish and wildlife agencies, local government entities, affected federal agencies, and affected private landowners during the development and implementation of experimental population rules. They noted that the plans developed by the Service need to be consistent with state and local plans. The State of Utah noted that it has a state Resource Management Plan (SRMP) and that all 29 counties in the state have adopted County Resource Management Plans (CRMPs) that should be considered in the planning process. Garfield County also requested consistency with its land use planning efforts. Cooperating agencies further requested the ability to coordinate during the development of the 10(j) rule.

**Representative Quote:** The ESA expressly carves out a role for states to assist in its implementation stating, specifically, that the Service “shall cooperate to the maximum extent practicable with the States.<sup>3</sup> Moreover, the Service’s interagency policy begins by recognizing that States possess broad trustee and police powers over fish, wildlife and plants and their habitats within their borders [and u]nless preempted by Federal authority, States possess primary authority and responsibility for protection and management of fish, wildlife and plants and their habitats.<sup>4</sup> Thus, the ESA and the Service encourage cooperation to effectuate the purposes of the ESA. In the event wolves are reintroduced in Colorado, it is imperative that the Service work with the state of Utah to ensure such cooperation in the management of wolves. This is also consistent with the Federal Land Policy and Management Act (FLPMA) and the National Forest Management Act (NFMA). When developing or creating Resource Management Plans, federal agencies, such as the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS), are required to coordinate their plans with state and local government plans.<sup>5</sup> This coordination process is a separate process from cooperation and must occur regardless of whether state or local governments were designated as Cooperating Agencies.<sup>6</sup> Thus, even if the State is not a Cooperating Agency in any given planning process (which it often is), the relevant federal agency would still be required to make efforts in drafting land use plans that are consistent with state and local plans.

**Representative Quote:** In the past, there were no state or local plans with which to ensure consistency. However, as of 2018, the State of Utah has adopted a State Resource Management Plan (SRMP)<sup>10</sup> and all twenty-nine (29) counties in the State have adopted County Resource Management Plans (CRMP).<sup>11</sup> The effort to adopt the SRMP and CRMPs was a first-of-its-kind effort not only in Utah, but nationwide. The state and the counties frequently use their plans to



coordinate management actions with the Bureau of Land Management and U.S. Forest Service. 12 All these plans include locally adopted objectives and policies for many aspects of not only public land management, but also include findings, provisions and policy relating to wildlife and critical habitat specifically. For example, the Utah SRMP has adopted the policy that the designation of endangered species or critical habitat must be proven through sound scientific evidence. This research should be done in collaboration and partnership with the state of Utah. 13 While it may be an indirect response to the proposed rule, the State now specifically requests, pursuant to the Coordination and Consistency principles discussed above, that any and all further land use actions taken by the USFWS that occur as a result of this proposed rule, be consistent with the Utah SRMP, the Utah CRMPs, and overall be done in collaboration and partnership with the State of Utah.

**Representative Quote:** The FWS has entered into a memorandum of agreement with Moffat County and has already initiated the consultation efforts with the County. Moffat County appreciates the FWS efforts to ensure the County and the State have the opportunity to meaningfully participate in the development of the draft EIS. Moffat County further requests the FWS to coordinate and consult with the County in developing the proposed experimental population rules for this group of gray wolves.

**CONCERN STATEMENT:** One commenter requested that the EIS process be put on hold until there is a decision to the petition to delist the gray wolf.

**Representative Quote:** RMEF maintains that the USFWS 2021 rule was correct that gray wolves in the lower 48 states are recovered and should be removed from the Endangered Species List. As such, we contend the state is the appropriate entity to manage the species. The 2022 court ruling re-listed wolves outside of the Northern Rocky Mountains and usurped state management. However, a USFWS decision (12 month finding) on a citizen's petition to relist the Northern Rocky Mountains population is pending. RMEF requests that the EIS be put on hold until such decision is made in order to properly analyze the effects of the proposed experimental population (and relevant permits).

**CONCERN STATEMENT:** Commenters asked that the EIS take a hard look at lethal control and its impacts and efficacy. They cited studies stating that livestock depredation may actually increase after lethal control. They also requested the EIS look at the role wolves play in livestock deaths, stating that they are not a large factor in mortality.

**Representative Quote:** The Service must also take a hard look at the efficacy of any proposal that provides for the killing of wolves as part of any scheme of wolf management. While depredation incidents involving wolves and livestock such as cattle and sheep does occur, science shows that lethal predator control may not be the most effective form of predator damage control. Livestock depredation by wolves (as well as coyotes) may actually increase following lethal control. For example, Wielgus and Peebles (2014) concluded that killing wolves actually increases cattle depredation, finding that increased carnivore mortality is associated with compensatory increased breeding pairs, compensatory number of carnivores, and increased depredations. Multiple studies by Treves call into question the efficacy of lethal control and highlight several additional studies showing depredations are often isolated incidents without repeat, even without lethal control.

**Representative Quote:** Knowing the vast majority of livestock death is due to starvation, dehydration, poisonous plants, birthing difficulties, choke, weather, theft, infectious diseases including CWD, which wolves help control in deer and elk populations because they seek weakened and ill prey, it is incumbent upon the service to educate the public that wolves are not the threat to livestock as they are so often wrongly accused.

## ***OTHER***

**CONCERN STATEMENT:** Commenters stated that the 10(j) rule should reflect a public desire for stricter protections and low support for recreational hunting.

**Representative Quote:** The 10(j) management rule should reflect broad public values that support stricter protections for wolves and reflect low support for recreational hunting.

**CONCERN STATEMENT:** Commenters stated that the 10(j) rule should include a subpopulation of Mexican gray wolves in southern Colorado to connect the existing population to a subpopulation and increase genetic diversity.

**Representative Quote:** 10(j) management rule should include the introduction of a sub-population of Mexican gray wolves in the southern region of Colorado. Such a sub-population would be able to connect to the existing population within the Mexican gray wolf experimental population area and would provide this critically endangered subspecies with much-needed genetic diversity and resilience.

**Representative Quote:** As the climate warms, it is natural for wolves to migrate from New Mexico to Colorado. The proposed rule regarding an experimental population of grey wolves (*Canis lupus*) in Colorado should take into account the experimental population of Mexican grey wolves (*Canis lupus baileyi*) in New Mexico. Rather than attempt to duplicate the ranges of historically separate subspecies, the introduction program should allow for intermixing of wild populations of the same species. The current inbred population of Mexican grey wolves is having difficulty surviving in New Mexico and Arizona. Allowing this population to migrate north and interbreed with wolves in Colorado will help save the grey wolf species as a whole.

**CONCERN STATEMENT:** Commenters noted the regulatory responsibility of the Service in addressing translocated wolves. These included addressing how any translocated wolves would affect wolves already in Colorado and how they would affect the Mexican gray wolf.

**Representative Quote:** The wolves currently inhabiting Colorado are protected under the ESA and no translocation may occur without compliance with the ESA, including but not limited to Section 7 consultation and Section 9 take, as well as National Environmental Policy Act (NEPA) compliance. Bringing gray wolves to Colorado could adversely impact not only the (federally-listed) wolves that have already migrated here, but recovery efforts for listed Mexican gray wolves and other listed species. The USFWS must ensure all listed species and their habitats are protected from such discretionary actions.

**Representative Quote:** Because bringing gray wolves to Colorado could adversely impact not only the wolves that have already migrated here, but recovery efforts for federally-listed Mexican gray wolves and other listed species, recovery plans for these listed species should be updated prior to translocation into Colorado.<sup>4</sup> These actions also require NEPA compliance. Consultation under Section 7 of the ESA should also occur for translocation that could adversely affect listed species such as the Mexican gray wolf, the Gunnison sage grouse and Utes Ladies Tresses, among others.

**CONCERN STATEMENT:** Commenters suggested studies that could be considered in the EIS process include those related to wolf densities and other reintroduction efforts such as Isle Royale National Park and the Northern Rockies.

**Representative Quote:** The NEPA and EIS process regarding introduction of wolves to Colorado should consider available science. I've prepared reports that provide background information and

analyses that can help predict the numbers of wolves that might populate Colorado, and the numbers of prey animals they will kill. These reports are attached. Please consider these reports as part of my comments

**Representative Quote:** Sixty-four years of scientific, peer-reviewed scientific data from Isle Royale's wolf-moose studies (Vucetich 2021) and twenty-seven years of scientific, peer-reviewed data from the Northern Rockies (Smith et al. 2020) are available to predict the effect of wolf restoration on Colorado's game and domestic animals. These long-term studies from Isle Royale and Yellowstone, and hundreds of wolf-related scientific publications, document an overall positive effect of wolf restoration on ecosystem processes, function and resilience.

**CONCERN STATEMENT:** Commenters were concerned for human health and safety due to the presence of wolves on the landscape.

**Representative Quote:** They will start moving in on house hold pets. Sheep, horses, goats, and yes your little lap dog. There is videos that show the damage they can and will do. I would hope the Colorado wildlife department would understand that people want to be able to go to the mountains and be able to fish, hunt, camp and still be able to take family and pets without looking over their shoulders.

**CONCERN STATEMENT:** Commenters requested the EIS discuss the impacts to recreation from wolf reintroduction, stating that past reintroduction efforts have not found negative impacts to recreation. Other commenters requested the Service state how impacts to recreation would be avoided.

**Representative Quote:** The USFWS and adjacent State Wolf management efforts have already identified that social impacts from the wolf reintroduction remain a major challenge in species management despite the fact that these two issues are entirely unrelated. The lack of relationship between the wolf and recreation could not be more perfectly exemplified by the fact that every state level wolf management plan recognizes the challenge of managing recreational users on best practices in wolf habitat and none even mention possible negative impacts to wolf habitat or populations from recreation. Recognition of the lack of relationship between recreation and wolves is badly needed to avoid closures of existing recreational opportunities in areas where there may be wolves and in mitigating the challenges clearly identified by the USFWS.

**Representative Quote:** Exceptionally clear statements from USFWS must be made to avoid any impacts to recreational usages of roads and trails from the wolf reintroduction.

**Representative Quote:** The Organizations would note there is a significant difference between a wolf being impacted on a high-speed arterial road and the risk of a wolf being impacted on a low-speed dirt road or trail. If there was any concern on the latter impacting habitat quality or wolf populations it is of such little concern it is not discussed. The Organizations are aware that highways may be looked at for management but we would be opposed to any restriction of existing recreational opportunities for dispersed or lower speed recreational opportunities. Rather this type of recreation commonly is drawn into management inadvertently and this should be avoided.

**CONCERN STATEMENT:** Commenters questioned if the reintroduced population would be "wholly separate" from existing populations and questioned if the Service has appropriate legal authority under section 10(j) for this effort.

**Representative Quote:** SCI encourages the Service to ensure that it has appropriate legal authority under ESA Section 10(j) to support the State of Colorado's wolf introduction under Proposition 114. Section 10(j) of the ESA defines an experimental population as a population authorized by the Secretary for release under paragraph (2), but only when, and at such times as, the population is

wholly separate geographically from nonexperimental populations of the same species. 16 U.S.C. 1539(j)(1). Section 10(j) authorizes the Service to release a listed species “outside the current range of such species if the release will further the conservation of such species. Id. 10(j)(2)(A). SCI further encourages the Service to consider whether a population of wolves in Colorado is wholly separate geographically from nonexperimental populations and whether any release is outside the current gray wolf range. Of course, the Service is aware of healthy wolf populations in Wyoming, Idaho, and the other Northern Rocky Mountains (NRM) states. In Colorado, “there are known wolves already in the state. 1. These wolves have dispersed from the NRM. For example, in 2019, a radio-collared wolf from Idaho was found in Jackson County, Colorado. In 2020, CPW visually confirmed the presence of a pack of six wolves in Moffat County, along the border with Wyoming and Utah. Since that time, CPW has received additional sighting reports and photos of wolves in this area. 2. Most notably, in June 2021, CPW observed wolf pups from the pairing of the 2019 Idaho wolf and another disperser, and even fitted one of these pups with a GPS collar. Altogether, CPW typically field[s] around 100 sightings each year. While CPW staff are not able to confirm all these sightings, the many reported sightings suggest the possibility of more wolves than simply this one pack. Given the dispersion of wolves from the NRM and the existence of wolves already in the State, it may not be possible to fulfill the Section 10(j) definitions and criteria.

## ***OTHER WILDLIFE***

**CONCERN STATEMENT:** Commenters raised concerns that the presence of wolves on the landscape would impact other species, mainly prey species such as elk, deer, and moose. They noted that CPW has restored these populations and were concerned this progress would be impacted by wolf reintroduction. Some commenters noted that the large ungulate populations in Colorado would provide adequate prey species for wolves. Commenters asked that stress levels in ungulates also be considered, in addition to direct mortality.

**Representative Quote:** The CPW has spent how many years working hard to restore the moose and mule deer population. Bringing the wolves in will set the progress they have made back

**Representative Quote:** The primary effects the USFWS should evaluate are those related to prey populations, particularly big game, and the resulting impacts on wolf populations.

**Representative Quote:** The recreational community is very concerned about possible declines in elk and deer herds from the wolf reintroduction driving management decisions and restricting recreation access now and into the future. These types of indirect impacts from the reintroduction must be protected against in the planning process.

**Representative Quote:** Ungulates- We have the biggest elk herd in the world in Colorado. Perfect habitat for wolves. Wolves need elk, and elk depend on wolves. The pressure of predation, elk are kept healthy, and the healthiest and strongest pass on their genes. By keeping elk populations in check, wolves promote ecosystems. For elk, this ensures that they remain genetically robust and less susceptible to diseases like Chronic Wasting Disease.

**Representative Quote:** I also ask that you closely study the impacts of elevated stress levels in ungulate species, particularly cow elk, especially due to the wolves well-known habits of chasing, killing, and harassing most other animal species for their own fun and enjoyment.

## *SOCIOECONOMIC RESOURCES*

**CONCERN STATEMENT:** Commenters noted that management measures should be designed to avoid or mitigate impacts to recreation that could cause economic losses.

**Representative Quote:** Recreational activity is a huge economic driver for the western slope areas of Colorado and Colorado more generally. These economic contributions must be protected from direct loss or indirect impacts from poorly tailored or overly restrictive management efforts.

**CONCERN STATEMENT:** Commenters noted the potential economic benefits or adverse impacts of the State's plan to reintroduce gray wolves.

**Representative Quote:** With the introduction of wolves, the possibility of severe impacts on the economy must be considered. Livestock operations, hunting and outfitting, and recreation will be severely impacted. These industries drive the economy of, not only our county, but our state. In North Park, the wolves that have migrated from Wyoming are already killing livestock. They have quickly adapted to fladgery, wild burros, range riders and several other hazing techniques. They are teaching their young to kill cattle as well. Wolves that habitually kill cattle would have already been eliminated in other states, to make room for wolves that hunt wild game instead. Other western states have felt these impacts and have learned that they need a lethal management option. The agriculture industry should not be forced to bear the brunt of an apex predator in the absence of effective management. This management plan needs to be right the first time, because delaying the ability to control wolves threatens the viability of ranches to stay in business.

**Representative Quote:** Has anyone really looked at the financial impact the wolves in Yellowstone have brought to the state in the means of tourism. Of course this economic benefit would be for a wider spectrum of society instead of a select few wealthy landowners etc. so maybe that's Colorado's problem.

**Representative Quote:** It is important to consider the benefits that wolves bring to ecosystems and communities. Their contribution to healthier ungulate herds by removing diseased (CWD, parasites, arthritic, etc) and older animals is well documented as well as their indirect impact to healthier vegetation by how they influence ungulate behavior. They bring economic benefit to communities through their ecological services as well as through ecotourism, mitigation of climate change and reduction of motor vehicular accidents (with ungulates as seen in the study in Wisconsin).

**Representative Quote:** Agriculture in Colorado is a 4 billion dollar industry, and the losses we livestock producers are going to incur will bankrupt us. Family farms will disappear, multi-generational ranches will be sold; decades of work in herd management and genetic improvements in livestock production will be lost.

**Representative Quote:** According to data from Colorado State University (CSU) Extension, every cow in Mesa County directly contributes \$600-\$800 to our economy on an annual basis. It is imperative that our local caretakers of the cattle have all the tools and flexibility needed to protect their livestock from the wolves that are migrating and being introduced in our area. Again, using CSU data, there are over 46,000 cattle in Mesa County. That is a direct impact of over \$32 million to Mesa County every year. This is in addition to the improved habitat for wildlife, large landscapes, and other contributions of the landowners. As the threat and impacts of wolves on these landscapes are felt, there will be fewer and fewer livestock on the land. If the impact of the wolves causes more producers to go out of business, then Mesa County continues to lose a very steady contributor to our economy. Our family ranch, alone, contributes nearly a half million dollars on an annual basis to the business community.

**CONCERN STATEMENT:** Commenters noted the EIS should consider potential socioeconomic impacts, including impacts to small businesses, including livestock producers and hunting-related businesses, and rural

communities with and without implementation of a section 10(j) rule. They noted these producers already see impacts from other wildlife.

**Representative Quote:** The Fish and Wildlife Service to Evaluate: The impacts to small businesses (livestock and wildlife related) with and without the ability to manage through the 10(j) rule which includes lethal control of problem wolves.

**Representative Quote:** In addition, the USFWS needs to evaluate all impacts to rural communities that will be the most impacted by this reintroduction. Wildlife and livestock related interests need to be carefully considered when making this designation. Small businesses, ranching families and outfitting businesses will all be negatively impacted by wolves. Having both lethal and non-lethal methods of control for the wolves is paramount.

**Representative Quote:** As USFWS considers alternatives to proposed approaches for wolf reintroduction, we sincerely hope that consideration extends to reasonable approaches for livestock producers. Undoubtedly, wolf-livestock conflict encompasses more than confirmed mortalities and direct loss. Indirect losses including, but not limited to, declining body condition score, conception rates, weaning weights, and other production metrics will certainly be affected by additional predator introduction. These economic losses are not insignificant, and as such, should be addressed in a comprehensive manner for the EIS. The very fabric of our rural communities is dependent upon a strong management plan, with definitive compensation processes and multipliers shored up by appropriate and accessible funding. Materials for mitigation, such as fladry, other domestic livestock, flares, etc. should come from state supported funds, and the onus of providing those deterrents should not fall to the producer.

**Representative Quote:** Section 10(j) Designations Socio Economic Impact Moffat County requests significant efforts be placed on an adequate social economic assessment comparing alternatives, and specifically identifying multiplier effects of various levels of management or non-management of problem wolves. The reintroduction of gray wolves into northwestern Colorado will impact local economies and small businesses located within the established boundaries of the non-essential experimental population. If part of the boundary includes federal land in Moffat County, then it will have an impact on the County's tourism and recreation industry, specifically as it relates to hunting, and also impact the County's agricultural industry. A reduction in big game population from wolf predation will impact Moffat County's world-renowned elk hunting, especially if the habitat overlaps with specific big game management units. The loss of livestock and additional costs for mitigating against gray wolf predation will also negatively impact the ranchers and agriculture industry in northwestern Colorado. Agriculture and livestock production impacts that are both direct and indirect must be quantified and evaluated for both primary and secondary impacted businesses in the socio economic evaluation.

**Representative Quote:** Lastly, we would like to ask the Fish and Wildlife Service to evaluate the impacts to rural communities, the ranching (livestock) industry, the guide and outfitter industry (hunting), as well as the small businesses in the communities that these industries reside in, with and without the ability to manage wolves under the 10(j) rule including lethal control. I am certain the conclusion will be that without the 10(j) rule, the economic impacts to these industries and businesses will be significant.

**Representative Quote:** \*USFWS should evaluate potential impacts on other resources but also other impacts such as weather, human uses such as recreation, domestic livestock grazing, and recreation (including hunting) on any specific resource.

**Representative Quote:** Many in our area already suffer loss of livestock to bears and mountain lions, not to mention calf loss to coyotes, so we are already pressured to continue to produce a safe, nutritious food source for Coloradans at a reasonable price .

**CONCERN STATEMENT:** Commenters noted the EIS should consider potential costs for reintroduction and management of gray wolves.

**Representative Quote:** The potential costs to comply with the actions under consideration, including those that would be borne by the Federal Government and private sectors. USFWS should consider the initial estimates of costs related to reintroduction and longer-term management of wolves developed by CPW.

**Representative Quote:** The potential costs to comply with the actions under consideration, including those that would be borne by the Federal Government and private sectors. a. Economic evaluations reveal that the economic benefits, which should include ecosystem benefits, of wolf reintroduction far outweigh the economic cost. In the Yellowstone area, wolf recovery has yielded economic benefits that far outweigh the costs. The annual impact of wolf restoration was estimated in 2005 to be \$35.5 million (Duffield et al. 2006). b. Funding: Although the wildlife portion of Colorado Parks and Wildlife revenue is primarily (68%) from hunting and fishing licenses, several other funds provide support for non-game wildlife: Great Outdoors Colorado lottery funds provided 7% (\$16 million) of CPW's budget in 2018; Federal State Wildlife Grants provided 0.5 % (1.1 million) of CPW's budget in 2018 for earmarked for species that are not hunted or fished; Income tax checkoff donation to the Non-game and Endangered Wildlife Fund provided about \$200,000.000 to CPW's budget in 2018; Pittman-Robertson excise tax provides funds in other states to monitor and manage wolf populations and could be used in Colorado; CPW's recently passed legislation authorizing the Keep Colorado Wild license plate fee guarantees \$10 million dollars per year to Colorado SWAP species of which gray wolves are one.

**CONCERN STATEMENT:** Commenters noted the Service should involve local counties in analyzing socioeconomic impacts to rural *communities and livestock producers*.

**Representative Quote:** There are bound to be some unintended consequences when you make your decision and besides the producer who is chosen by the wolves to host them, it will be at the county level that the impact will be felt the most. Please use them as a resource to help you determine the social-economic impacts of wolves on the landscape.

**Representative Quote:** Utilize counties to analyze the full breadth of impact on rural communities and livestock operations. All sectors and businesses in rural Colorado will be impacted (livestock operation, hunting and outfitting, recreation, etc).

**CONCERN STATEMENT:** Commenters noted that allowing flexible management options under the section 10(j) rule is needed to mitigate socioeconomic impacts.

**Representative Quote:** Lethal management under the 10(j) rule and giving Colorado Parks and Wildlife (cpw) flexible management options is paramount to the survival of cattle operations such as ours.

**Representative Quote:** Economic impacts of wolves is significant in all sectors of rural CO and we need the flexibility afforded by the 10(j) rule.

**CONCERN STATEMENT:** Commenters requested that the Service complete an economic study related to the State's planned reintroduction of gray wolves.

**Representative Quote:** With hundreds of businesses statewide, and the actual viability of those. We request that a full economic study is undertaken and any negative effects are mitigated.

**Representative Quote:** 1) The EIS should include a complete and thorough investigation into the economic impacts associated with this reintroduction process. More specifically I would call attention to impacts as they relate to Landowners, Livestock owners, Outfitters, Sportsman and Sportswomen, Municipalities and

County Governments. I would add that other state agencies (CDOT, State Landboard, State Dept. of AG) and others will likely see impacts to their operations and possible costs associated with wolf movements/migrations and occupation of lands that they control. This overall look at economics as it relates to the reintroduction of wolves should include possible mitigations to include but not be limited to monetary reimbursement to those impacted. Sources of funding should be explored that are outside the current budgets of state agencies, the USFWS and others. It is my believe that wolves moving into or being moved into the state will impact businesses and individuals that have been and are operating without another predatory species to compete with.

**CONCERN STATEMENT:** Commenters requested that the Service consider the potential effects of the State's plan to reintroduce gray wolves on tourism, hunting, and fishing revenues.

**Representative Quote:** The consideration of other wildlife populations that will be effected by the wolf introduction and how this will be managed to continue to have healthy wildlife populations within our State. As well as the tourism and hunting and fishing revenue that this gives to the state for our Parks and wildlife.

**CONCERN STATEMENT:** Commenters requested that the Service consider potential socioeconomic impacts on a local, rather than statewide, basis.

**Representative Quote:** It is imperative that the EIS accurately address the impacts of wolf depredation on livestock and our hunting industry. The losses cannot be given on a statewide basis. this is a skewed statistic. Losses need to be compiled on a localized basis comparing the number of wolves to the n umber of livestock or herds of big game in the conflict area instead of a statewide basis. It should also consider the economic impacts to western slope rural business owners, outfitters, hunters and Colorado Parks and Wildlife if wolf numbers are unchecked.

**Representative Quote:** When evaluating the significance of impacts to socioeconomic resources, USFWS should analyze the comprehensive effects to livestock producers for each alternative. Livestock impacts go beyond confirmed mortalities; operations would also face significant economic hardship from herd stress and sickness, reduced weight gain, lower pregnancy rates, increased labor/management costs, and other indirect effects. While the impacts may seem minor, industry or nationwide, these economic losses must be considered on the localized scale of the rural community and the individual ranchers impacted. USFWS should draw upon data from previous reintroductions, including the Mexican gray wolf experimental population in New Mexico, to inform this analysis and ensure all livestock producer impacts are considered.

**CONCERN STATEMENT:** Commenters requested that the Service consider implementing a section 10(a)(1)(A) permit to allow the state to manage wolves that depredate livestock and working dogs.

**Representative Quote:** SCI's concerns for wildlife also extend to livestock. Colorado's current wolf population has already depredated livestock and dogs.<sup>6</sup> An introduced population will only have a greater impact. Therefore, the Service should consider and implement a Section 10(a)(1) permit to provide the state with necessary authority to address these detrimental impacts.

**CONCERN STATEMENT:** Commenters noted that the section 10(j) rule should allow flexibility to address direct and indirect socioeconomic impacts of reintroduced gray wolves.

**Representative Quote:** With the reintroduction of gray wolves, ranchers will be subject to direct losses of livestock due to predation, decreased production, and will also have additional costs associated with trying to mitigated the predation. A Section I O(j) designation must account for this impact and allow the FWS and the state the management flexibility to address the damage caused by wolves.



**CONCERN STATEMENT:** Commenters noted the EIS should document the costs of implementing non-lethal and lethal take strategies.

**Representative Quote:** The EIS needs to very thoroughly document all costs to both agencies as well as individuals of using non-lethal deterrents vs. lethal take. It is proven that non-lethal deterrents are typically only effective for a short time and very expensive to Implement and maintain. Cost -effectiveness of lethal take needs to factor heavily into wolf management equation. Wolf numbers prove they are thriving across the West. I feel this relisting is political, romantic and emotional and has nothing to do with the actual recovery. Wolves in Colorado has usurped scientific, biological input with urban voting populations that will not be affected. This has created a great conflict in our state's rural vs urban. and as such, every management tool needs to made available to utilize.

**Representative Quote:** Reaction time from the Game service is slow, (can be non-responsive because of the miles needed to travel to alleviate the situation) and the practice of paying these agricultural providers is small, and is put upon THEM to prove the wolf has killed their livestock (by delivering the dead animal to the government, removing them from their actual work, expenses for travel, heart ache and being frequently not acknowledged even after such efforts are taken). These individuals do not have the money behind them that the government and the environmental groups have to support their on-going economic challenges which they incur INDIVIDUALLY.

### ***SPECIAL STATUS SPECIES***

**CONCERN STATEMENT:** Commenters stated that they do not believe the gray wolf should be an endangered species. Some suggested that since there are already wolves in Colorado, a threatened designation would be a more appropriate.

**Representative Quote:** Given that gray wolves have been confirmed by Colorado Parks and Wildlife to be present in Colorado in 2022 (Colorado Sun 2022), albeit at numbers below that which is sufficient to recover the species in Colorado, the more legally appropriate designation for gray wolves reintroduced to Colorado, according to the Endangered Species Act, is Threatened (CRS 2021). As defined by the Endangered Species Act (ESA), a Threatened Species is any species that is likely to become an endangered species within the foreseeable future (CRS 2021).

**CONCERN STATEMENT:** Commenters requested that the EIS look at impacts and interactions with the Mexican gray wolf. Commenters also expressed concern that the release of the gray wolf would jeopardize the recovery of the Mexican wolf, with a risk of genetic swamping of the Mexican wolf.

*Representative Quote: The Department recognizes that the establishment of the Nonessential Experimental Population with a 10(j) designation is the most appropriate avenue for the management of wolves in Colorado. However, releasing northern wolves closer to the existing nonessential experimental population of Mexican wolves (Canis lupus baileyi) jeopardizes the recovery of the latter. The Mexican wolf is a separately listed entity under the Act and the Department has a legal and ethical obligation to recover Mexican wolves, not simply fill vacant wolf habitat with any wolves.*

**Representative Quote:** Risk of Genetically Swamping the Recovering Mexican Wolf Population Wolves are noted for long-range movements and genetic interchange among distant populations, even as far as 678 miles (Wabakken et al. 2007), which is the approximate distance from Denver, Colorado to the wild Mexican wolf population in Chihuahua, Mexico. The wild U.S. population sits about halfway between these two points. Dispersing wolves from the Northern Rockies have already appeared in northern Arizona and New Mexico. In October 2014, a 2-year old female wolf collared near Cody, Wyoming was documented on the Kaibab Plateau in northern Arizona. The wolf was repeatedly sighted in that area for more than two months and

returned northward after finding no resident wolves. In July 2008, a wolf with black pelage was documented near the Vermejo Park Ranch in northern New Mexico. No Mexican wolves have ever been documented with black pelage so this was most likely a wolf from the Northern Rocky Mountains (Odell et al. 2018). Genetic swamping has been a critical challenge for other endangered canids, notably the Eastern red wolf (*C. rufus*, Kelly et al. 1999). Genetic swamping of Mexican wolves by northern wolves is more than a theoretical possibility it presents a very real threat to recovery of the Mexican wolf as a separately listed endangered subspecies. All available information suggests releasing larger northern wolves closer to central Arizona and New Mexico will result in hybridization with Mexican wolves. The risk of genetic swamping is particularly high during early phases of Mexican wolf recovery, when the number of wolves on the ground in recovery areas is relatively small. The Mexican wolf as a subspecies evolved its uniqueness in the high-elevation mountains of Mexico, and mostly separated from the other wolf subspecies to the north by fragmented habitat and discontinuous prey distribution (Heffelfinger et al. 2017a,b). The unique physical and genetic differences of Mexican wolves could not have developed, and maintained itself, if they had shared an extensive zone of genetic exchange with larger northern wolves. Generally, dispersing wolves are adopted into packs (Boyd et al. 1995) and can assume vacant breeding positions (Fritts and Mech 1981, Stahler et al. 2002, vonHoldt et al. 2008, Sparkman et al. 2012), usurp an existing breeder (Messier 1985, vonHoldt et al. 2008), or bide their time to ascend to breeding positions (vonHoldt et al. 2008). Body size is an important determinant of individual fitness and a driving evolutionary force (Baker et al. 2015). Stahler et al. (2013) demonstrated that body mass of breeders was the main determinant of litter size and survival of the litter. Hunting success is also tied directly to larger body size, which has obvious fitness advantages (MacNulty et al. 2009). This physical superiority offers a decisive advantage for northern wolves obtaining and defending breeding positions in the small Mexican wolf population. In addition to a body size differential, several characteristics of the current wild Mexican wolf populations make them vulnerable to genetic swamping by northern wolves: 1) social disruption from human-caused mortality, 2) small pack size, and 3) elevated levels of inbreeding. When wolf populations have high rates of mortality, the social turmoil results in a higher rate of acceptance of wolves dispersing from other packs (Ballard et al. 1987, Mech and Boitani 2003:16). Ballard et al. (1987) noted that 21% of dispersing wolves were accepted into other packs. Immigrating wolves are also more readily adopted by smaller packs where additional individuals, especially males, increase hunting efficiency and survival of existing pack members (Fritts and Mech 1981, Ballard et al. 1987, Cassidy et al. 2015). The wild U.S. population of Mexican wolves has consistently maintained a relatively small pack size (mean = 4.1, 1998-2016, USFWS 2017), which means they would more readily accept immigrating wolves from the north. Inbreeding avoidance in wolves has been well-documented, where wolves more readily mate with unrelated wolves (vonHoldt et al. 2008, Geffen et al. 2011, Sparkman et al. 2012). The current wild populations of Mexican wolves have inbreeding levels higher than most wolf populations (USFWS 2017), which means a new wolf immigrant, unrelated to all Mexican wolves, would have a disproportionately high probability of attaining a breeding position (vonHoldt et al. 2008, Geffen et al. 2011, Å. . .kesson et al. 2016).

**CONCERN STATEMENT:** Commenters expressed concern about the impact of lethal removal on the gray wolf, noting that studies show when lethal removal is allowed, poaching increases. Commenters noted that lethal management of wolves in Wyoming has had negative impacts by severing population connectivity and inhibiting gene flow.

**Representative Quote:** Lethal management of wolves in Wyoming has negatively impacted wolf population survivability across the west by severing population connectivity thereby inhibiting gene flow and diminishing long-term wolf survivability potential across the Rocky Mountain Cordillera. Current lethal management of wolves in Wyoming and of Mexican gray wolves in Arizona and New Mexico will reduce the long-term survivability potential of gray wolves in Colorado by reducing or eliminating population connectivity thereby inhibiting gene flow.

**CONCERN STATEMENT:** Commenters expressed concern that a 10(j) rule would preclude the designation of critical habitat for the enhancement of recovery efforts. Specific concerns included potential future habitat modifications like the addition or closure of roads, or opening up areas to motorized use.

**Representative Quote:** Section 10 designations often preclude the designation of Critical Habitat for the enhancement of recovery efforts. The designation of Critical Habitat entails the prevention of adverse modifications of such habitats, conferring numerous conservation benefits (Congressional Research Service 2021: 23) unavailable to experimental, nonessential populations. Should the gray wolf in Colorado be reintroduced under an experimental, nonessential 10(j) rule, they would be deprived of such habitat protections, to the detriment of species recovery. This deprivation is particularly detrimental to the extent that new roads were to be constructed, or existing closed and gated roads were to be opened to motorized transit, offering opportunities for poachers to access heretofore secure habitats used during denning and at other sensitive times of year. By contrast endangered status (and the requisite designation of Critical Habitat) would present a legal bar to such adverse modification of wolf habitats. Section 10 designations often allow for reintroduced species that breach designated boundaries to be either relocated back to the boundary area or be put in a captive breeding program. Wolves are listed as a threatened species in all states bounding Colorado except Wyoming and parts of Utah. The recovery of wolves nationwide is frustrated by these efforts to prevent natural dispersal beyond these boundaries, which typically are established based on political jurisdictions rather than suitable habitats. Wolves that emigrate from Colorado should be allowed to proceed unmolested in the interest of establishing viable populations in neighboring states.

### *SUPPORT OR OPPOSE*

**CONCERN STATEMENT:** Commenters stated support for the presence of wolves in Colorado and the 10(j) process, with most stating that increased management flexibility is needed to address potential impacts from the reintroduction.

**Representative Quote:** I am writing in support of the development of a Section 10(j) rule for wolves in Colorado. This designation will protect wolves while ensuring that red tape does not delay the reintroduction mandated by Colorado voters. I support the issuance of a Section 10(j) permit as it will allow some management flexibility to restore wolves to Colorado. I also support other approaches, or combinations of approaches including potential management actions in adjoining states, and evaluation of the potential impact of management in other states, especially Wyoming, on the establishment of wolves in Colorado.

**Representative Quote:** The 10(j) status will allow for the greatest range of management tools for Colorado Parks and Wildlife to ensure a healthy introduction of a species that has been absent from the range in Colorado for more than 75 years. This will help protect other sensitive species of interest to FWS that will

bear the brunt of depredation from introduced wolves, including moose. And it will allow for close management of a species that will significantly impact individuals, businesses, and the communities that benefit from those businesses.

**CONCERN STATEMENT:** Commenters stated opposition to the 10(j) process, stating that it lowers protection for wolves; reclassifying them as "non-essential" and "experimental" allows them to be killed.

**Representative Quote:** I don't support Colorado designating their wolf population as an experimental, non-essential wolf population under 10j. I believe 10j doesn't allow wolves to fully recover in Colorado which Colorado Parks and Wildlife needs to put first. In Montana my state has failed to do with the wolf population here and I want to see more state wildlife agencies putting recovering wolves first which 10j is a hurdle into making that goal happen, therefore the U.S. Fish and Wildlife should not support the decision of qualifying Colorado's wolf population under 10j.

**Representative Quote:** This seems pretty clearly to be an excuse to temper with the law in bad faith. The goal of reclassifying wolves as "experimental" is to allow for ranchers and their ilk to kill them. This has nothing to do with the preservation status of the wolves as a population in Colorado. The reintroduction of wolves into Colorado is not "experimental," as Colorado is the natural habitat of the species, which existed here before that state was formed. I think this is a grotesque of the endangered species list's explicit purpose and of American conservationism. I know that ranchers suffer minimally by wolf predation as a matter of fact, and that the state compensates them generously for any losses.

**Representative Quote:** My family farms and ranches in Colorado and Wyoming and with great respect, my family and I strongly oppose Colorado Parks and Wildlife request for the 10(j) rule under the ESA as it erodes wolf protection and is NOT science-based. It is a loophole that enables ranchers, farmers, and BIG oil and gas corporations more leeway to legally use lethal means instead of non-lethal means of control.

**Representative Quote:** At this stage, FWS is determining whether to promulgate a 10(j) rule for the wolf population to be reintroduced in Colorado. Friends of Animals believes that this does not represent the best option to create a self-sustaining population of wolves in Colorado. As has been clear in the two working groups assembled by CPW, the attitude surrounding wolves is dominated by how to kill wolves, where to kill wolves, and how much money will be paid to the meat industry for livestock compensation. There is a reason why animals are delineated as endangered or threatened at the Federal level. The Endangered Species Act was meant to "halt and reverse the trend toward species extinction "whatever the cost." This means that the species themselves should have priority, not special interests within a given state. By preventing a state from crafting its own rules, and giving handouts to influential industries within that state, FWS can ensure that this reintroduction of an endangered species succeeds.

## ***TRIBAL RESOURCES***

**CONCERN STATEMENT:** Commenters stated that the Service should consult with Tribal representatives and draw on and use traditional ecological knowledge in the development of the 10(j) rule. Commenters specifically noted the Service should consult with the Global Indigenous Council in this process. Commenters were concerned with potential impacts to Tribal cultural values.

**Representative Quote:** USFWS should consult with tribal representatives and indigenous voices from Colorado and draw on and use traditional ecological knowledge to effectively guide the development of the 10(j) management rule and other wolf policies.

**Representative Quote:** Use information from peer-reviewed research and by consulting with indigenous people like the Global Indigenous Council for their guidance.

**Representative Quote:** Considerations for evaluating the significance of impacts on species, locations, or other resources of religious or cultural significance for Tribes and impacts to cultural values from the actions being considered

**Representative Quote:** The Global Indigenous Council must have a seat at the table during this process. Their use of Traditional Ecological Knowledge. The Global Indigenous Council continues to be on the forefront of Defending the Sacred with the Wolf Treaty, support for preserving the Endangered Species Act (ESA), and introducing a Native American Endangered Species Act (NA-ESA). The latest Tribal Nations to support the Wolf Treaty and its principles are the Karuk and Yurok Tribes, the two largest Tribal Nations in California. The Wolf Treaty was present at the Bioneers Conference in San Rafael, California, in October 2019. Ponca Nation Councilwoman and internationally respected elder, Casey Camp-Horinek, and GIC Executive Director, Bear Stands Last, introduced the treaty at the event. Tom Goldtooth, Executive Director of the Indigenous Environmental Network, was among the leaders to sign the treaty at Bioneers. Tom and Casey were instrumental in ensuring indigenous communities had a voice and presence at the recent UN Climate Change Conference COP 25 in Madrid. Both were on the frontlines of the protest held by indigenous leaders and delegates on December 11.

**CONCERN STATEMENT:** Commenters stated that the Service should develop a management agreement with Tribes and indicated that the Service should consult with the Southern Ute, Ute Mountain Ute, Arapaho, Cheyenne, Kiowa, Comanche, Apache, Navajo and Shoshone Tribes.

**Representative Quote:** Receive definitive management agreement with neighboring states and Tribal representation

**Representative Quote:** USFWS should consult with the Southern Ute and Ute Mountain Ute tribes at a minimum and consider consultation with other tribes with historical connections to Colorado, including but not limited to the Arapaho, Cheyenne, Kiowa, Comanche, Apache, Navajo and Shoshone tribes. USFWS should consult with the Global Indigenous Council for their guidance on which tribes should be contacted.

**CONCERN STATEMENT:** Tribal representatives from the Southern Ute stated concern that wolf reintroduction would lead to conflicts with livestock and wildlife/hunting-related interests, both of which are an important and integral part of the Tribe's social, economic, and cultural fabric. They also expressed concern for wolf dispersal to Tribal trust lands of their reservation, as well as Brunot Area lands where the Tribe retains off-reservation hunting rights for its members. The Tribe noted that prior to wolf releases, it expects to develop a wolf management plan in consultation with appropriate agencies to minimize wolf-related impacts to the Tribe and its members.

*Representative Quote: The Tribe has closely followed the plan of the State of Colorado to reintroduce the gray wolf within the State beginning in 2023. The Tribe believes that the return of this apex predator throughout the southern Rocky Mountain landscape will lead to significant conflict with both livestock and wildlife/hunting related interests, both of which are a very important and integral part of the Tribe's social, economic, and cultural fabric. The Tribe further believes it is highly likely that, within a relatively short timeframe following the State's release of animals, wolves will disperse to locations of primary concern to the Tribe, including tribal trust lands of our reservation, as well as Brunot Area lands where the Tribe retains off-reservation hunting rights for our members. The big game located on these lands have historically been and continue to be an essential component to our Tribe's survival and way of life that must be preserved for our future generations. However, prior to wolf releases, the Tribe expects to develop a wolf management plan, in consultation with appropriate agencies, in order to minimize wolf related impacts to the Tribe and its members.*

**CONCERN STATEMENT:** The Southern Ute Tribe affirmed its intention to engage in government-to-government consultation.

**Representative Quote:** First, the Tribe wishes to affirm its desire to engage in government-to government consultation with the U.S. Fish & Wildlife Service (Service). The Tribe believes this consultation is vital to the protection of our sovereign rights and interests and is in keeping with Secretarial Order 3206 which compels the Service to harmonize its tribal trust responsibility with its species conservation efforts under the federal Endangered Species Act of 1973, 16 U.S.C. 1531, as amended (ESA).

**CONCERN STATEMENT:** Commenters suggested that no agreement between the Service and the Tribe is necessary to capture and remove wolves from Tribal trust lands.

**Representative Quote:** The Service or a designated agency may develop and implement management actions in cooperation with willing tribal governments. No agreement between the Service and a Tribe should be necessary for the capture and removal of wolves from tribal trust lands if requested by the tribal government.

**APPENDIX D: RESPONSES TO PUBLIC COMMENTS ON THE  
PROPOSED RULE AND DRAFT ENVIRONMENTAL IMPACT  
STATEMENT**



# **Colorado Gray Wolf 10(j) Final Rule and Final Environmental Impact Statement**

## ***Public Comment Analysis Report on the Draft Rule and Draft Environmental Impact Statement***

**August 2023**



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# INTRODUCTION

The U.S. Fish and Wildlife Service (Service) held a public comment period for the Colorado Gray Wolf 10(j) rule and draft environmental impact statement (DEIS) from February 17, 2023, to April 18, 2023. During the public comment period, four in-person open house meetings were held in Grand Junction, Craig, Walden, and Golden, Colorado, on March 14, March 15, March 16, and March 28, 2023, respectively. A virtual public meeting was held on March 22, 2023. Members of the public were encouraged to submit comments online through <https://www.regulations.gov> (following instructions to submit comments to Docket No. FWS-R6-ES-2022-0100). Written comments were also accepted by mail. Approximately 4,290 pieces of correspondence were received during the public comment period for the rule and DEIS, with 1 correspondence having 16,233 signatures. Additional detail is provided in this report. This report describes the public comment process for the rule and DEIS and presents the analysis and summary of public comments received.

## PUBLIC COMMENT FOR THE COLORADO GRAY WOLF 10(j) RULEMAKING

The public comment period was open for 60 days between February 17, 2023, and April 18, 2023. The Service issued a press release to local media outlets and published the press release on the Colorado Ecological Services Field Office website on February 15, 2023, announcing the dates, times, and places of the public meetings. The Service opened the public comment period on February 17, 2023. Notifications were sent to Tribes, states, County Commissions, and Congressional offices notifying them of the public scoping meetings and offering to brief them on the process, and the webpage for Docket No. FWS-R6-ES-2022-0100 on <https://www.regulations.gov/> was activated for the public to submit comments. The Notice of Intent was published in the *Federal Register* on February 17, 2023. Four in-person public meetings were held during the comment period at the following locations:

- March 14, 2023: Grand Junction Convention Center, Grand Junction, Colorado
- March 15, 2023: Moffat County Pavilion, Craig, Colorado
- March 16, 2023: Wattenberg Center, Walden, Colorado
- March 28, 2023: Denver Marriott West, Golden, Colorado

Additionally, the Service held a virtual public meeting on March 22, 2023.

Approximately 270 people attended the four in-person meetings and virtual meeting (65 people attended the meeting in Grand Junction, 50 people attended the meeting in Craig, 70 people attended the meeting in Walden, 15 people attended the meeting in Golden, and 70 people attended the virtual meeting).

At each meeting, handouts of the public newsletter were available that included information about the background of the proposed 10(j) rule, the proposed purpose and need, alternatives and issues analyzed in the DEIS, and information on how to submit comments online or via mail. This information was also displayed on banners at each in-person meeting venue and presented in a PowerPoint presentation during the virtual meeting. Service personnel, as well as staff from Colorado Parks and Wildlife (at the in-person meetings only), were available to answer questions and provide additional information to meeting attendees.

Interested parties were encouraged to enter their comments directly on <https://www.regulations.gov/>. Hard copy correspondence received by mail were also collected for analysis. All correspondence was entered into a web-based system, DiscoverText, for coding and analysis. DiscoverText is a text analytics software system that supports sorting and analysis of written comments.

## DEFINITION OF TERMS

Primary terms used in the document are defined below.

**Correspondence:** A correspondence is the entire document received from a commenter. This includes letters; written comment forms; comments submitted directly on <https://www.regulations.gov/>; and any other written comments provided either at the public scoping meetings or by mail.

**Comment:** A comment is a portion of the text within a correspondence that addresses a single subject. It could include such information as an expression of support or opposition for an alternative; additional data regarding existing conditions; or suggestions for resource topics, alternatives, or alternative elements to be considered.

**Code:** A code is a grouping centered on a common subject. The codes were developed during the scoping process and are used to track major subjects.

**Concern:** Concerns are statements that summarize the issues identified under each code. Each code was further characterized by concern statements to provide a better focus on the content of comments. Some codes required multiple concern statements, while others did not. In cases where no comments were received on an issue, the code was not identified or discussed in this report.

**Quotes:** Representative quotes have been taken directly from the text of the comments received from the public and further clarify the concern statements. Some quotes were edited slightly to correct formatting and spelling.

## COMMENT ANALYSIS METHODOLOGY

Correspondence was received by hard-copy letter via mail, on comment sheets submitted at the public meetings, or correspondence entered directly into <https://www.regulations.gov/>. Letters received by email or through the U.S. mail are included in the analysis.

Once all the correspondence was entered into DiscoverText, each was read, and specific comments within each unique correspondence were identified. More than 1,900 comments were derived from the unique correspondence received. In addition to unique correspondence, 1,617 form letters were received. When identifying comments, every attempt was made to capture the full breadth of comments submitted. During the public comment period, approximately 250 pieces of correspondence were received that discussed only issues related to the State Plan and the action of wolf reintroduction. Because these correspondences were outside the scope of the analysis, they were categorized as nonsubstantive comments.

To categorize comments, each comment was assigned one or multiple codes to identify the general content of a comment and to group similar comments. Twenty-three codes were used to categorize the comments received. Examples of codes developed for this project are *Consultation*, *Socioeconomics*, and *Special Status Species*. In some cases, the same comment may be categorized under more than one code, reflecting the fact that the comment may address more than one issue or idea.

## **GUIDE TO THE CONCERN/RESPONSE REPORT**

The *Concern/Response Report* is provided in the following section of this document. This report summarizes the comments received during the public comment process. In the report, comments are organized by codes and further organized into concern statements. Representative quotes are provided for each concern statement. The Service's response to each concern statement is provided below the representative quotes for that concern statement. A list of concern statements, in table format, is provided at the beginning of the *Concern Report* section for quick reference (refer to table 1).

### **HOW WILL MY COMMENT BE USED?**

As described above, all comments are categorized into concern statements, such as “Commenters requested that the Bureau of Land Management and U.S. Forest Service be cooperating agencies for the DEIS” and “Commenters requested that the DEIS look at impacts and interactions with the Mexican wolf.” These concerns are listed in table 1 in the *Concern Report* section of this document. A response has been provided for each concern. If changes to the DEIS or rule were required based on a concern, the comment response notes that the corresponding change was made in the Final EIS (FEIS) and/or the final rule.

# CONCERN REPORT

As described above, this report summarizes the comments received during the public comment period for the 10(j) rule and DEIS in support of the State of Colorado’s reintroduction of the gray wolf. Table 1 provides a concise list of concern statements by code for quick reference. It is followed by the full concern report, which includes representative quotes.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

Boundary	
Concern 1	Commenters requested the boundary of the nonessential experimental population be reduced from the entire State of Colorado, with some suggesting it be 50 miles (80 kilometers) around each release site. Commenters noted this would allow gray wolves migrating into Colorado to have full protection under the Endangered Species Act (ESA) rather than be considered threatened, as they would be under the 10(j) rule. Commenters also suggested that specific areas of the State of Colorado be excluded (i.e., North Park, Moffat County, Routt County and Rio Blanco County) because of the existing gray wolves in these areas.
Concern 2	Commenters requested that the boundary for the 10(j) be expanded to be larger than the State of Colorado and include the northwest portion of Utah that falls within the Northern Rocky Mountain Distinct Population Segment and north of the Colorado State border into Wyoming up Interstate 80. They noted this would provide a buffer zone for the wolves and address the wolf dispersal that would likely occur.
Concern 3	Commenters stated opposition to using 10(a)1(A) permits to remove wolves that venture to neighboring states and return them to Colorado. Commenters stated that dispersing wolves should be able to live where they find suitable habitat and that dispersal would help reestablish the population. They also expressed concern regarding potential injuries to wolves during relocation.
Concern 4	Commenters questioned the legality of introducing wolves to areas of Colorado where they are already present, specifically northwest Colorado. They further noted that the reintroduced population would not be wholly separate geographically, and therefore alternative 2 is not a legal alternative. Commenters questioned the Service's definition of a population of gray wolves and the determination that an existing population of gray wolves had not been identified in Colorado at the time of publication of the FEIS.
Concern 5	Commenters questioned what the status of wolves crossing into Colorado from other states would be and asked how the Service could apply section 10(j) regulations to wolves that had dispersed naturally to Colorado. They suggested that since populations must be "wholly separate geographically" that wolves entering Colorado should not be part of the experimental population.
Concern 6	One commenter expressed concern about how the three alternatives in the DEIS would protect wolves from being killed when they cross or are driven across the border into southern Wyoming.
Endangered Species Act	
Concern 7	One commenter noted that because gray wolves are federally listed as endangered under the ESA, the State must obtain approval from the Service to reintroduce the species.

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Concern 8	Commenters requested that the 10(j) rule state that the Service will propose to delist the nonessential experimental population from the ESA as soon as possible after Colorado removes wolves from the state list. Some commenters noted that reintroduction of wolves in Colorado should support delisting the species under the ESA or not affect the Service's decision to delist the species in the lower 44 states. They further noted if the Service determines that the currently listed entity no longer meets the standards for an ESA listing, it must delist the species (including any wolves in Colorado), regardless of the status of Colorado's wolf reintroduction.
Concern 9	Commenters recommended that the Service retain authority over the State of Colorado in implementing measures to promote the recovery of the gray wolf in the state and meet requirements under section 7(a)(1) of the ESA.
Concern 10	Commenters noted that the rule may violate the ESA by not addressing threats to the species or supporting recovery and conservation of the species in Colorado. One commenter suggested the Service should complete section 7 consultation to assess the impacts of lethal take on the species.
Concern 11	One commenter noted that the requirement for federal agencies to consult with the Service on any federal activities that may impact gray wolves would delay fuel reduction and wildfire mitigation projects on federal lands in Colorado and increase the risk of catastrophic wildfires.
<b>Ungulate Provision</b>	
Concern 12	Commenters expressed opposition to adding a provision to the rule to manage gray wolves that are impacting ungulate populations. Some commenters reasoned that the provision would be unnecessary because of scientific research indicating that wolves do not tend to markedly reduce ungulate populations, especially on larger scales. A commenter said that elk populations have increased in Idaho, Montana, and Wyoming even with wolves present and asserted that lethal control of wolves would rarely be justifiable. Another commenter cited research from Alberta, Canada, and Alaska that indicated removing predators did not necessarily increase ungulate populations or reduce hunter harvest of elk. Commenters noted that the lethal take of wolves permitted in the northern Rocky Mountains nonessential experimental population has led to unsustainable wolf hunting practices. Commenters said that managing wolf populations to benefit ungulates and the hunting industry would be contrary to the goals of the reintroduction. They also indicated that allowing lethal take of a federally listed species to provide recreational opportunities like hunting would be inappropriate. A commenter argued that lethal take of wolves to benefit hunters would be immoral and unfair because thriving wolf populations confer ecological benefits to all people. Commenters noted that wolves tend to predate on weak and diseased ungulates, leading to a stronger and healthier ungulate population and reducing chronic wasting disease. One commenter specifically requested that wolves not be killed in response to decreases in nonnative mountain goat populations.



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Concern 13	<p>Commenters expressed support for adding a provision to the rule to manage gray wolves that are having an impact on ungulate populations. Commenters requested that the provision mirror the guidelines in the 2005 final rule that established a northern Rocky Mountains gray wolf nonessential experimental population. Commenters argued that the ungulate provision in the northern Rocky Mountains nonessential experimental population rule gave managers the tools to mitigate effects on ungulates, and they indicated that ungulate populations would be at risk without the provision. Commenters noted that a reduction of ungulate populations could have economic impacts, particularly in the form of reduced revenues from hunting and decreased funding for CPW via ungulate hunting license sales. Commenters also worried that if wolves are allowed to severely depopulate ungulates, they may seek out livestock as an alternate food source, increasing impacts on livestock. Some commenters were specifically concerned about wolf impacts to the recovering moose population without the ungulate provision in place. A few commenters worried about high levels of predation on ungulates during the winter because wolves can travel on snow while ungulates typically do not. One commenter said that because wolves reproduce in litters with multiple pups, they have an advantage over other species that produce a single offspring annually, so the ungulate provision should be included to counteract that advantage.</p>
<b>Take</b>	
Concern 14	<p>Commenters expressed disapproval for the lethal take permitted in the rule. Some commenters said that all lethal take of wolves, except in immediate defense of life, should be illegal. Commenters asked that people who lethally take wolves face felony criminal penalties, at least two years in prison, and fines.</p>
Concern 15	<p>Commenters cited scientific research that has proven the effectiveness of nonlethal approaches at reducing livestock conflicts over lethal approaches. Some commenters noted that legalized lethal take of wolves can lead to less public respect and tolerance of wolves and may encourage more poaching. Commenters were specifically opposed to private individuals being permitted to lethally take wolves. One commenter noted that even when individual problem wolves are targeted for lethal take, mistakes have occurred, and the incorrect wolf was killed as a result. The commenter gave an example from southeast Washington. Commenters requested that wolves in Colorado be considered endangered with full ESA protections and noted that previous extirpations of wolves have been because of liberal lethal take. Other commenters asked for the rule to specifically ban lethal take of pups and breeding pairs. Commenters urged the Service to require nonlethal prevention measures before allowing any lethal take. Proposed methods for conflict avoidance included fladry, conditioned taste aversion, strobe lights, low stress stockmanship, range riders, fox lights, guard animals, removing livestock carcasses and bone piles, increasing human supervision, and adjusting calving time and location. Commenters cited studies and examples from the northern Rocky Mountains and Great Lakes region that document nonlethal conflict prevention's effectiveness. One commenter suggested additional management strategies, such as using avoidance collars on wolves so that they avoid coming close to livestock and making wolves' first encounter with livestock negative, so they learn to avoid livestock. Another commenter asked for more management flexibility to address expanding gray wolf populations. The commenter also asked for new technology measures to be considered such as "LED lights attached to ears of livestock, electric fences, shock collars put on wolves, or deterrents such as the radio-activated guard (RAG) box, a device which keeps wolves away by emitting strobe lights and sounds when triggered by a signal from radio collars." Another commenter asked the Service to allow use of less than lethal munitions to opportunistically harass wolves.</p>

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Concern 16	Commenters asked for wolf population recovery to be at the center of the Service's action. Commenters proposed that ranchers should not be allowed to take wolves until there is a self-sustaining population established in the state. Commenters also asked the Service to consider the intrinsic value of each individual wolf and the overall health of the population in addition to establishing numerical population goals. Commenters requested that the Service clarify how lethal take allowances would benefit the reintroduced wolf population and aid in their recovery. One commenter said the Service should prioritize the protection of gray wolves over other topics discussed in the rule and FEIS. The commenter noted that human-caused mortality was the main driver of gray wolf population decline in both the past and the present. The commenter urged the Service to consider that lethal take of wolves has weakened the metapopulation formed by wolves in central Idaho, northwest Montana, and the Yellowstone region.
Concern 17	Commenters expressed support for lethal take allowances in the rule and in the FEIS and said that lethal take is a necessary management strategy to have available. Commenters were in favor of the management flexibility provided in the rule and under alternative 1 of the FEIS. Commenters noted that the previous reintroductions in the northern Rocky Mountains have succeeded with the management flexibility of a 10(j) rule. Commenters noted that lethal take is necessary to protect the livestock industry and other wildlife and requested that the permitting process for lethal take be liberal and streamlined to prevent livestock losses. Some commenters were specifically supportive of take provisions for wolves caught in the act of predating on pets and working dogs. Commenters said that lethal take would be important to prevent extreme growth of wolf populations in Colorado and impacts on livestock, big game, and other wildlife species. Some commenters said they appreciated the greater flexibility allowed in the Service's rule compared to the State Plan, specifically in relation to taking wolves "in the act of attacking" and the reporting requirements. Commenters said that lethal take would be the only feasible option in many cases and asserted that nonlethal measures like relocation and livestock guardian dogs are ineffective.
Concern 18	A commenter said reporting of lethal take or harassment should be permitted through a phone call or website in addition to mail or email.
Concern 19	Commenters asked the Service to fine livestock operators who do not remove carcasses promptly.
Concern 20	Commenters asked that each pack of wolves be consistently monitored to give livestock operators a chance to take steps to protect their animals and prevent lethal take from occurring as a result of depredations.
Concern 21	Several commenters requested a limit to the overall numbers of wolves that can be lethally taken.
Concern 22	Commenters asked the Service to work collaboratively with livestock operators and require proof of use of conflict prevention measures before lethal take is considered. Commenters noted that immediately allowing lethal take would disincentivize use of nonlethal management as a first step. Commenters said that the onus should be on livestock operators to manage their livestock to avoid conflicts rather than managing wolves to avoid conflicts. A commenter said that determinations regarding causes of livestock deaths should be made publicly available prior to any lethal take and should include summaries of livestock losses, investigation reports, maps of areas with known wolf activity and depredations, and conflict deterrence plans specific to the area. They also requested that take authorizations should end after the wolf is killed, the wolf leaves the area, or after 14 days. Commenters also suggested that wolves that chronically depredate on livestock could be translocated rather than lethally taken. Commenters asked the Service to ensure that the rule does not unintentionally incentivize lethal take over nonlethal take.

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Concern 23	<p>Commenters asked the Service to incorporate additional scientific research into its take provisions. Commenters said the take permitted in the rule favors people who do not support wolf reintroduction and does not rely on the science behind wolf conflict prevention. Commenters asked the Service to incorporate science on minimum viable population sizes in the rule. Commenters noted research with the following findings:</p> <ul style="list-style-type: none"> <li>• Keeping wolf mortality as close as possible to natural death rates leads to less depredation by wolves, while higher lethal take leads to more depredation because of social disruption to wolves.</li> <li>• Only targeted lethal removal of known individual depredating wolves can reduce future depredations.</li> <li>• Timing of removal should be less than 7 days after the depredation event for the most effective reduction in conflicts.</li> <li>• Nonlethal tools are more effective than lethal management.</li> <li>• Lethal take of wolves, particularly pack leaders, can lead to pack dispersal. Dispersing wolves are more likely to predate on livestock.</li> </ul>
Concern 24	<p>Commenters asked for clarity on whether recreational hikers on public land could take wolves in the act of attacking their dogs.</p>
Concern 25	<p>One commenter said that the Service should not allow wolves to be driven from public to private lands where they could be subjected to take.</p>
Concern 26	<p>Commenters asked for a broadening of the take allowed on public lands, noting that livestock can end up outside their owner's allotments and should still be defensible from wolf attacks.</p>
Concern 27	<p>Commenters were opposed to any take on public land, saying that public lands should be a refuge for wolves. One commenter said that not permitting lethal take on public lands would provide necessary incentives for livestock operators to nonlethally protect their livestock from wolves. Commenters noted that although Colorado Proposition 114 says that Colorado will not impose land use restrictions on private lands for purposes of wolf reintroductions, the Service should impose land use restrictions on public lands and forbid take of wolves on public land. Other commenters said that lethal take on public land should only be permitted if individual problem wolves could be targeted.</p>
Concern 28	<p>Commenters worried that the regulations for shoot-on-sight in the rule are too vague and that key terms like harassing and molesting do not have clear definitions. They asked for more straightforward definitions to avoid confusion.</p>
Concern 29	<p>Commenters expressed opposition to shoot-on-sight take authorizations and for permission to take wolves in the act of attacking. A commenter noted that wolves often chase or test potential prey without the chase resulting in an attack. One commenter noted that the 1994 rule governing wolf reintroduction in the northern Rocky Mountains does not include shoot-on-sight authorizations for private landowners and said that the allowance would not be necessary.</p>
Concern 30	<p>Commenters requested that take authorization permits be extended for a period longer than 45 days. A commenter asked for the shoot-on-sight requirements to be changed to specify that the predation event was confirmed within the last 30 days, rather than the predation event occurring within the last 30 days. The commenter noted that grazing allotments are often large and remote and that it is impractical to expect all depredations to be discovered and confirmed within 30 days.</p>
Concern 31	<p>A commenter asked the Service to forbid attracting wolves in order to harass them. The commenter notes that the term "intentional harassment" is too vague and could include methods of tracking, searching out, and waiting for wolves that lead to attracting wolves to human-dominated areas and livestock, resulting in habituation. The commenter was in favor of including methods like predator calls to deter wolves.</p>

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Concern 32	<p>Some commenters made suggestions for conditions that should be met prior to the authorization of lethal take. Suggested conditions included:</p> <ul style="list-style-type: none"> <li>• Require four or more livestock losses on private land by a single wolf within seven days to lethally take the wolf.</li> <li>• Require the Service to determine that no circumstances attracted wolves to predate on the livestock, including the presence of carrion or unusual odors.</li> <li>• Verify that the livestock operator implemented at least two area-specific conflict minimization techniques.</li> <li>• Verify that further nonlethal prevention would not be effective and that lethal take of the wolf would not harm the wolf population and state recovery objectives.</li> </ul> <p>Require more than one depredation event to occur before lethal take is permitted.</p>
Concern 33	<p>Commenters had suggestions for who could perform lethal take of wolves. Many commenters wanted the rule to exclusively permit CPW personnel to carry out lethal management. One commenter said that the Service should not carry out lethal take and that rules should instead be enforced by "animal damage control agents" to ensure livestock operators' livelihoods are adequately protected. One commenter said that U.S. Department of Agriculture (USDA) Wildlife Services should be the first choice for investigating and taking problem wolves, while another commenter said USDA Wildlife Services should never be permitted to use lethal control. Commenters also proposed that CPW and the Service should be the only personnel allowed to conduct lethal control and that all lethal take should occur within seven days of the incident.</p>
Concern 34	<p>A commenter worried that delegating lethal take authority to state and Tribal officials would lead to a stagnant and unsuccessful reintroduction, citing the decline of the Mexican wolf population under State management. Commenters also said that the 10(j) rule for the Mexican wolf and the red wolf reintroductions had not contributed to the species' recovery and worried about a similar outcome in Colorado.</p>
Concern 35	<p>Commenters stated that only the Service and designated agents should have the authority to lethally take wolves and that private citizens should not be permitted to do so.</p>
Concern 36	<p>Commenters expressed opposition to the implementation of a 10(j) rule. Commenters requested that wolves be considered endangered, rather than experimental and nonessential, when they are reintroduced. Commenters stated that the rule would be contrary to the intentions of the ESA and worried that the rule could put wolves in jeopardy.</p>
Concern 37	<p>Some commenters expressed concern about prioritizing livestock over wolves, noting the ecological impacts cattle can have on landscapes and indicating that wolves are the native species, while cattle have been introduced.</p>
Concern 38	<p>Some commenters expressed opposition to the use of traps, snares, poison, and hound hunting. Commenters said that traps should never be used to resolve conflicts and noted that incidental take of wolves in traps and snares should be prosecuted. Commenters noted that Colorado permits trapping and hound hunting of other species that could have a high risk of capturing wolves too. Commenters asked the Service to update the rule to forbid incidental take of wolves caused by traps and hounds to discourage their use because they could threaten the recovery of the experimental population. Commenters specifically requested that the Service forbid the use of poisons, such as sodium cyanide and Compound 1080 in wolves' range or in their potential future range. One commenter noted that the practice of hounding, or hunting with hounds, in Colorado could increase the likelihood of unintended or illegal take. This commenter suggested the Service exclude hounding from allowable incidental take included in the rule and work with the State to revise hounding regulations to reduce potential impacts to wolves.</p>

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Concern 39	Commenters requested that the Service change the definition of “livestock producer” from “a person that is actively engaged in farming/ranching and that receives a substantial amount of total income from the production of livestock” to “a person that is actively engaged in farming/ranching and receives income from the production of livestock” because many agricultural operations are diversified in Colorado and the term “substantial amount” may be limiting.
Concern 40	Commenters requested the Service clarify the definition of problem wolf, since “calendar year” implies a wolf attacking in December and a month later in January might not count as a problem wolf. Commenters suggested changing the language to “within any 12-month period.”
Concern 41	Commenters asked for the problem wolf definition to include wolves who have depredated on livestock once rather than twice.
Concern 42	Commenters stated that language forbidding artificial or intentional feeding of wolves should be added and noted if evidence of intentional feeding is found, the wolf should not be considered a problem wolf.
Concern 43	Commenters asked the Service to add harassment and stalking of people and domestic animals to the definition of a problem wolf, along with livestock.
Concern 44	Commenters requested clarity about depredation events on public lands, specifically if depredation on public lands would count toward determining if a wolf is a problem wolf and asked for the definition to be updated to include attacks on federal grazing allotments and Tribal land.
Concern 45	A commenter asked for an update to the definition of “in the act of attacking” to include other injuries to livestock, including running through a fence while a wolf is chasing them and heart and lung problems from being chased for long distances. Another commenter asked the Service to remove the phrase, “chasing, molesting, or harassing by wolves that would indicate to a reasonable person that such biting, wounding, grasping, or killing of livestock or dogs is likely to occur at any moment” because it would be too subjective and difficult to enforce. Another commenter asked the Service to remove the phrase “at any moment” from the definition.
Concern 46	A commenter asked that the Service not consider harassment as take and requested that it be defined separately.
Concern 47	A commenter asked the Service to clarify and give examples of the characteristics that a wolf would need to exhibit to justify taking that wolf.
Concern 48	A commenter said the definition of “incidental take” should cover working dogs or other dogs that kill a wolf.
Concern 49	Commenters indicated that livestock operators and landowners should be included as designated agents. Commenters also asked for greater clarity on the process for assigning designated agents. One commenter suggested that the definition be changed to “a Federal, State, or Tribal agency, or employee thereof, authorized or directed by the Service to conduct gray wolf management consistent with this rule”.
Concern 50	A commenter asked for a broader definition of livestock that includes any large animal raised for its meat.
Concern 51	Commenters asked the Service to revise the definition of livestock guard animals to include animals other than dogs, like llamas or donkeys.
Concern 52	A commenter asked for the definition of private land to include leased private lands. A commenter asked for clarity on the current definition because it could include state and locally owned lands and could create confusion.

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Concern 53	A commenter asked the Service to clarify the definition of immediate and direct threat to human life. They asked the Service to explain what would be considered a threat and to ensure that a person’s fear when seeing a gray wolf would not be justification for lethally taking the wolf.
Concern 54	A commenter asked the Service to clarify the definition of intentional harassment to ensure intentional harassment does not injure or inadvertently kill wolves.
Concern 55	A commenter asked the Service not include non-working pets and domestic bison in the domestic animal definition for consistency with the State Plan.
Concern 56	Commenters questioned what proof would be required before purposeful take would be authorized. Commenters requested that the Service require specific proof of a wolf predating on livestock to authorize take of that wolf. Some commenters asked for photos, scat, and hair samples to be permitted as evidence of an attack if a depredation cannot be directly linked to wolves. Other commenters said the rule should forbid tampering or interfering with carcasses from potential wolf depredation events to preserve evidence. A commenter asked the Service to allow evidence other than livestock carcasses as proof of depredation because bears and other wildlife can eat carcasses and remove evidence.
Concern 57	Commenters requested that the language related to animal husbandry in alternative 1 under “Agency take of wolves that repeatedly depredate livestock” be removed.
Concern 58	Commenters requested that the Service update the language in alternative 1 under “Additional taking by private citizens on their private land” so that wolf depredations on neighboring properties can factor into the Service issuing “shoot-on-sight” authorizations.
Concern 59	Commenters asked the Service to clarify that baiting, attracting, and intentionally feeding wolves is illegal.
Concern 60	Commenters requested the Service provide examples of what would be considered incidental take, such as killing a wolf while driving on a highway.
Concern 61	Commenters suggested that the Service include an escape clause in the 10(j) rule.
Concern 62	Commenters requested the rule use the terms “killing” and “harassment” instead of take.
Concern 63	Commenters asked the Service to clarify that pursuit of wolves with all-terrain vehicles, on horseback, or by other measures would only be permitted to prevent livestock depredation to prevent people from chasing wolves indiscriminately.
Concern 64	Commenters asked the Service to clarify that passive and proactive deterrents like flashing lights and fladry should be considered opportunistic harassment, not intentional harassment, and that no written take authorization should be required to use passive deterrent measures.
Concern 65	Commenters requested that the Service rename shoot-on-sight permits to “Chronic Depredation Permits” for consistency with the State Plan.
Concern 66	Commenters asked the Service to clarify the term “regulatory standards” in this sentence in the DEIS, “States or Tribes must submit a science-based report showing the action meets regulatory standards.”
Concern 67	Commenters requested the rule clarify the differences between take, lethal take, and harassment.
Concern 68	Several commenters requested more stringent reporting requirements, while others requested more permissive reporting requirements

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Concern 69	Commenters asked the Service to integrate the State Plan into the rule framework as long as the plan uses the best available science. Commenters noted differences between the State Plan and the Service’s rule and asked for inconsistencies to be explained or addressed. A commenter asked for rule to clarify that the State Plan can be more restrictive than the Service’s rule.
Concern 70	Some commenters asked for neighboring states to be granted 10(a)1(A) permits to give them the flexibility to return dispersing wolves to Colorado.
Concern 71	A commenter asked the Service to allow lethal management if big game population levels fall by 5 percent or more from population levels prior to the reintroduction and to allow hunting of gray wolves when populations achieve the 2-2-2 rule. A commenter requested additional management flexibility to allow the Service and its designated agents the authority to haze, relocate, or kill wolves that are adversely affecting other wildlife species and to stop migration across state and Tribal boundaries.
<b>Illegal Take</b>	
Concern 72	Commenters requested the Service revise the rule to hold people accountable for illegal take. One commenter suggested the Service set limits on the number of wolves that can be lethally taken in a certain timeframe. One commenter suggested punishing illegal take through fines, imprisonment, and seizing of the firearm. Commenters suggested a lack of enforcement of take provisions has led to more illegal taking in other reintroduced wolf populations. Commenters cited data or suggested studies that should be reviewed for inclusion in the FEIS.
Concern 73	Commenters noted that individuals who lethally take a wolf while defending livestock, working dogs, or pets should not be prosecuted.
Concern 74	Commenters noted that individuals who injure or lethally take a wolf while mistaking it for a coyote or another species should not be prosecuted or subject to any legal action, referencing the McKittrick Policy.
<b>National Environmental Policy Act (NEPA)</b>	
Concern 75	Commenters expressed thoughts or opinions concerning the public involvement process for the EIS. One commenter questioned why the Service did not allow people to provide verbal comments at the public meetings for the DEIS. Another commenter questioned why public meetings during review of the DEIS were held on the Western Slope rather than in Front Range communities.
Concern 76	Commenters questioned why the EIS does not analyze the potential impacts of wolf reintroduction or why a separate EIS has not been completed to analyze wolf reintroduction. Commenters stated that since the Service has jurisdiction over the implementation of the ESA, including the conservation, transportation, release, and/or reintroduction of listed species under or in the absence of Section 6 Cooperative Agreements, the EIS should address Colorado’s wolf reintroduction. One commenter asked the Service to approve regulations that would require a NEPA assessment of the reintroduction. One commenter noted that the State should be required to complete an EIS because wolves reintroduced to Colorado would quickly disperse to federal lands in the state. One commenter stated that no gray wolves should be reintroduced until the NEPA process is completed for the reintroduction and a 10(j) rule is in place.
Concern 77	A commenter noted the study area should be expanded to the maximum area where reintroduced gray wolves are expected to disperse within the foreseeable future.
Concern 78	A commenter noted that release and transportation of an endangered species outside its current range seems beyond the scope of typical Section 6 Cooperative Agreements, in response to a statement in the DEIS that reintroduction of gray wolves in Colorado would be allowed under CPW’s Section 6 Cooperative Agreement.

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Concern 79	A commenter questioned the Service's use of data in a 2022 study by Ditmer et al. to determine the list of focal counties in the EIS. The commenter suggested that more detailed, site-specific analysis is needed for areas in the State's proposed release area. Another commenter suggested additional counties that should be added to the focal counties, including Pitkin, Summit, San Juan, and Hinsdale, because they "are within the dispersal area of the release zones."
Concern 80	A commenter suggested that the Service pause the NEPA process until CPW has finalized the State's Wolf Restoration and Management Plan and include any changes in the reintroduction process and management of gray wolves in the FEIS. This commenter suggested that the EIS should again be released for public comment after final changes in the State Plan are incorporated.
Concern 81	Commenters suggested that the purpose and need for the proposed action should be revised to reflect the Service's statutory responsibilities to conserve endangered species and their habitats. Commenters suggested that the Secretary of the Interior must make the finding that the 10(j) rule is consistent with the purposes of the ESA and ensure the conservation of wolves and ecosystems in Colorado; therefore, these responsibilities should constitute the purpose and need for the proposed action.
<b>Consultation</b>	
Concern 82	The Navajo Nation requested government-to-government consultation and coordination with Tribes and the development of a Colorado wolf management group with CPW, the Service, impacted Tribes, and other groups.
Concern 83	Commenters were supportive of the Service's collaboration with CPW and encouraged the Service to ensure the State Plan and rule are compatible. One commenter asked the Service to coordinate with the State Plan to avoid negative impacts to ungulates, livestock, and other wildlife. Another commenter suggested that the Service should integrate recommendations developed by CPW's Stakeholder Advisory Group and Technical Working Group into the rule. One commenter asked the Service to retain management authority and not improperly delegate authority to Colorado.
Concern 84	Commenters made requests for continued coordination with state and federal agencies. Commenters asked the Service to continue to involve and seek input from wildlife agencies in states neighboring Colorado. One commenter noted that the USDA would be an important partner for the Service in providing tools and resources to agricultural producers. Commenters also suggested forming agreements with neighboring states to return dispersing wolves to the 10(j) area to alleviate any burdens on the Mexican wolf recovery effort and to allow gray wolf restoration in Colorado where there would be more management flexibility.
<b>Socioeconomics</b>	
Concern 85	Commenters suggested that the estimates of livestock depredation should be revised to portray more realistic estimates or questioned the data used in the analysis. Commenters questioned if the analysis includes livestock in feedlots, which would be less vulnerable to depredations. Commenters also noted that the analysis in the EIS should assess projected losses in local areas rather than statewide. Commenters noted limitations associated with the data from Wyoming used in the analysis (i.e., that the total number of livestock used includes livestock in the Predator Zone, where depredations are not likely to be reported, and may artificially decrease the total number of projected depredations) and provided suggestions for revisions.
Concern 86	Commenters stated that reintroduction of wolves would result in adverse socioeconomic impacts from decreases in ungulate populations, hunter participation, and hunting revenues, including revenues for local communities, Tribal communities, and CPW. Commenters noted that a socioeconomic impacts to outfitters and guides would be adverse and long term.
Concern 87	Commenters noted that wolves and other predators are responsible for a relatively small percentage of livestock deaths compared to non-predator causes of death including disease and weather conditions. Commenters provided data from the USDA on the causes of death for livestock.



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Concern 88	Commenters noted that the reintroduction of wolves in Colorado would result in beneficial economic impacts, including revenues from increased tourism driven by wildlife viewing opportunities, increases in ungulate populations, reduced deer-vehicle collisions, and reduced agricultural damage from ungulates.
Concern 89	Commenters noted that reintroduction of wolves would result in significant economic impacts on livestock producers from depredation and the cost of implementing measures to prevent depredation, and on small businesses in rural areas. Commenters noted indirect impacts on livestock producers from the presence of wolves, including decreases in reproduction and weight gain and increased stress in livestock. One commenter suggested that allowing wolves on federally managed grazing allotments would violate existing lease agreements. One commenter noted that costs for measures to reduce or avoid depredations should be feasible for livestock producers. Commenters noted that costs may be significant for small operations and for rural communities. One commenter noted that these socioeconomic impacts may result in changes in land use at the county or regional level because livestock producers may be forced or choose to sell their ranches. One commenter noted that the conclusion that there would be no long-term impacts on livestock production overall in the state is inaccurate and based on data that were inappropriately extrapolated from states that are not similar to Colorado. One commenter requested that the Service consider impacts to communities in other states.
Concern 90	One commenter noted that the costs associated with the proposed reintroduction are unacceptable impacts that are expected to continue once wolves are on the landscape. The commenter suggested that these costs should be addressed in the 10(j) rule.
Concern 91	Commenters expressed support for lethal or nonlethal measures to prevent livestock depredation based on the costs of the measures. One commenter suggested that the management flexibility allowed under alternative 1, including lethal take, would reduce agency management costs and costs for livestock producers. Another commenter provided data related to a program using nonlethal livestock protection methods in Idaho and discussed how the program was less costly than lethal take.
<b>New Alternatives</b>	
Concern 92	Commenters requested that the alternatives included in the EIS address dispersal of gray wolves outside the experimental population boundary, either through capture and relocation of wolves that disperse outside the boundary or by allowing some degree of dispersal. Commenters identified the potential for livestock depredation in other states and impacts on Mexican wolves as reasons for capturing and relocating dispersing wolves. One commenter asked that the final rule recognize the eligibility of livestock producers in neighboring states for compensation under federal programs in the event of livestock depredation. Some commenters suggested that wolves that leave the boundary should be allowed to disperse to support establishment of wolf populations in neighboring states, with some commenters suggesting the only exception should be if dispersal of wolves would pose unacceptable impacts on the Mexican wolf. One commenter suggested tracking gray wolves that disperse outside the boundary to understand factors that may cause wolves to disperse outside Colorado.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

Concern 93	Some commenters noted the range of alternatives addressed in the EIS is too narrow, and commenters suggested additional alternatives that should be considered to support the conservation of reintroduced gray wolves in Colorado or to limit or prohibit lethal take. Alternative regulatory tools suggested including use of Safe Harbor Agreements or a statewide 10(a)1(A) permit while maintaining the species' endangered status in Colorado. Commenters also suggested considering alternative versions of the rule that would prohibit all lethal take, lethal take on public lands, or lethal take in the absence of nonlethal management strategies. Multiple commenters suggested the Service should retain management authority over reintroduced wolves in Colorado. One commenter suggested that the Service should expand the geographic area of the northern Rocky Mountains distinct population segment to encompass Colorado in recognition of the dispersal of individual wolves into Colorado from the northern Rocky Mountains region. Some commenters requested that the Service include provisions for ecosystem protection in Colorado in the range of alternatives. Commenters also requested that the Service consider alternatives that include education and financial incentives for livestock producers and rural communities to increase social tolerance for wolves.
Concern 94	Commenters suggested additional provisions or elements that should be included in the 10(j) rule. These included a prohibition on baiting wolves, recognition of the State of Wyoming's authority to manage wildlife species under its jurisdiction, a preference for relocating wolves that chronically depredate livestock, authorizing the use of trapping to support monitoring or translocation of wolves, requiring use of radio collars for monitoring, and allowing flexibility to manage the wolf population to maintain numbers once it reaches a certain target goal. Commenters suggested the Service identify a population goal for gray wolves in Colorado and/or establish limits on lethal take until reintroduced gray wolves meet certain population targets. Another commenter requested an addition to the 10(j) rule to forbid killing of wolves if they are not at an abundance that is serving to "meaningfully limit" coyote populations.
Concern 95	Multiple commenters suggested that the Service assess introducing Mexican wolves to Colorado in conjunction with the State's reintroduction of gray wolves, or that connectivity between gray wolves and Mexican wolves be allowed to support genetic diversity in the wild population of Mexican wolves.
Concern 96	Commenters suggested expanding the scope of the optional provision related to ungulates to allow management flexibility to address unacceptable impacts on other species as these impacts are identified or to allow management of wolves to address other conflicts related to ungulates (e.g., if wolves cause ungulate herds to mingle with livestock herds, displace ungulate herds into road rights-of-way causing impacts to public safety, or to address unacceptable impacts on ungulate herds following severe weather conditions).
<b>Ecosystems</b>	
Concern 97	Commenters suggested that the rule and EIS should be revised to discuss biodiversity concerns related to the reintroduction of the gray wolf in Colorado. Commenters discussed the ecosystem effects that have been attributed to gray wolves and provided data sources. Many commenters discussed the concept of trophic cascades and noted that predators affect the behavior and abundance of prey species, which can have more widespread ecosystem impacts. Potential effects mentioned included improving the condition of riparian areas, increasing habitat for other special status species, reducing disease transmission in ungulates, and mitigating climate change by creating carbon sinks. Commenters noted that lethal take would reduce or affect the ecosystem benefits provided by reintroduced wolves.
<b>Environmental Justice</b>	
Concern 98	One commenter suggested that the term "environmental justice" should be deleted from the EIS and the analysis combined with the socioeconomics analysis. The commenter suggested that the term "environmental justice" should not be used because it is suggestive, emotional language that "has no mooring in sound science."

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

Concern 99	One commenter asked if education and outreach, specifically using Spanish-language materials, was provided for environmental justice groups of concern that included a high percentage of people of Hispanic, Latino, or Spanish origin. The commenter recommended the Service conduct predator awareness training for minority livestock producers, to include nonlethal methods for avoiding depredation, and suggested this training may reduce depredations for livestock producers who may be disproportionately affected.
<b>Tribal Resources</b>	
Concern 100	Commenters requested that the Service consult with Tribal representatives from Colorado to incorporate traditional ecological knowledge into the planning process.
Concern 101	Commenters noted the taking of a wolf would be considered the taking of a sacred animal by the Global Indigenous Council.
Concern 102	Commenters requested that the EIS reflect there should be no wolves in the Tribal Reservation and Brunot Agreement Area. They requested a no wolf buffer south of I-70 to ensure Tribal rights are protected.
Concern 103	A commenter asked for the Service to GPS collar all wolves so that they can be removed from Tribal lands where they are not desired. The commenter also requested the Service remove any wolf from Tribal lands where they are not desired at no cost to the Tribe.
<b>Special Status Species</b>	
Concern 104	Commenters asked for the Service to evaluate impacts of the rule on special status species more thoroughly. Specific concerns about impacts to special status species included wolves preying on lynxes and competing with them for food sources and predation on the Greater sage-grouse, Columbian sharp-tailed grouse, and Gunnison sage-grouse. Additionally, commenters noted that ranchers have worked with the Service, CPW, the Forest Service, and the Bureau of Land Management to protect lower elevation sagebrush habitats for Gunnison sage-grouse and worried about predation on grouse species. A commenter asked the Service to consider adding flexibility to the rule to protect species of special concern if they are negatively affected by the reintroduced wolves.
<b>Gray Wolf Impacts</b>	
Concern 105	Commenters expressed concerns that the lethal take permitted in the rule could negatively affect gray wolves and hinder their recovery in Colorado. A commenter noted that given the small initial number of wolves slated for reintroduction, any lethal take of wolves could impact recovery. Commenters also expressed concern about how lethal take could create pack instability and lead to pack dissolution. Other impacts of lethal take on gray wolves that commenters cited were disturbances to hunting patterns, territory isolation, behavior, genetic diversity, and social structure. Commenters noted that wolves have complex social patterns that include non-breeder altruism and cooperative hunting—characteristics that can be disturbed by removal of small numbers of wolves. Commenters asked the Service to consider additional research on potential numbers of wolves that would be lethally taken in Colorado and to reevaluate how lethal take has affected wolves in Idaho, Montana, and Wyoming without federal protections.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

Concern 106	<p>Commenters suggested that some of the comparisons to other wolf reintroductions in the rule and DEIS were incorrect. A commenter noted that the Northern Rocky Mountains and Yellowstone National Park have key differences in land use from Colorado, including large areas that are free of livestock and larger areas of winter range for elk. They asserted that wolves' success in the Northern Rocky Mountains could be attributed to ample elk for prey and to the lack of lethal take in response to livestock predation in areas without livestock. A commenter also said that the DEIS's reference to low levels of lethal take in Oregon and Washington was misplaced because the data was collected during initial monitoring years and because wolves in Colorado would be more likely to prey on livestock and be lethally taken. The commenter predicted that levels of lethal take would be similar to levels experienced by Mexican wolves in Arizona and New Mexico. A commenter also suggested that research in the Northern Rocky Mountains and Alaska indicating that wolves could withstand high levels of human-caused mortality were not applicable to Colorado because their wolf populations were larger and more established. The commenter asked the Service to evaluate in the EIS the relevance of the data on the effects of human-caused mortality in the Northern Rocky Mountains and Alaska to wolves in Colorado.</p>
Concern 107	<p>Commenters proposed corrections to the rule and DEIS related to gray wolf impacts. Proposed corrections included:</p> <p>(1) Asking the Service to remove "sport hunting" from the rule section titled "Actions and Activities in Colorado that May Affect Introduced Gray Wolves." The commenter noted that the inclusion of sport hunting could create confusion because regulated hunting would not be considered while wolves are federally listed and the 10(j) rule is in effect.</p> <p>(2) Requesting reevaluation and correction of the descriptions of potential wolf depredation incidents in the DEIS. Commenters asserted that two of the depredations in Jackson County were on dogs, and the third was on livestock. They also said that CPW has not conclusively determined the cause of the calves' deaths in the 2022 incident near Meeker and asked the Service to include CPW's position on the events in the EIS. Another commenter asserted that the investigation into the depredation near Meeker had found no evidence of wolf involvement.</p> <p>(3) Changing the number of wolves in the group in north-central Colorado from seven individuals to two individuals based on information from March 2023.</p>
Concern 108	<p>A commenter noted that the analysis of the no-action alternative and alternative 1 in the DEIS is not clear about which alternative would be more beneficial to wolf conservation.</p>
Concern 109	<p>One commenter asked the Service to revisit the analysis of alternative 1 in the DEIS where the text states, "Alternative 1 could have adverse environmental impacts to individual wolves through regulated take but is not expected to hinder recovery or have population-level effects in the long term." The commenter asserted that lethal take of individual problem wolves would not have adverse impacts on the environment.</p>

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

<b>Mexican Wolf Impacts</b>	
Concern 110	Commenters stated that any reintroduction of the northern gray wolf may jeopardize recovery of the Mexican wolf, and the Service should ensure that State trust authorities for the recovery of the Mexican wolf are not harmed by the proposed reintroduction. Commenters requested that the Service complete a more robust analysis of potential impacts on Mexican wolves in the EIS. Commenters noted that the EIS does not clarify how gray wolves that leave the experimental population boundary would be returned to prevent impacts on the genetic integrity of the Mexican wolf. Commenters requested that the Service identify all available tools and outline a specific plan for returning gray wolves that leave the experimental population boundary to prevent impacts on Mexican wolves. Some commenters requested the Service issue a 10(a)1(A) permit allowing the capture and return of gray wolves that disperse beyond the boundary. Commenters additionally suggested advising the State of Colorado not to proceed with the gray wolf reintroduction due to potential impacts on Mexican wolves or taking action to maintain a buffer outside the experimental population boundary between gray wolves and Mexican wolves.
Concern 111	Commenters suggested that reintroduced gray wolves be allowed to mix with Mexican wolves either in a zone of intergradation in Colorado or New Mexico and Arizona to increase the genetic diversity of Mexican wolves.
Concern 112	One commenter suggested that the experimental population boundary for the Mexican wolf should be expanded to the north based on the potential historic range for this subspecies and the small number of individuals in the wild in the U.S. and Mexico. This commenter suggested that the EIS take a harder look at the status of Mexican wolf recovery in the description of the program in the “Cumulative Impacts” section, rather than describe the Recovery Plan and the effects of the gray wolf reintroduction on the Mexican wolf recovery program. The commenter also suggested the Service consider potential impacts under the rule to Mexican wolves that disperse into Colorado.
<b>Other Wildlife</b>	
Concern 113	Commenters stated that reintroduction of gray wolves without management flexibility would result in severe decreases in ungulate populations. Commenters also noted that potential impacts on ungulate populations or the current conditions of these populations must be considered in development of the rule or analyzed in more detail in the EIS. Specific areas suggested for further analysis included ungulate population and hunting license trends, indirect impacts as a result of changes in ungulate behavior, and potential impacts on ungulates in the focal counties. One commenter suggested that ungulate populations in Colorado are no longer sufficient to support a population of gray wolves and the reintroduction should be reconsidered. One commenter suggested that illegally reintroduced species, such as moose, should not be considered a sustainable source of prey for reintroduced gray wolves.
Concern 114	Commenters noted that reintroduction of gray wolves in other parts of the country has contributed to improvements in the health of ungulate herds or ungulate population numbers. Commenters suggested areas of the analysis, including discussing the potential impacts on hunting, that should be revised to consider an improvement in the health of ungulate herds or ungulate population numbers.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

<b>Impact Topics</b>	
Concern 115	One commenter asked the Service to include an analysis of the best available science on the benefits wolves can provide to ecosystems and how those benefits can mitigate the causes and effects of climate change. They also requested a description of anticipated climate change impacts in the planning area and a discussion of how climate change could impact the affected environment and environmental consequences of each alternative. They noted that climate change could exacerbate impacts of lethal take and change the rule's ability to advance wolf conservation. The commenter suggested using the Council on Environmental Quality's Interim Climate Guidance for NEPA, particularly the section titled "Considering the Effects of Climate Change on the Proposed Action," to guide the analysis. The commenter also recommended referencing the National Fish, Wildlife, and Plants Climate Adaptation Strategy for information on climate change analysis, resiliency, and adaptation measures. The commenter pointed out that Colorado is already experiencing the effects of climate change and encouraged the Service to examine how the impacts of 10(j) rule might be altered by climate change in the EIS. One commenter asserted that wolves could help mitigate climate change by depredate ungulates and asked for the possible positive impacts to be evaluated.
Concern 116	<p>Commenters requested analysis of additional topics in the EIS, including:</p> <ul style="list-style-type: none"> <li>• Recreation, including impacts on local economies and revenue from the recreational hunting and outfitting industry.</li> <li>• Effects on the mining, oil and gas, and timber industries.</li> <li>• Impacts on the livestock industry, particularly related to grazing patterns.</li> <li>• Potential for wolves to disperse to New Mexico and possible damages caused by the wolves in the state.</li> <li>• A review of consistency with the Mesa County Resource Management Plan.</li> </ul> <p>One commenter suggested that all of the issues dismissed from detailed evaluation in the EIS should be analyzed in detail.</p>
Concern 117	Commenters asked the Service to consider evaluating the impacts of wolves causing ungulates with chronic wasting disease to disperse into new habitats and potentially spread the disease. A commenter also requested an analysis of how wolves could act as disease vectors by transporting prions via their digestive tracts. Commenters also requested the Service address other disease risks that may be caused or exacerbated by wolves, including Echinococcus and Hydatid Disease.
<b>Cumulative Impacts</b>	
Concern 118	Commenters noted that the presence of wolves would result in indirect impacts on the Gunnison sage-grouse as a result of displacement of existing predators that may prey on sage-grouse and add to the predation pressure on this species.
Concern 119	Commenters noted potential impacts that may result in surrounding states as gray wolves disperse outside Colorado, including impacts on ungulate populations from predation.
Concern 120	One commenter noted revisions to the State Plan will need to be captured in the FEIS, particular the removal of phase 4 in the draft State Plan, which would have allowed hunting of wolves.

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

<b>Other</b>	
Concern 121	Commenters expressed concerns regarding funding for the management of reintroduced gray wolves. One commenter noted, in response to language in the rule stating that the rulemaking would not impose a cost of \$100 million or more in any given year on local or State governments or private entities, that costs below this amount could still significantly or uniquely affect local governments. Multiple commenters noted that the Service is ultimately responsible for the success of the reintroduction and requested that the reintroduction be paused until a long-term funding source is established. Commenters requested that the Service complete a federalism assessment pursuant to the provisions of Executive Order 13132 with input from organizations representing local governments in Colorado and the local governments most likely to be affected. Another commenter suggested that the Service ensure it is adequately funded to manage wolves that disperse outside the experimental population boundary.
Concern 122	Commenters requested additional actions related to or by other federal agencies in response to the State Plan. One commenter requested that the Service decision documents and interagency agreements specify that reintroduced gray wolves will not be provided additional protections as sensitive species on lands managed by other federal agencies, including the Bureau of Land Management (BLM) and US Forest Service (USFS). Commenters requested that other federal agencies, including the BLM, USFS, and National Park Service, update their resource management plans to address potential impacts from the proposed reintroduction before publication of the FEIS.
Concern 123	Commenters questioned or recommended changes to the language and maps in the rule. These changes include specifying that a reference to “previous reintroduction efforts” refer to efforts in other states, replacing the terms “we,” “us,” and “our” throughout the rule with the U.S. Fish and Wildlife Service or Service, and correcting the proposed deadline for State reintroduction in the preamble. Multiple commenters requested that the Service update the map of the State’s proposed release sites to show currently proposed release sites. One commenter additionally requested the Service include the percentage of federally managed land in the release areas and distance to other federally managed lands outside the release areas. One commenter asked why the Service is planning to prepare annual reports to evaluate progress toward achieving State downlisting and delisting criteria, questioning if the State is planning to downlist or delist wolves in Colorado.
Concern 124	Commenters noted that the Service must use the best available science in determining the presence of suitable habitat for gray wolves in Colorado and developing the 10(j) rule. Commenters suggested that computer models should not be considered “best available science” in determining habitat suitability and potential wolf occupancy. One commenter noted that the Service must base actions under the ESA on evidence supported by the best scientific and commercial data available.
Concern 125	One commenter requested that the Service revise the 10(j) rule to allow wolf hunting when authorized by State or Tribal authorities. One commenter noted that allowing hunting when allowed by State or Tribal authorities would allow the State to manage an overly abundant wolf population.
<b>Paperwork Reduction Act</b>	
Concern 126	Commenters requested that in the section of the rule related to the Paperwork Reduction Act, text be edited to read “The report, due by June 30 of each year, will describe wolf conservation and management activities that occurred in Colorado each calendar or biological year up until 5-years post reintroduction.”

**Table 1. Code, Corresponding Concern ID, and Corresponding Concern Statement**

<b>Essential or Nonessential</b>	
Concern 127	Commenters expressed a preference for reintroduced gray wolves to be designated an essential experimental population based on the reported ecosystem effects of wolf populations, desires to restore a native species, and perceived risks to wolves in Colorado or across the species' range if the population is designated nonessential. One commenter noted reintroduced wolves in Colorado would be relatively genetically isolated from other populations of the species as rationale for designating reintroduced wolves as essential. One commenter suggested that the nonessential designation should be timebound and lifted once biodiversity standards have been met. Commenters also stated that the nonessential population designation has had adverse effects on the recovery of the Mexican wolf in New Mexico.
Concern 128	One commenter suggested that the determination to establish the reintroduced population of gray wolves as "essential" or "nonessential" should be analyzed under the NEPA process and stated the NEPA document fails to take a "hard look" at this issue. Specifically, the commenter stated the DEIS does not look at the impact of the rule on Mexican wolves and does not consider whether potential benefits may exist in allowing a zone of integration between Mexican wolves and gray wolves. The commenter also stated that the EIS does not consider the impacts of lethal take that would be allowed under the rule on the remainder of the listed entity (gray wolves) in the lower 44 states.
<b>Requests for Extension</b>	
Concern 129	One commenter asked for an additional 60 days to provide comments on the DEIS. The commenter noted the length of the document and requested more time for research before submitting comments.



## PUBLIC SCOPING COMMENT SUMMARY

The following report is organized by codes and then concern statements. Representative quotes are provided for each concern statement along with the Service's response to the concern statement.

Representative quotes are presented exactly as they were submitted by the commenters. Grammar and spelling have not been changed. These representative quotes are not the only comments received under a particular concern statement; rather, these quotes have been chosen to represent those comments categorized under each concern statement.

### ***BOUNDARY***

**CONCERN STATEMENT 1:** Commenters requested the boundary of the nonessential experimental population be reduced from the entire State of Colorado, with some suggesting it be 50 miles (80 kilometers) around each release site. Commenters noted this would allow gray wolves migrating into Colorado to have full protection under the Endangered Species Act (ESA) rather than be considered threatened, as they would be under the 10(j) rule. Commenters also suggested that specific areas of the State of Colorado be excluded (i.e., North Park, Moffat County, Routt County and Rio Blanco County) because of the existing gray wolves in these areas.

**Representative Quote:** A federal management rule that truly benefits Colorado wolves should include a narrow geographic boundary for the 10(j) population of wolves of 50 miles around any reintroduction sites, leaving wolves already on the ground and those migrating into the state naturally as fully protected under the ESA.

**Representative Quote:** The Proposed Rule acknowledges the likelihood of continued dispersal, Proposed Rule at 42, and that there is no reasonable method for distinguishing between dispersing wolves and NEP wolves, id. at 41. Classifying either all wolves in Colorado, or all wolves outside North Park, as nonessential and experimental, fails to establish a reasonable definition of the NEP. The Proposed Rule effectively argues that most wolves would be nonessential, therefore all wolves are nonessential: "[E]ven if gray wolves from the NRM or other populations were to disperse into the NEP, the presence of one or a few individual dispersing gray wolves would not constitute a population, as described above. Therefore, gray wolves reintroduced into Colorado will be wholly geographically separate from the delisted portion of the NRM population as well as the remainder of the currently listed 44-State entity. Based on this geographic separation, we conclude that any gray wolves found in Colorado after the initial release will, with a high degree of likelihood, be members of the NEP; therefore, we conclude that geographic location is an appropriate means to identify members of the NEP." Proposed Rule at 41-42. This assumption is arbitrary and ignores the ongoing reality of continuing successful dispersal. In order to establish a more reasonable geographic criteria for separating the NEP from areas where dispersing wolves have been documented, the NEP should exclude not only North Park, but also Moffat County, where multiple confirmed wolf sightings were documented in 2020, and neighboring Routt and Rio Blanco Counties, where substantial suitable habitat and prey base can support dispersing wolves. Alternatively, the Service should also consider limiting NEP status to a discrete geographic area around the reintroduction sites themselves.

**Representative Quote:** A reasonable and limited definition of the NEP is of utmost importance because, absent the 10(j) rule, gray wolves in Colorado continue to receive the full protections of listed status under the ESA, including protection from take and the requirement that federal agencies consult with the Service to avoid jeopardy. An NEP designation will remove those protections from all wolves within its area, leading to the very real possibility that dispersing wolves will now be subject to lethal

removal based on claims, real, imagined, or fraudulent, of impacts to livestock. The fact that those dispersing wolves do not yet meet the Service's time and number threshold for a full population cannot obscure the reality that they will be losing protections under a 10(j) designation. For the rule to achieve its statutory purpose of furthering conservation, the scope of designation must ensure that the benefits of reintroduction are not outweighed by the additional harm to the species authorized. Therefore, a limited NEP either confined to reintroduction sites, or excluding known dispersal areas of northwest and north central Colorado, should be considered as a reasonable alternative.

**Response:** As noted in the FEIS, in section 3.2.1, "Gray Wolf," wolves are able to disperse over long distances. Further the State has the ability to reintroduce wolves anywhere west of the Continental Divide and manage them across the entire State of Colorado. The 10(j) boundary that encompasses the State of Colorado would allow for management flexibility anywhere wolves may disperse after initial release, while promoting the conservation of the species as a whole by increasing the number of gray wolf populations in the remaining listed entity. The Service established a precedent for defining gray wolf populations for establishment of 10(j) populations in the early 1990s, and the designation of the entire State of Colorado (versus excluding portions of the State as suggested) is consistent with this precedent as well as consistent with the area covered by the State Plan. Further explanation of why a smaller 10(j) boundary was not considered is provided in the FEIS (section 2.3.3), under "Alternatives Identified During Scoping but Not Evaluated Further."

**CONCERN STATEMENT 2:** Commenters requested that the boundary for the 10(j) be expanded to be larger than the State of Colorado and include the northwest portion of Utah that falls within the Northern Rocky Mountain Distinct Population Segment and north of the Colorado State border into Wyoming up Interstate 80. They noted this would provide a buffer zone for the wolves and address the wolf dispersal that would likely occur.

**Representative Quote:** If wolves are restored to Colorado as an experimental population under section 10(j) of the Endangered Species Act, the boundary of the potential 10(j) experimental population should be expanded beyond Colorado's state borders to protect the Colorado population. This buffer zone would act to protect our investment of wolf restoration. The boundary should be extended to encompass the northwest portion of Utah that falls with the Northern Rocky Mountains Distinct Population Segment and should also extend north of the Colorado state border into Wyoming up to Interstate 80. Currently wolves in Wyoming are classified as predators and can be killed year-round by any means. Without a buffer zone, even wolves living inside protected landscapes such as Yellowstone and Denali National Parks, have been killed just outside the edge of the protective boundary

**Representative Quote:** The Service should not arbitrarily limit management flexibilities to Colorado. Rather than learn the lesson that established wolf populations can disperse widely into new and unexpected areas, the Service's experimental population proposal seems to repeat that earlier error. It indicates that only the State of Colorado and its residents will have the flexibility to manage the experimental population. When these wolves eventually cross into Arizona, New Mexico, and Utah all possibilities the proposed rule acknowledges they would automatically be treated as endangered with all of the regulatory consequences that flow from that status. Indeed, Utah opposes Colorado's reintroduction plan because it would result in wolves entering Utah, receiving endangered status, and leaving the state little to no flexibility to manage conflicts. Wolf populations growing to the point that they can disperse to other areas is recovery progress that should be rewarded, not punished. Yet the Service's proposal to define the experimental population along political boundaries rather than where the reintroduced wolves roam threatens to punish any neighboring states that accommodate wolves

and contribute to the population’s success. Instead of advancing gray wolf conservation, limiting the experimental population in this way is likely to set its conservation back.

**Response:** The Service considered having a boundary larger than the State of Colorado but dismissed it from further consideration. See FEIS section 2.3.3, “Alternatives Identified During Scoping but Not Evaluated Further.” In summary, special management provisions, such as a 10(j) rule, are only applicable within the experimental population boundary where an ESA-listed species will be reintroduced and allow for the conservation of the species while reducing the regulatory burden associated with introduction of an endangered species. If the gray wolf is not federally listed as endangered in a state, including some states neighboring Colorado, designation of a 10(j) rule and creation of an experimental population boundary would not be applicable, and these regulatory tools would not change the designation of wolves in that state to offer more protection. Furthermore, a 10(j) rule and experimental population boundary cannot be applied in areas where existing populations of a species are present.

**CONCERN STATEMENT 3:** Commenters stated opposition to using 10(a)1(A) permits to remove wolves that venture to neighboring states and return them to Colorado. Commenters stated that dispersing wolves should be able to live where they find suitable habitat and that dispersal would help reestablish the population. They also expressed concern regarding potential injuries to wolves during relocation.

**Representative Quote:** 10(a)(1)(A) defenders opposes assurance agreements and permits under section 10(a)(1)(A) if intended to be used as permission to allow removal of wolves that roam beyond Colorado’s borders in areas where they are protected under the ESA. Any wolves found in neighboring states where ESA protections are in place including wolves that have dispersed from Colorado should be managed as “endangered” under the ESA, not removed or returned to Colorado. Section 10(a)(1)(A) permits must be consistent with the ESA’s recovery mandate. Permitting the removal of wolves from areas where they would otherwise be protected under the ESA or limit natural occupation to the confines of the 10(j) boundary would not only fail to promote recovery of gray wolves; it would undermine those efforts. Dispersing wolves tend to avoid high-exposure areas like densely populated human communities and open agricultural lands (Morales-Gonzalez, A. et al. 2022). The behavior of avoiding conflict-prone environments is desirable and should be encouraged rather than suppressed through automatic management removals. Furthermore, wolves captured through trapping may suffer injuries, which can hinder their hunting ability and lead them to eat slower-moving livestock instead of native prey. Therefore, the unintended consequences of rule-mandated wolf capture or removal can result in undesirable outcomes that unnecessarily increase conflict and run counter to conservation of the species. Ultimately, gray wolves should be permitted to live where they find suitable habitat, and allowing wolves to utilize habitat corridors from the southwest through the Rockies will help re-establish population connectivity vital to the long-term success of the species (Carroll et al. 2006).

**Response:** The capture and return of wolves from neighboring states is not part of the 10(j) rule but would be addressed with separate 10(a)(1)(A) permits as necessary. Should wolves need to be captured and returned, injury or mortality during trapping is rare. Should the Service or designated agent need to relocate a wolf, all necessary precautions would be taken to ensure the safety of the wolf. Based on the issuance of the 10(a)(1)(A) permit that allows for these relocations, the Service determined that these infrequent wolf captures would not jeopardize the species and would support the State of Colorado to achieve the goals set forth in the State Plan.

**CONCERN STATEMENT 4:** Commenters questioned the legality of introducing wolves to areas of Colorado where they are already present, specifically northwest Colorado. They further noted that the reintroduced population would not be wholly separate geographically, and therefore alternative 2 is not a legal alternative. Commenters questioned the Service's definition of a population of gray wolves and the determination that an existing population of gray wolves had not been identified in Colorado at the time of publication of the FEIS.

**Representative Quote:** Reintroduction of wolves means they are no longer part of the ecosystem in the planned reintroduction area. They are already in Northwest Colorado! Reintroduction in Northwest Colorado cannot be legal if they are already here. These wolves are killing pets, working dogs and livestock, as well as other wildlife in this area. They are approaching homes within 40' in the Walden area.

**Representative Quote:** Alternative 2 is unlawful because on its face it violates the section 10(j) requirement that experimental populations be “wholly separate geographically” from non-experimental populations of the same species. As preface, we acknowledge that the known distribution and numbers of breeding wolves in Colorado and Wyoming at present justify designating the state of Colorado as an experimental population area, as Alternative 1 proposes, due to the way the Service has defined what constitutes a population, and specifically because there is just one known breeding pair in Colorado and the southern portion of Wyoming has no known breeding wolves coupled with state rules that allow killing all wolves in southern Wyoming. As noted in the DEIS, these Wyoming circumstances have led to as-yet insufficient wolf colonization of Colorado habitats to establish a population as defined by the Service, and suggest an infrequency of contact between wolves in Wyoming and wolves in Colorado consistent with describing the upcoming Colorado experimental population area as wholly separate geographically. That said, in contrast to Alternative 1, Alternative 2 would eliminate the geographic separation that section 10(j) requires between an experimental and a fully-endangered population, through (were it to be selected) bifurcating Colorado arbitrarily within areas of suitable habitat on both sides of such a (future) delineating line: Under this alternative, wolves that establish a population naturally in the 10(a)(1)(A) permit area would be granted more protection than wolves that are reintroduced to the rest of the state. The wolf population may increase more rapidly in the state as a whole because of the protection granted in one small area, which would support wolf conservation and recovery objectives. However, wildlife do not respect invisible boundaries of administrative zones, and wolves that occur naturally in the 10(a)(1)(A) permit area would eventually disperse into the experimental population boundary based on biological needs and their social environment. The proposed rule and the DEIS present Alternative 2 as an actionable alternative only if a wolf population (that is, two breeding pairs that each keep alive at least two pups, during each of two successive years) is found to be naturally occurring in Colorado. As such, Alternative 2 serves merely as a stopgap in the event that wolf recolonization of Colorado proceeds such that Alternative 1 could not be carried out. Yet in such circumstances, those naturally-occurring breeding wolves would not be geographically separated from habitat that would be designated as an experimental population area, nor would there be an intervening region in which regulations would effectively separate the two populations. For example, the DEIS specifies a possible wolf recolonization region in which wolves would not be designated as experimental: “A portion of the state, potentially including most of Jackson County and the western part of Larimer County (areas within Colorado big game management units 161, 6, 7, 16, 17, and 171) would be covered under a section 10(a)(1)(A) permit that the Service would issue to the State of Colorado under alternative 2.11.” Yet such an outlined area would have no geographic separation from other areas of suitable wolf habitat in Colorado.

**Response:** As noted in section 1.4 of the FEIS, wolves that are known to occur in Colorado in 2023 do not meet the Service's definition of a population of gray wolves (i.e., at least two breeding pairs of wild wolves successfully raising at least two young each year [until December 31 of the year of their birth], for two consecutive years). This definition is consistent with the definition of a population of gray

wolves used in the 1994 10(j) rule and EIS for the reintroduction of gray wolves to Yellowstone National Park and Central Idaho and considers sustained breeding and territory formation by multiple packs of wolves in a geographic area. Transient wolves, such as the group of wolves documented in the state in 2020 and lone dispersing wolves, do not meet the definition of a population. Colorado Parks and Wildlife (CPW) would continue to monitor for the presence of any naturally recolonizing wolves, and if a naturally recolonizing population of wolves is discovered in Colorado prior to finalization of the 10(j) rule, the Service would exclude the geographic area where the naturally recolonizing wolf population occurs from the experimental population boundary. Under alternative 2, the home ranges of any naturally occurring breeding pairs of gray wolves in Colorado would be excluded from the experimental population boundary and managed consistent with the gray wolf's federal status and the State Plan. Section 2.4.3 of the FEIS was revised to clarify how existing and reintroduced populations of gray wolves would be delineated separately under alternative 2.

**CONCERN STATEMENT 5:** Commenters questioned what the status of wolves crossing into Colorado from other states would be and asked how the Service could apply section 10(j) regulations to wolves that had dispersed naturally to Colorado. They suggested that since populations must be "wholly separate geographically" that wolves entering Colorado should not be part of the experimental population.

**Representative Quote:** Second, wolves naturally expanding into Colorado arguably preclude the Service's proposed experimental population. The Endangered Species Act requires experimental populations to be "wholly separate geographically from nonexperimental populations of the same species." 20 The Service acknowledges that wolves from the Northern Rocky Mountain population have, in fact, established a breeding pair in the area proposed for the experimental population. 21 And several commentators have objected to the proposal on the ground that it violates the Endangered Species Act. The Service proposes two potential ways around this problem. First, it suggests that by crossing the Wyoming border wolves from the Northern Rocky Mountain population cease being a part of that population but don't become part of any other population or form any new population. Second, it suggests that the area where naturally dispersing wolves have been seen could be excluded from the experimental population area. Neither is satisfying, especially considering the high likelihood that the naturally occurring and reintroduced wolves will merge and raise complicated questions about their status and regulations that apply to them. Indeed, a lawsuit has already been filed seeking to compel the Forest Service to regulate delisted wolves in Wyoming as if they were endangered because actions in Wyoming may affect the wolves naturally dispersing to Colorado where they receive endangered status.

**Response:** Section 2.4.2 of the FEIS notes that individual gray wolves may disperse into Colorado from the northern Rocky Mountains population; however, these movements likely would be infrequent given Colorado's distance (more than 124 miles [200 kilometers]) from existing populations of gray wolves compared to the normal dispersal distances of gray wolves and the difficulty of dispersal across most of Wyoming. As noted in the response to concern 4, individual wolves that disperse into Colorado do not meet the Service's definition of a population. Further, it is not possible for the Service to definitely determine for every wolf whether it originated in Colorado or another state. Under alternative 1, wolves that disperse naturally into Colorado following establishment of the 10(j) rule would be managed as part of the experimental population.

**CONCERN STATEMENT 6:** One commenter expressed concern about how the three alternatives in the DEIS would protect wolves from being killed when they cross or are driven across the border into southern Wyoming.

**Representative Quote:** The Proposed Rule and DEIS consider only three alternatives: the mandatory no-action alternative, a Nonessential Experimental Population (NEP) designation throughout the state, or “promulgating a section 10(j) rule for the gray wolf population that would be reintroduced in a limited territory and issuing a permit under section 10(a)(1)(A) for an existing gray wolf population, should one become established prior to finalization of the section 10(j) rule.” DEIS at 2-2. These limited alternatives ignore the uncontested fact that wolves have successfully dispersed from the Northern Rockies into both northwest Colorado and North Park, and successfully bred in North Park. These dispersing wolves have been unsuccessful in establishing longer-lasting breeding populations due to the near-certainty of killing when they cross (or are driven across) the border into southern Wyoming, where they can be hunted as predators essentially without limit.

**Response:** Gray wolves are not listed under the ESA in Wyoming; therefore, if an introduced wolf from Colorado crosses the border into Wyoming, it would not be protected. Furthermore, intentionally moving wolves from Colorado into Wyoming is a form of harassment/take that is not an exception provided by the rule, and would be a violation of section 9 of the ESA.

### ***ENDANGERED SPECIES ACT***

**CONCERN STATEMENT 7:** One commenter noted that because gray wolves are federally listed as endangered under the ESA, the State must obtain approval from the Service to reintroduce the species.

**Representative Quote:** Since gray wolves are federally protected as “endangered” under the Endangered Species Act (ESA), Colorado must receive permission from the U.S. Fish and Wildlife Service (USFWS) to manage reintroductions.

**Response:** Chapter 1 of the FEIS describes the Service’s involvement in the reintroduction effort, and section 1.2 provides further detail on the regulatory authority for the State of Colorado to reintroduce the gray wolf. To facilitate reintroduction efforts, the State of Colorado has requested the Service designate the gray wolf population that would be reintroduced as an experimental population under section 10(j) of the ESA. A 10(j) experimental population designation would not be necessary for the reintroduction, as the State proposes to use wolves from areas where they are not listed as endangered. However, if no 10(j) designation were made, take of wolves would be forbidden in most circumstances, and there would be limited management flexibility available to livestock producers and the State.

**CONCERN STATEMENT 8:** Commenters requested that the 10(j) rule state that the Service will propose to delist the nonessential experimental population from the ESA as soon as possible after Colorado removes wolves from the state list. Some commenters noted that reintroduction of wolves in Colorado should support delisting the species under the ESA or not affect the Service’s decision to delist the species in the lower 44 states. They further noted if the Service determines that the currently listed entity no longer meets the standards for an ESA listing, it must delist the species (including any wolves in Colorado), regardless of the status of Colorado’s wolf reintroduction.

**Representative Quote:** Delisting under state law should trigger delisting under the ESA. Once adopted, Colorado’s wolf management plan will include different management phases, which are triggered based on population counts over time. For example, after achieving a minimum count of 150 wolves for two

successive years, wolves will be delisted from Colorado’s list of threatened and endangered species. At that point, the Service should remove the NEP from the ESA list. The 10(j) rule should explicitly state that the Service will propose to delist the NEP from the ESA as soon as possible after Colorado removes the wolves from the state list, following the specific and measurable delisting criteria set forth in Colorado’s wolf management plan.

**Representative Quote:** Information pertaining to the conservation status of gray wolves and how it relates to the proposed reintroduction and rulemaking efforts. We support the continued protection of the gray wolf under both federal and state law. The issues surrounding the protection of gray wolves under the federal ESA are complex both biologically and legally. Establishment of a self-sustaining population of wolves in Colorado should lead to stronger justification for removal of the species from the protections of the federal ESA.

**Response:** Recovery or delisting of the population inside or outside the proposed nonessential experimental population is beyond the scope of the rule. However, if the population of wolves in the lower 44 states is delisted in the future, the 10(j) rule would no longer apply to the reintroduced population in Colorado.

**CONCERN STATEMENT 9:** Commenters recommended that the Service retain authority over the State of Colorado in implementing measures to promote the recovery of the gray wolf in the state and meet requirements under section 7(a)(1) of the ESA.

**Representative Quote:** There must be explicit language that makes it clear that the USFWS retains enough management authority to fulfill its duty to conserve gray wolves in Colorado and does not delegate all management authority to the state

**Representative Quote:** The Service has a Section 7(a)(1) duty to conserve listed species, and the Draft Rule, in its current iteration with excessive allowances of take and extreme deference to state and private actors to carry out such take, may fail to comport with the Service’s conservation mandate under the ESA. 16 U.S.C. § 1536(a)(1). While the State is undertaking the reintroduction effort on its own volition, the Service cannot abdicate its responsibility for ensuring the recovery of this listed species altogether by this Section 10(j) rule. The Service should be engaged in ably assisting the State with achieving the true, biological recovery of the species in Colorado which the Service acknowledges as a population of up to 1,200 wolves (88 Fed. Reg. 10,268) not completely handing over the reins to the State, landowners, livestock producers, and federal land permittees to carry out alleged recovery actions as they see fit with very little oversight from the Service, as the Draft Rule currently provides.

**Response:** The Service would retain authority over the taking of gray wolves by the Service and its designated agents in accordance with the 10(j) rule while the species is federally listed under the ESA. The State of Colorado and Tribes in Colorado would be eligible to request to become a designated agent and would be required to comply with the provisions of the 10(j) rule. Section 7(a)(1) requires federal agencies to further the purposes of the ESA by carrying out programs for the conservation of endangered species and threatened species; this section does not apply to state agencies.

**CONCERN STATEMENT 10:** Commenters noted that the rule may violate the ESA by not addressing threats to the species or supporting recovery and conservation of the species in Colorado. One

commenter suggested the Service should complete section 7 consultation to assess the impacts of lethal take on the species.

**Representative Quote:** In addition to our concerns with the Draft Rule as explained above, we note that the Draft Rule may also violate the ESA in other regards as well. First, the Service should initiate Section 7 consultation to assess the impacts of the Draft Rule’s excessive lethal take allowances and its overall effect of decreasing protections for wolves in the experimental population, on the listed entity, gray wolves in Lower 44 state population. 16 U.S.C. § 1536(a)(2).

**Representative Quote:** In nature, a species usually moves into a new area gradually when the conditions are favorable. This might happen because a competing species becomes less dominant providing an opportunity for expansion or there is an increase in prey in an area that makes conditions favorable. There may be several failed attempts by a species to move into an area before the conditions are right and expansion is successful. In nature, the species must be robust and the habitat must be favorable for success. When man introduces a species to a new area, like the Service is attempting with the gray wolf in Colorado, it does so suddenly. The conditions and habitat may or may not be favorable for the introduction. At the moment of sudden introduction, the species is at its most vulnerable and needs the most protection in order for it to establish a population and survive. However, the Service’s proposal for the reintroduction of the gray wolf provides the fewest protections under the law. This directly undermines the purpose of reintroducing wolves to Colorado and the goals of the ESA. The goal of the ESA is to recover wild species. Reintroduction of gray wolves furthers that objective by introducing an apex species to a portion of its historic range and expanding on the Service’s gray wolf program beyond Minnesota and Yellowstone. The ESA states that the Service shall make its management determinations based on the best scientific and commercial information available. However, the Service states that the primary reason for selecting its preferred alternative is for “management flexibility.” Flexibility is not one of the factors the Service should use for making its determinations. The Service is therefore manipulating the regulatory framework for the endangered wolf based on its own needs and not the requirements of the ESA or those in the best interest of the species.

**Response:** The rule includes a section on causes of decline and threats. Section 10(j) of the ESA was created in recognition of public resistance to previous efforts to reintroduce endangered species into unoccupied historical range and provides management tools to address the potential for listed species to disrupt land management activities. These management tools include relaxing take prohibitions and consultation requirements under the ESA, while still promoting the conservation of the species. As part of the 10(j) process, the rule details how the establishment of a nonexperimental population would further the conservation of the species and discusses species recovery. The Service has addressed all the areas requested by commenters in the rule. Section 7 intra-Service consultation has occurred as part of this process to ensure this rulemaking would not jeopardize the continued existence of the gray wolf.

**CONCERN STATEMENT 11:** One commenter noted that the requirement for federal agencies to consult with the Service on any federal activities that may impact gray wolves would delay fuel reduction and wildfire mitigation projects on federal lands in Colorado and increase the risk of catastrophic wildfires.

**Representative Quote:** Federally managed lands in Colorado would be required to consult with USFWS on any management activities where they may affect wolves. This would further slow fuel reduction projects and any other management activities on federal lands, further hindering fuel mitigation projects, and increasing the danger of more catastrophic wildfires in Colorado.



**Response:** Under a non-essential experimental designation (i.e., 10(j) rule), federal agencies, except for the National Park Service and the USFWS National Wildlife Refuge System, treat the species as a species proposed for listing for purposes of section 7 of the ESA (50 CFR § 17.83(a)(2)). Federal agencies are only required to confer with the Service on actions that are likely to jeopardize the continued existence of proposed species or result in destruction or adverse modification of proposed critical habitat. Under this action, the Service is not designating critical habitat for gray wolves in Colorado. The 10(j) rule reduces the regulatory burden of conducting actions on federal lands, except on National Park Service and National Wildlife Refuge System lands, where the species is treated as threatened under the ESA.

### ***UNGULATE PROVISION***

**CONCERN STATEMENT 12:** Commenters expressed opposition to adding a provision to the rule to manage gray wolves that are impacting ungulate populations. Some commenters reasoned that the provision would be unnecessary because of scientific research indicating that wolves do not tend to markedly reduce ungulate populations, especially on larger scales. A commenter said that elk populations have increased in Idaho, Montana, and Wyoming even with wolves present and asserted that lethal control of wolves would rarely be justifiable. Another commenter cited research from Alberta, Canada, and Alaska that indicated removing predators did not necessarily increase ungulate populations or reduce hunter harvest of elk. Commenters noted that the lethal take of wolves permitted in the northern Rocky Mountains nonessential experimental population has led to unsustainable wolf hunting practices. Commenters said that managing wolf populations to benefit ungulates and the hunting industry would be contrary to the goals of the reintroduction. They also indicated that allowing lethal take of a federally listed species to provide recreational opportunities like hunting would be inappropriate. A commenter argued that lethal take of wolves to benefit hunters would be immoral and unfair because thriving wolf populations confer ecological benefits to all people. Commenters noted that wolves tend to predate on weak and diseased ungulates, leading to a stronger and healthier ungulate population and reducing chronic wasting disease. One commenter specifically requested that wolves not be killed in response to decreases in nonnative mountain goat populations.

**Representative Quote:** A quarter century of data on wolf predation on elk in Idaho, Montana, and Wyoming that has resulted in INCREASES in elk in all three states suggests that lethal control of wolves will rarely be necessary or justifiable.

**Representative Quote:** (5) Whether to allow lethal management of gray wolves that are having a significant impact to ungulate populations, similar to the provisions in the 2005 final rule that established a northern Rocky Mountains (NRM) gray wolf nonessential experimental population (70 FR1286, January 6, 2005). As noted above we oppose the inclusion of a take allowance for a federally-listed species. It is inappropriate to allow such take that could substantially affect the recovery trajectory of a listed species simply to provide recreational opportunity. Colorado's wolf plan (currently not finalized) does have such a take provision but is not applicable until wolves are removed from the protections of the state threatened and endangered species act. Allowing take to bolster wild ungulate populations is unacceptable while wolves are protected as threatened or endangered under either federal or state law.

**Representative Quote:** I hope any rule will recognize that wolves are vital to maintaining healthy, biodiverse ecosystems, as has been demonstrated many times, for example in Yellowstone National Park. They must never be "managed" to protect ungulate populations. On the contrary, an uncontrolled ungulate population alters and threatens the health of the ecosystems that support it.

**Representative Quote:** The USFW should not incorporate a provision into the Draft 10(j) Rule that would allow for the lethal removal of gray wolves that are having an allegedly significant impact on native ungulate populations. Such a provision would serve no purpose in furthering the conservation needs of the endangered species as required by the ESA. Additionally, science does not support such a provision. Data from Montana, Wyoming, and Idaho show that elk populations have increased since wolves were reintroduced. Moreover, wildlife managers are highly unlikely to obtain reliable scientific data showing a causal link between wolf presence and ungulate population decline. Ungulate populations are limited by a complex combination of factors, including availability of winter range, competition with livestock, human tolerance, and hunting.

**Response:** The final rule does not include a general provision to allow for take in relation to ungulate management; however, it does include a provision to allow the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe, as designated agents, take related to ungulate management on reservation lands. The final rule includes requirements to exercise this provision. This exception requires a science-based proposal that must, at a minimum, include the following information: (1) the basis of ungulate population or herd management objectives; (2) data indicating that the ungulate herd is below management objectives; (3) what data indicate that wolves are a major cause of the ungulate population decline; (4) why wolf removal is a warranted solution to help restore the ungulate herd to management objectives; (5) the level and duration of wolf removal being proposed; (6) how ungulate population response to wolf removal will be measured and control actions adjusted for effectiveness; and (7) demonstration that attempts were and are being made to address other identified major causes of ungulate herd or population declines or of Tribal government commitment to implement possible remedies or conservation measures in addition to wolf removal. The proposal must be subjected to both public and peer review prior to it being finalized and submitted to the Service for review. At least three independent peer reviewers with relevant expertise in the subject matter that are not staff of the Tribe submitting the proposal must be used to review the proposal. Upon Service review, and before wolf removals can be authorized, the Service will evaluate the information provided by the requesting Tribe and provide a written determination to the requesting Tribal game and fish agency on whether such actions are scientifically based and warranted. Adding this provision recognizes the sovereignty of these Tribal nations.

**CONCERN STATEMENT 13:** Commenters expressed support for adding a provision to the rule to manage gray wolves that are having an impact on ungulate populations. Commenters requested that the provision mirror the guidelines in the 2005 final rule that established a northern Rocky Mountains gray wolf nonessential experimental population. Commenters argued that the ungulate provision in the northern Rocky Mountains nonessential experimental population rule gave managers the tools to mitigate effects on ungulates, and they indicated that ungulate populations would be at risk without the provision. Commenters noted that a reduction of ungulate populations could have economic impacts, particularly in the form of reduced revenues from hunting and decreased funding for CPW via ungulate hunting license sales. Commenters also worried that if wolves are allowed to severely depopulate ungulates, they may seek out livestock as an alternate food source, increasing impacts on livestock. Some commenters were specifically concerned about wolf impacts to the recovering moose population without the ungulate provision in place. A few commenters worried about high levels of predation on ungulates during the winter because wolves can travel on snow while ungulates typically do not. One commenter said that because wolves reproduce in litters with multiple pups, they have an advantage over other species that produce a single offspring annually, so the ungulate provision should be included to counteract that advantage.

**Representative Quote:** Pg ix Alt 1 Agency take to reduce impacts on wild ungulates: This is important to be included in the final Rule because there is definite potential for a pack(s) to begin killing in large

numbers rather than just what they need to survive. This could be detrimental to one or many more guides and outfitters as well as to a rural community that economically depends on big game hunting.

**Representative Quote:** Please apply the Section 10(j) Rule as described in your Alternative Concept #1 (preferred alternative) to ALL Wolves in Colorado and allow legal management of ALL wolves that are having a significant impact to livestock and ungulate populations, similar to the provisions in the 2005 final rule that established a Northern Rocky Mountain (NRM) gray wolf NEP (70 FR 1286, January 6 2005). These allowances will give CPW the proper, and necessary tools to effectively manage wolves when they become a significant problem depredating on livestock and wild ungulate populations within the State.

**Representative Quote:** Colorado's big game hunting and fishing generate \$1.8 Billion dollars annually to the Colorado economy, \$900,000 in big game hunting alone. In addition, trophy elk and deer hunting units exist in Moffat County and take over 20 years for hunters to draw tags within these units. Landowners in these hunt areas, as well as most hunt areas of Moffat County rely on big game hunting as a critical component of income for their ranches. Moffat County STRONGLY requests the USFWS adopt an EIS and 10(j) rule that applies to wildlife population management. Only applying 10(j) to livestock and not including wildlife, would eliminate a critical component of landscape scale management, and hamstring CPW from wildlife management. We understand there is consternation regarding the potential lethal take of an endangered species (wolves) for the management of game species such as deer, elk, antelope, big horns, and moose. However, these species have traditionally supported the Colorado Parks and Wildlife budget, as well as a major draw for out of state visitors. Colorado must not compromise the prized big game herds and wildlife watching and hunting opportunities, in the name of a top line predator that voters narrowly chose to be in this State. Colorado must be able to manage wolf populations in balance with big game, not instead of big game.

**Representative Quote:** This leads to my second issue as the management of the ungulate herds. Our ungulate herd is already declining with a low calf recruitment. When the ungulate population suffers the management of wolves needs to be a part of the plan. The ungulate herds have been encroached on and moved around due to increased human activity, building, recreation, etc. In GMU 47 and 444 cow tags were reduced to only 10 per season to help the low numbers. These animals have already had a loss of habitat and winter range but having another predator will not help these animals in our area. Please consider the ungulate management along with wolf management as other wildlife in this state is managed.

**Response:** As noted in the response to Concern Statement 12, a provision has been added to the final rule to allow for take related to ungulate management that would only apply to the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe on Tribal reservation lands when certain requirements are met (see response to Concern Statement 12 for a detailed list of these requirements). Adding this provision recognizes the sovereignty of these Tribal nations.

## ***TAKE***

**CONCERN STATEMENT 14:** Commenters expressed disapproval for the lethal take permitted in the rule. Some commenters said that all lethal take of wolves, except in immediate defense of life, should be illegal. Commenters asked that people who lethally take wolves face felony criminal penalties, at least two years in prison, and fines.

**Representative Quote:** Lethal management of wolves should not be permitted except in extremely rare circumstances of immediate defense of life.

**Representative Quote:** First we need to give wolves in CO full ESA protection with the exception of hazing and using all non lethals to mitigate livestock loss. The 10-J rule was clearly a part of the failure in the NC red wolf reintroduction and has hampered the Mexican Grey reintroduction. We saw that wolves were needlessly killed and poachers were embolden with the lack of punishments under the 10-J. Wolf poaching needs to carry a mandatory federal prison sentence. Labeling them experimental and inconsequential only emboldens those who want to kill them.

**Representative Quote:** The 10(j) rule should be revised to prioritize and concentrate solely on the non-lethal management of wolves in response to livestock conflicts. USFWS should modify the proposed 10(j) rule to strictly curtail any lethal management of wolves especially and importantly on public lands. As a taxpaying citizen, I really tire of hearing about these lethal methods on public lands, and notably, when so much of the public is unaware. USFWS should remove any provisions in the draft management rule that allow individuals to “shoot on sight” and lethal management of wolves should not be permitted except in extremely rare circumstances of immediate defense of life.

**Response:** The legal protections afforded to gray wolves under this rule are considered adequate and allow for the conservation of the species, while reducing the regulatory burden associated with species introduction. Except for narrowly defined exceptions, killing of wolves would be a violation of the take prohibitions described in section 9 of the ESA and of this rule and would subject the offenders to the penalties described in section 11 of the ESA. The ability to take a wolf on public lands is also dependent on any regulations of the public land agency related to firearm possession, use, or hunting on said lands. The Service believes the management authorized is appropriate based on the previous implementation of similar strategies of removing livestock-depredating wolves that has proved successful for wolf recovery elsewhere. In section 2.4.1 of the FEIS, a no-action alternative was considered where no lethal or injurious take would be permitted. The analysis found that the no-action alternative would not meet the purpose and need for the proposed action.

**CONCERN STATEMENT 15:** Commenters cited scientific research that has proven the effectiveness of nonlethal approaches at reducing livestock conflicts over lethal approaches. Some commenters noted that legalized lethal take of wolves can lead to less public respect and tolerance of wolves and may encourage more poaching. Commenters were specifically opposed to private individuals being permitted to lethally take wolves. One commenter noted that even when individual problem wolves are targeted for lethal take, mistakes have occurred, and the incorrect wolf was killed as a result. The commenter gave an example from southeast Washington. Commenters requested that wolves in Colorado be considered endangered with full ESA protections and noted that previous extirpations of wolves have been because of liberal lethal take. Other commenters asked for the rule to specifically ban lethal take of pups and breeding pairs. Commenters urged the Service to require nonlethal prevention measures before allowing any lethal take. Proposed methods for conflict avoidance included fladry, conditioned taste aversion, strobe lights, low stress stockmanship, range riders, fox lights, guard animals, removing livestock carcasses and bone piles, increasing human supervision, and adjusting calving time and location. Commenters cited studies and examples from the northern Rocky Mountains and Great Lakes region that document nonlethal conflict prevention’s effectiveness. One commenter suggested additional management strategies, such as using avoidance collars on wolves so that they avoid coming close to livestock and making wolves’ first encounter with livestock negative, so they learn to avoid livestock. Another commenter asked for more management flexibility to address expanding gray wolf populations. The commenter also asked for new technology measures to be considered such as “LED lights attached to ears of livestock, electric fences, shock collars put on wolves, or deterrents such as the radio-activated guard (RAG) box, a device which keeps wolves away by emitting strobe lights and sounds when triggered by a signal from radio collars.” Another

commenter asked the Service to allow use of less than lethal munitions to opportunistically harass wolves.

**Representative Quote:** Lethal management often fails to provide a long-term solution to wolf-livestock conflict and has the highest variability of success when compared to non-lethal practices. In addition, there is significant evidence showing that lethal management of wolves may be less functionally effective at mitigating subsequent livestock losses than non-lethal deterrents.

**Representative Quote:** While human interests and safety are always a state concern, the same must be provided to wildlife. Please make certain that wolves are adequately protected for their growth and well-being. There must be no slaughter of pups or breeding/nursing females, and any wolf posing a potential threat must first be evaluated, since killing even one wolf can destroy its pack.

**Representative Quote:** We need to require implementation of non-lethal livestock-wolf conflict prevention on both private and public lands. Science is screaming that conflict avoidance and coexistence strategies are much more effective at protecting livestock than lethal methods. These methods include flagery, fox lights, guard animals, adjusting calving time and location, removing livestock carcasses, and increased human supervision. These methods are very effective. There are many recent studies from the Northern Mountain Rocky states and The Great Lakes that document the effectiveness of non-lethal conflict prevention. Again, killing wolves does not protect livestock. Lethal methods do not solve the problem of wolf depredation and fail to provide long-term solutions. These sources also find that killing wolves is the least effective method of conflict prevention. Lethal management of wolves should not be permitted except in extremely limited circumstances. I, also, do not want to “tie the hands of the agencies” by insisting that no wolf should ever be killed. However, historically, the liberal use of lethal control has been a major detriment to the other wolf populations in the U.S. No one has ever been prosecuted for the poaching of a red wolf, yet they are killed illegally every year. The Mexican Grey Wolf population also suffers from poaching and legal killings. These killings are a direct result of the flexibility of their 10(j) rulings. We cannot allow that in CO. Lethal control should NEVER be performed by Wildlife Services. Wildlife services kill hundreds of thousands of native animals every year, including hundreds of wolves and tens of thousands of coyotes. Private individuals should NOT be allowed to kill wolves. No wolf should be killed on public land, except in defense of a human life.

**Representative Quote:** Additionally, new technological measures are proposed such as LED lights attached to ears of livestock, electric fences, shock collars put on wolves, or deterrents such as the radio-activated guard (RAG) box, a device which keeps wolves away by emitting strobe lights and sounds when triggered by a signal from radio collars (Breck et al., 2002; Schultz et al., 2005; Salvatori and Mertens, 2012).

**Response:** The Service considers it important to retain the ability to remove wolves in specific situations in which nonlethal management actions are ineffective at resolving conflicts. The effectiveness of nonlethal deterrents depends on various characteristics of the area and individual livestock operations. For instance, many tools (fladry, radioactivated guard boxes, and electric fencing) are only effective in small areas. Nevertheless, some innovative tools (diversionary feeding, range riding, hazing) have reduced wolf depredations in certain situations. The Service would continue to focus on and expand the use of nonlethal tools where appropriate. The rule limits lethal removal at the agency's discretion. The Service anticipates using removal as a last resort to balance conserving the species and preventing depredations. Additionally, the ability to take a wolf on public lands also depends on any regulations of the public land agency related to firearm possession, use, or hunting on said lands. The Service notes that the conclusion referenced by commenters of an inverse relationship between illegal killing and the level of protection afforded to wolves is far from a consensus in the scientific literature.

**CONCERN STATEMENT 16:** Commenters asked for wolf population recovery to be at the center of the Service's action. Commenters proposed that ranchers should not be allowed to take wolves until there is a self-sustaining population established in the state. Commenters also asked the Service to consider the intrinsic value of each individual wolf and the overall health of the population in addition to establishing numerical population goals. Commenters requested that the Service clarify how lethal take allowances would benefit the reintroduced wolf population and aid in their recovery. One commenter said the Service should prioritize the protection of gray wolves over other topics discussed in the rule and FEIS. The commenter noted that human-caused mortality was the main driver of gray wolf population decline in both the past and the present. The commenter urged the Service to consider that lethal take of wolves has weakened the metapopulation formed by wolves in central Idaho, northwest Montana, and the Yellowstone region.

**Representative Quote:** Legal taking of wolves by ranchers should not be permitted until there is a self-sustaining population in a given state. The Colorado Division of Wildlife places that number at 250-300.

**Representative Quote:** Along with this designation, I would like to see an emphasis placed on animal welfare, ensuring that the wolves of Colorado are managed in a humane manner. Giving strong credence to recent research that shows how human activity can have devastating impacts on individual wolf packs, which in turn could have equally deleterious effects on livestock producers and their operations. Recognizing the intrinsic value of each individual wolf and the health of the population, not just focusing on the number of wolves in the population, should be of the utmost importance.

**Representative Quote:** The Service should adhere to the elemental protection needs of the species above and beyond the other factors under consideration. As noted in the Proposed Rule, "Unregulated, human-caused mortality was the primary factor that caused population declines of gray wolves across the lower 48 States during the late 1800s and early 1900s." It remains so today. The State of Idaho is in the process of exterminating most of its wolf population that once numbered near 2,000 at its peak prior to the delisting of wolves from the Northern Rockies. Wolves were reintroduced to Idaho and Yellowstone National Park under a similar 10j Rule as a nonessential experimental population. While this allowed wider authority to kill wolves, as these states have done by the thousands, it has not resulted in greater tolerance of wolves. In fact, there is more opposition to wolves today than nearly 30 years during their reintroduction. The Service has failed to acknowledge the breakdown in the Northern Rockies wolf metapopulation that is threatening to dismantle the basic tenets of the Northern Rockies wolf recovery plan. Under this plan, the subpopulations of central Idaho, northwest Montana, and the Yellowstone region were to form the basis of a connected metapopulation. As the

states move to remove more wolves and reduce numbers down as far as they can, the metapopulation itself is now endangered.

**Representative Quote:** We need your help to ensure the 10(j) rule doesn't sacrifice wolf protection and recovery in the name of "flexibility." A robust Colorado wolf population is necessary for the recovery of wolves across the West, and the rules that manage them need to reflect this obligation.

**Response:** The Service believes that wolves that exhibit depredating behavior do not further the conservation of the species and for that reason should be controlled. The selective removal of this type of individual animal is warranted in certain limited circumstances, and their removal contributes to overall conservation of the species. In Idaho during the first 10 years under the northern Rocky Mountain 10(j) rule, a small percentage of the population of wolves was controlled due to depredations, while the wolf population continued to expand from 14 individuals to 476 individuals. The Service anticipates similar conditions in Colorado. Overall, the 10(j) rule would allow for the conservation of the species, while reducing the regulatory burden that may arise in these situations. Establishment and monitoring of population goals and management measures that may be implemented to achieve recovery of the species in the State fall under the State Plan.

**CONCERN STATEMENT 17:** Commenters expressed support for lethal take allowances in the rule and in the FEIS and said that lethal take is a necessary management strategy to have available. Commenters were in favor of the management flexibility provided in the rule and under alternative 1 of the FEIS. Commenters noted that the previous reintroductions in the northern Rocky Mountains have succeeded with the management flexibility of a 10(j) rule. Commenters noted that lethal take is necessary to protect the livestock industry and other wildlife and requested that the permitting process for lethal take be liberal and streamlined to prevent livestock losses. Some commenters were specifically supportive of take provisions for wolves caught in the act of predating on pets and working dogs. Commenters said that lethal take would be important to prevent extreme growth of wolf populations in Colorado and impacts on livestock, big game, and other wildlife species. Some commenters said they appreciated the greater flexibility allowed in the Service's rule compared to the State Plan, specifically in relation to taking wolves "in the act of attacking" and the reporting requirements. Commenters said that lethal take would be the only feasible option in many cases and asserted that nonlethal measures like relocation and livestock guardian dogs are ineffective.

**Representative Quote:** Lethal control must remain in the 10(j) Rule and subsequent implementation. Any weakening of the use of lethal control will limit the success of the Colorado Plan and negatively impact livestock production, and other wildlife species. The previous reintroductions in the Northern Rocky Mountains have all done so with a 10(j) and have been very successful.

**Representative Quote:** The 10J designation needs to include the following: Trapping as a management option for wolves; A quick and efficient process for lethal take permits for livestock owners when depredation takes place or wolves are chronically harassing livestock; A comprehensive and flexible incidental take section; and Provide options for relocation/removal of wolf packs negatively impacting livestock production, depressing wildlife populations or creating human concerns. The ban of the use of leghold traps by Colorado's Amendment 14 does not apply to federal agencies in Colorado. With the exception of California, all other states use trapping as a management tool. Without the assistance of this tool, the Colorado wolf population will reach a point of extreme growth with unmitigated impacts to livestock, big game and other wildlife species. The Bureau of Land Management's failure to control the feral horse population serves as a prime example for unchecked growth of a high impact species.

**Representative Quote:** We find positive differences between provisions in the proposed 10(j) rule and similar allowances referenced in Colorado Parks and Wildlife's (CPW) Wolf Restoration and Management Plan. First, we appreciate that the proposed 10(j) rule allows for flexibility beyond what the state of Colorado would allow, including the taking of wolves "in the act of attacking" livestock without a permit or authorization from FWS. Second, we are encouraged to see that the definition of livestock under the proposed 10(j) rule is broader than what CPW recognizes and includes domestic bison as well as pigs, mules, and alpacas. Third, we are pleased to see that the safety of our pets is accounted for in the proposed 10(j) rule, and that wolves could be taken without FWS authorization, if in the act of attacking pets beyond livestock guard animals and working dogs. Fourth, we are in favor of the flexible reporting requirements in the proposed rule whereby opportunistic and intentional harassment of wolves will be reported to FWS within 7 days as opposed to the 24-hour notification required by the state. We appreciate that the FWS can issue a written take authorization for limited duration of 45 days or less, where the state issues a limited duration permit only if state or federal agents are unable to implement lethal control actions.

**Representative Quote:** The permitting process for intentional harassment and take provisions should be expeditious, liberal and streamlined to allow for timely prevention of conflicts and depredations.

**Representative Quote:** Lethal Take Wolves have been living in other states, so this is not an experiment. If wolves have no reason to fear humans, they are not deterred from killing livestock, even in the presence of range riders, and have no reason to avoid human contact. Recent killings in North Park illustrate this. "Non-lethal" deterrents, while highly recommended and celebrated, are, in fact, not effective. Experience in other states, and in North Park, show that the wolves soon learn to ignore fladry, noisemakers, range riders and other deterrents if there is no consequence to hunting and killing prey. A predator "any predator" has to kill another living creature every few days in order to survive. Ribbons tied to a fence will not change their minds. We have used Livestock Guardian Dogs to protect our sheep since 1980. They are expensive to maintain and require a lot of management. They are usually effective with coyotes because they are the larger dominant canines. Livestock Guardian Dogs are not a deterrent to wolves who can and do kill them.

**Response:** The Service notes the support provided for the lethal take provided in the rule. In the final rule, the Service has removed the inclusion of pets from the allowable lethal take provision and the definition of domestic animals. The Service did not receive many comments related to the inclusion of domestic pets. In addition, retaining the pet provision could lead to conflicts between the Service's rule and the State Plan because the State Plan does not include take of wolves in the event of depredation or attacks on domestic pets. However, herding and guarding animals (such as alpacas, llamas, donkeys, and certain breeds of dogs commonly used for herding or guarding livestock) are considered livestock and are included in the allowable lethal take provision.

**CONCERN STATEMENT 18:** A commenter said reporting of lethal take or harassment should be permitted through a phone call or website in addition to mail or email.

**Representative Quote:** Section 17.84(6) requires harassment or lethal take of gray wolves to be reported to USFWS or its designated agent. The Rule currently provides for reporting by US Mail or email. The Rule should also authorize reporting through a phone number or website to provide maximum flexibility to reporting individuals.

**Response:** According to the proposed regulation promulgation provided in the rule, any take of wolves, including opportunistic harassment or intentional harassment, must be reported to the Service, the



<p>Colorado Ecological Services Field Office Supervisor, or a Service-designated agent of another federal, state, or Tribal agency. The rule does not specify that any method of communication is not permitted.</p>
<p><i>CONCERN STATEMENT 19: Commenters asked the Service to fine livestock operators who do not remove carcasses promptly.</i></p>
<p><b>Representative Quote:</b> Dead livestock, dogs or other domestic animals should be removed promptly after collecting any evidence. They should not be allowed to attack predators. Fines should be imposed for those who leave dead livestock to attract predators in an effort to be able to kill wolves</p>
<p><b>Response:</b> The Service agrees that the carcasses of livestock that die for reasons unrelated to wolves should be removed as promptly as possible; however, it is outside the Service’s regulatory authority to require this. In addition, due to the size and remoteness of many livestock operations, it would be impractical for ranchers to discover and remove every carcass within a timeframe that would prevent wolves from potentially feeding on them.</p>
<p><i>CONCERN STATEMENT 20: Commenters asked that each pack of wolves be consistently monitored to give livestock operators a chance to take steps to protect their animals and prevent lethal take from occurring as a result of depredations.</i></p>
<p><b>Representative Quote:</b> The Proposed Rule provides for GPS and VHF to be used to assist with individual identification. The percentage of GPS units will decline as wolf numbers increase in Colorado. To accurately focus non-lethal resources every pack must be monitored in real time and that information be shared with livestock producers in the surrounding area to allow for additional management to be put in place.</p>
<p><b>Representative Quote:</b> 3-8 Domestic Prey Species/Livestock Depredation. This section highlights the need for lethal control under the 10(j) designation; and the need for trapping to radio collar and monitor wolves to assist livestock owners with targeted implementation of non-lethal deterrents.</p>
<p><b>Response:</b> The State would monitor gray wolves in the nonessential experimental population area using GPS collars, radio telemetry, or other standard wolf population monitoring techniques, as appropriate. Monitoring wolves and groups of wolves falls under the State Plan, and decisions regarding how monitoring data are used or distributed would be left to the State.</p>
<p><i>CONCERN STATEMENT 21: Several commenters requested a limit to the overall numbers of wolves that can be lethally taken.</i></p>
<p><b>Representative Quote:</b> The proposed rule lacks any quantitative or qualitative checks on the number of wolves that can be injured or killed under these take provisions (Proposed Rule 49-52). Given the concerns above regarding the vagueness and subjectivity of numerous take authorizations, coupled with substantial anti-wolf prejudice and the publicly-expressed intent of numerous individuals to engage in poaching, these provisions may well lead to levels of take comparable to those currently ongoing in Idaho and Montana. Particularly given expected low wolf numbers during early years of restoration efforts, coupled with the threat of being killed over the Wyoming border, these take provisions could, absent quantitative checks, lead to either the destabilization of individual packs or the</p>

overall failure of the restoration effort. No lethal take should be authorized without a prior analysis, by the Service, of how that take will affect both the pack in question and the resilience of the entire Colorado wolf metapopulation.

**Response:** The Service will coordinate with the State of Colorado and review annual reporting to ensure that there is progress toward wolf recovery per the State Plan. As specified in table 1 of the rule, livestock operators may only be issued “repeated depredation” take authorization of a limited number of wolves, if: (1) the landowner has had at least one depredation by wolves on livestock that has been confirmed by the Service or its designated agent within the last 30 days; (2) the Service or its designated agent has determined that repeatedly depredating wolves are routinely present on the private land and present a significant risk to the health and safety of livestock; and (3) the Service or its designated agent has authorized lethal removal of wolves from that same private land. Note that the term “repeatedly depredating wolves” has replaced the term “problem wolves” in the final rule.

**CONCERN STATEMENT 22:** Commenters asked the Service to work collaboratively with livestock operators and require proof of use of conflict prevention measures before lethal take is considered. Commenters noted that immediately allowing lethal take would disincentivize use of nonlethal management as a first step. Commenters said that the onus should be on livestock operators to manage their livestock to avoid conflicts rather than managing wolves to avoid conflicts. A commenter said that determinations regarding causes of livestock deaths should be made publicly available prior to any lethal take and should include summaries of livestock losses, investigation reports, maps of areas with known wolf activity and depredations, and conflict deterrence plans specific to the area. They also requested that take authorizations should end after the wolf is killed, the wolf leaves the area, or after 14 days. Commenters also suggested that wolves that chronically depredate on livestock could be translocated rather than lethally taken. Commenters asked the Service to ensure that the rule does not unintentionally incentivize lethal take over nonlethal take.

**Representative Quote:** We need to require implementation of non-lethal livestock-wolf conflict prevention on both private and public lands. Science is screaming that conflict avoidance and coexistence strategies are much more effective at protecting livestock than lethal methods (6). These methods include flagery, fox lights, guard animals, adjusting calving time and location, removing livestock carcasses, and increased human supervision. These methods are very effective (7,8,9). There are many recent studies from the Northern Mountain Rocky states and The Great Lakes that document the effectiveness of non-lethal conflict prevention (10,11,12,13). Again, killing wolves does not protect livestock. Lethal methods do not solve the problem of wolf depredation and fail to provide long-term solutions (14,15,16). These sources also find that killing wolves is the least effective method of conflict prevention. 5. Lethal management of wolves should not be permitted except in extremely limited circumstances. I, also, do not want to “tie the hands of the agencies” by insisting that no wolf should ever be killed. However, historically, the liberal use of lethal control has been a major detriment to the other wolf populations in the U.S. No one has ever been prosecuted for the poaching of a red wolf, yet they are killed illegally every year. The Mexican Grey Wolf population also suffers from poaching and legal killings. These killings are a direct result of the flexibility of their 10(j) rulings. We cannot allow that in CO.

**Representative Quote:** A requirement that multiple, documented, nonlethal coexistence practices are first used and proved unsuccessful before any wolf killing is allowed. Fladry (Young, 2018), low-stress stockmanship (Louchouran, 2023), conditioned taste aversion (Dingfelder, 2010), livestock protection dogs (Gehring, 2010) and other non-lethal management techniques such as strobe lights (WDFW, 2015) are increasingly viable practices.

<p><b>Representative Quote:</b> Regarding lethal take for depredation, I ask that proof be required of meaningful deployment of non-lethal conflict reduction techniques before any such lethal take is allowed. I would hope, too, that no lethal take be allowed on public lands.</p>
<p><b>Representative Quote:</b> We would like to see what regulatory actions will be available to mitigate perverse incentives inspiring the questionable take of wolves in retaliation for perceived hunting or livestock losses.</p>
<p><b>Response:</b> Nonlethal control methods are preferred and encouraged as noted in Concern Response 15. However, the Service considers it important to retain the ability to remove wolves in specific situations in which nonlethal management actions are ineffective at resolving conflicts. The 10(j) rule provides the framework for implementation of any take that may occur. The Service ultimately authorizes the take of gray wolves under limited circumstances. The ability to take a wolf on public land also depends on any regulations of the public land agency related to firearm possession, use, or hunting on said lands. Monitoring and reporting on wolves and wolf depredation fall under the State Plan, and decisions regarding how monitoring data is used or distributed would be left to the State.</p>
<p><b>CONCERN STATEMENT 23:</b> Commenters asked the Service to incorporate additional scientific research into its take provisions. Commenters said the take permitted in the rule favors people who do not support wolf reintroduction and does not rely on the science behind wolf conflict prevention. Commenters asked the Service to incorporate science on minimum viable population sizes in the rule. Commenters noted research with the following findings:</p> <ul style="list-style-type: none"> <li>• Keeping wolf mortality as close as possible to natural death rates leads to less depredation by wolves, while higher lethal take leads to more depredation because of social disruption to wolves.</li> <li>• Only targeted lethal removal of known individual depredating wolves can reduce future depredations.</li> <li>• Timing of removal should be less than 7 days after the depredation event for the most effective reduction in conflicts.</li> <li>• Nonlethal tools are more effective than lethal management.</li> <li>• Lethal take of wolves, particularly pack leaders, can lead to pack dispersal. Dispersing wolves are more likely to predate on livestock.</li> </ul>
<p><b>Representative Quote:</b> General comments on lethal removal of depredating wolves. We would first note that the targeted lethal removal of known depredating wolves, whether “in the act” or otherwise known to have killed livestock, can reduce future depredations; untargeted or indiscriminate public harvest, however, does not (DeCesare et al. 2018). Further, Bradley et al. 2015 provide guidelines for timing and when partial or total pack removal is most effective; response within 7 days is more effective than a longer period of time after the depredation. These guidelines should be incorporated in the Service’s standards and required for any designated agent, livestock owner, or other individual authorized to lethally take wolves under the rule.</p>
<p><b>Representative Quote:</b> The proposed 10(j) rule is not grounded in best available science of wolf ecology or biology. Best available science informs that wolf pack survivability is reduced by human killing of family members and ecological effectiveness is diminished. Instead, rather than contributing to conservation of wolves, lethal management subverts wolf conservation by legitimizing legal wolf killing and exacerbating illegal wolf killing. - Best available science informs that lethal management is ineffective and exacerbates livestock losses to wolves. - Best available science informs that non-lethal livestock-carnivore strategies are effective in preventing livestock depredations and maintain wolf</p>

family structure. - Require livestock-wolf conflict prevention: Allow lethal take on private and public land only after all reasonable non-lethal livestock-carnivore conflict prevention strategies have first been exhausted. - Killing wolves should never be the first line of defense and killing wolves to prevent livestock attacks should never be allowed on Colorado's public lands. - Livestock who are turned out to graze on large public land allotments die for many reasons including weather, disease, injury (22). o Wolves, mountain lions, black bears and other native carnivores should not become a scapegoat. - Killing wolves can exacerbate conflicts with livestock by disrupting the stable social structures that wolves rely on. Numerous scientific reviews have questioned the scientific merit and efficacy of lethal predator control. - Non-lethal methods to prevent conflicts are more effective, ethical and economical than killing wolves. Most scientific research today suggests the deployment of an array of non-lethal tools is the most consistently effective way to prevent these types of incidents, including barriers such as fencing or fladry, human presence and light/sound deterrents. That is especially true when comparing the effectiveness of non-lethal methods in the scientific literature to lethal methods, which have been found to be highly variable and even counterproductive for preventing incidents. Lethal methods in response to incidents may exacerbate conflict through the disruption of wolf families, which often disband after they lose a member to human-caused killing. Such break up of wolf families increases the risk that otherwise cooperative hunters that prefer wild prey will turn to domesticated animals. Killing wolves is not the correct answer (56).

**Representative Quote:** I believe this proposed rule is just meant to appease people who want to liberally take wolves off the landscape. The people who "suffer" from wolf depredations, will learn how to adjust to non-lethal control methods. If we are truly following the best science in this necessary reintroduction, then we must acknowledge that killing a wolf usually makes problem situations worse. Research evidence from Kira Cassidy has shown that killing a pack leader will usually weaken the wolf pack because they will have lost their best/most experienced hunters. This loss will likely cause dispersal of the wolf pack or cause the remaining pack members to target softer prey (i.e. livestock). Dispersing wolves are also more likely to go after livestock due to the difficult nature of hunting large mammals alone. This research shows that the worst thing you can do to a wolf pack is kill one or both of the pack leaders. It can cause an increase in wolf depredations on livestock. This rule totally overlooks the fact that we must use all non-lethal controls available and not resort to the killing of "problem" wolves. Please don't be fooled by this rule. It is a misguided attempt to appease hunters, ranchers, etc. and go after wolves as much as they can while ignoring the science that says this kind of response will only create more problems.

**Representative Quote:** 13. Best science can conclude about the state of the science for preventing predation on livestock. At present, the evidence is better for non-lethal methods, and they seem on average more effective at protecting livestock (Treves et al. 2016; van Eeden et al. 2018, Khorozyan et al. 2020). Furthermore, lethal methods pose a risk of counter-productive increases in livestock loss, detected in two studies in Europe and several in the USA on wolves (Fernandez-Gil et al. 2016; ImBert et al. 2016; Santiago-Avila et al. 2018), and studies of recreational hunting of cougars in Washington state (Peebles et al. 2013) and beyond (Laundre & Papouchis 2020).

**Response:** As stated in previous responses, the 10(j) rule provides the framework for protections and exceptions allowing for lethal control of wolves under limited circumstances. The Service considers it important to retain the ability to remove wolves in specific situations where nonlethal management actions are ineffective to meet the purpose of the 10(j) rule of conserving the species while reducing the regulatory burden from reintroductions. The ability to take a wolf on public lands also depends on any regulations of the public land agency related to firearm possession, use, or hunting on said lands. The Service does not anticipate that lethal removal would exceed natural mortality levels in the reintroduced gray wolf population, as outlined in section 4.4.1 of the FEIS, "Gray Wolf," under alternative 1.

<i>CONCERN STATEMENT 24: Commenters asked for clarity on whether recreational hikers on public land could take wolves in the act of attacking their dogs.</i>
<b>Representative Quote:</b> Taking wolves “in the act of attacking” livestock on PUBLIC land. As above, we support this form of take under the rule if the required reporting and confirmation are strictly enforced. The description in the table on page 50 of the proposed rule states that “any person legally present on public land may immediately take a wolf that is in the act of attacking the individual’s stock animal or dog.” This is a broad take allowance that would presumably allow a recreational hiker to lethally take a wolf attacking their pet dog. If that is the intent, more description would help to clarify this take allowance, and it should be noted that current Colorado law does not authorize the taking of other predators attacking pets.
<b>Response:</b> The Service has revised the rule’s inclusion of pets in the authorization of take to only include “working dogs” to minimize confusion and to be consistent with the State Plan. However, as stated in the rule, anyone may engage in opportunistic harassment of gray wolves.
<i>CONCERN STATEMENT 25: One commenter said that the Service should not allow wolves to be driven from public to private lands where they could be subjected to take.</i>
<b>Representative Quote:</b> The 10 (j) rule must be revised to prioritize the non-lethal management of wolves in livestock conflicts and curtail any lethal management of wolves on public lands - and do not allow the "convenient" ushering of wolves onto private lands so they can be "managed" there as the BLM does with wild horses and burros.
<b>Response:</b> The 10(j) rule does not authorize an individual to “drive” wolves from one area to another, regardless of if the land is public or private. As noted under Concern Statement 6, intentionally moving wolves from one area to another is a form of harassment/take that is not an exception provided by the rule and would be a violation of section 9 of the ESA. Conditions set forth in the 10(j) rule dictate when and where nonlethal versus lethal control can be used to manage wolves. The ability to take a wolf on public lands also depends on any regulations of the public land agency related to firearm possession, use, or hunting on said lands.
<i>CONCERN STATEMENT 26: Commenters asked for a broadening of the take allowed on public lands, noting that livestock can end up outside their owner's allotments and should still be defensible from wolf attacks.</i>
<b>Representative Quote:</b> Lastly, I would like to see a literal broadening of the ability for public land permittees to be able to use take to defend their livestock and dogs being attacked by wolves to beyond their designated allotment to wherever their livestock may be. Public lands are under multiuse doctrine which means that often gates get left open or cut, livestock are kept away from water sources by campers, chased by dogs. There are many reasons that livestock may be off its owner’s allotment.
<b>Representative Quote:</b> Additionally, the proposed rule provides that when it comes to take on public land, any livestock producer and public land permittee who is legally using public land under a valid Federal land-use permit may take a gray wolf in the act of attacking livestock or dogs on the person's allotment or other authorized for the person's used without prior written authorization. Delta BoCC

would suggest that the language be amended to read "any livestock producer and public land permittee... who is legally using public land under a valid Federal land-use permit may take a gray wolf in the act of attacking livestock or dogs legally present on public lands without prior written authorization." This would protect Delta County permittees from the scenario where livestock would be on adjoining allotment and/or private lands due to gates being open.

**Representative Quote:** (iv) Take on public land. The proposed rule includes provisions authorizing Any livestock producer and public land permittee (see definitions in paragraph (a)(4) of this section) who is legally using public land under a valid Federal land-use permit may take a gray wolf in the act of attacking livestock or dogs on the person's allotment or other area authorized for the person's use without prior written authorization. We recommend changing this provision to read "Any livestock producer and public land permittee (see definitions in paragraph (a)(4) of this section) who is legally using public land under a valid Federal land-use permit may take a gray wolf in the act of attacking livestock or livestock guard animals legally present on public land." The limitation of this provision to only the person's allotment or other specific area authorized for use under a grazing permit would not account for livestock that may have strayed onto adjacent public lands. This is not an infrequent occurrence and can be due to recreators not closing gates, livestock being run through fences by predators, or any number of circumstances.

**Response:** The 10(j) rule allows for take of wolves on public lands under specific conditions and specifies that any take occurring on public lands would be subject to the regulations of the federal land management agency. The Service has modified language in the rule to clarify this issue: "Any livestock producer and public land permittee. . . who is legally using public land under a valid Federal land-use permit may take a gray wolf in the act of attacking livestock or working dogs legally present on public lands without prior written authorization." Livestock, as defined in the rule and FEIS, includes livestock herding and guard animals.

**CONCERN STATEMENT 27:** Commenters were opposed to any take on public land, saying that public lands should be a refuge for wolves. One commenter said that not permitting lethal take on public lands would provide necessary incentives for livestock operators to nonlethally protect their livestock from wolves. Commenters noted that although Colorado Proposition 114 says that Colorado will not impose land use restrictions on private lands for purposes of wolf reintroductions, the Service should impose land use restrictions on public lands and forbid take of wolves on public land. Other commenters said that lethal take on public land should only be permitted if individual problem wolves could be targeted.

**Representative Quote:** Lethal control is to be carefully considered only in emergency situations and only by CPW on private land. Lethal control is inappropriate and should never be considered on public lands. Public lands belong to me and the wolves on that land belong to everyone. Taking wolves on public land is taking something irreplaceable from all of us.

**Representative Quote:** You should allow no killing of wolves on public land under any circumstances. Wolves are still an endangered species.

**Representative Quote:** Additional taking by grazing permittees on public land (Proposed Rule at 51). In addition to the problems of shoot-on-sight policies on private land, the Service has failed to even consider whether lethal take in support of public land grazing permits is justifiable or consistent with provisions of land management and grazing law. Grazing on public land is a privilege, and grazing permits must comply with Forest Service and Bureau of Land Management plans, which in turn must address the multiple-use requirements of their governing statutes. Authorizing lethal take of wolves on

public land, based on a single depredation, presumes that the livestock permittee's interest in continuing operations without taking measures to minimize conflict outweighs the public's interest in other uses of the public lands, including enjoying the presence of viable wild wolf packs. Proposition 114 states clearly that the State of Colorado shall not impose land use restrictions on private lands for purposes of wolf restoration, but this provision both does not and cannot apply to federal agencies' management of the federal public lands.

**Response:** The ability for public land permittees to take wolves for the purposes of removing depredating wolves is necessary to mitigate conflict with livestock producers and is consistent with the purpose of the 10(j) rule to conserve the species while reducing the regulatory burden of a species' introduction. This ability is essential for the recovery of the gray wolf because the regulation of human-caused mortality has been a primary factor contributing to increased wolf abundance and distribution in the lower 44 states. The ability to "take" a wolf on public lands is also dependent on any regulations of the public land agency related to firearm possession, use, or hunting on said lands. State management of wolves is beyond the scope of the rule and EIS.

**CONCERN STATEMENT 28:** Commenters worried that the regulations for shoot-on-sight in the rule are too vague and that key terms like harassing and molesting do not have clear definitions. They asked for more straightforward definitions to avoid confusion.

**Representative Quote:** We strongly recommend that the Service clearly define chasing, harassing and molesting in a way that makes it clear to livestock owners what evidence of a real threat would be necessary to legally allow lethal take. Any guidance that can be given would ease the concerns of the livestock owners and assure wolf advocates that lethal take only occurs under clear circumstances that would result in the death or injury of livestock.

**Representative Quote:** Taking wolves "in the act of attacking" livestock on private land. This provision allows for lethal take for "harassing" and "molesting" and in the definitions section includes "chasing;" these terms are not defined in the proposed rule or elsewhere in federal regulation. Livestock owners will not be able to clearly identify when these provisions apply and so I oppose taking wolves in this circumstance. I believe the Service should clearly define these terms to give livestock owners directions under the proposed rule. Allowing the take of a wolf in the act of attacking livestock will not solve anything. The livestock owner should provide proof of the attack to management and if there is take there should be a 24-hour reporting rule.

**Representative Quote:** The proposed 10(j) rule allows for lethal take for "harassing" and "molesting" and in the definitions section includes "chasing." These terms need to be clearly defined in the proposed rule, DEIS or elsewhere in federal regulations. Livestock owners need to be clear on when these provisions apply.

**Response:** The Service added examples to the rule to guide harassment activities and clarified the definition of "in the act of attacking." The term "shoot-on-sight" written take authorization was replaced with "repeated depredation" written take authorization in the final rule. The precise requirements to qualify for issuance of a repeated depredation authorization are provided in the final rule. The terms used to describe wolves in the act of attacking are consistent with section 3 of the ESA and previous 10(j) rules. The term "take" is also defined in section 3 of the ESA. The terms "harm" and "harass" are defined by regulation and are not repeated in the rule. See 50 CFR § 17.3.

**CONCERN STATEMENT 29:** Commenters expressed opposition to shoot-on-sight take authorizations and for permission to take wolves in the act of attacking. A commenter noted that wolves often chase or test potential prey without the chase resulting in an attack. One commenter noted that the 1994 rule governing wolf reintroduction in the northern Rocky Mountains does not include shoot-on-sight authorizations for private landowners and said that the allowance would not be necessary.

**Representative Quote:** “Shoot-on-sight” permits should be eliminated or, at minimum, significantly narrowed. The Proposed Rule would allow the Service to issue a limited-duration “shoot-on-sight” take authorization allowing a landowner, their employees, or a public land grazing permittee to take up to a specified number of wolves. These authorizations should be eliminated because they are unnecessary and contrary to the conservation of the species. First, the Proposed Rule’s other exceptions for agency take of wolves and take by individuals when a wolf is in the act of attacking domestic animals adequately cover all situations where lethal removal might be considered, as a last resort, necessary. Indeed, the 1994 4(d) rule governing wolf reintroduction in the Northern Rocky Mountains did not include any analogous provision for private landowner take authorization and there is no reason why it is necessary here. Second, expanding the circumstances where private individuals (rather than agency officials) may lethally take wolves should be disfavored, because private individuals do not receive the same training as government officials, and their actions are not subject to the same accountability and transparency mechanisms as agency actors. Third, “shoot-on-sight” authorizations are intrinsically untargeted and are likely to result in the killing of random wolves who are not “problem” wolves responsible for livestock attacks, undermining the efficacy of the authorization as a means of addressing conflict and amplifying the damaging effects of the killing on the population.

**Representative Quote:** Additionally, the Draft Rule’s “shoot-on-sight” provisions, see 88 Fed. Reg. 10,272, must be removed altogether, especially on federal public lands, but also as unnecessary on private lands as well. This is a particularly egregious allowance of take that cannot be said to serve the conservation needs of the species and is thereby entirely inappropriate in this Section 10(j) rule.

**Response:** The ability to provide take authorization for a landowner or public land permittee for the purposes of removing depredating wolves is necessary to mitigate conflict with livestock producers and is essential for the recovery of the gray wolf. Regulation of human-caused mortality has been a primary factor contributing to increased wolf abundance and distribution in the lower 44 states. “Shoot-on-sight” written take authorizations have been renamed to “repeated depredation” written take authorizations in the final rule. Repeated depredation written take authorizations are of limited duration and scope, include direct oversight by the Service or its designated agents, and are authorized only when the Service or its designated agents are unavailable to address the situation. The ability to take a wolf on public lands is also dependent on any regulations of the public land agency related to discharge of firearms on said lands.

**CONCERN STATEMENT 30:** Commenters requested that take authorization permits be extended for a period longer than 45 days. A commenter asked for the shoot-on-sight requirements to be changed to specify that the predation event was confirmed within the last 30 days, rather than the predation event occurring within the last 30 days. The commenter noted that grazing allotments are often large and remote and that it is impractical to expect all depredations to be discovered and confirmed within 30 days.

**Representative Quote:** b. The “shoot on-sight” written take authorization permit should be available for longer than 45 days in the face of continued depredation or should be allowed to be extended. Our grazing allotment is permitted for 82 days and we see continuous depredation by resident predators in



our area (bear, lion, coyote) for the entire duration. I assume depredation behavior from wolves would be similar.

**Representative Quote:** The requirement that a shoot-on-sight order must be preceded by a confirmed depredation within the last 30 days (50 C.F.R. 17.84(iii)(B) and iv(B)) should specify that the confirmation must have occurred within the last 30 days, not that the depredation itself occurred within the last 30 days. Public land grazing allotments are large, and portions of many allotments are remote and difficult to access regularly. Some large private holdings also contain remote or inaccessible areas. As a result, it is not practical to expect that all depredations will be discovered within 30 days, let alone be confirmed. Further, staff or funding constraints may make it difficult or impossible for USFWS or its designated agent to confirm all depredations within 30 days, even if they are promptly discovered and reported.

**Response:** The Service believes the maximum 45-day duration of the “repeated depredation” written take authorization is appropriate. Note that “repeated depredation” written take authorization is the updated term for “shoot-on-sight” written take authorization for the final rule. The length of the authorization is designed to ensure that only wolves identified as posing a high risk of depredation are targeted for removal. The rule stipulates that to qualify, the grazing allotment must have had at least one depredation by wolves on livestock that was confirmed by the Service or its designated agent within the last 30 days. As such, the confirmation must have been within the last 30 days, not the depredation event.

*CONCERN STATEMENT 31:* A commenter asked the Service to forbid attracting wolves in order to harass them. The commenter notes that the term “intentional harassment” is too vague and could include methods of tracking, searching out, and waiting for wolves that lead to attracting wolves to human-dominated areas and livestock, resulting in habituation. The commenter was in favor of including methods like predator calls to deter wolves.

**Representative Quote:** Intentional harassment. We recommend removing any allowance for attracting wolves in order to harass them. The definitions of opportunistic harassment and intentional harassment imply that intentional harassment could include “prior purposeful actions to attract, track, wait for, or search out the wolf.” (Emphasis added). Intentionally attracting wolves in order to harass them could run counter to the intent of such harassment, which is to keep wolves from approaching humans and their livestock. If “attracting” can be clearly defined to include methods such as using predator calls or other means that will not potentially attract wolves to human dominated areas or livestock, this provision would be acceptable. Without such constraints, it could lead to further depredations or habituation. On the other hand, tracking, waiting for, and searching out wolves can be done in ways that will cause avoidance and we support inclusion of those methods in the proposed rule.

**Response:** The Service has added language to the rule prohibiting the use of attractants or intentional feeding of wolves for the purposes attracting them.

*CONCERN STATEMENT 32:* Some commenters made suggestions for conditions that should be met prior to the authorization of lethal take. Suggested conditions included:

- Require four or more livestock losses on private land by a single wolf within seven days to lethally take the wolf.

<ul style="list-style-type: none"> <li>• Require the Service to determine that no circumstances attracted wolves to predate on the livestock, including the presence of carrion or unusual odors.</li> <li>• Verify that the livestock operator implemented at least two area-specific conflict minimization techniques.</li> <li>• Verify that further nonlethal prevention would not be effective and that lethal take of the wolf would not harm the wolf population and state recovery objectives.</li> <li>• Require more than one depredation event to occur before lethal take is permitted.</li> </ul>
<p><b>Representative Quote:</b> LETHAL MANAGEMENT OF WOLVES SHOULD NOT BE PERMITTED EXCEPT IN EXTREMELY LIMITED CIRCUMSTANCES, should be conducted only by CPW professionals, never be conducted by Wildlife Services, never be conducted by private individuals, and only be conducted on privately-owned land, never on publicly owned land. – In defense of human life or if a wolf is perceived to be a threat to human life and safety. – Regarding livestock, those extremely limited circumstances or cases of urgency are defined by all of the following conditions being met: 1) There are 4 or more livestock losses on private land confirmed to be by the same wolf within 7 days; 2) FWS determines that no identified circumstance exists that attracts or encourages wolf livestock conflict; 3) no carrion or unusual odor attracted the wolf to livestock prior to wolf attacks on stock; 4) FWS confirms livestock owners in the area have worked to reduce conflicts and have documented the appropriate implementation of at least two area-specific conflict minimization techniques; 5) FWS determines the livestock losses are likely to keep occurring despite non-lethal measures; 6) the identified wolf caused the chronic livestock loss and killing it is likely to reduce the threat of livestock losses; and 7) FWS determines that killing the wolf is not expected to harm the wolf population’s ability to reach recovery objectives statewide.</p>
<p><b>Representative Quote:</b> All scientific methods should be used to keep wolves away from livestock before lethal management is used.</p>
<p><b>Response:</b> The 10(j) rule provides for both lethal and nonlethal take to conserve the species while reducing the regulatory burden of species reintroduction. The allowances for lethal take in the rule are narrow and limited. With these limited allowances, including additional requirements on the use of lethal take would create barriers that would reduce the effectiveness of the rule and would not provide the management flexibility the rule was developed to provide. Language has been added to the FEIS to state why these concepts are not included in the final documents.</p>
<p><b>CONCERN STATEMENT 33:</b> Commenters had suggestions for who could perform lethal take of wolves. Many commenters wanted the rule to exclusively permit CPW personnel to carry out lethal management. One commenter said that the Service should not carry out lethal take and that rules should instead be enforced by "animal damage control agents" to ensure livestock operators' livelihoods are adequately protected. One commenter said that U.S. Department of Agriculture (USDA) Wildlife Services should be the first choice for investigating and taking problem wolves, while another commenter said USDA Wildlife Services should never be permitted to use lethal control. Commenters also proposed that CPW and the Service should be the only personnel allowed to conduct lethal control and that all lethal take should occur within seven days of the incident.</p>
<p><b>Representative Quote:</b> Killing wolves should be a last-resort measure performed only by the FWS or their designated agent, and strictly limited to chronic conflict situations where nonlethal approaches or other solutions have proven ineffective at resolving the conflict.</p>
<p><b>Representative Quote:</b> Additionally, any take/lethal control permits issued under the 10(j) rule should only be given to Colorado Parks and Wildlife staff, and not to private individuals or to individuals</p>

associated with USDA- Wildlife Services which has been implicated in the deaths of the endangered Mexican gray wolf (23). We know that wildlife service's kill hundreds of thousands of wild, native animals every year in this country and we will no longer allow it. We also know that Wildlife services poisons (with poisons like sodium cyanide and Compound 1080) our land in an attempt to cull predators. We will not tolerate these poisons in wolves' actual or potential range.

**Representative Quote:** I would support the following provisions: Lethal control should be conducted only by FWS or CPW staff, and only in cases of livestock losses confirmed to be by the same wolf, within 7 days of an incident. All kill authorizations should be revoked after the depredating wolf is killed or leaves the area, or after 7-14 days, if no wolf is killed. Do not allow for 45 day permits since it is impossible to determine if the “problem wolf” is still in the area, or if other wolves are moving through the area and are not preying on livestock.

**Representative Quote:** “The Service or our designated agent may carry out harassment, nonlethal control measures, relocation, placement in captivity, or lethal control of problem wolves.” 88 FR 10278. USDA Wildlife Services should remain the first choice for investigating and taking problem wolves.

**Response:** The legal protections afforded to gray wolves under this rule are considered adequate. Except for narrowly defined exceptions in the 10(j) rule, lethal take of wolves would be a violation of the section 9 take prohibitions described in the ESA. As stated in the rule, the Service may work with other federal, state, or Tribal agencies to develop a Memorandum of Agreement or Cooperative Management Agreement to authorize these entities as designated agents to conduct gray wolf management consistent with this rule.

**CONCERN STATEMENT 34:** A commenter worried that delegating lethal take authority to state and Tribal officials would lead to a stagnant and unsuccessful reintroduction, citing the decline of the Mexican wolf population under State management. Commenters also said that the 10(j) rule for the Mexican wolf and the red wolf reintroductions had not contributed to the species’ recovery and worried about a similar outcome in Colorado.

**Representative Quote:** Delegating authority on all aspects of wolf management including the killing of wolves to state and tribal officials, and in particular to Colorado Parks and Wildlife, will likely keep the wolf population in Colorado suppressed for an even longer period than the Mexican wolf population remained demographically stagnant in Arizona and New Mexico. That is because, parsing out year-by-year results in the latter two states, one finds that from 2003 to 2009, during which period the Arizona Game and Fish Department brought into existence and chaired the Mexican Wolf Adaptive Management Oversight Committee (AMOC), with authority on wolf removals, the Mexican wolf population in the wild in Arizona and New Mexico declined from 55 to 42 an almost 24% decrease in wolf numbers. The Colorado Parks and Wildlife and its draft wolf restoration and management plan, operating in similar landscapes, similarly calling for the removal of wolves that prey on livestock, and similarly containing no measures to require nonlethal protection of livestock from wolves, if given an opportunity will similarly suppress the number of wolves.

**Representative Quote:** It is my strong opinion that FWS follow the “No Action Alternative” option. Here are my reasons: The FWS proposed 10(J) rule does not follow best available science nor will it conserve gray wolves. The 10(J) rule has been instrumental in derailing the reintroduction of the red wolf (*Canis Rufus*) and has been a roadblock in the reintroduction of the Mexican gray wolf (*Canis Lupus Baileyi*) in NM and AZ. Gray wolves need the full protection of the Endangered Species Act.

<p>When protection is removed as seen in several northern Rockies states human-caused mortality has a significant impact on wolf populations, pack cohesion and pack behavior.</p>
<p><b>Representative Quote:</b> We must protect the wolf population of Colorado to ensure the survival of their species. The Red Wolf, the Mexican Grey Wolf, and the Grey Wolf populations have been kept down by the liberalization of killing wolves allowed by the 10(j).</p>
<p><b>Response:</b> The establishment of a 10(j) nonessential, experimental population would provide regulatory flexibility and discretion in managing the reintroduced species to encourage recovery in collaboration with partners, especially private landowners. Before authorizing the release as an experimental population of a listed species and before authorizing any necessary transportation to conduct the release, the Service must find, by regulation, that such release would further the conservation of the species. In making such a finding, the Service uses the best scientific and commercial data available.</p>
<p><i>CONCERN STATEMENT 35:</i> Commenters stated that only the Service and designated agents should have the authority to lethally take wolves and that private citizens should not be permitted to do so.</p>
<p><b>Representative Quote:</b> Lethal management of wolves should be a last-resort measure performed only by the FWS or their designated agent, and strictly limited to chronic conflict situations where nonlethal approaches or other solutions have proven ineffective at resolving the conflict.</p>
<p><b>Representative Quote:</b> ONLY CPW/USFW officials should be able to use lethal control. Public citizens should NEVER be issued a take permit and USDA's wildlife services should NEVER be able to use lethal control.</p>
<p><b>Response:</b> The majority of conflicts are likely to occur on private property or in remote and difficult to reach locations, making timely responses by Service or designated agent personnel difficult. Authorizing take for livestock operators and landowners under strictly defined circumstances would help to minimize conflict when landowners are the closest responders. It would also meet the purpose of the 10(j) rule in conserving the species while reducing the regulatory burden.</p>
<p><i>CONCERN STATEMENT 36:</i> Commenters expressed opposition to the implementation of a 10(j) rule. Commenters requested that wolves be considered endangered, rather than experimental and nonessential, when they are reintroduced. Commenters stated that the rule would be contrary to the intentions of the ESA and worried that the rule could put wolves in jeopardy.</p>
<p><b>Representative Quote:</b> First we need to give wolves in CO full ESA protection with the exception of hazing and using all non lethals to mitigate livestock loss. The 10-J rule was clearly a part of the failure in the NC red wolf reintroduction and has hampered the Mexican Grey reintroduction. We saw that wolves were needlessly killed and poachers were emboldened with the lack of punishments under the 10-J.</p>
<p><b>Representative Quote:</b> Management “flexibility” created under a 10(j) rule will not improve recovery probabilities for gray wolves. Evidence from previous wolf reintroduction efforts where the 10(j) rule has been implemented does not support this proposition. Actually, evidence documents that the 10(j) rule has undermined recovery of wolves in the United States by exacerbating both legal and illegal wolf killing (6,24,25). Colorado’s wolf reintroduction has thus become essential to the conservation of gray</p>

wolves, in which case they should be considered fully endangered, not experimental, as detailed under the endangered species act. We must protect the wolf population of Colorado to ensure the survival of their species. The Red Wolf, the Mexican Grey Wolf, and the Grey Wolf populations have been kept down by the liberalization of killing wolves allowed by the 10(j).

**Representative Quote:** I am urging you to keep the strongest ESA protections for reintroduced wolves in Colorado. I am strongly against the 10(J) rule that would allow the taking (injury or killing) of wolves “in the act of attacking” (wounding, harassing, molesting, or killing) livestock or dogs (working or pet) on both private and public land. The science does not support this alternative. Killing wolves to prevent conflict with livestock has been shown in most situations as ineffective and has actually been documented to increase livestock-wolf conflict. Lethal management of wolves should not be permitted except in extremely limited circumstances.

**Representative Quote:** Colorado Parks and Wildlife should not be going forward with 10J. Killing wolves in wolf packs that predate on livestock has not been successful nor deters wolf families from killing livestock in addition they have been too often mismanaged. In Washington between late 2021 to late 2022 Washington Department of Fish and Wildlife issued 3 kill orders to 3 different wolf packs that were predated on livestock and during all 3 of these kill orders issued something went wrong. In late 2021 the Columbia Family which lives in Southeast Washington there was a wolf killed in that wolf family after the kill order expired and apparently there was a mishap in communications as to when that kill order was supposed to have ended. The Smackout Family which lives in Northeast Washington had a kill order placed on them in early fall 2022 and a wolf from a completely different pack was killed under that kill order, a black wolf from the dirty shirt family. To put it simply, the wrong wolf from the wrong pack was killed. And the Leadpoint Family which lives in Northeast Oregon had a kill order placed on them in fall 2022 and it was confirmed that the reason the kill orders weren’t working there was because one of the effected livestock producers wasn’t properly disposing their cattle carcasses properly and Washington Department of Fish and Wildlife once learning this info had to call off the kill order.

**Response:** Multiple gray wolf populations occur throughout the country, including the delisted northern Rocky Mountain population. As such, the establishment of a 10(j) experimental population in the State of Colorado is not likely to jeopardize the continued existence of the species. The provisions of section 10(j) were enacted to ameliorate concerns that reintroduced populations would negatively impact landowners and other private parties, by giving the Service and its designated agents greater regulatory flexibility and discretion in managing the reintroduced species to encourage recovery in collaboration with partners, especially private landowners. The EIS does consider and analyze the no-action alternative, which was determined not to meet the purpose and need for action.

**CONCERN STATEMENT 37:** Some commenters expressed concern about prioritizing livestock over wolves, noting the ecological impacts cattle can have on landscapes and indicating that wolves are the native species, while cattle have been introduced.

**Representative Quote:** The ESA was intended to protect species from threats regardless of economic issues. The wolf is the only animal that has a protection exemption allowing legal "take" and it's been a means to lethal take without employing better management of the species that are invasive, such as cattle. It's time for humans to adapt to wolves in their presence not the other way around. Given the destructive nature of cattle and livestock on public lands it makes sense to reduce grazing permits, to stop subsidizing cattle and livestock through carnivore killing and to prioritize native wildlife. I'm glad that Colorado will once again include wolves but, it is appalling what is happening in the Rocky Mountain states. The management of wolves in those states is unconscionable. I don't want to see

Colorado's wolves return only to suffer the same fates. If the USFWS did its duty and relisted the Rocky Mountain wolves, then they would repopulate Colorado naturally, but they are mercilessly slaughtered by a crazed legislature that has no regard or respect for wildlife unless it can be slaughtered as a trophy or as public enemy number 1. Do your duty and protect wolves. Don't call them an experimental population and allow for legal take. Just protect them as other species under the ESA are protected and relist the Rocky Mountain population.

**Response:** The purpose and intent behind a nonessential, experimental population is to contribute to the conservation of the species and minimize regulatory burdens of reintroducing an endangered species to improve reintroduction success. The Service strives to balance the conservation needs of the gray wolf with the needs and concerns of local communities, including livestock operators. The take allowances in this rule were developed to ensure that progress toward recovery dictates the availability of management flexibility, while also ensuring that the Service and its partners maintain the ability to address conflict situations.

**CONCERN STATEMENT 38:** Some commenters expressed opposition to the use of traps, snares, poison, and hound hunting. Commenters said that traps should never be used to resolve conflicts and noted that incidental take of wolves in traps and snares should be prosecuted. Commenters noted that Colorado permits trapping and hound hunting of other species that could have a high risk of capturing wolves too. Commenters asked the Service to update the rule to forbid incidental take of wolves caused by traps and hounds to discourage their use because they could threaten the recovery of the experimental population. Commenters specifically requested that the Service forbid the use of poisons, such as sodium cyanide and Compound 1080 in wolves' range or in their potential future range. One commenter noted that the practice of hounding, or hunting with hounds, in Colorado could increase the likelihood of unintended or illegal take. This commenter suggested the Service exclude hounding from allowable incidental take included in the rule and work with the State to revise hounding regulations to reduce potential impacts to wolves.

**Representative Quote:** In short, hounding in Colorado occurs year-round and is commonplace on public and private lands, and for furbearer hunters, CPW permits the use of an unlimited number of hounds. These policies set up hunters for the illegal take of wolves and the FWS must do more to work with CPW to tighten state hounding regulations. CPW's liberal hounding regulations create unacceptable risks for wolves and for their recovery. These permissive regulations set wolves up for take in likely unexpected numbers. For example, as we witnessed during the February 2021 Wisconsin wolf trophy hunt, where wolf hunting with hounds was permitted, hounds maimed or outright killed wolves. Wisconsin DNR appeared to hide the numbers of wolves maimed or killed, but as we later gleaned from tribal members who could not openly speak about this after they had retrieved wolves' bodies, the toll was considerable. Many tribal members were horrified by the desecration. On the other hand, wolves are intolerant of other canids in their territories and will attack and kill hunting hounds" especially over bear bait piles. Sending hounds into wolves' territories especially during wolves' breeding season, will sow chaos.

**Representative Quote:** Because the use of traps and snares presents an unacceptable risk of causing harmful take of wolves, it should be excluded from the 10(j) rule's exception for incidental take in order to discourage their use where they would threaten the recovery of the experimental population.

**Representative Quote:** INCIDENTAL TAKE OF WOLVES CAUSED BY TRAPS AND HOUNDS SHOULD NOT BE PERMITTED. The Proposed Rule provides that "any person may take a gray wolf if the take is incidental to an otherwise lawful activity, if reasonable due care was practiced to avoid such taking, and such taking was reported within 24 hours.106 Colorado law permits certain methods

of taking other species hound hunting and, with special agency permits, trapping that pose a high and unavoidable risk of taking wolves. Because it is impossible to exercise “due care” to avoid taking a wolf when carrying out these activities in wolf range, the Service should explicitly exclude them from the 10(j) rule’s blanket exception for incidental take (as the Proposed Rule currently does for shooting a wolf as a result of mistaking it for another species). There is no conceivable benefit to the conservation of the population associated with permitting incidental take caused by hound hunting and trapping and therefore no legal justification for the Service to elect to expose non-target wolves to these inherently high-risk activities under the 10(j) rule.

**Representative Quote:** Incidental take of non-target wolves in traps or snares should be prosecuted. - Predator poisons including sodium cyanide and Compound1080, which are administered by the USDA-Wildlife Services on private lands, should not be permitted for use in wolves’ range or potential future range.

**Response:** While regulating State hunting practices is beyond the scope of this rulemaking process, the State cannot authorize hunting of the gray wolf as long as the species (including the population in Colorado) is listed under the ESA. The 10(j) rule does not authorize incidental take of reintroduced gray wolves associated with the use of traps, poisons, or hounds. Trapping, capture, hunting, and pursuing are all prohibited forms of take, as described in section 9 of the ESA. Authorization to conduct these activities while the gray wolf is listed must be obtained through an exemption issued by the Service to the take prohibitions.

**CONCERN STATEMENT 39:** Commenters requested that the Service change the definition of “livestock producer” from “a person that is actively engaged in farming/ranching and that receives a substantial amount of total income from the production of livestock” to “a person that is actively engaged in farming/ranching and receives income from the production of livestock” because many agricultural operations are diversified in Colorado and the term “substantial amount” may be limiting.

**Representative Quote:** Livestock Producer - defined as a person that is actively engaged in farming/ranching and that receives a substantial amount of total income from..... The amount of income that person receives from livestock production has nothing to do with whether or not they produce livestock. Additionally, what qualifies as “substantial” is ambiguous. This income requirement should be removed from the definition.

**Representative Quote:** I would recommend the definition of Livestock Producer be changed because the current definition, “a person that is actively engaged in farming/ranching and that receives a substantial amount of total income from the production of livestock” does not accurately reflect the reality of agriculture within the state of Colorado much less livestock production. There are places in Colorado where agriculture is diversified, and livestock may not provide a substantial amount of the total income for that operation. There are 39,000 identified farms and ranches across the state, most of which produce some sort of livestock. According to the USDA Economic Research service 96% of the farms and ranches rely on some off-ranch income. On those family farms, the amount of their total which comes from off-ranch sources in 82%. I recommend that the following words be stricken from the definition, “that, “a substantial amount of total. It would then read, Livestock Producer is a person that is actively engaged in farming/ranching and receives income from the production of livestock.

**Response:** The definition of livestock producer has been revised in the final rule to “a person that is actively engaged in farming/ranching and that receives income from the production of livestock.”

**CONCERN STATEMENT 40:** Commenters requested the Service clarify the definition of problem wolf, since “calendar year” implies a wolf attacking in December and a month later in January might not count as a problem wolf. Commenters suggested changing the language to "within any 12-month period."

**Representative Quote:** In the definition of Problem Wolf would recommend for clarity two changes. It reads “wolves that we or our designated agent confirm to have attacked any other domestic animals on private land twice within a calendar year. I read this to mean that attacks on allotments would not be counted toward determining the wolf to be a problem wolf. When you use the term calendar year, I read that to mean January through December. That would mean, if a wolf attacked in December of 2023, and then attacked in January of 2024, the wolf could not be determined to be a problem wolf. If it was not the intent to leave out wolf attacks on public lands or to restrict the counting to a calendar year to merely define a problem wolf as wolves that we or our designated agent confirm to have attacked any other domestic animals twice within a 12-month period.

**Representative Quote:** There is also a potential timing issue if “calendar year” as used in the definition of “problem wolves” is interpreted literally. A depredation in January of year 2 would not be in the same calendar year as December of year 1. It would be clearer if the timing was described as “within a 12-month period.”

**Response:** A calendar year is the preferred method to identify wolves as repeatedly depredating animals and is a defined period for data collection and monitoring purposes. In other states, accurate recording of wolf depredations on a continuous basis has proven to be impractical because wolf populations expand and contract naturally. Note that the term “problem wolves” has been updated to “repeatedly depredating wolves” in the final rule.

**CONCERN STATEMENT 41:** Commenters asked for the problem wolf definition to include wolves who have depredated on livestock once rather than twice.

**Representative Quote:** Moffat County requests the definition of a problem wolf be recharacterized. Since problem wolves being present are the standard for take, lethal, and non-lethal harassment, the definition of a problem wolf is critical to be accurate. Moffat County requests the standard of 2 documented attacks on domestic animals within a 12-month time frame be lowered. One attack within 12 months or two within 24-months would be more adequate. As wolf populations increase in Colorado, it will be more likely that wolf attacks will not be caught and documented, and problem wolves will cause livestock harassment without being designated a problem wolf. The definition of a problem wolf should give the livestock operator maximum ability to protect his herd, and a 2-attack standard should be reevaluated.

**Representative Quote:** The Proposed Rule defines “Problem wolves” as “wolves that we or our designated agents confirm to have attacked any other domestic animals twice within a calendar year are considered problem wolves for purposes of agency wolf control actions. I would ask that this wording be changed to any wolf that has attacked a domestic animal once within a calendar year be considered a problem wolf for purposes of agency wolf control actions. This does not allow for a problem wolf to train the young members of the pack to attack domestic animals.

**Representative Quote:** The Proposed Rule defines problem wolves: "wolves that we or our designated agents confirm to have attacked any other domestic animals twice within a calendar year are



considered problem wolves for purposes of agency wolf control actions." I would ask that this wording be changed to any wolf that has attacked a domestic animal once within a calendar year be considered a problem wolf for purposes of agency wolf control actions. Ironic that a domestic dog only gets one bite, but we'd consider clemency to a wolf. A dog who bites is put down. A wolf should be also. Defining a problem wolf as one domestic animal attack also means that problem wolf will not have the opportunity to teach the young members of the pack about the vulnerability of domestic animals.

**Response:** The term "problem wolf" has been updated to "repeatedly depredating wolf" in the final rule. The term "repeatedly depredating wolf" is meant to identify wolves that present a significant risk to the health and safety of livestock. The Service does not consider a single depredation event as reaching this threshold of significant risk. A landowner may however request a "repeated depredation" written take authorization, issued at the Service's discretion, to take wolves on their private land if the landowner has had at least one depredation by wolves on livestock.

**CONCERN STATEMENT 42:** Commenters stated that language forbidding artificial or intentional feeding of wolves should be added and noted if evidence of intentional feeding is found, the wolf should not be considered a problem wolf.

**Representative Quote:** Furthermore, when determining the status of "problem wolves," language from the NRM 10(j) rule should be added to clarify: "No evidence of artificial or intentional feeding of wolves can be present. Improperly disposed livestock carcasses located in the area of depredation will be considered attractants. On Federal lands, removal or a decision on the use of such attractants must accompany any control action. If livestock carrion or carcasses are not being used as bait for an authorized control action on Federal lands, it must be removed or otherwise disposed of so that they will not attract wolves" (USFWS 1994).

**Response:** As stated in the rule, the Service or its designated agent will consider any evidence of unusual attractants or artificial or intentional feeding of wolves before carrying out harassment, nonlethal control measures, relocation, placement in captivity, or lethal control of repeatedly depredating wolves. Note that the term "repeatedly depredating wolves" is used in the final rule, replacing the term "problem wolves". Additionally, private landowners may only take wolves on private land if there is no evidence of intentional baiting, feeding, or deliberate attractants of wolves. The Service has added language to the rule prohibiting the use of attractants or intentional feeding of wolves for the purposes of attracting wolves.

**CONCERN STATEMENT 43:** Commenters asked the Service to add harassment and stalking of people and domestic animals to the definition of a problem wolf, along with livestock.

**Representative Quote:** 48 (rule) "Problem wolves." Wolves that we or our designated agents confirm to have attacked any other domestic animals twice once within a calendar year or are stalking/harassing domestic animals or people are considered problem wolves for purposes of agency wolf control actions." Comment is asking twice to be changed to once and the text "or are stalking/harassing domestic animals or people" to be added.

**Response:** The definition of repeatedly depredating wolf relates to the act of depredation of livestock. The presence of wolves and a perception of "stalking" do not necessarily present a significant risk to

the health and safety of livestock or people. Note that the term “repeatedly depredating wolves” is used in the final rule, replacing the term “problem wolves.”

*CONCERN STATEMENT 44:* Commentors requested clarity about depredation events on public lands, specifically if depredation on public lands would count toward determining if a wolf is a problem wolf and asked for the definition to be updated to include attacks on federal grazing allotments and Tribal land.

**Representative Quote:** Problem wolf is defined as being on private land. Problem wolves will be on private, state, federal and tribal lands, therefore BoCC requests the final language read "Confirm to have attacked any domestic animals on private land and/or federal grazing permit land twice within the last twelve months."

**Representative Quote:** Problem wolf is defined as being on private land. Problem wolves will be on private, state, federal and tribal lands and therefore LeValley Ranch request that the final language read “confirm to have attacked any domestic animals on private and/or federal grazing permit land twice within the last 12 months. Areas within Delta and surrounding counties are very remote and will not be easily accessible in a timely manner by the service or designated agent, therefore LeValley Ranch requests language that allows for confirmation or reasonable evidence of loss when there is strong evidence of wolves in the area. In addition, the definition of a “problem wolf” and “in the act” needs to be clarified to reduce ambiguous language.

**Response:** In regard to clarity on depredation events on public lands:

- The definition of repeatedly depredating wolf is inclusive and does not specify where depredation occurs. “Repeatedly depredating wolves—Wolves that we or our designated agents confirm to have attacked domestic animals two or more times within a calendar year are considered repeatedly depredating wolves.” Note that the term “repeatedly depredating wolves” is used in the final rule, replacing the term “problem wolves.”
- Under table 1 of the rule, a livestock producer and/or public land permittee may be issued written take authorization under specified circumstances. The rule provides authorization for both private land and public land if the conditions are met.
- The ability to “take” a wolf on public lands is also dependent on any regulations of the public land agency related to firearm possession, use, or hunting on said lands.
- Clarification requested by commentors for “in the act” is provided in Concern Statement 45.

*CONCERN STATEMENT 45:* A commenter asked for an update to the definition of “in the act of attacking” to include other injuries to livestock, including running through a fence while a wolf is chasing them and heart and lung problems from being chased for long distances. Another commenter asked the Service to remove the phrase, “chasing, molesting, or harassing by wolves that would indicate to a reasonable person that such biting, wounding, grasping, or killing of livestock or dogs is likely to occur at any moment” because it would be too subjective and difficult to enforce. Another commenter asked the Service to remove the phrase “at any moment” from the definition.

**Representative Quote:** Definition of “In the Act of Attacking: The proposed rule would allow a landowner to take a wolf in the act of attacking livestock or dogs on their private land. It would also allow a public land permittee with livestock “who is legally using public land under a valid Federal land-use permit” to take a wolf in the act of attacking livestock or dogs. The rule defines attacking as the

actual biting, wounding, grasping, or killing of livestock or dogs, or chasing, molesting, or harassing (emphasis by NPCA) by wolves that would indicate that such biting, wounding, grasping, or killing is likely to occur. While NPCA supports the take of wolves that are in the act of killing livestock or dogs, the inclusion of harassing or molesting could lead to the killing of wolves that are merely near livestock. Wolves are frequently in the same area as natural prey or livestock without killing them. MacNulty et al. (2007) found that wolves watching a prey species “rarely led directly to attacking. The proposed rule should change “In the Act of Attacking” to “In the Act of Killing” and create stronger sideboards that create more clarity and less subjectivity between the act of merely being near livestock, which some could claim is harassment, to behavior that demonstrates the wolf is actually attacking. If a landowner is there to observe wolves near livestock, rather than lethal take, the landowner should be able to implement opportunistic harassment measures to further reduce the chance of livestock depredation.

**Response:** The definition of “in the act of attacking” is sufficient as written in the rule. The term as defined in the rule was written to provide flexibility to prevent an imminent depredation event. Changing the word “attacking” to “killing” would not allow livestock producers this flexibility. The rule requires reporting and evidence of the incident to ensure the wolf in question was taken appropriately.

*CONCERN STATEMENT 46:* A commenter asked that the Service not consider harassment as take and requested that it be defined separately.

**Representative Quote:** Confusion: Allowable forms of “take.” Harassment vs take. Should these be separated out on page 71-72? Pg. 71 - (5) Under Allowable forms of “take” of grey wolves, harassment is considered “take.” “Harassment” should not be under “take.

**Response:** The terms “harm” and “harass” are appropriately defined in the final rule and FEIS (appendix A).

*CONCERN STATEMENT 47:* A commenter asked the Service to clarify and give examples of the characteristics that a wolf would need to exhibit to justify taking that wolf.

**Representative Quote:** Page 52: (6) to remove wolves with abnormal physical or behavioral characteristics, as determined by the Service or our designated agent, from passing on or teaching those traits to other wolves. Comment: The Service should give examples of such “abnormal physical or behavioral characteristics,” if it knows what they are. Otherwise, (6) becomes a catch-all phrase left entirely to the Service or its agent.

**Response:** The description of abnormal physical or behavioral characteristics provided in the rule is appropriate and sufficient. Examples include, but are not limited to, hybridization (including with domestic dogs) and habituation to humans or infrastructure.

*CONCERN STATEMENT 48:* A commenter said the definition of “incidental take” should cover working dogs or other dogs that kill a wolf.

**Representative Quote:** 46 (rule) Incidental Take coverage should include livestock protection dogs or other dogs if they inadvertently kill a wolf; intentional harassment to deter wolves from threatening or

<p>attacking; and should cover mistaken identity since Colorado has a large population of wolf/dog hybrids, and young wolves may look similar to coyotes.</p>
<p><b>Response:</b> In the unusual case of a dog killing a wolf, the Service would consider that as an incidental take of the wolf unless the dog was purposefully sent to chase and attack the wolf. See Concern Statement 74 for issues related to take of wolves due to mistaken identity.</p>
<p><i>CONCERN STATEMENT 49:</i> Commenters indicated that livestock operators and landowners should be included as designated agents. Commenters also asked for greater clarity on the process for assigning designated agents. One commenter suggested that the definition be changed to “a Federal, State, or Tribal agency, or employee thereof, authorized or directed by the Service to conduct gray wolf management consistent with this rule”.</p>
<p><b>Representative Quote:</b> Designated Agents: The Proposed Rule defines “Designated agent” in two different ways: 1) “Designated agent” Federal, State, or Tribal agencies authorized or directed by the Service may conduct gray wolf management consistent with this rule; 2) “Designated agent” An employee of a Federal, State, or Tribal agency that is authorized or directed by the Service to conduct gray wolf management consistent with this rule.” To eliminate this inconsistency, CCA suggests that the Service combine its separate definitions of “Designated agent” to read, “[a] Federal, State, or Tribal agency, or employee thereof, authorized or directed by the Service to conduct gray wolf management consistent with this rule.</p>
<p><b>Representative Quote:</b> Designated Agent Should include livestock/landowners that have had confirmed depredation, or are in proximity of wolves that pose an imminent threat to the safety of humans, and domestic animals including pets.</p>
<p><b>Response:</b> The Service has revised the rule to ensure a single definition of “designated agent,” as an employee of a federal, state, or Tribal agency that is authorized or directed by the Service to conduct gray wolf management. As described in the rule, the process starts with a letter to the Service requesting designated agent status. The letter includes a proposal for the work to be completed and resume of qualifications for the work to be performed. The Service responds with a letter to the requester authorizing them to complete the work if they meet the required qualifications. Livestock operators and private landowners are afforded options in this rule, outside designated agent status, for managing conflicts.</p>
<p><i>CONCERN STATEMENT 50:</i> A commenter asked for a broader definition of livestock that includes any large animal raised for its meat.</p>
<p><b>Representative Quote:</b> The definition of livestock proposed in section 17.84(a)(4) of the Draft Rule (pages 69-70) will cover nearly all the animals raised by GCSA and its members. However, the definition should recognize that other animals are raised by livestock producers in Colorado, including but not limited to ungulate species, and the definition should be broad enough to include any large animal raised for its meat.</p>
<p><b>Response:</b> The definition of livestock provided in the proposed rule is appropriate and in accordance with previous 10(j) rules.</p>

<i>CONCERN STATEMENT 51: Commenters asked the Service to revise the definition of livestock guard animals to include animals other than dogs, like llamas or donkeys.</i>
<b>Representative Quote:</b> 48 (rule) “Livestock” Cattle, sheep, pigs, horses, mules, goats, domestic bison, and herding and guarding animals (alpacas, llamas, donkeys, and certain breeds of dogs commonly used for herding or guarding livestock). Livestock excludes dogs that are not being used for livestock guarding or herding.” Owners of non-working dogs should have the ability to protect their pets when on their private property or if their dog is under leash or voice control on federal lands. Allowing wolves to kill dogs without consequences creates a bigger safety problem for livestock guardian dogs, livestock, and humans. There must be rapid and effective response to wolves that threaten and attack domestic animals and people.
<b>Representative Quote:</b> Lethal Take: Although GCSA supports the lethal take provisions in the Draft Rule, GCSA believes they should be clarified to address some points of potential confusion: - 50 C.F.R. 17.84(a)(5)(iii)(A) should make it clear that lethal take is authorized if a gray wolf is attacking any livestock guard animal on private land, not just dogs. While the definition of “livestock” includes guardian animals other than dogs, subsection (5)(iii)(A) as written refers to gray wolves in the act of attacking “livestock or dogs (working or pet).” This could be read to suggest that lethal take is not permitted if wolves attack other guardian animals, such as llamas or donkeys. - Similarly, 50 C.F.R. 17.84(5)(iv) should make it clear that lethal take is authorized if a gray wolf attacks any guardian animal on public lands that are being lawfully used under a valid Federal permit, not just dogs. While the definition of livestock includes guardian animals, the reference to dogs in subsection 5(iv) could suggest that lethal take is not permitted if wolves attack other guardian animals on public lands. Because this does not appear to be USFWS’s intent, this subsection should be clarified.
<b>Response:</b> The definition of livestock provided in the rule has been revised and includes cattle, sheep, pigs, horses, mules, goats, domestic bison, and herding and guarding animals (alpacas, llamas, donkeys, and certain breeds of dogs commonly used for herding or guarding livestock).
<i>CONCERN STATEMENT 52: A commenter asked for the definition of private land to include leased private lands. A commenter asked for clarity on the current definition because it could include state and locally owned lands and could create confusion.</i>
<b>Representative Quote:</b> The proposed rule defines Private Land as all land other than that under Federal Government ownership and administration and including Tribal reservations. This definition will likely cause confusion as it includes all non-Federal lands such as state and locally owned lands.
<b>Response:</b> For the purposes of the rule, the Service treats both State- and local-owned (county and city) lands as private lands.
<i>CONCERN STATEMENT 53: A commenter asked the Service to clarify the definition of immediate and direct threat to human life. They asked the Service to explain what would be considered a threat and to ensure that a person’s fear when seeing a gray wolf would not be justification for lethally taking the wolf.</i>

**Representative Quote:** Furthermore, to avoid a circumvention on the prohibition of unlawful taking under the provisions of Table 1 allowing for the taking of grey wolves “in defense of human life” and “in the act of attacking livestock” on private or public land, the regulations should further clarify what level of “demonstration” is required to substantiate a claim that there was a direct threat to human life or that the gray wolf was in the act of attacking livestock or dogs, as permitted by the proposed regulation. Additionally, although the language is not facially vague, many landowners may confuse an “immediate and direct threat” to human life to mean their personal fear at seeing a grey wolf, rather than it actually presenting a danger to them, and this language should be clarified to make more explicit that the grey wolf must be beginning an attack on a person to justify such a taking in defense of human life, rather than the more vague “threat” language that is ripe for misinterpretation and abuse. This clarification will again serve the purpose of the regulation by conserving the population of gray wolves by preventing unnecessary takings and mitigating the possibility of provoking attacks that otherwise would not have occurred.

**Response:** The definition of "take in defense of human life" provided in the rule is appropriate and in accordance with previous 10(j) rules. The rule specifies that the taking of a wolf without an immediate and direct threat to human life may be referred to the appropriate authorities for prosecution.

**CONCERN STATEMENT 54:** A commenter asked the Service to clarify the definition of intentional harassment to ensure intentional harassment does not injure or inadvertently kill wolves.

**Representative Quote:** Intentional Harassment: In order to deter livestock depredation on private or public lands, the proposed rule would allow the Service to issue written take authorization for deliberate or pre-planned harassment of wolves in a nonlethal, injurious manner by a landowner or public land permittee. In order to increase the effectiveness of the intentional harassment action to deter depredation and ensure the action does not lead to injury that could result in unintentional fatality, the Service should define and limit the actions permitted as “intentional harassment.

**Response:** The rule defines intentional harassment as the deliberate and pre-planned harassment of wolves, including by less-than-lethal munitions that are designed to cause physical discomfort and temporary physical injury but not death. The rule provides examples of allowable less-than-lethal munitions. Less-than-lethal munitions are an effective tool to deter depredation.

**CONCERN STATEMENT 55:** A commenter asked the Service not include non-working pets and domestic bison in the domestic animal definition for consistency with the State Plan.

**Representative Quote:** The definition of Livestock deviates from the list of livestock as defined in CRS 33-2-105.8. Domestic bison are not included in the definition of livestock in CRS 33-2-105.8. Matching these definitions (i.e., removing bison from the 10j definition) is critical to eliminate confusion.

**Representative Quote:** Definitions: Domestic Animals includes pets within the definition. CPW requests that domestic, non-working pets not be included in this definition. Our draft regulations do not include an ability to take wolves when a conflict with domestic pets occurs, and having consistent rules and regulations between federal and state agencies is important in this issue. Livestock includes domestic Bison. Definition of livestock in CRS 33-2-105.8 does not include domestic bison. Matching these definitions (removing bison from the 10j definition) is critical for our purposes.

**Response:** During the public comment period, the Service received comments both to include and exclude domestic bison in the definition of livestock. The Service will continue to include domestic bison in the definition of livestock to be consistent with the State’s definition of livestock (Colorado Revised Statute § 35-50-103(7)). To avoid confusion and be consistent with take authorized under state law, the rule has been revised to change the definition of domestic animals to include only working dogs, not pets.

**CONCERN STATEMENT 56:** Commenters questioned what proof would be required before purposeful take would be authorized. Commenters requested that the Service require specific proof of a wolf predating on livestock to authorize take of that wolf. Some commenters asked for photos, scat, and hair samples to be permitted as evidence of an attack if a depredation cannot be directly linked to wolves. Other commenters said the rule should forbid tampering or interfering with carcasses from potential wolf depredation events to preserve evidence. A commenter asked the Service to allow evidence other than livestock carcasses as proof of depredation because bears and other wildlife can eat carcasses and remove evidence.

**Representative Quote:** Evidence of Loss Standard: The Proposed Rule states, “to preserve physical evidence that the livestock or dogs were recently attacked by a wolf or wolves, the carcass and surrounding area must not be disturbed. The Service or designated agent must be able to confirm that the livestock or dogs were wounded, harassed, molested, or killed by wolves. The take of any wolf without such evidence of a direct and immediate threat may be referred to the appropriate authorities for prosecution.” “The Service or designated agent must be able to confirm that the livestock or dog were wounded, harassed, molested, or killed by a wolf or wolves. The carcass of any wolf taken and the area surrounding it should not be disturbed to preserve physical evidence that the take was conducted according to this rule.” There will likely be cases where a kill cannot be located, or a carcass is naturally disturbed before a Designated agent is able to investigate and confirm the kill by wolves, but strong evidence of wolf presence in the area remains, i.e., tracks, scat, and/or fur. To ensure consistency with the Colorado Wolf Restoration and Management Plan, CCA requests that the Service amend the Proposed Rule to require the same preponderance of evidence of loss standard: “A preponderance of evidence, including dead or injured livestock or working dogs, or other physical evidence should be present, which would lead a reasonable person to believe that a depredating wolf or wolves were involved, or that a wolf attack on livestock or dogs was occurring or imminent.

**Representative Quote:** I urge that lethal management be the absolute last resort, and that it be used only if incontrovertible evidence confirms that the livestock damage or loss was due indeed to wolves. And then, only the wolves identified as preying on livestock should be targeted, and only by agents of the FWS.

**Representative Quote:** There will be cases where a wolf kill would not be located in an area that is easily accessible and agency staff will not be able to get to the carcass in time to confirm the kill by wolves. However, there may be strong evidence of wolf presence that the rancher could verify by taking photos and scat and/or hair samples from the site. Therefore, we request language that allows for confirmation or reasonable evidence of loss when there is strong evidence of wolves in the area.

**Response:** Concern Response 21 addresses the procedures for a “repeated depredation” take authorization (previously called “shoot-on-sight” take authorization in the proposed rule) and responses to wolves caught in the act of attacking livestock. The 10(j) rule provides the standard for what conditions need to be met before purposeful take would be authorized (see table 1 in the final rule)

<i>CONCERN STATEMENT 57: Commenters requested that the language related to animal husbandry in alternative 1 under “Agency take of wolves that repeatedly depredate livestock” be removed.</i>
<b>Representative Quote:</b> Pg viii Alt 1 Agency take of wolves that repeatedly depredate livestock: i,§ “(4) evidence that animal husbandry practices recommended in approved allotment plans and annual operating plans were followed.” i,§ Request the animal husbandry language be removed from all areas as noted in comments for page 75.
<b>Response:</b> As noted in the FEIS, animal husbandry practices, such as adjusting calving timing and location, increased human supervision by range riding over large grazing areas, and livestock guardian dogs are effective at minimizing livestock losses and thereby reducing wolf conflict with livestock operators. The Service believes that all nonlethal options for reducing wolf conflict should be used prior to using lethal take.
<i>CONCERN STATEMENT 58: Commenters requested that the Service update the language in alternative 1 under “Additional taking by private citizens on their private land” so that wolf depredations on neighboring properties can factor into the Service issuing “shoot-on-sight” authorizations.</i>
<b>Representative Quote:</b> Pg vi Alt. 1 Additional taking by private citizens on their private land. Similar to the public land issue noted above, it is important to include neighboring private property where at least one depredation has occurred. There will likely be situations where wolves kill on one landowner’s property and then attack on a neighboring property. Agency staff should be able to provide neighboring landowners the ability to take a wolf that has killed livestock and/or pets on the neighbors and has now moved to their property and is threatening to kill again.
<b>Response:</b> If caught in the act of attacking, landowners have the ability to defend their livestock from attack (see Concern Response 21). As it relates to depredations on neighboring lands and additional take authorizations, the Service believes the language in alternative 1 under “Additional taking by private citizens on their private land” is appropriate to address depredations on private land.
<i>CONCERN STATEMENT 59: Commenters asked the Service to clarify that baiting, attracting, and intentionally feeding wolves is illegal.</i>
<b>Representative Quote:</b> Page 51: The Service or our designated agent may carry out harassment, nonlethal control measures, relocation, placement in captivity, or lethal control of problem wolves. The Service or our designated agent will consider: (1) Evidence of wounded livestock, dogs, or other domestic animals, or remains of livestock, dogs, or domestic animals that show that the injury or death was caused by wolves, or evidence that wolves were in the act of attacking livestock, dogs, or domestic animals; (2) the likelihood that additional wolf-caused losses or attacks may occur if no control action is taken; (3) evidence of unusual attractants or artificial or intentional feeding of wolves; and (4) evidence that animal husbandry practices recommended in approved allotment plans and annual operating plans were followed. Comment: Is it not true that the use of unusual attractants or artificial or intentional feeding of wolves is illegal? Why is this issue lumped in with wolf attacks and management



<p>procedures? Recommendation: It should be made clear that this practice, baiting, is illegal and may be prosecuted.</p>
<p><b>Response:</b> Intentional baiting, feeding, or deliberate attractants of wolves are prohibited under section 9 of the ESA. The Service has added language to the rule prohibiting the use of attractants or intentional feeding of wolves for the purposes of attracting wolves, as noted in Concern Response 42.</p>
<p><i>CONCERN STATEMENT 60:</i> Commenters requested the Service provide examples of what would be considered incidental take, such as killing a wolf while driving on a highway.</p>
<p><b>Representative Quote:</b> Incidental take: We support this allowance for take, with the restrictions noted in the proposed rule, including 24 hour notice of such take. The prohibition on shooting a wolf through “mistaken identity” is a necessary addition, there is no excuse for mis-identifying a wolf as another species, and any uncertainty should lead the shooter to refrain. It may be useful for the Service to provide a non-comprehensive list of possible situations that would be considered incidental take, such as striking and killing a wolf on a highway.</p>
<p><b>Response:</b> Incidental take is defined in the rule as take that occurs incidental to an otherwise lawful activity, if reasonable due care was practiced to avoid such taking, and such taking was reported within 24 hours. As such, any take that occurred as a result of an activity that meets this description would be considered incidental. The Service does not believe any additional clarification is necessary.</p>
<p><i>CONCERN STATEMENT 61:</i> Commenters suggested that the Service include an escape clause in the 10(j) rule.</p>
<p><b>Representative Quote:</b> The 10(j) rule should include an “escape clause.” The Service should include an “escape clause” that authorizes the State to lethally remove all members of the experimental population if its “nonessential” status is at risk. The Service has included such escape clauses in numerous other experimental population rules. This provision is very appropriate here, given that Colorado’s wolf population is not being established to further any necessary conservation objectives, and removal of the population would not impact the status of wolves throughout the lower 48 states, which have long met recovery objectives and no longer meet the standards for endangered or threatened status under the ESA. See 85 Fed. Reg. 69778 (Nov. 3, 2020) (final rule delisting wolves throughout lower 48 states).</p>
<p><b>Response</b> If the wolf population in Colorado changes to the degree that the status of the population under the ESA needs to change, the Service would be required to do additional rulemaking to change that status. Also, establishment of a 10(j) rule requires that the rule further the conservation of the species, which this 10(j) rule does.</p>
<p><i>CONCERN STATEMENT 62:</i> Commenters requested the rule use the terms “killing” and “harassment” instead of take.</p>

<p><b>Representative Quote:</b> 1) Whereas “conservation” has historically been defined as “the act of preserving, guarding, or protecting; the keeping (of a thing) in a safe or entire state,” [1913 Webster], and is so considered in the Endangered Species Act, the consultant, at the behest of the Fish and Wildlife Service (FWS) in cooperation with the Colorado Parks and Wildlife Commission (CPW), has redefined conservation to include killing and harassment, euphemistically called takings. The correct English word should be used throughout the document, not a bureaucratic get-around promoted by FWS and CPW.</p>
<p><b>Response:</b> The terms “conservation” and “take” are both defined in section 3 of the ESA. Both terms are used appropriately in the context of the rule.</p>
<p><i>CONCERN STATEMENT 63:</i> Commenters asked the Service to clarify that pursuit of wolves with all-terrain vehicles, on horseback, or by other measures would only be permitted to prevent livestock depredation to prevent people from chasing wolves indiscriminately.</p>
<p><b>Representative Quote:</b> In the preamble, under Regulatory Framework, the draft rule notes that the ESA defines “take” of listed species to include pursuit. This should not be included as a form of take as pursuit is an important strategy for non-lethal conflict reduction between livestock and wolves. For example, livestock owners should be able to chase wolves away with ATVs or on horseback or otherwise “pursue” them, but only in order to protect livestock.</p>
<p><b>Response:</b> The Service has adequately addressed this topic in the final rule. “Pursuit” is listed under the definition of take in the ESA. As such, all forms of pursuit are not permitted unless described in the rule under the allowable forms of take (table 1).</p>
<p><i>CONCERN STATEMENT 64:</i> Commenters asked the Service to clarify that passive and proactive deterrents like flashing lights and fladry should be considered opportunistic harassment, not intentional harassment, and that no written take authorization should be required to use passive deterrent measures.</p>
<p><b>Representative Quote:</b> Harassment: The Draft Rule should clarify in 50 C.F.R. §17.84(5)(i) &amp; (ii) that passive, proactive deterrents such as flashing lights or fladry are considered opportunistic harassment, not intentional harassment, when placed on private property or around fenced areas where livestock are kept, and that no prior written take authorization is required to employ passive deterrent measures.</p>
<p><b>Response:</b> The final rule sufficiently defines opportunistic harassment. Table 1 states that anyone may conduct opportunistic harassment of any gray wolf in a non-injurious manner at any time without written authorization from the Service.</p>
<p><i>CONCERN STATEMENT 65:</i> Commenters requested that the Service rename shoot-on-sight permits to "Chronic Depredation Permits" for consistency with the State Plan.</p>

**Representative Quote:** The CPW regulations refer to permits authorizing take of chronically depredating wolves as “Chronic Depredation Permits” rather than “shoot on sight” permits because we think “shoot on sight” is confusing, as livestock owners may also “shoot on sight” wolves caught in the act of attacking livestock or dogs. Please consider eliminating the phrase “shoot on sight” and replacing it with “Chronic Depredation Permits” to provide more clarity to the public.

**Response:** “Shoot-on-sight” written take authorization was renamed to “repeated depredation” written take authorization in the final rule. The Service prefers a slightly broader approach because “chronic depredation” refers to repeated events over a period of time, whereas the framework of the rule relies on a lower threshold for depredation events.

**CONCERN STATEMENT 66:** Commenters asked the Service to clarify the term “regulatory standards” in this sentence in the DEIS, “States or Tribes must submit a science-based report showing the action meets regulatory standards.”

**Representative Quote:** 3 SCI requests that the Service clarify what is meant by “regulatory standards” in the provision stating that “States or Tribes must submit a science-based report showing the action meets regulatory standards” or “meets the regulatory standards.” DEIS at ix, 2-13, 2-19, 2-25. SCI reads this provision to mean State or Tribal regulatory standards, i.e., the provisions in Colorado’s wolf management plan. The DEIS should use that language to be clear.

**Response:** The Service removed the term “regulatory standard” from the FEIS. The provision to allow take of wolves having a negative impact on ungulates is limited to the Ute Mountain Ute and Southern Ute Tribal reservation lands in Colorado and is defined in the final rule. In order to exercise this provision, certain requirements must be met, which are detailed in the response to Concern Statement 12.

**CONCERN STATEMENT 67:** Commenters requested the rule clarify the differences between take, lethal take, and harassment.

**Representative Quote:** The following is confusing, and the Districts ask language to be clarified: - Allowable forms of “take” Harassment vs take Should these be separated out on page 71 72? o Pg. 71 - (5) Under Allowable forms of “take” of grey wolves, harassment is considered “take” o Pg.72 (ii) Intentional harassment – The Districts recommend “agent may issue written harassment authorization valid for” o Pg. 77 (6) Under “Reporting requirements, “take” and “harassment” are differentiated. o Pg. 77 (6)(i) now this paragraph combines them again. “Report any take of wolves, including opportunistic harassment or intentional harassment” – “Harassment” should not be under “take” consider calling it “non-lethal take” and “lethal take.”

**Response:** The Service has sufficiently defined these terms in the rule. Lethal take (kill) and harass are prohibited forms of “take” as defined under section 3 of the ESA. Harass is further defined in Service regulations at 50 CFR § 17.3.

<p><i>CONCERN STATEMENT 68: Several commenters requested more stringent reporting requirements, while others requested more permissive reporting requirements</i></p>
<p><b>Representative Quote:</b> Reporting Requirements: The requirement for the report of lethal or injurious take within 24 hours may be impractical. Some backcountry producers may be several days away from having the ability to make this report. We suggest that language be changed to state: “Any lethal or injurious take must be reported to the Service or a designated agent within 24 hours unless impractical, but within 72 hours.”</p>
<p><b>Representative Quote:</b> We are in favor of the flexible reporting requirements in the proposed rule whereby opportunistic and intentional harassment of wolves will be reported to FWS within 7 days as opposed to the 24-hour notification required by the state. We appreciate that the FWS can issue a written take authorization for limited duration of 45 days or less, where the state issues a limited duration permit only if state or federal agents are unable to implement lethal control actions.</p>
<p><b>Representative Quote:</b> Taking of wolves on public land should be completely restricted. If there is a take strict rules should apply including providing evidence and implementing a 24 hour reporting rule.</p>
<p><b>Response:</b> The reporting requirements as defined by the rule are appropriate for assessing the success of the reintroduced populations and management actions authorized by the 10(j) rule.</p>
<p><i>CONCERN STATEMENT 69: Commenters asked the Service to integrate the State Plan into the rule framework as long as the plan uses the best available science. Commenters noted differences between the State Plan and the Service’s rule and asked for inconsistencies to be explained or addressed. A commenter asked for rule to clarify that the State Plan can be more restrictive than the Service’s rule.</i></p>
<p><b>Representative Quote:</b> The inconsistencies between the Proposed 10(j) Rulemaking and the Colorado Wolf Restoration and Management Plan (Colorado Plan) need to be addressed and reconciled to ensure consistent implementation and management. Specific areas of inconsistency include definitions of “problem wolves” and “designated agent.”</p>
<p><b>Representative Quote:</b> In the same section, under Designated agent, it states that with the approval of an MOA, Colorado will be able to “assume lead authority for wolf conservation and management” within its jurisdiction and “implement the portions of their State wolf management plans that are consistent with this proposed rule.” Colorado may implement any parts of its state plan that are not consistent with the 10(j) rule, as long as they are more restrictive than the 10(j) rule. This is based on Section 6(f) of the ESA, which allows states to enforce laws or rules that are more restrictive than “the exemptions or permits provided for in” the ESA. Please clarify this in the final rule.</p>
<p><b>Representative Quote:</b> Proposition 114 requires Colorado Parks and Wildlife (CPW) develop a wolf reintroduction plan that will” restore and manage gray wolves in Colorado, using the best scientific data available. United States Fish and Wildlife Service (USFWS) should integrate the CPW developed plan into the proposed 10(j) management rule framework only to the extent that such plan complies with the best available science.</p>
<p><b>Response:</b> The final 10(j) rule is intended to provide the federal legal framework and authorize take pursuant to the ESA to support the State’s wolf reintroduction effort. Where possible, and respecting the differing authorities of the Service and the State, the Service has reviewed and incorporated consistency with the State Plan in the Service’s final rule as appropriate.</p>

<p><i>CONCERN STATEMENT 70: Some commenters asked for neighboring states to be granted 10(a)(1)(A) permits to give them the flexibility to return dispersing wolves to Colorado.</i></p>
<p><b>Representative Quote:</b> Finally, as discussed above, DWR has baseline data for wild ungulates throughout the state and is therefore uniquely equipped to evaluate the effect of wolves on ungulate populations. DWR is also committed to increasing ungulate monitoring efforts for populations near the proposed reintroduction zones. This information will help to inform proper wolf management into the future and allow for early detection of problematic wolves. Consistent with the requested capture and take provisions, Utah asks for express authority in the 10(a)(1)(A) permit for Colorado's neighboring states to immediately remove any wolves that affect ungulate populations within Utah.</p>
<p><b>Representative Quote:</b> Utah needs a mechanism to remove wolves from the state and return them to Colorado. It is entirely possible for a 10(j) plan to include management restrictions, protective measures, or other special management concerns to ensure isolation and/or containment of an experimental population. Such management restrictions were implemented in the case of the red wolf and Mexican wolf and should be considered here because of the proximity to other experimental and existing wolf populations. To ensure such containment and as discussed above, Utah, along with the states of Arizona and New Mexico, requests full authority, pursuant to a 10(a)(1)(A) permit under the ESA, to capture wolves dispersing into the state and immediately return those wolves to Colorado. Further, Utah asks for clear language, in both the Final Environmental Impact Statement and the Final Rule associated with the 10(j), establishing that all gray wolves dispersing into Utah will be considered part of Colorado's experimental population and allowing for immediate capture and return to Colorado.</p>
<p><b>Response:</b> Issuance of 10(a)(1)(A) permits is a separate action and outside the scope of this rule. Use of 10(a)(1)(A) permits is a foreseeable future action that is addressed in the FEIS under "Cumulative Impacts."</p>
<p><i>CONCERN STATEMENT 71: A commenter asked the Service to allow lethal management if big game population levels fall by 5 percent or more from population levels prior to the reintroduction and to allow hunting of gray wolves when populations achieve the 2-2-2 rule. A commenter requested additional management flexibility to allow the Service and its designated agents the authority to haze, relocate, or kill wolves that are adversely affecting other wildlife species and to stop migration across state and Tribal boundaries.</i></p>
<p><b>Representative Quote:</b> I would ask that you consider adopting Alternative Concept 1 for the Colorado Parks and Wildlife request for a 10(j) rule concerning the reintroduction of Grey Wolves in Colorado, with the following provisions: 1. Lethal control by the landowner/livestock grower for any Grey Wolf caught in the act of livestock deprivation, including pets and working dogs. 2. Lethal management at any time if any big game population falls by 5% or more below the current (pre-wolf) management objectives. 3. Grey wolf management by means of hunting is allowed when Grey Wolf populations achieve the 2,2,2 rule.</p>
<p><b>Representative Quote:</b> 45 (of rule) "Management of the nonessential experimental population would allow reintroduced wolves to be hazed, killed, or relocated by the Service or our designated agent(s) for domestic animal depredations, adversely impacting other wildlife species, or stopping migration across</p>

state or tribal boundaries.” Comment suggests adding the text "adversely impacting other wildlife species, or stopping migration across state or tribal boundaries.

**Response:** Hunting of wolves is not allowed while the species is listed under the ESA. Concern Response 12 addresses how an ungulate provision has been incorporated into the final rule and FEIS.

### ***ILLEGAL TAKE***

**CONCERN STATEMENT 72:** Commenters requested the Service revise the rule to hold people accountable for illegal take. One commenter suggested the Service set limits on the number of wolves that can be lethally taken in a certain timeframe. One commenter suggested punishing illegal take through fines, imprisonment, and seizing of the firearm. Commenters suggested a lack of enforcement of take provisions has led to more illegal taking in other reintroduced wolf populations. Commenters cited data or suggested studies that should be reviewed for inclusion in the FEIS.

**Representative Quote:** In the 1970s, wolves were reintroduced into the Rocky Mountain ecological system, but they allowed the trapping and killing of any wolf that preyed upon livestock if they were not in a protected area (Rocky Mountain Wolf Project, 2019). This at the time worked, and the population by the 2000s was a substantially healthier size. Due to this substantial increase, ranchers had more issues with their livestock being killed. With the EPA backing their Act and not allowing them to hurt them under the law, ranchers came to a peak and started illegally shooting them in large quantities. This will need to be addressed within this rule or we will have an incredibly similar situation happen with this round of reintroduction. Unfortunately, even though the EPA appears to be very strict regarding this act, the ranchers got away with murdering wolves in the early 2000s. This needs to be addressed immediately, as this will cause ranchers to not listen to the rules laid out by the EPA not only for the wolves but also for other things backed by the EPA if they know they won't receive any repercussions. This calls for the EPA to strengthen its laws regarding the Endangered Species Act. They did allow ranchers to kill wolves if they were hurting their livestock, but the quantity that was murdered is hard to believe they were all doing that. The EPA needs to mandate rules to how many wolves ranchers are allowed to killing a certain time span. Or set up cameras to prove their reasoning prior to killing entire packs. Holding ranchers accountable is the only means to protect the new wolf population.

**Representative Quote:** Any incidents should be thoroughly investigated by the USFWS and not solely by local law enforcement. Local law enforcement has shown time and again that they are subject to the effects of favoritism by landowners, local politics, etc. If such an incident is found to not fall under these circumstances, then the perpetrator should be punished by fine AND imprisonment AND loss of the firearm.

**Representative Quote:** Felony criminal penalties for killing wolves by any means should attach and include, but not be limited to, fines of at least \$10,000 per wolf killed or injured, a mandatory minimum prison sentence for the first offense of at least two (2) years, with credit only for time already served, and no credit or early release or parole/probation for good behavior or any other reason.

**Response:** The Service is committed to vigorous enforcement in appropriate cases where evidence exists that illegal killing or other forms of unauthorized take, as described in ESA section 9, occurred.

**CONCERN STATEMENT 73:** Commenters noted that individuals who lethally take a wolf while defending livestock, working dogs, or pets should not be prosecuted.

<p><b>Representative Quote:</b> It would also be unfair to prosecute a citizen who shoots a wolf while defending their prize property, whether it be award-winning or prime livestock, or a priceless working dog or a beloved pet. The citizens of Colorado must come first.</p>
<p><b>Representative Quote:</b> If a livestock protection dog injures or kills a wolf, no punitive action should be taken against the owner/agent. Similarly, if an owner of livestock or dog owner needs to harass (which may result in injury/death) a wolf to stop an encounter/attack, no punitive action should be imposed.</p>
<p><b>Response:</b> Table 1 of the rule describes how the Service would authorize specified individuals to lethally take wolves in the act of attacking livestock or working dogs on both public and private land. The Service removed authorization to take a wolf while defending a pet.</p>
<p><b>CONCERN STATEMENT 74:</b> Commenters noted that individuals who injure or lethally take a wolf while mistaking it for a coyote or another species should not be prosecuted or subject to any legal action, referencing the McKittrick Policy.</p>
<p><b>Representative Quote:</b> My two children just completed the Colorado Hunter Safety course, and we were all amazed how similar the coyote looks to the wolf. It would be unfair to prosecute a law abiding hunter who shoots a wolf while under the impression that it was a coyote. The Colorado Division of Wildlife photographs for distinguishing the two animals are almost identical images.</p>
<p><b>Representative Quote:</b> Accidental harvest of wolves due to mistaken identification while hunting should not be referred for prosecution, per the “McKittrick Policy.” The proposed rule states that “shooting a wolf as a result of mistaking it for another species is not considered accidental and may be referred to the appropriate authorities for prosecution.” 50 C.F.R. § 17.84(a)(5)(viii) (proposed). The Service’s conclusion contradicts the Department of Justice’s “McKittrick Policy” and should be removed from the 10(j) rule. The McKittrick Policy provides that incidental shooting of a listed species due to mistaken identity does not violate the ESA’s take prohibition because the shooter does not knowingly violate the law. Thus, criminal prosecution in such instances is not appropriate. The McKittrick Policy was previously challenged in a suit involving incidental take by hunters who mistake Mexican wolves for coyotes while lawfully coyote hunting. The Ninth Circuit Court of Appeals rejected this challenge to the Policy; thus, it should apply to incidental take of Colorado’s wolves. <i>WildEarth Guardians v. U.S. Dep’t of Justice</i>, No. 17-16677, 752 Fed. Appx. 421 (9th Cir. 2018). To be clear, SCI does not condone intentional illegal harvest of wolves or any other species, and the Service should refer for prosecution any such take that is not truly accidental and illegal. But as the Service has recognized, it is possible to mistakenly identify wolves as coyotes” even trained Service personnel have done so. And coyote hunters provide a valuable service to the State by helping maintain the ever-increasing coyote population. The reintroduction of wolves into Colorado, and the Service’s 10(j) rule, should not deter hunters from hunting coyotes.</p>
<p><b>Response:</b> Under the rule, take of a gray wolf is allowed if the take is incidental to an otherwise lawful activity and if reasonable due care was practiced to avoid such take and such take is reported within 24 hours. Hunters have the responsibility to identify their target before shooting. Shooting a wolf as a result of mistaking it for another species is not considered incidental and may be referred to the appropriate authorities for prosecution.</p>

***NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)***

<p><b>CONCERN STATEMENT 75:</b> Commenters expressed thoughts or opinions concerning the public involvement process for the EIS. One commenter questioned why the Service did not allow people to provide verbal comments at the public meetings for the DEIS. Another commenter questioned why public meetings during review of the DEIS were held on the Western Slope rather than in Front Range communities.</p>
<p><b>Representative Quote:</b> It is appalling that you would not take the time or expense that would be needed to hear in-person comments regarding Colorado's Wolf introduction. It's as if you think the wolf introduction is unimportant and the state of Colorado doesn't matter.</p>
<p><b>Representative Quote:</b> It appears that all of the public scoping meetings were held in areas where the majority of participants were expected to oppose wolf reintroduction. Considering the closeness of the vote for and against Proposition 114, such a choice of location appears to have been purposefully chosen to elicit support for what was to become Alternative 1 or Alternative 2, rather than the straight-forward No-action alternative. The Service should have held public meetings in Colorado's population centers, the Denver metro area, Colorado Springs, and Pueblo. The matter of wolf reintroduction is not only a Western Colorado issue as long as (a) the Colorado Parks and Wildlife Commission represents the entire state and (b) the majority of the lands where wolves would be reintroduced are federal and, hence, of interest to the entire nation.</p>
<p><b>Response:</b> Public comment was allowed during the review of the rule and DEIS through regulations.gov and through direct submission of comments to the Service. Three public meetings were held on the Western Slope of Colorado on March 14, 15, and 16, 2023, one public meeting was held in Golden, Colorado, on March 28, 2023, and a virtual public meeting was held on March 22, 2023. The majority of in-person public meetings were held in Western Colorado because that is where wolves will be released.</p>
<p><b>CONCERN STATEMENT 76:</b> Commenters questioned why the EIS does not analyze the potential impacts of wolf reintroduction or why a separate EIS has not been completed to analyze wolf reintroduction. Commenters stated that since the Service has jurisdiction over the implementation of the ESA, including the conservation, transportation, release, and/or reintroduction of listed species under or in the absence of Section 6 Cooperative Agreements, the EIS should address Colorado's wolf reintroduction. One commenter asked the Service to approve regulations that would require a NEPA assessment of the reintroduction. One commenter noted that the State should be required to complete an EIS because wolves reintroduced to Colorado would quickly disperse to federal lands in the state. One commenter stated that no gray wolves should be reintroduced until the NEPA process is completed for the reintroduction and a 10(j) rule is in place.</p>
<p><b>Representative Quote:</b> The state of Colorado should not be allowed to establish a nonessential experimental population of Gray Wolves until a proper environmental impact study is completed in accordance with the National Environmental Protection Act (NEPA). Introducing an apex predator, such as Gray Wolves, onto the landscape after an absence of over 50 years is a process that must not be rushed or executed with haste. It must proceed in a deliberate and thoughtful manner, ensuring that all potential impacts are clearly considered and mitigation measures are identified. Colorado's current wolf introduction and management plan identifies multiple Gray Wolf release sites, all on Colorado state or private lands. This is an intentional decision to avoid completing the required environmental impact studies for the release of Gray Wolves on federal public lands. However, it is evident that Gray Wolves will quickly move onto nearby federal lands, as the majority of western Colorado is made up of</p>



federal public lands. The state of Colorado must be required to complete an environmental impact study prior to the introduction of Gray Wolves. The completion of an environmental impact study will allow all stakeholders and decision makers to better understand the impacts of Gray Wolf introduction, prepare mitigation measures, and ensure a successful introduction effort.

**Representative Quote:** Please approve regulations that require an environmental impact assessment that will evaluate the total impact on all other species prior to allowing introduction of grey wolves.

**Representative Quote:** The reintroduction of gray wolves to Colorado's Western Slope is a complex issue that demands careful management and a full NEPA of the affect it will cause the state as a whole.

**Representative Quote:** The state of Colorado must be required to complete a National Environmental Policy Act (NEPA) study. The Colorado Parks and Wildlife (CPW) is charged with the plan to place wolves on the landscape. They claim they do not need to do NEPA since they plan to do the releases on private and state lands. However, as repeatedly referenced in the USFWS DEIS, the wolves will naturally and quickly disperse to other locations in Colorado ,including federal lands. References to the federal presence in this proposed introduction appear throughout the DEIS. "Development of the 10(j) rules is considered a major federal action requiring review under the NEPA Act of 1969." 2-4 refers to the dispersal distance which includes federal lands. 3-8 again refers to dispersal on and across federal lands. 3-9 refers to dispersal throughout the state. 25 confirms that CPW's wolf release is expected to include "high dispersal" across Colorado, including inevitably federal lands. 27 again refers to "wolves released. . . are more likely to disperse immediately from the release site." 39 "A large proportion of Colorado is composed of publicly owned Federal Lands (approximately 36%)" Further it states that "Bureau of Land Management manages approximately 35 per cent of public land in Colorado, much of which is located in the western portion of the State where reintroduction efforts for gray wolves will take place." CPW and USFWS's own documents openly state that wolves will be managed on federal lands, clearly requiring NEPA analysis. No wolves should be introduced until NEPA is completed and the 10(j) Rule is in place.

**Response:** The "Background" section of the FEIS (pages 1-3 and 1-4) details the unique nature of this planning effort and the State of Colorado's role as the entity performing the reintroduction of the gray wolf. The reintroduction of gray wolves to the State of Colorado is a State-led action that does not require the approval of the Service (see section 1.2 of the FEIS that further discusses Regulatory Authorities), and therefore there is no federal nexus to the reintroduction that would prompt review under NEPA. Although wolves may disperse throughout the state, including onto federal lands, no federal management of wolves would occur; the sole presence of wolves on a federal property does not constitute a federal nexus under NEPA. Because NEPA is not required for the reintroduction, completion of NEPA for the 10(j) process is not a limiting factor for the State to begin reintroduction efforts.

**CONCERN STATEMENT 77:** A commenter noted the study area should be expanded to the maximum area where reintroduced gray wolves are expected to disperse within the foreseeable future.

**Representative Quote:** The action should have been assessed within the maximum area around reintroduction sites where wolves might be expected to range within the near and foreseeable future.

**Response:** This scope of this EIS is the management flexibility provided by the 10(j) rule, which would only be applicable within the State of Colorado. Therefore, the Service has determined that the State of

Colorado, and not beyond, is the appropriate study area. See the FEIS Chapter 1 for further explanation about the regulatory authority and scope of the analysis.

*CONCERN STATEMENT 78:* A commenter noted that release and transportation of an endangered species outside its current range seems beyond the scope of typical Section 6 Cooperative Agreements, in response to a statement in the DEIS that reintroduction of gray wolves in Colorado would be allowed under CPW's Section 6 Cooperative Agreement.

**Representative Quote:** The DEIS states (pages 1-2) that the need for this action (the 10j rule) is to provide management flexibility to the Service and its designated agents for the management of gray wolves in Colorado. The DEIS further states (pages 1-4,1-5) that the State may reintroduce wolves with or without further action by the Service in compliance with the State's cooperative agreement under section 6 of the ESA; therefore, considering an alternative not to pursue active wolf reintroduction efforts is outside the Service's legal authority and outside the scope of the EIS. Release and transportation of an endangered species outside the current range of such species seem beyond the scope of typical Section 6 cooperative agreements. Instead, the release and associated transportation of an endangered species outside its current range is a specific provision of experimental populations established under Section 10(j) of the Endangered Species Act. Suppose the current Colorado Section 6 Cooperative Agreement contains requirements specific to authorizing the release and related transportation of endangered gray wolves within the state of Colorado. These provisions represent a significant federal action and should have been analyzed under NEPA. Without that analysis, the scope of the DEIS is deficient by not providing an analysis of the impacts associated with authorizing the release and transport of endangered gray wolves outside of their current range.

**Response:** The State of Colorado has proposed acquiring wolves from the northern Rocky Mountain source population. Because this population has been delisted under the ESA, authorization is not needed, and there is no conflict related to transporting and releasing wolves in Colorado by the State. As noted in section 1.2 of the FEIS, the ESA does not prohibit the State of Colorado from partnering with other states to capture gray wolves in states where they are not listed under the ESA and transport those wolves to Colorado for release. See section 1.2 of the FEIS, which further explains this regulatory authority including the Section 6 Cooperative Agreement between the Service and CPW.

*CONCERN STATEMENT 79:* A commenter questioned the Service's use of data in a 2022 study by Ditmer et al. to determine the list of focal counties in the EIS. The commenter suggested that more detailed, site-specific analysis is needed for areas in the State's proposed release area. Another commenter suggested additional counties that should be added to the focal counties, including Pitkin, Summit, San Juan, and Hinsdale, because they "are within the dispersal area of the release zones."

**Representative Quote:** 3-3 "The focal counties have high ecological suitability for gray wolves, as determined by a 2022 study by Ditmer et al. The Service overlaid a map of Colorado counties on modeling of ecological suitability in summer and winter to determine the list of focal counties (Ditmer 2022)." The reliance upon Ditmer, et al is grossly inadequate. It does not provide the specificity needed to accurately assess impacts in the release area. More detailed, site-specific analysis is needed.

**Representative Quote:** 3-1 "The Service considered all potentially relevant resource areas for analysis in this EIS." Pitkin, Summit, San Juan, and Hinsdale counties need to be added to the focal counties for the EIS since they are within dispersal area of the release zones.

**Response:** The action analyzed as the preferred action in the FEIS, implementation of a 10(j) rule, is a programmatic state-wide action; therefore, the state-wide programmatic level of analysis is appropriate. Ditmer et al. (2022) is the best available science. Focal counties identified by the Ditmer study were used to focus the analysis, realizing that once released, wolves would quickly disperse and the implementation of the 10(j) would be a state-wide issue.

**CONCERN STATEMENT 80:** A commenter suggested that the Service pause the NEPA process until CPW has finalized the State's Wolf Restoration and Management Plan and include any changes in the reintroduction process and management of gray wolves in the FEIS. This commenter suggested that the EIS should again be released for public comment after final changes in the State Plan are incorporated.

**Representative Quote:** Generally, RMEF agrees with the adequacy of the proposed regulations and supports Alternative 1. However, RMEF recommends the USFWS pause the Final Rule and EIS until after CPW has finalized its wolf management plan in order to best assess potential impacts of a NEP and 10j designation in Colorado. Any changes to CPW's draft plan in the release site, number of wolves, donor state, timeline, etc. could affect the outcome of the proposed rule/EIS and should be reassessed and, again, open for public comment. Bills are currently being discussed in the Colorado legislature to allow for a reintroduction to occur after the initial deadline of December 31, 2023. This would allow more time for the USFWS to fully assess potential impacts based on CPW's final plan.

**Response:** The State Plan was finalized in May 2023; the rule and EIS will both be finalized after the State Plan. Where possible and respecting the differing authorities of the Service and the State, the Service has reviewed and incorporated consistency with the State Plan in the Service's final rule as appropriate. The final EIS will be available for public review for 30 days following the publication of the Notice of Availability in the *Federal Register* before the Record of Decision is issued.

**CONCERN STATEMENT 81:** Commenters suggested that the purpose and need for the proposed action should be revised to reflect the Service's statutory responsibilities to conserve endangered species and their habitats. Commenters suggested that the Secretary of the Interior must make the finding that the 10(j) rule is consistent with the purposes of the ESA and ensure the conservation of wolves and ecosystems in Colorado; therefore, these responsibilities should constitute the purpose and need for the proposed action.

**Representative Quote:** First, the section on the "Purpose and Need for Action" in the draft EIS wrongly premises the proposed rule on a "need" to "provide management flexibility to the Service and its designated agents. In fact, as we explain below, the foremost purpose and need must be the statutory responsibility to conserve endangered species the gray wolf and the Mexican gray wolf; moreover, the Fish and Wildlife Service is obliged in this rulemaking to conserve the ecosystems on which these wolf subspecies depend.

**Representative Quote:** The 10(j) rule must contain measures to meet the statutory intent to recover wolves from their present state of endangerment. Moreover, the Act requires the Secretary of the Interior invoking subsection 10(j) to make a finding that the 10(j) rule is consistent with the Act's purposes, which include conservation of the ecosystems on which endangered species depend. Because of that unequivocal direction from Congress, not only must the final 10(j) rule ensure the conservation of wolves in Colorado; it also must advance ecosystem conservation in Colorado and those twin mandates must constitute the overarching purpose and need for this rulemaking. The DEIS emphasizes the wrong factors in asserting: "The purpose of this action is to respond to Colorado's request to

designate the gray wolf population that would be reintroduced to Colorado as experimental under section 10(j) and to further the conservation of the species. . . . The need for this action is to provide management flexibility to the Service and its designated agents . . . [to] reduce the regulatory impact." The DEIS's prejudicial statement as to the purpose and need for the action has led to an insufficient range of alternatives and a blinkered analysis of wolf conservation and ecosystem conservation, which in turn facilitated development of a deeply flawed proposed rule. All these legal errors must be corrected in the final EIS, starting with the misdirectional purpose-and-need-for-action statement.

**Response:** The rule specifies that the establishment of an experimental population of a listed species must further the conservation and recovery of the species. As stated in the rule, the determination that the 10(j) rule is consistent with the purposes of the ESA and ensures the recovery of gray wolves is at the direction of the Secretary of the Interior.

### *CONSULTATION*

**CONCERN STATEMENT 82:** The Navajo Nation requested government-to-government consultation and coordination with Tribes and the development of a Colorado wolf management group with CPW, the Service, impacted Tribes, and other groups.

**Representative Quote:** Navajo Nation wishes to see a Colorado Wolf management group developed with Colorado Parks and Wildlife, US Fish and Wildlife Service, impacted Tribes, and other groups who will receive regular updates regarding wolf reintroduction and management in Colorado.

**Response:** The Service is engaged in government-to-government consultation with all Tribes that requested consultation. Please see Chapter 5 of the FEIS for more information on Tribal consultation that has occurred and is ongoing. The Service will be working cooperatively with the State while wolves remain listed under the ESA. Requests for a working group would need the approval of all entities involved.

**CONCERN STATEMENT 83:** Commenters were supportive of the Service's collaboration with CPW and encouraged the Service to ensure the State Plan and rule are compatible. One commenter asked the Service to coordinate with the State Plan to avoid negative impacts to ungulates, livestock, and other wildlife. Another commenter suggested that the Service should integrate recommendations developed by CPW's Stakeholder Advisory Group and Technical Working Group into the rule. One commenter asked the Service to retain management authority and not improperly delegate authority to Colorado.

**Representative Quote:** SCI encourages the Service to continue its collaboration with the State of Colorado to implement the State's management plan for wolves, and to ensure the forced introduction of wolves does not negatively impact Colorado's elk, deer, sheep, moose, and other wildlife populations. SCI appreciates that the Service is willing to work with CPW to ensure the State has the flexibility to manage an increasing wolf population.

**Representative Quote:** FWS should look to the details in the final plan, scheduled to be approved in May 2023, for consideration in the final 10(j) rule to ensure both policies are compatible with one another and pursue continued public engagement opportunities that clearly communicate their regulatory expectations.

**Representative Quote:** Defenders also supported Colorado Parks and Wildlife's (CPW) extensive public engagement process, and we were selected by CPW to have a representative on their

<p>Stakeholder Advisory Group (SAG). We urge the U.S. Fish and Wildlife Service (FWS) to integrate the consensus recommendations developed by the SAG and Technical Working Group (TWG) where appropriate in this rule, as these teams represent diverse interests brought together voluntarily by CPW to seek areas of common ground for inclusion and equity in the Colorado wolf recovery effort.</p>
<p><b>Representative Quote:</b> Ensure that the U.S. Fish and Wildlife Service retains enough management authority to fulfill its legal obligations to promote species recovery, including not improperly delegating all of its management authority to the State of Colorado.</p>
<p><b>Response:</b> The Service has been consulting with the State of Colorado throughout the process and will continue to do so as the rule and EIS are finalized. Many of the recommendations from the various working groups have been incorporated into the rule, and the Service has reviewed the final State Plan while preparing the final rule and FEIS. Where possible and respecting the differing authorities of the Service and the State, the Service has reviewed and incorporated consistency with the State Plan in the Service's final rule as appropriate. The Service may authorize the State of Colorado, or any Tribe within the State that has a wolf management plan consistent with this rule, to assume the lead authority for wolf management under this rule within the borders of the nonessential experimental population area in the State or reservation as set forth in paragraph (a)(10) of this rule. The Service will use monitoring and reporting requirements stipulated in this rule to evaluate the State's progress toward achieving delisting criteria. If the Service determines that modifications to reintroduction protocols, wolf monitoring, or management activities are needed, the Service will coordinate with the State to ensure progress toward achieving recovery goals while concurrently minimizing wolf-related conflicts in Colorado. The Service retains authority to terminate any established Memorandum of Agreement if it determines management is not in accordance with this rule.</p>
<p><i>CONCERN STATEMENT 84:</i> Commenters made requests for continued coordination with state and federal agencies. Commenters asked the Service to continue to involve and seek input from wildlife agencies in states neighboring Colorado. One commenter noted that the USDA would be an important partner for the Service in providing tools and resources to agricultural producers. Commenters also suggested forming agreements with neighboring states to return dispersing wolves to the 10(j) area to alleviate any burdens on the Mexican wolf recovery effort and to allow gray wolf restoration in Colorado where there would be more management flexibility.</p>
<p><b>Representative Quote:</b> NPCA encourages the USFWS to work closely with the state of Colorado to ensure communities understand how wolves will be managed as well as the valuable role wolves play on the landscape. This should include working with state and other federal partners such as the U.S Department of Agriculture to provide tools and resources to agricultural producers to prevent conflicts.</p>
<p><b>Representative Quote:</b> AZSFWC focuses primarily on issues within Arizona; however, this particular action by the Service could have enormous implications for Colorado's neighboring states to the south and west. It is essential that state wildlife agencies and stakeholders across this area are fully involved in the process and their concerns are addressed.</p>
<p><b>Representative Quote:</b> I ask that USFWS continue to work closely with the state on establishing necessary federal-state agreements and determining the appropriateness of using the flexibilities of Section 10 of the ESA during the wolf restoration efforts.</p>
<p><b>Representative Quote:</b> Though such relocations are authorized by the proposed rule, our experience is that they require substantial state and federal resources to conduct, and a large degree of policy and</p>

logistical coordination. While we recognize that the 10(j) rule does not contain the finalized gray wolf introduction strategy for Colorado, we encourage the Service to work with states and other federal agencies, including through federal permitting mechanisms, to assist in authorizing such relocations in a way that alleviates the burden on neighboring states and recovery programs, such as the Mexican wolf recovery effort. Such cooperation could include, but is not limited to, a multi-state or national 10(a)(1)(A) permit that would allow wildlife managers in Colorado to retrieve wolves that have left the 10(j) area, as is the current practice in the southwest's Mexican wolf management. In order to protect the public and multiple-use management on U.S. Forest Service Lands, we request the Service affirm its commitment to managing Colorado NEP wolves by working with state and federal agencies to return dispersing wolves to their designated 10(j) area so they can be recovered with the flexibility intended in this proposed rule.

**Response:** The Service has coordinated with state and federal cooperating agencies during development of the EIS and rule. This coordination has been detailed and updated in Chapter 5 of the FEIS. As part of a separate process, the Service is coordinating with the states of Colorado, Arizona, New Mexico, and Utah to develop a permitting approach to mitigate potential impacts on Mexican wolves from the State of Colorado's reintroduction effort. Based on input from these States, the Service has updated the analysis of potential cumulative impacts on Mexican wolves in the FEIS under, "Cumulative Impacts Analysis."

## ***SOCIOECONOMICS***

**CONCERN STATEMENT 85:** Commenters suggested that the estimates of livestock depredation should be revised to portray more realistic estimates or questioned the data used in the analysis. Commenters questioned if the analysis includes livestock in feedlots, which would be less vulnerable to depredations. Commenters also noted that the analysis in the EIS should assess projected losses in local areas rather than statewide. Commenters noted limitations associated with the data from Wyoming used in the analysis (i.e., that the total number of livestock used includes livestock in the Predator Zone, where depredations are not likely to be reported, and may artificially decrease the total number of projected depredations) and provided suggestions for revisions.

**Representative Quote:** Losses need to be compiled on a localized basis comparing the number of wolves to the number of livestock in a conflict area instead of on a statewide basis. The socioeconomic section of the EIS should prioritize the needs of those most directly affected, such as landowners, hunters, outfitters, and rural communities if wolf numbers are unchecked.

**Representative Quote:** 3) Lastly, I would like to point out the downward inventory trends of sheep and lambs in the Northern Rocky Mountain states since Yellowstone wolf reintroductions. Economic impacts considered in the EIS do not include the complete loss of business of family farms or the resulting decline in overall inventories impacting our industry's contribution to local and state economies. I have spoken to multiple producers in Montana, Idaho, Minnesota, Oregon and Wyoming and a common theme from them was that they themselves or their neighbors are no longer raising sheep because they "were unable to protect them." I realize this is anecdotal so I did some research on inventory trends in MT, ID, WY and compared it to inventories here in Colorado over the last 20+ years. I am attaching a graph using NASS reported inventory numbers from 2000- 2023 (post-reintroduction to present) to demonstrate the shocking declines in sheep production in these states compared to the robust numbers we have in Colorado. Although there are likely several compounding factors at play that may be contributing to these declines, the EIS should include consideration of these potential impacts.

**Representative Quote:** Other Economic Considerations

The economic burden of wolf introduction will be borne by the rural communities where the wolves will take up residence. This includes direct and indirect costs to livestock producers and outfitters, whose businesses will be affected. This will lead to a trickle-down effect on local businesses as ranchers and outfitters have less income, and as hunters don't come to communities where game herds have been depleted. Statistics used in this proposal are questionable at best and should be updated and accurate. An example is the discussion of how few animals, relative to their entire population in all of Colorado, will be lost to wolf depredation. This should be region specific. Consideration must be made to the individual producer or community where the impacts occur. For example, two years ago we lost our entire yearling ram herd to mountain lions, which was a small percentage of sheep in the state but devastating to us. If wolf depredation leads to economic distress and the sale of ranches, open space will be lost as landowners sell to developers in these mountain communities. Section 3-22 should address an analysis of impacts.

**Representative Quote:** 4-17 "However, to assess the possible impacts of the wolf population on livestock, the following equation was constructed to standardize depredation rates from a reference area outside Colorado (Wyoming) in relation to total livestock in the wolf range and wolf populations." The concept of "standardizing depredation rates" is fatally flawed. Colorado's habitat, wildlife populations, and livestock distribution is vastly different from the northern Rockies (Wyoming, Idaho, Montana). A large portion of Wyoming is managed as a predator zone, so livestock losses due to wolves often go unreported. Wyoming also has much more management flexibility to prevent depredation.

**Response:** The analysis in section 4.7, "Socioeconomic Resources," has been revised to consider the data and comments on the methodology provided by agencies and members of the public. The socioeconomic impacts analysis considers potential impacts statewide and in the focal counties because the potential implementation of the 10(j) rule is a state-wide programmatic action, and site-specific analysis is not applicable to this action (although it may be applicable for the State's action: wolf reintroduction). Analysis of the potential impacts of State's reintroduction effort in combination with other actions is included in the FEIS under "Cumulative Impacts." Section 4.7 of the FEIS notes that potential economic impacts on individual livestock producers as a result of depredation may be substantial. The total number of cattle included in the analysis does not include dairy cows or cattle on feedlots. Section 4.7 has been reviewed to ensure that sheep on feedlots are excluded from estimates of potential depredation under the no-action alternative to the degree possible based on available data.

**CONCERN STATEMENT 86:** Commenters stated that reintroduction of wolves would result in adverse socioeconomic impacts from decreases in ungulate populations, hunter participation, and hunting revenues, including revenues for local communities, Tribal communities, and CPW. Commenters noted that a socioeconomic impacts to outfitters and guides would be adverse and long term.

**Representative Quote:** As ungulate populations decrease, hunter participation and recruitment will predictably decrease, with the resulting significant decrease in revenues calling into question the very viability of the Colorado Parks and Wildlife agency who rely on elk, deer and other ungulate license sales to fund their operations.

**Representative Quote:** This could cause short and long-term adverse impacts to guides and outfitters who may need to adjust operations and leases for elk hunting.

**Representative Quote:** Wolf restoration poses an even greater risk to the Ute Mountain Ute Tribe's elk herds and livestock on its Tribal ranches located in Gunnison, La Plata, and Montezuma Counties, risks that are not shared by the SUIT. It's difficult to know what the long-term impacts wolf restoration will have on elk populations across the state, but the UMUT agrees with SUIT that "if ungulate populations decrease and it becomes necessary to limit hunting licenses, it is our strong opinion that any hunting license reductions within the Brunot Area must fall on the hunters licensed by the state. The Tribe(s) will continue to monitor game populations in the Brunot Area and any voluntary reductions in Tribal hunting licenses will be within the sole discretion of the Tribe(s). This is the only approach that is consistent with the intent of the 1874 Brunot Agreement."

**Response:** The analysis in section 4.7, "Socioeconomic Resources," has been revised to consider the data and information provided by agencies, members of the public, and Tribes regarding short- and long-term, adverse impacts on guides and outfitters and declines in revenues for local communities and CPW.

**CONCERN STATEMENT 87:** Commenters noted that wolves and other predators are responsible for a relatively small percentage of livestock deaths compared to non-predator causes of death including disease and weather conditions. Commenters provided data from the USDA on the causes of death for livestock.

**Representative Quote:** Our comments are focused on providing information about predator and nonpredator deaths of cattle in the US. Many people believe, incorrectly, that predators are the major cause of deaths of cattle. This is not true. The 2015 USDA report on cattle deaths provides a wealth of information about the causes of deaths of cattle and shows that livestock producers need not worry about the re-introduction of wolves to Colorado. Wolves are responsible for only a tiny percentage of cattle deaths. We have attached a screenshot of the nonpredator causes of cattle deaths in the US in 2015, taken from the USDA report. The report further documents that of all cattle deaths in 2015, 98% were non-predator deaths. For calves, the number was 89%.

**Representative Quote:** Livestock losses from wolves are rare in every jurisdiction in which they live, and livestock producers lose far more animals to maladies like disease, respiratory problems, and bad weather than to wolves.<sup>20</sup> Data from states in the Northern Rocky Mountains region shows that just a fraction of 1% of livestock losses are attributed to wolves each year.

**Response:** Data on livestock losses from all causes has been added to section 3.5 of the FEIS, "Socioeconomic Resources," to provide a point of comparison for projected losses discussed in section 4.7.

**CONCERN STATEMENT 88:** Commenters noted that the reintroduction of wolves in Colorado would result in beneficial economic impacts, including revenues from increased tourism driven by wildlife viewing opportunities, increases in ungulate populations, reduced deer-vehicle collisions, and reduced agricultural damage from ungulates.

**Representative Quote:** Furthermore, wolf tourism will benefit local economies (37,38,39). Visitation to Yellowstone during 2005 was 2,835,651, but by 2017, park visits had risen 145% to 4,116,525. An estimate of the annual economic impact [of wolves], adjusted for 23% inflation over this period, is \$65.5 million annually (19)!<sup>11</sup> Wolves will NOT devastate the hunting industry. Data from the northern Rocky Mountains indicate that wolves have not caused harm to the big game hunting industry



and that instead, elk populations have increased in those states since wolf reintroduction there! Since 1995, when 31 wolves were transported to Yellowstone and 37 to central Idaho, elk numbers have increased. Idaho had 103,448 elk in 1995, but by 2018, the population had grown to 110,300. Montana had 109,500 elk in 1995, which increased to 139,470 in 2018 and 141,785 by 2021. To qualify, predator-prey relationships are incredibly complicated. It cannot be said that in every case, more wolves mean more elk. Other factors may include habitat loss, fragmentation, disease, human hunting and poaching (19,41,42). However, if wolves were the “vicious killers that hunt for fun” that many believe they are, we would surely see a decrease in elk populations where wolves were present.

**Representative Quote:** Wolves also can help have hidden but important economic impacts that might not be seen until after removal like helping reduce deer-vehicle collisions (Raynor et. al., 2021). In a 2021 study it was found that counties that had a wolf presence saw on average a \$375,000 per year reduction due to deer-vehicle collisions (Raynor et. al., 2021). The study suggests it might be possible that wolves can help curtail damage to agricultural fields and the spread of Lyme disease by helping curtail deer overpopulation (Raynor et. al., 2021). Private landowners or those who would intentionally harass the NEP wolf population could also benefit with public spending to help cover the upfront costs to nonlethal and non-injurious methods (Kareiva et. al., 2022).

**Representative Quote:** Finally, the economic effect of wolves is almost certain to be more positive than negative. The most recent estimate from Yellowstone is that wolf-oriented tourism was responsible for more than \$8 million dollars in the most recent economic analysis. Of course, that is a small part of total Yellowstone revenues, but it is still a significant amount of money.

**Response:** The impacts analysis in the FEIS sections 4.7, “Socioeconomic Resources,” and 4.9, “Cumulative Impacts and Other Considerations,” focuses on economic activities and sectors that could be affected by implementation of the proposed 10(j) rule (i.e., hunting and livestock production). The potential socioeconomic impacts of wolf reintroduction outside these areas (e.g., from an increase in tourism spending) are a potential consequence of the State Plan and are outside the scope of the Service's proposed action. Section 4.7 of the FEIS notes that elk populations and hunter harvest have not fallen in Montana, Idaho, or Wyoming following reintroduction of gray wolves but notes that wolves' impact on game species varies locally.

**CONCERN STATEMENT 89:** Commenters noted that reintroduction of wolves would result in significant economic impacts on livestock producers from depredation and the cost of implementing measures to prevent depredation, and on small businesses in rural areas. Commenters noted indirect impacts on livestock producers from the presence of wolves, including decreases in reproduction and weight gain and increased stress in livestock. One commenter suggested that allowing wolves on federally managed grazing allotments would violate existing lease agreements. One commenter noted that costs for measures to reduce or avoid depredations should be feasible for livestock producers. Commenters noted that costs may be significant for small operations and for rural communities. One commenter noted that these socioeconomic impacts may result in changes in land use at the county or regional level because livestock producers may be forced or choose to sell their ranches. One commenter noted that the conclusion that there would be no long-term impacts on livestock production overall in the state is inaccurate and based on data that were inappropriately extrapolated from states that are not similar to Colorado. One commenter requested that the Service consider impacts to communities in other states.

**Representative Quote:** The potential economic impact of wolf reintroduction in Colorado extends beyond the Aspen area to other parts of the state where ranching is a significant industry. Colorado is home to over 12,000 ranches, many of which raise livestock such as cattle, sheep, and goats. According

to the Colorado Department of Agriculture, the livestock industry in Colorado contributes over \$4 billion annually to the state's economy and supports thousands of jobs. The reintroduction of wolves to Colorado could have significant economic impacts on ranchers throughout the state. As mentioned previously, wolves are known to prey on livestock, which can result in financial losses for ranchers. With rising costs in nearly every market in the United States, these losses can be particularly devastating for smaller operations or those with limited resources to absorb the costs. In addition to direct losses from predation, ranchers are highly likely to incur additional indirect costs associated with managing and preventing predation. Monitoring and protecting livestock will need to be increased which will bring with it higher labor costs. Adding to these costs will be implementing measures such as fencing, guard dogs, and other deterrents. These costs can be significant and may impact the financial viability of ranching operations. A real-world example of what this means in terms of value to small ranchers, according to a 2017 report by the USDA Economic Research Service, the average net cash farm income for cattle and calf operations in Colorado was \$41,000 per farm. This figure represents the income left over after expenses have been paid and does not account for non-cash expenses such as depreciation or the opportunity cost of unpaid family labor. A loss of just a few cattle per year could prove disastrous for these ranchers. Overall, the potential economic impact of wolf reintroduction on ranchers in Colorado is significant and underscores the need for careful consideration and planning around the reintroduction of wolves. It is important to work with stakeholders to develop effective strategies that balance the economic concerns of ranchers with the ecological benefits of wolf reintroduction.

**Representative Quote:** Within the guidelines there is no reference to landowners and land lease holders for loss of livestock or loss of breeding potential of livestock. It is not the number of cows that are kill by wolves but the 30% plus loss of reproduction, the lack of weight gain and the stress impacts that is caused by wolves. The livestock will not go up into the forest where the grazing grass is because that is where the wolves are. This is in violation of the lease agreements the landowners have with the Federal Government. Leased ground cannot be considered part of the area in wolf reintroduction.

**Representative Quote:** 4-46 “While there would be a loss of ungulates and livestock, loss of either is not an irreversible or irretrievable commitment of resources because both are abundant, renewable resources. Labor associated with the implementation of proactive management to decrease the likelihood of livestock depredations may occur, or to address the consequences of depredation (such as building additional fencing, or paperwork associated with depredation claims); however, these impacts and commitments can be restored or returned to their prior condition with mitigation such as successful implementation of proactive measures or receipt of depredation compensation.” Compensation payments never cover the real costs of managing wolves. If a rancher must carve out time to manage wolves, he is taking time away from other management responsibilities. These inefficiencies subtract from annual income and are never compensated for so there is an irreversible and irretrievable loss. There is also the potential for irreversible and irreversible loss to other wildlife, hunters, outfitters, and local businesses. Therefore, it’s extremely important that the 10(j) with lethal take statewide be adopted.

**Representative Quote:** Management tools and requirements must be useful and feasible for the livestock producer and/or public land permittee. As a livestock producer, it is my responsibility to take care of my livestock. Nobody should have to sit back and allow their livestock to be tormented by wolves which lead to negative direct costs (death of a cow, calf, sheep, dogs, etc.) but also indirect costs such as those incurred by nervous, stressed livestock: reduced weight, conception, etc. Also, scared, nervous livestock will not use the range effectively. Instead, they will use protective measures such as staying bunched up and not dispersing to graze.

**Representative Quote:** I believe the process and introduction should utilize counties to analyze the full breadth of impact on rural communities and livestock operations. All sectors and businesses in rural

<p>Colorado will be impacted (livestock operation, hunting and outfitting, etc.). Please consider the impacts on other Western states and the livestock producers in those states.</p>
<p><b>Response:</b> The analysis in section 4.7, “Socioeconomic Resources,” has been revised to consider the data and comments on the methodology provided by agencies and members of the public. The section discusses the potential indirect impacts on livestock, livestock producers, and local communities as a result of economic losses caused by the presence of wolves and wolf depredation. The socioeconomic impacts analysis also considers potential impacts statewide and in the focal counties; potential impacts on communities outside the focal counties are considered as part of the statewide analysis. The terms of lease agreements for grazing allotments on federal lands are outside the scope of the 10(j) rule and are therefore not addressed in the EIS.</p>
<p><i>CONCERN STATEMENT 90:</i> One commenter noted that the costs associated with the proposed reintroduction are unacceptable impacts that are expected to continue once wolves are on the landscape. The commenter suggested that these costs should be addressed in the 10(j) rule.</p>
<p><b>Representative Quote:</b> While we are aware that costs are most directly an issue for CPW and the State of Colorado, the Organizations are concerned that the experiences with costs of the reintroduction are highly relevant to the 10j scope of management authority allowed in the designation and process. These are unacceptable impacts that have already attempted to be remedied within the short timeframe since passage of Prop 114. We can see no reason why these issues would just stop once wolves are on the ground, but rather we expect to see impacts become more apparent at a faster rate.</p>
<p><b>Response:</b> The costs of reintroduction and management of gray wolves in Colorado are addressed in the State Plan and are the responsibility of CPW and the State of Colorado. The rule includes provisions that likely would help mitigate the costs of the State's wolf reintroduction and management program by reducing livestock depredations and, subsequently, reducing required compensation to livestock owners.</p>
<p><i>CONCERN STATEMENT 91:</i> Commenters expressed support for lethal or nonlethal measures to prevent livestock depredation based on the costs of the measures. One commenter suggested that the management flexibility allowed under alternative 1, including lethal take, would reduce agency management costs and costs for livestock producers. Another commenter provided data related to a program using nonlethal livestock protection methods in Idaho and discussed how the program was less costly than lethal take.</p>
<p><b>Representative Quote:</b> xii - Socioeconomic Resources: The management flexibility provided with Alternative 1 will also reduce agency costs for wolf management. Non-lethal deterrents are expensive, and over time lose their efficacy. Lethally removing depredating wolves not only benefits the overall wolf recovery program so other wolves can avoid conflict, but it reduces agency management cost, and the financial and emotional burden on producers.</p>
<p><b>Representative Quote:</b> Ironically, while the state of Idaho appears to be waging war on its wolves, we have an existing model in coexistence that has worked well in Blaine County in one of the only regions of the state where wolf trapping and snaring is not allowed: the Wood River Wolf Project (Project) area. IWCN is the fiscal manager of the Project, which is a 16-year demonstration study of nonlethal methods to determine if wolves and the most vulnerable livestock sheep can coexist on the same landscape. The Project has helped protect an average of 20,000 sheep in our 1100 sq km area that is</p>

largely composed of mountainous terrain on national forest land. As you know, sheep are the most vulnerable of all livestock to large predators. Our project area is among the most rugged and remote areas of the state where livestock is allowed to graze. Of the 20,000+ sheep in our project area, our average loss of sheep to wolves is 4.7 sheep per year. During our 16-year history, only one wolf was purposely killed to control sheep attacks, yet packs of wolves have been left largely undisturbed because our nonlethal methods are highly effective at minimizing sheep losses. Our peer reviewed paper has been submitted and can accessed online here: Adaptive use of nonlethal strategies for minimizing wolf-sheep conflict in Idaho | Journal of Mammalogy | Oxford Academic (oup.com). Other cattle producers are documenting significant reduction or no losses to wolves due to proactive nonlethal measures. Yet, the State of Idaho is willfully ignoring this viable alternative that provides better protection for livestock at a far lower cost than the millions of dollars it is spending to kill wolves. Is the State of Idaho ready to admit that it is succumbing to anti-wolf hysteria and even fostering the unwarranted hatred of wolves rather than fulfilling its duty to responsibly manage all wildlife?

**Response:** The rule allows a range of nonlethal and lethal take strategies to prevent livestock depredation. Livestock producers may implement various strategies based on their needs and circumstances, subject to the requirements for permitting, reporting, and documentation in the rule and State law.

## ***NEW ALTERNATIVES***

**CONCERN STATEMENT 92:** Commenters requested that the alternatives included in the EIS address dispersal of gray wolves outside the experimental population boundary, either through capture and relocation of wolves that disperse outside the boundary or by allowing some degree of dispersal. Commenters identified the potential for livestock depredation in other states and impacts on Mexican wolves as reasons for capturing and relocating dispersing wolves. One commenter asked that the final rule recognize the eligibility of livestock producers in neighboring states for compensation under federal programs in the event of livestock depredation. Some commenters suggested that wolves that leave the boundary should be allowed to disperse to support establishment of wolf populations in neighboring states, with some commenters suggesting the only exception should be if dispersal of wolves would pose unacceptable impacts on the Mexican wolf. One commenter suggested tracking gray wolves that disperse outside the boundary to understand factors that may cause wolves to disperse outside Colorado.

**Representative Quote:** The proposed rule and DEIS anticipate wolf dispersal across the entire state of Colorado. It is also extremely likely that gray wolves will disperse into neighboring states that lack wolf restoration or management plans and where they are listed as a federally endangered species (e.g., New Mexico, Utah, Nebraska, etc.). It would be a disservice to neighboring states to not proactively address this potential conflict in the current proposed rule. Accordingly, our organizations request that the USFWS work closely with adjoining and nearby states to address the likelihood of reintroduced gray wolves dispersing from Colorado, and consider the approach taken with Mexican wolves in Arizona and New Mexico. There, wolves identified as experimental dispersers would generally be translocated back to their NEP geographic boundary by the USFWS or an authorized agent. As was done within the associated rule and EIS in that case, we'd support USFWS issuing a research and recovery permit (similar to TE0915518 dated 04/04/2013) to authorize removal of gray wolves identified as having dispersed from the geographic boundary of the Colorado NEP, and a decision to either maintain those wolves in captivity, translocate them to areas of suitable habitat within the NEP geographic boundary, or transfer them elsewhere.

**Representative Quote:** Section 10 designations often allow for reintroduced species that breach designated boundaries to be either relocated back to the boundary area or be put in a captive breeding program. Wolves currently remain listed in all states bounding Colorado except Wyoming and parts of Utah. The recovery of wolves nationwide is frustrated by these efforts to prevent natural dispersal beyond these boundaries, which typically are established based on political jurisdictions rather than suitable habitats. Wolves that emigrate from Colorado should be allowed to proceed unmolested in the interest of establishing viable populations in neighboring states.

**Representative Quote:** Restrict removals and relocations back of wolves who leave the experimental population area to the sole circumstance of preventing too much introgression of northern wolves genes into the U.S. Mexican wolf population and only in such instances after a science-based finding that the prospective introgression of northern genes from the wolf to be removed would be detrimental to conservation of Mexican wolves.

**Representative Quote:** Between the state of Wyoming and Colorado, Wyoming has much more relaxed rules regarding the gray wolf. One of these issues is permitted “take. Wyoming is one of the states with the most natural habitat for the wolves that still reside in their current/historical range as a species. There are no mechanisms in place with this EIS to control wolf populations from migrating from Colorado back into Wyoming. With gray wolf intergroup interactions usually being aggressive, “the loss of adult group members may reduce the competitive strength of the group, and failure to defend against intruders may result in the loss of resources, territory, and the lives of group members” (Cassidy et. al.). This is prevalent because without knowing the exact outcome of the 10(j) experimental habitat, the wolves could find that the area is not suitable for them and migrate back into Wyoming. Migration increases the probability of interpack interactions and issues with incidental “take” due to differences in state laws. Overall, there needs to be implementation of tracking the Colorado wolf populations for both their safety and understanding if the 10(j) experimental areas in Colorado are a viable option for the species.

**Response:** The rule does not address capture and relocation of wolves that leave the 10(j) boundary (see Chapter 1 of the FEIS for the scope of the EIS analysis); however, throughout this process, the Service has coordinated with state and federal cooperating agencies during development of the EIS and rule. This coordination has been detailed and updated in Chapter 5 of the FEIS, including coordination to address potential impacts on the Mexican wolf. Coordination with surrounding states related to potential impacts to the Mexican wolf are further discussed under Concern Statement 84. Suggestions related to wolf tracking and dispersal are components of the reintroduction effort and would be addressed by the State of Colorado as part of its State Plan.

**CONCERN STATEMENT 93:** Some commenters noted the range of alternatives addressed in the EIS is too narrow, and commenters suggested additional alternatives that should be considered to support the conservation of reintroduced gray wolves in Colorado or to limit or prohibit lethal take. Alternative regulatory tools suggested including use of Safe Harbor Agreements or a statewide 10(a)1(A) permit while maintaining the species' endangered status in Colorado. Commenters also suggested considering alternative versions of the rule that would prohibit all lethal take, lethal take on public lands, or lethal take in the absence of nonlethal management strategies. Multiple commenters suggested the Service should retain management authority over reintroduced wolves in Colorado. One commenter suggested that the Service should expand the geographic area of the northern Rocky Mountains distinct population segment to encompass Colorado in recognition of the dispersal of individual wolves into Colorado from the northern Rocky Mountains region. Some commenters requested that the Service include provisions for ecosystem protection in Colorado in the range of alternatives. Commenters also

requested that the Service consider alternatives that include education and financial incentives for livestock producers and rural communities to increase social tolerance for wolves.

**Representative Quote:** Another reasonable alternative to 10(j) designation that should be considered is the use of Safe Harbor Agreements. Safe Harbor agreements are voluntary agreements between the Service and nonfederal landowners that provide assurances that penalties will not accrue in the event of unintentional/incidental take of a listed species in the context of day-to-day business operations (Congressional Research Service 2021). These achieve all of the purported benefits of a 10(j) “experimental, nonessential” rule without the conservation penalty of removing consequences for intentional take.

**Representative Quote:** Protecting wolves on public lands, which should be a refuge, a safe place for them, which belong to wildlife and all Americans, should be your focus in creating the EIS. What actions are you taking to fulfill your legal requirement to assure wolves have the safe environment that they are entitled to via the EIS? A 10(j) should be off the table because it lacks the call to keep habitat protected for wolves.

**Representative Quote:** There is going to have to be a long -term commitment to using non-lethal measures, regarding wolf, livestock conflicts for ranchers and farmers. Of course, ranchers, farmers, should receive federal reimbursement for any proven livestock attacks.

**Representative Quote:** Finally, offering education to ranchers and helping them mitigate wolf attacks on their livestock would help substantially. Offering ways for ranchers to protect their farms and protect wolf populations is the best outcome. One way to protect livestock is the EPA using their resources to plant carcasses within their habitats, as wolves generally come to livestock if they are having a hard time finding wild game. Another way is to have heavier hunting regulations to keep the elk and moose populations thriving for wolves.

**Representative Quote:** Third, the DEIS fails to consider an adequate number of alternatives to its proposed action, and/or fails to justify why additional alternatives were not considered in more detail. For example, the Service should have considered an alternative in which the Draft Rule contained no lethal take provisions or contained provisions disallowing lethal take on federal public lands, or disallowing any take if non-lethal coexistence techniques and practices were not first employed. Additionally, the DEIS fails to properly consider an alternative that used a Section 10(a)(1)(A) permit instead of a Section 10(j) rule to foster the goals and objectives of the state mandated reintroduction effort.

**Response:** The FEIS considers variations on statewide permits issued by the Service (see FEIS, page 2-3) and describes why they were not carried forward for detailed analysis. As noted in the FEIS, the limited and narrow provisions for lethal take would allow for species conservation while reducing the regulatory burden associated with species introduction. The no-action alternative provides the option where there would be no lethal take, but this was not selected as the preferred alternative and was determined not to meet the purpose and need. The Service believes the combination of lethal and nonlethal take under the 10(j) rule would provide the needed management flexibility. The northern Rocky Mountains population of gray wolves is not listed under the ESA; therefore, expanding this population is not a feasible alternative. Suggestions related to ecosystem protection, financial compensation, and education are related to the wolf reintroduction process and would fall under the scope of the State Plan, not the 10(j) rule.

**CONCERN STATEMENT 94:** Commenters suggested additional provisions or elements that should be included in the 10(j) rule. These included a prohibition on baiting wolves, recognition of the State of Wyoming's authority to manage wildlife species under its jurisdiction, a preference for relocating wolves that chronically deplete livestock, authorizing the use of trapping to support monitoring or translocation of wolves, requiring use of radio collars for monitoring, and allowing flexibility to manage the wolf population to maintain numbers once it reaches a certain target goal. Commenters suggested the Service identify a population goal for gray wolves in Colorado and/or establish limits on lethal take until reintroduced gray wolves meet certain population targets. Another commenter requested an addition to the 10(j) rule to forbid killing of wolves if they are not at an abundance that is serving to "meaningfully limit" coyote populations.

**Representative Quote:** 4-22 “Compared to lethal removal, the translocation of wolves away from conflict sites showed advantages and disadvantages.” Because of Colorado’s limited habitat, avoiding conflicts will be very difficult, so problem wolves should be lethally removed and not relocated. 4-22 “In the earliest periods of wolf recovery, when promoting the formation of new packs was a high priority, soft releasing and translocating family units may be beneficial ways to reduce homing behavior, although initially more expensive.” This is another reason the 10(j) should authorize trapping to assist with radio-collaring and monitoring.

**Representative Quote:** The needed supplemental draft environmental impact statement and final rule should respectively analyze and consist of the following provisions: (1) A proscription on killing wolves to the extent that such killings would inhibit or slow attainment of a growing wolf population of at least 750 animals with genetic connectivity to wolf populations north and south; (2) a proscription on killing wolves to the extent that such killings would inhibit trophic cascades and specifically conservation of riparian habitats, pronghorn, swift fox, black-footed ferret, and Canada lynx; (3) a proscription on killing wolves that injure or kill livestock solely on public lands; (4) a proscription on killing wolves that kill livestock in instances in which the same wolves had previously scavenged on non-wolf-killed livestock carrion; and (5) approval for introducing Mexican gray wolves into southwestern Colorado.

**Representative Quote:** the Colorado gray wolf 10(j) rule must be that the killing of wolves cannot be allowed to curtail the abundance, distribution or density of wolves to the extent that wolves do not serve to meaningfully limit coyote numbers.

**Representative Quote:** In order to effectively conserve the future experimental population of wolves in Colorado, the final rule should define conservation goals, including the number of wolves inhabiting Colorado, and other aspirational conditions, that would represent a population no longer in danger of extirpation. The supplemental draft environmental impact statement should explain the basis for these conservation goals.

**Response:** The rule includes limited and narrow provisions for lethal take in response to conflicts, which the Service believes provides needed management flexibility. The rule does not specify methods or practices that must be used and prohibits certain activities in limited circumstances. Language has been added to the rule stating that baiting is not an allowed practice. Reintroduction and management goals, mechanisms, and protocols, including population targets, fall under the State Plan and are not within the scope of the 10(j) rule.

**CONCERN STATEMENT 95:** Multiple commenters suggested that the Service assess introducing Mexican wolves to Colorado in conjunction with the State's reintroduction of gray wolves, or that

connectivity between gray wolves and Mexican wolves be allowed to support genetic diversity in the wild population of Mexican wolves.

**Representative Quote:** The draft 10(j) rule must be modified to ensure wolves in Colorado are reintroduced and conserved using an ecosystem-based approach that ensures the return of healthy and self-sustaining populations across suitable habitat, while promoting ethical human-wolf coexistence. Wolf populations should be allowed to flourish to ensure the restoration of the full ecological benefits the species brings to ecosystems. As recommended by wolf biologists who advise Mexican wolf recovery, the Colorado 10(j) management rule should include the introduction of a subpopulation of Mexican gray wolves in the southern region of Colorado. Such a subpopulation would be able to connect to the existing population within the Mexican wolf experimental population area and would provide this critically endangered subspecies with much-needed genetic diversity and resilience.

**Representative Quote:** 2. We need to allow Mexican gray wolf connectivity with Colorado's gray wolves. The biggest threat to Mexican Grey Wolves is the lack of genetic diversity (1). Mexican Grey wolves are also poached at atrocious rates. Mexican Grey Wolves should be reintroduced to southern CO so that they can breed with the Grey Wolves. I have heard the argument, "Canis lupus is much larger and more vicious than Canis lupus nubilus (the Great Plains Wolf) and therefore this reintroduction of Canis lupus into CO is unnatural and irresponsible." While the Great Plains wolves are typically smaller than the Canadian Grey Wolves, no wolf is "vicious." However, if Mexican Grey Wolves and Grey Wolves began to breed, we may see a CO wolf population that is smaller in stature and therefore increase wolf support from the public. If we reintroduce Mexican Grey wolves into southern CO, we could begin to tackle the two biggest threats to Mexican Grey wolves: lack of genetic diversity and poaching.

**Representative Quote:** The draft 10(j) rule for the reintroduction of wolves into Colorado must be modified to insure wolves (both gray and Mexican) are restored to the native habitat in such a way that they can flourish and provide Colorado with all the ecological benefits these animals bring to the natural environment.

**Representative Quote:** I strongly urge FWS to allow Mexican gray wolves connectivity with Colorado gray wolves.

**Response:** The State of Colorado explored options for which subspecies to reintroduce and decided gray wolf was the appropriate subspecies (see the State Plan and processes for this analysis and decision). Section 2.3.3 of the FEIS discusses why the suggested alternative to introduce Mexican wolves in Colorado was not evaluated in detail. Additionally, introduction of Mexican wolves in Colorado falls outside the Service's stated recovery strategy in the revised recovery plan for Mexican wolves (see page 201 of the *Final Supplemental EIS Proposed Revision to the Regulations for the Nonessential Experimental Population for Mexican Wolves* for further information). Potential cumulative impacts to the genetic integrity of the Mexican wolf are discussed in the FEIS under "Cumulative Impacts Analysis."

**CONCERN STATEMENT 96:** Commenters suggested expanding the scope of the optional provision related to ungulates to allow management flexibility to address unacceptable impacts on other species as these impacts are identified or to allow management of wolves to address other conflicts related to ungulates (e.g., if wolves cause ungulate herds to mingle with livestock herds, displace ungulate herds



into road rights-of-way causing impacts to public safety, or to address unacceptable impacts on ungulate herds following severe weather conditions).

**Representative Quote:** The Service has provided similar broad protections around wolverines in Colorado and we would ask for language at least as strong as that previously provided in possible 10j designations for the Wolverines. Weaker recreation protections have been provided for the Mexican Gray wolf in Arizona and New Mexico 10j efforts and it has been our experience that these protections have not proven to be strong enough, as even with these protections every time there is a planning effort, trails have to be reviewed for the protection of Mexican wolves. We would ask the Service to apply the “unacceptable impacts” standard proposed for ungulates far more broadly than to just ungulate populations as unacceptable impacts will range far outside just this issue.

**Representative Quote:** The Organizations would like to thank the Service for moving the public concerns raised around possible impacts from wolf predation on ungulates forward as a concern that would be addressed with the optional management authority. While we are aware that this optional management authority is only proposed to be applied to ungulates in the Proposal, we believe expansion of this type of management authority will be a significant benefit in the case where wolves are impacting other wild species such as Lynx, domestic herd animals and domestic pets. We are aware that these types of concern have not been documented well, we are also aware that this issue has not been well researched either. We believe that this authority is critical to mitigating unintended impacts, should they be found. The Organizations are aware that this optional management authority still requires a public engagement analysis process and decisions for utilization of this optional management authority and we believe this review process will provide significant protections for all species possibly impacted.

**Representative Quote:** Wolves are opportunistic predators and their impacts to the imperiled Gunnison sage-grouse is unknown. The 10(j) should provide management flexibility if wolves are negatively impacted by other wildlife species. 4-35 “Reintroduction of wolves has not resulted in the disappearance of lynx elsewhere, including at Yellowstone National Park (Murphy et al. 2006).” Colorado has less available habitat than other areas in the northern Rockies, making it difficult for other species to disperse to avoid wolf depredation. The impact of wolves on lynx in Colorado is unknown.

**Representative Quote:** The Service should also consider allowing intentional take to prevent unacceptable impacts to other species, not just ungulates.

**Response:** Concern Response 12 addresses how the ungulate provision is incorporated into the final rule, applying only to reservation lands of the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe. Allowing for take of wolves to address potential impacts on other wildlife species or to address other concerns related to ungulate populations would not be consistent with the State Plan; therefore, these options are not considered in detail in the FEIS.

## ***ECOSYSTEMS***

**CONCERN STATEMENT 97:** Commenters suggested that the rule and EIS should be revised to discuss biodiversity concerns related to the reintroduction of the gray wolf in Colorado. Commenters discussed the ecosystem effects that have been attributed to gray wolves and provided data sources. Many commenters discussed the concept of trophic cascades and noted that predators affect the behavior and abundance of prey species, which can have more widespread ecosystem impacts. Potential effects mentioned included improving the condition of riparian areas, increasing habitat for other special status species, reducing disease transmission in ungulates, and mitigating climate change

by creating carbon sinks. Commenters noted that lethal take would reduce or affect the ecosystem benefits provided by reintroduced wolves.

**Representative Quote:** How do wolves mitigate climate change? First, they are keystone species that complete and support the food web. Intact food webs are more resilient to environmental changes (31). Second, wolves will control the location and number of deer and moose populations, which will increase the amount of CO2 stored in plants. Wolves have created massive carbon sinks that keep CO2 from our atmosphere. Researchers estimated an increase in CO2 storage between 46 and 99 million metric tons as a result of the presence of wolves. This amount of CO2 is equivalent to tailpipe emissions from between 33 and 71 million cars (40)!

**Representative Quote:** It is commonly understood that the absence of apex predators, such as the wolf, has caused imbalances to those ecosystems that evolved with them.<sup>4</sup> to better understand the baseline environmental conditions and to measure the impacts of each of the alternatives, we recommend discussing in Chapter 3, Affected Environment, how the environment in Colorado has been impacted by the absence of wolves. Providing this baseline will help the reader understand the impacts of the alternatives to Colorado’s ecosystems and environment.

**Representative Quote:** I support the U.S. Fish and Wildlife Service's creation of a new rule under section 10(j) of the Endangered Species Act to advance the restoration of gray wolves in Colorado. Functioning ecosystems require that all species participate in the manner subscribed by Nature. Removing (a) species impacts the balance of the system. The gray wolf has been part of this system for thousands of years and need to remain in numbers dictated by the system

**Representative Quote:** Unfortunately, the draft environmental impact statement only barely mentions the scientific findings on wolves’ positive effects on their ecosystems elsewhere, in particular wolves’ influences on other species of animals and plants through trophic cascades. And the fact that the DEIS does not contain meaningfully different alternatives precludes its analysis of how wolves’ roles in ecosystems would be affected by different types of management. The supplemental DEIS that is required through this DEIS’s inadequacy should evaluate how the authorized killing of wolves under different circumstances reflected in different alternatives -- would affect their ecosystems. In particular, the killing of wolves would harm four species that are negatively affected by high coyote densities since wolves kill coyotes, suppress their numbers, and limit their densities; with greatly constrained levels of wolf-killing, those species -- black footed ferret, swift fox, Canada lynx and pronghorn. Other rare and imperiled species would also benefit from wolves and conversely be harmed by unconstrained killing of wolves, including wolverines that feed on carrion provided by wolves, and Chapin Mesa milkvetch whose range is constrained in part by high levels of elk herbivory along with other sensitive native plants in Colorado affected by high densities and/or sedentary behaviors of elk, cattle and other ungulates, and animals affected by overgrazing of riparian areas.

**Response:** The Service recognizes the growing volume of scientific literature pertaining to wolves’ role as apex predators/keystone species, continued exploration of “top-down versus bottom-up” ecosystem regulation and trophic cascades, and even potential indirect impacts on climate change. The Service also recognizes the importance of predators in maintaining or restoring ecosystem health and that gray wolves are an apex predator. In addition to resources cited in the DEIS, the Service reviewed resources mentioned or provided as part of public comments during the public review period for the rule and DEIS. Section 4.9.2, “Cumulative Impacts Analysis,” in the FEIS has been updated to include additional citations as appropriate.

## ENVIRONMENTAL JUSTICE

**CONCERN STATEMENT 98:** One commenter suggested that the term "environmental justice" should be deleted from the EIS and the analysis combined with the socioeconomics analysis. The commenter suggested that the term "environmental justice" should not be used because it is suggestive, emotional language that "has no mooring in sound science."

**Representative Quote:** xiii Environmental Justice: The "Environmental Justice" category label should be deleted, and the analysis comments combined with the "Socioeconomic Resources" section. "Environmental Justice" is highly charged, emotional, and subjective trigger language that has no mooring in sound science and serves to undermine management principles anchored in fact and reason versus emotional rhetoric.

**Response:** Environmental justice is addressed in the FEIS, and the term is consistent with federal policy, including Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, and Executive Order 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*. The methodology for the environmental justice analysis in the FEIS follows recommendations in the 2016 report by the Federal Interagency Working Group on Environmental Justice, *Promising Practices for EJ Methodologies in NEPA Reviews*.

**CONCERN STATEMENT 99:** One commenter asked if education and outreach, specifically using Spanish-language materials, was provided for environmental justice groups of concern that included a high percentage of people of Hispanic, Latino, or Spanish origin. The commenter recommended the Service conduct predator awareness training for minority livestock producers, to include nonlethal methods for avoiding depredation, and suggested this training may reduce depredations for livestock producers who may be disproportionately affected.

**Representative Quote:** The Draft EIS contains an environmental justice analysis of the proposed action in Chapters 3 and 4 (pp.3-27 3-37 and 4-24 4-28). We appreciate the information that the Service has provided in its analysis of the baseline conditions and potential impacts to communities that experience environmental justice concerns. The Draft EIS states that "minority environmental justice communities within the agricultural population group of concern were identified using the "meaningfully greater" analysis. If the percentage of minority producers or producers of Hispanic, Latino, or Spanish origin exceeds the percentage at the state level by more than 5 percent, these communities are considered environmental justice communities. Six counties in the state, including two focal counties, are home to producers of Hispanic, Latino, or Spanish origin that meet the threshold for environmental justice communities" (p. 3-35). It is not clear whether outreach to these specific ranching operations has occurred and whether any Spanish-language materials were developed to provide information to these smaller ranching operators that might have limited English proficiency. We recommend that education and outreach will include Spanish-language materials to ensure communication is sufficient in communities with significant portions of Spanish speaking residents. It is also unclear whether these Spanish-language materials will include assistance navigating the administrative process to receive depredation compensation, which can be cumbersome for these impacted communities. Finally, we recommend rancher-predator awareness training, which includes training on non-lethal methods for avoiding depredations, which may be useful to reduce depredations for disproportionately impacted operators, among others.

**Response:** CPW's Wolf Restoration and Management Plan includes objectives and policies for education and outreach to target audiences, including the agricultural community and sportspersons and outfitters. Educational materials produced and distributed by the State will address concerns over

wolf-livestock conflicts, including methods to prevent conflicts and wolf-ungulate interactions. As part of this program, the State has produced a Spanish language guide for livestock producers and owners to reduce depredations (<https://cpw.state.co.us/learn/Pages/CON-Wolf-Management.aspx>, Colorado Wolf Management Resources). The Service will continue to coordinate with the State on education and outreach efforts by providing technical expertise to address questions and concerns related to the 10(j) rule.

### ***TRIBAL RESOURCES***

**CONCERN STATEMENT 100:** Commenters requested that the Service consult with Tribal representatives from Colorado to incorporate traditional ecological knowledge into the planning process.

**Representative Quote:** USFWS should consult with tribal representatives and indigenous voices from Colorado and draw on and use traditional ecological knowledge to effectively guide the development of the 10(j) management rule and other wolf policies.

**Representative Quote:** Native American tribes should also have a say in the implementation of the plan, since their knowledge and beliefs about wolves and the ecosystems is much older than ours.

**Representative Quote:** Our Ute people are the original and longest continuous inhabitants of what is now the state of Colorado and maintain historical as well as contemporary interests all over the state to this day. We request that our comments be strongly considered and included in the establishment of a nonessential experimental population of the gray wolf in Colorado and final environmental impact statement.

**Response:** The Service has been consulting with Tribes from Colorado and across the region regularly. Chapter 5 of the FEIS has been updated to further detail this coordination.

**CONCERN STATEMENT 101:** Commenters noted the taking of a wolf would be considered the taking of a sacred animal by the Global Indigenous Council.

**Representative Quote:** While the Ute peoples' opinions are considered as they do not support the reintroduction of the wolves, the Global Indigenous Council does support this, and by allowing take of a sacred animal, this is violating their beliefs (Richardson, 2020).

**Response:** Throughout the planning process, the Service has coordinated with Tribes throughout the region, including conducting government-to-government consultation (see Chapter 5 of the FEIS). Information provided by these Tribes related to their views on the wolf and its presence on their Tribal lands was included in the DEIS, and further information obtained during the public comment period has been incorporated into the FEIS.

**CONCERN STATEMENT 102:** Commenters requested that the EIS reflect there should be no wolves in the Tribal Reservation and Brunot Agreement Area. They requested a no wolf buffer south of I-70 to ensure Tribal rights are protected.

<p><b>Representative Quote:</b> Under Chapter 3.4.3 Tribal Cultural Resources Treaty rights and reservation must be revised to reflect the Southern Ute Indian Tribe stipulating “no wolves” within the Tribal Reservation and the Brunot Treaty Area. The USFWS must provide a “no wolf” buffer south of I-70 to ensure tribal rights are protected.</p>
<p><b>Response:</b> The ability of Tribes to manage wolves on their lands is addressed in the FEIS (see section 4.8.3). As stated there, “. . . Tribes would be able to conduct wolf management to address depredation of livestock and impacts on ungulate populations from wolves on Tribal reservation lands as designated agents of the Service within the experimental population boundary on reservation lands. Tribes would be required to obtain prior approval from the Service before implementing certain management actions as outlined in Chapter 2.” Further, as noted under Concern Response 12, the rule has been modified to allow the Southern Ute Indian Tribe and the Ute Mountain Ute Tribe to manage wolves in relation to ungulate impacts on reservation lands.</p>
<p><b>CONCERN STATEMENT 103:</b> A commenter asked for the Service to GPS collar all wolves so that they can be removed from Tribal lands where they are not desired. The commenter also requested the Service remove any wolf from Tribal lands where they are not desired at no cost to the Tribe.</p>
<p><b>Representative Quote:</b> Navajo Nation wishes to have all wolves collared with GPS tracking units so as to ensure any individual that wanders into Navajo lands is quickly located and removed.</p>
<p><b>Representative Quote:</b> Navajo Nation does not want wolves to establish on Navajo Lands. As such, any wolf that comes onto Navajo Nation shall be removed as quickly as is possible. Navajo Nation expects this effort to be coordinated by US Fish and Wildlife Service and/or Colorado Parks and Wildlife at no charge to the Nation.</p>
<p><b>Response:</b> The management of wolves, including collaring, would occur in accordance with the State Plan, with the State of Colorado serving as a designated agent. The Service is engaged in government-to-government consultation with the Navajo Nation and will continue to discuss these concerns at this level to reach a resolution.</p>

***SPECIAL STATUS SPECIES***

<p><b>CONCERN STATEMENT 104:</b> Commenters asked for the Service to evaluate impacts of the rule on special status species more thoroughly. Specific concerns about impacts to special status species included wolves preying on lynxes and competing with them for food sources and predation on the Greater sage-grouse, Columbian sharp-tailed grouse, and Gunnison sage-grouse. Additionally, commenters noted that ranchers have worked with the Service, CPW, the Forest Service, and the Bureau of Land Management to protect lower elevation sagebrush habitats for Gunnison sage-grouse and worried about predation on grouse species. A commenter asked the Service to consider adding flexibility to the rule to protect species of special concern if they are negatively affected by the reintroduced wolves.</p>
<p><b>Representative Quote:</b> The EIS conducted in the draft does not account for environmental impact to species such as Lynx. The Lynx is currently listed as endangered with the ESA. Colorado's lynx reintroduction program has proven marginally successful. Wolves and lynx Compete for food sources and wolves have been shown to cause predation impact on Lynx themselves.</p>

**Representative Quote:** Lethal management of gray wolves that are having a significant impact on other species of concern (i.e., Gunnison Sage Grouse and Greater Sage Grouse) should be added to the final rule. At the very least, attention to and investigation of the impacts needs to be further explored instead of being characterized as “not likely.”

**Representative Quote:** “Potential environmental impacts would be the same as those described under the no-action alternative because management flexibility for reintroduced wolves under alternative 1 would not include provisions for the take of wolves for the purposes of protecting or managing species of special concern. Therefore, alternative 1 is not likely to result in adverse effects on species of special concern.” Based on the reference to the “no action” alternative this section is wrong. The 10(j) should provide flexibility to protect ungulate species, other prey species, and other wildlife species of special concern if they are negatively impacted by the presence of wolves.

**Representative Quote:** In addition, including the northern half of Gunnison County would overlap wolf habitat with Gunnison sage grouse (endangered) habitat. Ranchers in the Gunnison Basin have worked hard with USFWS, CPW, the Forest Service, and the BLM to protect lower elevation sagebrush habitats. In heavy snow winters like 2023, wolves would inevitably be limited to predation in these lower elevation sagebrush habitats and prey on Gunnison sage grouse as well as elk, deer, and livestock. There is no literature available on Gunnison sage grouse or Greater sage grouse that shows the effect wolves would have moving elk or deer around when sage grouse are lekking in March (proposed time of wolf release).

**Response:** The FEIS addresses potential impacts of the rule on special status species. Potential impacts of wolf reintroduction on Canada lynx and Gunnison sage-grouse (and other ground-nesting birds) through predation and competition are described in the cumulative impact analysis. This analysis was based on a review of the best available scientific literature. The rule does not include provisions for the take of wolves for the purposes of protecting or managing species of special concern. However, declines in Canada lynx and grouse populations have not been documented because of previous wolf reintroductions elsewhere in North America and are not anticipated to result from the reintroduction of wolves in Colorado. The FEIS notes that predation and competition are not driving factors in the decline of Canada lynx or sage-grouse (both Gunnison and greater sage-grouse) populations (main drivers include habitat loss, fragmentation, and degradation), nor are they considered barriers to recovery success for either of these species.

## ***GRAY WOLF IMPACTS***

**CONCERN STATEMENT 105:** Commenters expressed concerns that the lethal take permitted in the rule could negatively affect gray wolves and hinder their recovery in Colorado. A commenter noted that given the small initial number of wolves slated for reintroduction, any lethal take of wolves could impact recovery. Commenters also expressed concern about how lethal take could create pack instability and lead to pack dissolution. Other impacts of lethal take on gray wolves that commenters cited were disturbances to hunting patterns, territory isolation, behavior, genetic diversity, and social structure. Commenters noted that wolves have complex social patterns that include non-breeder altruism and cooperative hunting—characteristics that can be disturbed by removal of small numbers of wolves. Commenters asked the Service to consider additional research on potential numbers of wolves that would be lethally taken in Colorado and to reevaluate how lethal take has affected wolves in Idaho, Montana, and Wyoming without federal protections.

**Representative Quote:** In a recent study, “Human-caused Mortality Triggers Pack Instability in Gray Wolves,” researchers confirm the devastating effects that human killing of wolves has on pack-level biological processes which impact pack persistence and reproduction (17). Earlier research confirms

the negative impacts of breeder loss on social structure, reproduction and population growth in social canids such as gray wolves, detailing the setbacks packs suffer including pack disintegration, when a breeding wolf is lost from a pack (18). Gordon Haber, wolf biologist in Denali National Park for 43 years, wrote in his 2013 book, *Among Wolves*, “For wolves, shooting and trapping causes significant impacts” lasting long after numbers have recovered on wolf family social structure, behavior, hunting patterns, distribution, territories, genetic variations, and mortality patterns of survivors and recolonizers. Wolf social organization and success are based on two evolutionary strategies that are rare among vertebrates: (1) Cooperative breeding/rearing non-breeders altruistically attend the breeding pair, as well as cooperatively nurse, babysit, teach, guard, and raise pups; and (2) cooperative hunting adults cooperate in stalking and killing prey” (20). In sum, Human killing of wolves destroys the fabric of wolf families and their survivability undermining wolf conservation.

**Representative Quote:** The DEIS should consider available science regarding the potential numbers of wolves and prey that will be killed in Colorado. I've prepared reports and articles that provide background information and analyses that predict the numbers of wolves that might populate Colorado, and the numbers of prey animals they will kill (Cronin 2020a, 2020b, 2020c, 2023a, 2023b). Please consider these references as part of my comments.

**Representative Quote:** The Proposed Rule asserts that re-eradication is not possible under a 10(j) rule because of the assumption that "purposeful eradication is no longer a tool used for wolf management. Based on the elimination of purposeful eradication, and the fact that gray wolves are protected under State and Federal laws, we do not anticipate the original cause of wolf extirpation from Colorado to be repeated." Proposed Rule at 32. However, the present examples of Idaho, Montana, and Wyoming make clear that, absent federal protections, there is considerable political pressure to re-institute state-sponsored campaigns of purposeful eradication, and plenty of evidence that illegal poaching increases after the full protections of the ESA are lifted (Santiago-Avila et al. 2020).

**Representative Quote:** Given the identical lack of any restrictions on wolf killings in response to predation on livestock, and the state control that would be granted under authority of Alternative 1, loss of genetic diversity from the founding population will occur in Colorado as well. Such losses will only rarely be mitigated by introgression of northern wolves' genes into the Colorado wolf population, given the widespread wolf killing and lack of regulations restricting such killing throughout 84% of Wyoming, and encompassing the entirety of southern Wyoming. A small, isolated population of wolves in Colorado, subject to killing and with limited and declining genetic diversity, would likely become extirpated and likely also not be able to contribute meaningfully to the representation, redundancy and resilience that the Service cites (but didn't bother to really examine) as its anticipated benefit to overall conservation of endangered gray wolves from Alternative 1.

**Response:** Overall, the social structure of gray wolf packs is adaptable. Breeding members can be replaced from either within or outside the pack, and pups can be reared by another pack member should their parents die (USFWS 2020). Consequently, wolf populations can overcome severe disruptions, such as intensive human-caused mortality or disease as long as immigration from either within the affected population or from adjacent populations (or both) occurs (Bergerud and Elliot 1998, pp. 1554–1559; Hayes and Harestad 2000, pp. 44–46; Bassing et al. 2019, entire). The Service acknowledges that breeder loss can and will occur in the future to some degree regardless of the presence of human-caused mortality and that the loss of any individual will have some effect on pack dynamics. As noted in Concern Statement 93, the FEIS details how the limited and narrow provisions for lethal take would allow for species conservation while reducing the regulatory burden associated with species introduction.

**CONCERN STATEMENT 106:** Commenters suggested that some of the comparisons to other wolf reintroductions in the rule and DEIS were incorrect. A commenter noted that the Northern Rocky Mountains and Yellowstone National Park have key differences in land use from Colorado, including large areas that are free of livestock and larger areas of winter range for elk. They asserted that wolves' success in the Northern Rocky Mountains could be attributed to ample elk for prey and to the lack of lethal take in response to livestock predation in areas without livestock. A commenter also said that the DEIS's reference to low levels of lethal take in Oregon and Washington was misplaced because the data was collected during initial monitoring years and because wolves in Colorado would be more likely to prey on livestock and be lethally taken. The commenter predicted that levels of lethal take would be similar to levels experienced by Mexican wolves in Arizona and New Mexico. A commenter also suggested that research in the Northern Rocky Mountains and Alaska indicating that wolves could withstand high levels of human-caused mortality were not applicable to Colorado because their wolf populations were larger and more established. The commenter asked the Service to evaluate in the EIS the relevance of the data on the effects of human-caused mortality in the Northern Rocky Mountains and Alaska to wolves in Colorado.

**Representative Quote:** The analysis for Alternative 1 discusses wolf numbers and distribution, stating "in the long term, the allowable take provisions under alternative 1 would be unlikely to reduce the number of wolves in Colorado because wolf populations are able to sustain relatively high rates of human-caused mortality (see section 3.2.1 for discussion on mortality)." EPA reviewed Section 3.2.1 of the Draft EIS, which includes the following: "Wolf populations have demonstrated strong resilience to mortality because of the compensatory nature (see definition in Appendix A, Glossary) of natural and human-caused mortality factors and because of wolves' high reproductive potential (Fuller et al. 2003). The range of sustainable human-caused mortality rates varies due to biological and ecological conditions of specific habitats and wolf populations. Previous research in Minnesota and Alaska indicated that wolves could withstand human-caused mortality rates up to 28 percent before a population decline is detected (Fuller 1989; Adams et al. 2008), while modeling the effects of human-caused mortality on northern Rocky Mountain wolf population growth estimated a sustainable rate of 45 percent (Gude et al. 2012)" (pp. 3-9 3-10). The Alaskan and Northern Rocky Mountain populations are more established with a much greater number of wolves than Colorado. Therefore, for Colorado, there is a question as to what rate of human-caused mortality would have the potential to have a significant impact on the ability of the rule to further the conservation of the species and to achieve the population targets in the Draft CPW Wolf Reintroduction Plan. We recommend evaluating in the Final EIS the extent to which data on the effects of human-caused mortality on wolf populations in Alaska and the Northern Rockies are relevant to future introduced Colorado populations, and what that evaluation indicates regarding the ability of introduced Colorado populations to withstand human caused mortality.

**Representative Quote:** The draft environmental impact statement acknowledges that, under alternative 1, legal killings of wolves could impede the ability to establish a self-sustaining population and projects that "wolf numbers in Colorado during the first five years are likely to be similar to reported wolf numbers in Oregon (average of 37 wolves in 2009 & 2013) and Washington (average of 27 wolves in 2008 & 2012)" because "lethal control actions in Colorado are likewise anticipated to be similar to Oregon and Washington, during their respective initial monitoring years, where 3 percent and 2 percent, respectively, of the known wolf numbers were lethally controlled. Nonetheless, the DEIS is optimistic that "in the long term, the allowable take provisions under alternative 1 would be unlikely to reduce the number of wolves in Colorado because wolf populations are able to sustain relatively high rates of human-caused mortality. The DEIS's short-term projection based on Oregon and Washington numbers, and the DEIS's accompanying long-term reassurance about the demographic effects of Alternative 1 on wolves, are each misplaced. Colorado's wolves will likely prey on livestock and be subject to ensuing federal and state wolf killing (in addition to private illegal



killings) at rates similar to those experienced by Mexican gray wolves during their initial reintroduction to Arizona and New Mexico.

**Representative Quote:** Citing in the proposed rule and draft environmental impact statement the robust wolf numbers achieved through the Service’s reintroduction of wolves as an experimental nonessential population to the northern Rocky Mountains is not predictive as a model to project Colorado’s upcoming wolf demography under Alternative 1. That is because of a difference in land use and a difference in management: First, the northern Rockies is blessed with two extensive areas with little or no domestic livestock grazing & 2.2 million acres in Yellowstone National Park and a similar extant in central Idaho encompassing the Frank Church & River of No Return Wilderness Area, each an order of magnitude larger than any livestock-free area found in Colorado, for example Yellowstone is an order of magnitude greater in size than the 267,000 acres of Rocky Mountain National Park (and that comparison does not even account for the far-greater proportion of Yellowstone National Park and in particular central Idaho compared to Rocky Mountain National Park, comprising winter range for the elk that constitutes wolves’ primary prey). Within those livestock-free areas in the northern Rockies, wolf numbers increased, and from within them dispersing wolves emanated, even as wolf numbers were (and are) perennially reduced through killings in response to livestock predation almost everywhere else in the northern Rockies.

**Response:** In drawing comparisons to other wolf reintroductions in the rule and FEIS, the Service used data from the most similar areas and reintroduction scenarios available. Oregon and Washington are most similar to Colorado in that there are few areas that do not have livestock grazing on the landscape. Furthermore, Colorado is home to the largest population of elk in the country, providing ample prey availability, similar to conditions in the northern Rocky Mountains. It is speculative to assume that lethal control measures will be higher in Colorado compared to eastern Oregon and Washington.

**CONCERN STATEMENT 107:** Commenters proposed corrections to the rule and DEIS related to gray wolf impacts. Proposed corrections included:

(1) Asking the Service to remove “sport hunting” from the rule section titled “Actions and Activities in Colorado that May Affect Introduced Gray Wolves.” The commenter noted that the inclusion of sport hunting could create confusion because regulated hunting would not be considered while wolves are federally listed and the 10(j) rule is in effect.

(2) Requesting reevaluation and correction of the descriptions of potential wolf depredation incidents in the DEIS. Commenters asserted that two of the depredations in Jackson County were on dogs, and the third was on livestock. They also said that CPW has not conclusively determined the cause of the calves’ deaths in the 2022 incident near Meeker and asked the Service to include CPW’s position on the events in the EIS. Another commenter asserted that the investigation into the depredation near Meeker had found no evidence of wolf involvement.

(3) Changing the number of wolves in the group in north-central Colorado from seven individuals to two individuals based on information from March 2023.

**Representative Quote:** In the section entitled Actions and Activities in Colorado that May Affect Introduced Gray Wolves, we share the following comments. In the second paragraph of that section, controllable sources of mortality are discussed. The inclusion of "sport hunting" in this section is inappropriate, because while federally listed, the condition under which 10(j) designation is relevant,

sport hunting (i.e., regulated hunting) is not considered. This term should be removed from the document to eliminate potential confusion on this issue.

**Representative Quote:** In the section entitled Habitat suitability/prey availability (Within the Likelihood of Population Establishment and Survival heading), it is stated that there is, "a single group of at least seven wolves presently in north-central Colorado". This is referenced earlier in the document, but qualified as known to be true in September 2022. We currently have confirmed only 2 animals in that group, as of March 2023. This information should be corrected in the final rule.

**Representative Quote:** Page 3-9 of Chapter 3 states "three separate wolf depredation incidents on cattle were confirmed on a ranch in Jackson County, Colorado, between December 2021 and January 2022 (CPW 2021c, 2022d), and an investigation is ongoing (as of December 2022) of a potential depredation on White River National Forest lands near Meeker in October 2022 (CPW 2022e). See section 3.5 for a more detailed discussion of the socioeconomic impacts of depredation." According to available information two of the confirmed Jackson County depredations were on dogs, and one on livestock. Additionally, in February 2023 CPW concluded the investigation into the October 2022 incident in Meeker that it could not determine the exact cause of the death of the calves and found no evidence wolves were in the area at the time of the incident. Further, Carter Niemeyer, a former U.S. Department of Agriculture-Wildlife Services district supervisor and a retired U.S. Fish and Wildlife Service wolf-livestock conflict specialist, as well as a current member of CPW's Technical Working Group on wolf restoration, issued a report in February 2023 concluding that the evidence in Meeker is inconsistent with wolf attacks. We recommend the Service revise the Final EIS to correct the errors in the case of the Jackson County depredations and include the current CPW position on the incident in Meeker. We also recommend the Service correct the reference to Section 3.5 for the depredation impact analysis. The correct citation is Section 4.7.

**Representative Quote:** On page 3-9 of the DEIS, reference is made to an investigation on the White River National Forest Lands near Meeker, Colorado. This investigation has concluded with no evidence of wolves being involved. This should be corrected in the Final EIS.

**Response:** Phase 4, as originally proposed in the State Plan, has been removed from the final plan. References to sport hunting have been removed from the rule. Information on the number of wolves known to reside in Colorado and depredation events has been updated in the FEIS.

**CONCERN STATEMENT 108:** A commenter noted that the analysis of the no-action alternative and alternative 1 in the DEIS is not clear about which alternative would be more beneficial to wolf conservation.

**Representative Quote:** The Draft EIS states the no action alternative "is expected to be the most beneficial for wolves from a purely biological standpoint because it would limit any take on wolves that are reintroduced or that disperse naturally into the state. However, illegal human-caused mortality may be highest under this alternative (Olson et al. 2015)" (p. 4-4). Then for Alternative 1 it states, "In the long term, it is not expected that allowable take under alternative 1 would have a measurable impact on the population" (p. 4- 5). These two statements appear to be at odds with one another and, therefore, it is unclear if Alternative 1 is more beneficial to the wolf and would further conservation of the species compared to the no action alternative. It appears in its analysis of impacts the Service concluded that illegal take is expected to be higher under the no action alternative and that lethal take is necessary for management of the wolves by preventing illegal take and decreasing livestock depredation. The Draft EIS includes numerous citations to scientific literature supporting this position.

**Response:** The purpose and need of the FEIS is not focused on providing the most conservation benefits; however, as part of the 10(j) rule, implementation of the rule must show that it furthers the conservation of the species. Therefore, the analysis in the FEIS addresses impacts on the species overall but does not focus on conservation benefits.

**CONCERN STATEMENT 109:** One commenter asked the Service to revisit the analysis of alternative 1 in the FEIS where the text states, “Alternative 1 could have adverse environmental impacts to individual wolves through regulated take but is not expected to hinder recovery or have population-level effects in the long term.” The commenter asserted that lethal take of individual problem wolves would not have adverse impacts on the environment.

**Representative Quote:** “Alternative 1 could have adverse environmental impacts to individual wolves through regulated take but is not expected to hinder recovery or have population-level effects in the long term.” Killing an individual wolf is not an environmental impact to the wolf. The environment is habitat and surroundings in which the wolf lives. The removal of individual problem wolves will not have an adverse impact on the environment.

**Response:** The FEIS analysis does not assert adverse impacts to the environment overall, but instead adverse impacts at the individual level. The “take” of a wolf is considered an adverse impact, but as noted in the analysis, this impact would be at the individual level and not at the population level.

### ***MEXICAN WOLF IMPACTS***

**CONCERN STATEMENT 110:** Commenters stated that any reintroduction of the northern gray wolf may jeopardize recovery of the Mexican wolf, and the Service should ensure that State trust authorities for the recovery of the Mexican wolf are not harmed by the proposed reintroduction. Commenters requested that the Service complete a more robust analysis of potential impacts on Mexican wolves in the EIS. Commenters noted that the EIS does not clarify how gray wolves that leave the experimental population boundary would be returned to prevent impacts on the genetic integrity of the Mexican wolf. Commenters requested that the Service identify all available tools and outline a specific plan for returning gray wolves that leave the experimental population boundary to prevent impacts on Mexican wolves. Some commenters requested the Service issue a 10(a)1(A) permit allowing the capture and return of gray wolves that disperse beyond the boundary. Commenters additionally suggested advising the State of Colorado not to proceed with the gray wolf reintroduction due to potential impacts on Mexican wolves or taking action to maintain a buffer outside the experimental population boundary between gray wolves and Mexican wolves.

**Representative Quote:** It is important to point out that recovery of the Mexican wolf is required of the U. S. Fish and Wildlife Service under the Endangered Species Act and any federal action that jeopardizes Mexican wolf recovery is contrary to both the Service’s mission and the Act itself. It is also important to affirm that Arizona is outside the historical range of the Northern wolf and any introduction, intended or otherwise, is an unacceptable action on the part of the Service. As has been stated by Department staff on a number of occasions, the concept that the release of wolves in Colorado is a state action and that the establishment of a 10(j) as solely a separate federal action is a fundamentally flawed approach to an action that is certain to fail legal challenge. In the Department’s response to this request for comment, the agency will provide abundant examples of the inextricable tie between the establishment of the proposed 10(j) rule and the release of wolves. Logic should clearly point to the fact that without the release of wolves in Colorado, there is no need for a 10(j) rule and vice versa. Mexican wolf recovery under the established 10(j) population throughout the subspecies

historical range will continue to be the focus for the Commission and the Department. The Service must recognize that any action that jeopardizes Mexican wolf recovery and conservation must ensure that State trust authorities for recovery of Mexican wolf and management of wolves within Arizona, are not harmed by establishment of an NEP within the State of Colorado.

**Representative Quote:** One of the clear flaws in the current draft of the EIS is the lack of clarity in how wolves leaving the 10(j) area would be returned to Colorado and not allowed to establish within the historical range of the Mexican wolf. The Service must ensure the genetic integrity of the Mexican Wolf isn't diluted by naturally dispersing wolves that are allowed to establish outside the NEP. The Service must ensure that establishment of the NEP in Colorado, and future recovery efforts do not create unlawful consequences in Arizona and unravel progress made in Mexican wolf recovery.

**Representative Quote:** AZSFWC is on record supporting recovery of the Mexican wolf within its historic range, an effort that represents tens of millions of dollars and decades of effort by state wildlife agencies, the Service, the government of Mexico, and numerous stakeholders. The dispersal of larger, behaviorally dominant Gray wolves into Arizona, and the inevitable genetic mixing, poses an unacceptable, existential threat to the Mexican wolf.

**Representative Quote:** The draft environmental impact statement (DEIS; USFWS 2023, p. 4-36) erroneously concludes there will be minimal impact from larger northern wolves on the genetic integrity of Mexican wolves. The Department therefore requests the Service do a more robust analysis of the impacts of introducing and establishing an experimental population of northern gray wolves on the ESA listed Mexican gray wolf population.

**Response:** Additional information on potential cumulative impacts on the Mexican wolf has been added to the FEIS in the section, "Cumulative Impacts Analysis." To maintain separation between northern gray wolves and Mexican wolves and protect Mexican wolf genetic integrity, the Service is coordinating with the State of Colorado and the States of Arizona, New Mexico, and Utah through a separate process to develop a permitting approach to mitigate potential impacts on Mexican wolves from the State of Colorado's reintroduction effort. This permitting approach is a separate action from the 10(j) rule as described further in the FEIS. The decision by the State to reintroduce or not reintroduce the gray wolf is outside the scope of the Service's rulemaking and the EIS (see FEIS section 1.2, Regulatory Authority).

**CONCERN STATEMENT 111:** Commenters suggested that reintroduced gray wolves be allowed to mix with Mexican wolves either in a zone of intergradation in Colorado or New Mexico and Arizona to increase the genetic diversity of Mexican wolves.

**Representative Quote:** 2. ALLOW MEXICAN GRAY WOLF CONNECTIVITY WITH COLORADO'S GRAY WOLVES. Mexican gray wolves are in urgent need of genetic rescue (1). Mexican gray wolves should be allowed to freely enter Colorado to enable increased genetic diversity.

**Representative Quote:** They need to be allowed to mix with the Mexican Grey Wolves so that genetic diversity can provide for good future growth of the packs.

**Representative Quote:** The Colorado rule does not even consider the restoration and reintroduction of Mexican gray wolves in Colorado, and the Service's lack of critique in the DEIS and draft 10j is a grave abdication of duty to ensure the Mexican wolf's survival as a subspecies.

**Representative Quote:** Mexican Grey Wolves (*Canis lupus Baleyii*) are extremely endangered and desperately need genetic diversity (1). This rule mentions nothing about the Mexican Grey Wolves (MGW) The MGW need to be able to connect with the Grey Wolves in CO or else their subspecies is likely to go extinct due to genetic depression (1). This means that the wolves in CO should be considered fully endangered.

**Response:** Addressing genetic diversity in the Mexican wolf is outside the scope of this rulemaking. Discussion of potential cumulative impacts on the Mexican wolf, specifically with regard to maintaining the genetic integrity of the listed entity, has been added to the FEIS in the section, “Cumulative Impacts Analysis.”

**CONCERN STATEMENT 112:** One commenter suggested that the experimental population boundary for the Mexican wolf should be expanded to the north based on the potential historical range for this subspecies and the small number of individuals in the wild in the U.S. and Mexico. This commenter suggested that the EIS take a harder look at the status of Mexican wolf recovery in the description of the program in the “Cumulative Impacts” section, rather than describe the Recovery Plan and the effects of the gray wolf reintroduction on the Mexican wolf recovery program. The commenter also suggested the Service consider potential impacts under the rule to Mexican wolves that disperse into Colorado.

**Representative Quote:** The DEIS’s reliance on the number of Mexican wolves in the wild as a measure of the population’s growth ignores the best available science that shows it is the genetics not the numbers of Mexican wolves that matter. The Mexican wolves are descended from just seven founders, and they suffer high degrees of inbreeding. As the population grows in number (241 in 2022), the ability to influence the overall diversity with additional genes is reduced. Thus, the growth of the population alone is not evidence of its stability, it’s simply more inbred wolves on the landscape. It is unclear if the geographic expansion cited in the DEIS (at 4-32) includes occupied habitat in Mexico or not, but the Service cannot be relying on Mexico to support Mexican wolf recovery. As of August 2022, Mexico had only 13 collared wolves alive in the wild (Anderson, personal communication, April 18, 2023), and two of those were actually living in the United States and one has since been killed. So, there are a maximum of eleven collared wolves in Mexico, which hardly accounts for a robust binational recovery. Additionally, the current northern boundary on the Mexican wolf recovery area (Interstate 40 in Arizona and New Mexico) is scientifically inadequate. “There is no scientific support for the decision to limit recovery to an arbitrary geographic area bounded by a highway. Genetic analysis of historic Mexican wolf specimens showed that the range of the subspecies likely extended beyond the initial range that was assumed by earlier scientists (Leonard et al. 2005). Other research has identified areas well to the north of the current distribution as essential to the subspecies (Carroll et al. 2014). Rather, in notes from the recovery planning process, the Interstate 40 boundary was justified for “geopolitical reasons” (USFWS 2016).” “The 2017 Recovery Plan limits recovery efforts to the areas to the south of Interstate 40 based on a description of the species’ historic range derived from limited morphological analyses (Heffelfinger et al. 2017). This perspective is not consistent with more recent molecular genetic analyses of Mexican wolf specimens, which suggest a broader historic distribution of Mexican wolves (Hendricks et al. 2016, 2017, Hedrick 2017). “Allowing the Mexican wolf to recover in additional places north of Interstate 40 (e.g., the north rim of the Grand Canyon, the San Juan Mountains, and southern Utah) would provide greater representation to ensure the recovery of the Mexican wolf in a variety of ecosystems across the likely historic range that was formerly occupied by either Mexican wolves or closely related, but now extirpated gray wolves. This broader geographic view of recovery is supported by scientific literature and aligns well with the larger purpose of the

Endangered Species Act to protect the ecosystems upon which endangered species depend (Carroll et al. 2006).

**Representative Quote:** The DEIS's summary of the Mexican wolf reintroduction in the cumulative impacts section fails to provide an accurate assessment of the Mexican wolf recovery. DEIS at 4-31. It essentially takes the aspirational Recovery Plan as the current status of the program, without accounting for the actual critical differences between the goals of the project and the current, on-the-ground realities. There is no actual analysis of the effectiveness of the current Mexican wolf 10j designation, or how this could be affected by the Colorado rule. Moreover, a statewide 10j for gray wolves in Colorado would preclude Mexican wolf recovery in Colorado, but the Service here has failed to take a hard look of the impacts of that restriction.

**Representative Quote:** The DEIS does mention gray wolves as having been documented coming from the north into Arizona and New Mexico (DEIS at 4-36) but fails to consider dispersal in the opposite direction. With a statewide NEP, any wolves in Colorado would be treated the same way, and Mexican wolves would effectively lose the Endangered Species protections they have now when they disperse from the MWEPA.

**Response:** Additional information regarding the Mexican wolf and potential impacts has been added to the FEIS in the section, "Cumulative Impacts Analysis." The decision to modify the 10(j) boundary for the Mexican wolf is outside the scope of analysis for this effort.

## ***OTHER WILDLIFE***

**CONCERN STATEMENT 113:** Commenters stated that reintroduction of gray wolves without management flexibility would result in severe decreases in ungulate populations. Commenters also noted that potential impacts on ungulate populations or the current conditions of these populations must be considered in development of the rule or analyzed in more detail in the EIS. Specific areas suggested for further analysis included ungulate population and hunting license trends, indirect impacts as a result of changes in ungulate behavior, and potential impacts on ungulates in the focal counties. One commenter suggested that ungulate populations in Colorado are no longer sufficient to support a population of gray wolves and the reintroduction should be reconsidered. One commenter suggested that illegally reintroduced species, such as moose, should not be considered a sustainable source of prey for reintroduced gray wolves.

**Representative Quote:** As noted in CPW's draft management plan, gray wolves will be reintroduced onto private lands due to a lack of resources to comply with a full NEPA analysis. Nevertheless, further analysis is needed, and should be included in the final 10(j) rule because wolf reintroduction at the scale proposed will have significant impacts on ungulate herds and other wildlife. We appreciate the inclusion of the concerning trends in Colorado's mule deer statewide population and individual herds, and consideration of select big game population trends under the "Habitat Suitability/Prey Availability" section of the proposed rule. However, we recommend the USFWS incorporate additional analysis to bolster the DEIS and properly inform decision making. Specifically, we ask that USFWS compare ungulate herd population trends to trends in big game hunting license applications and hunting opportunity. For example, while the state's elk population may appear to be stable at a high level, USFWS acknowledges that elk calf:cow ratios are problematically low in some areas. This was not identified as a potential concern in the DEIS or analyzed. The DEIS and proposed rule also overlook the fact that in an ongoing attempt to try to moderate the consequences of habitat fragmentation and problematically low elk calf:cow ratios and recruitment rates, CPW has already reduced the number of limited cow elk licenses available to hunters by 68,000 licenses since 2004 to try to stabilize elk herds. In the comments submitted to the Colorado Parks and Wildlife Commission by CWCP regarding their

<p>draft Wolf Restoration and Management Plan, we asked CPW to do more to estimate herd sizes and conditions, and hunter satisfaction in the areas where wolf introduction is planned. Doing so would create a valuable baseline from which the USFWS, CPW, and the Parks and Wildlife Commission could evaluate conditions post gray wolf reintroduction.</p>
<p><b>Representative Quote:</b> Severe depredation on Colorado’s wild herds and other species from moose to Bighorn sheep – must be a consideration for future management decisions. These wildlife species are also valuable and beloved.</p>
<p><b>Representative Quote:</b> Protection vs. Management of this non-essential species is paramount to saving our elk, deer, recovering Moose, Bighorn sheep and mountain goat populations. A forced introduction of non-native wolves (McKenzie Grey’s from the Vanadian Yukon area) was done in Yellowstone Park in the mid 90s with DISASTOROUS results to the elk herds there (which we had spent 25 years building up) as shown by the attached chart metric comprised of the elk population decline numbers from the USFWS. To not learn that ALL wildlife needs to be managed with science (vs. protecting a serious Apex predator in a prey rich environment) from this forced introduction and cause and effect metric, would be a huge, grave mistake. Part of this same wolf population has now migrated into adjacent states (Montana, Wyoming, Idaho, Washington, Oregon and Colorado) and reducing the carrying capacity of both wild ungulates and livestock now in those states. For the sake of our wildlife, PLEASE ALLOW Colorado to manage these wolves.</p>
<p><b>Representative Quote:</b> The inclusion of an illegally introduced non-native animal species (Moose) in the calculation of food source for the wolf populations is not scientific protocol. This illegal presence cannot be assured for the future, nor can it be counted towards a supporting food source</p>
<p><b>Response:</b> The impacts from the reintroduction of wolves by the State of Colorado to other wildlife is described in the FEIS in the section, “Cumulative Impacts Analysis.” This analysis notes that it is unknown if the presence of wolves would influence ungulate population dynamics but cites studies that indicate long-term, adverse impacts are not anticipated. The issue of whether ungulate populations are sufficient to support reintroduction is directly related to the State planning effort and outside the scope of this analysis.</p>
<p><b>CONCERN STATEMENT 114:</b> Commenters noted that reintroduction of gray wolves in other parts of the country has contributed to improvements in the health of ungulate herds or ungulate population numbers. Commenters suggested areas of the analysis, including discussing the potential impacts on hunting, that should be revised to consider an improvement in the health of ungulate herds or ungulate population numbers.</p>
<p><b>Representative Quote:</b> Indeed, since the reintroduction of wolves in northern states, the elk and deer herds are larger and healthier than they were before the reintroduction. The wolves remove weak, diseased and older animals in those herds, actually strengthening them.</p>
<p><b>Representative Quote:</b> In Idaho, hunters’ success remains above the ten-year average and last year marked the eighth year in a row where elk harvest eclipsed 20,000, which has happened only one other time dating back to the 1930s indicating that wolves are clearly not a threat to elk or hunter success. To the contrary, a healthy wolf population would be an asset to combatting Chronic Wasting Disease which is beginning to appear in deer herds in Idaho. IDFG plans to cull ungulates where CWD has appeared, but wolves provide additional and perhaps even more effective influence on reducing</p>

diseases from elk and deer herds. Current and longer-term elk and deer populations and hunting success levels do not justify a cap of only 500 wolves in Idaho

**Representative Quote:** Whereas under the No-action alternative, “A decline in hunting applications could lead to decreased wildlife revenue for CPW” (page xii and throughout), hunting applications could actually increase if the elk and deer herds are improved by a reduction in chronic-wasting disease. To date, the Colorado Parks and Wildlife Commission has been markedly unsuccessful in limiting this disease in Colorado, if they are trying to do so. Accordingly, the speculative statement (page x and throughout), “The lack of flexibility for the management of reintroduced wolves could result in short or long-term, adverse impacts to prey populations because the Service and its designated agents would not have the ability to manage wolves for the purposes of managing other wildlife populations for conservation,” is in error because prey populations could, in fact, become healthier and increase.

**Response:** The impacts from the reintroduction of wolves by the State of Colorado on other wildlife is described in the FEIS in the section, “Cumulative Impacts Analysis.” This analysis notes that it is unknown if the presence of wolves would influence ungulate population dynamics but cites studies that indicate long-term, adverse impacts are not anticipated. Available data are not conclusive regarding the likelihood of wolf predation to improve the health of ungulate populations over the long term.

## ***IMPACT TOPICS***

**CONCERN STATEMENT 115:** One commenter asked the Service to include an analysis of the best available science on the benefits wolves can provide to ecosystems and how those benefits can mitigate the causes and effects of climate change. They also requested a description of anticipated climate change impacts in the planning area and a discussion of how climate change could impact the affected environment and environmental consequences of each alternative. They noted that climate change could exacerbate impacts of lethal take and change the rule’s ability to advance wolf conservation. The commenter suggested using the Council on Environmental Quality’s Interim Climate Guidance for NEPA, particularly the section titled “Considering the Effects of Climate Change on the Proposed Action,” to guide the analysis. The commenter also recommended referencing the National Fish, Wildlife, and Plants Climate Adaptation Strategy for information on climate change analysis, resiliency, and adaptation measures. The commenter pointed out that Colorado is already experiencing the effects of climate change and encouraged the Service to examine how the impacts of 10(j) rule might be altered by climate change in the EIS. One commenter asserted that wolves could help mitigate climate change by depredating ungulates and asked for the possible positive impacts to be evaluated.

**Representative Quote:** The Draft EIS states “under all alternatives, the provision of a regulatory framework to provide management flexibility to the Service and its designated agents would not affect climate change” (p. 4- 46). Other than a response to public comments discussing some of the benefits wolves provide to the ecosystem that have the potential to mitigate the cause and impacts of climate change (see Appendix C, p. 27), there is no other discussion of these benefits in the Draft EIS and it is unclear if these benefits were considered and utilized in the analysis. We recommend the Final EIS include in its analysis the best available science regarding the benefits wolves provide to the ecosystem that have the potential to mitigate the cause and impacts of climate change. Climate change has the potential to impact the affected environment and the environmental consequences of each of the alternatives; therefore, we recommend analyzing this in the Final EIS. Climate change has the potential to impact the resources, issues and environmental consequences discussed in the Draft EIS, including but not limited to wolf health, distribution, population numbers, habitat, predator-prey dynamics, environmental justice, and tribal issues. It might exacerbate the impacts of lethal take and impact the ability of the rule to further the conservation of the wolf. EPA recommends the EIS include a discussion



of reasonably foreseeable climate change impacts in the planning area and the potential effects those impacts will have on the affected environment, direct, indirect, and cumulative effects of the alternatives, and resiliency and adaptation. In February 2023, the Council on Environmental Quality issued the Interim Climate Guidance for NEPA and recommended agencies should consider applying the guidance to on-going NEPA processes if doing so would inform the consideration of alternatives or help address comments raised through the public comment process. EPA recommends the Service utilize this guidance in the EIS, specifically Section V, Considering the Effects of Climate Change on the Proposed Action, which may be the most useful for a project such as this. Climate change is already having detectable impacts on the ecosystems of the West, and future changes (warmer temperatures, more frequent and severe drought, and reductions in snowpack, stream flows and water availability) could affect wolves or their prey, and to the degree that these changes limit prey abundance, decreased wolf densities may be expected. We note that future climate projections for Colorado include historically unprecedented warming during this century, increased drought intensity, and highly uncertain summer monsoon rainfall. It is with these things in mind we recommend the Service utilize the National Fish, Wildlife, and Plants Climate Adaptation Strategy in its climate change analysis, development of the range of alternatives, and resiliency and adaptation measures to minimize the adverse impacts of any 10(j) rule that may be adopted.

**Representative Quote:** Predators also mitigate causes of climate change by moderating ungulate populations that cause carbon sinks.

**Response:** The Service recognizes that climate conditions are changing; however, it does not believe that climate change will affect the gray wolf to a measurable degree. The issue of climate change has been added in the FEIS under “Issues Considered but Dismissed from Detailed Analysis.” Variations in environmental conditions (such as drought, fire, and prey fluctuations) and episodic threats (e.g., disease) are characteristic of wild populations of most species, including gray wolves. Gray wolf populations that are genetically robust will be more likely to recover from episodic threats (USFWS 2012, 2020b). Based on the above, the Service does not expect measurable cumulative impacts on gray wolves in Colorado from changing climate conditions and the limited take that would be allowed under the 10(j) rule.

**CONCERN STATEMENT 116:** Commenters requested analysis of additional topics in the EIS, including:

- Recreation, including impacts on local economies and revenue from the recreational hunting and outfitting industry.
- Effects on the mining, oil and gas, and timber industries.
- Impacts on the livestock industry, particularly related to grazing patterns.
- Potential for wolves to disperse to New Mexico and possible damages caused by the wolves in the state.
- A review of consistency with the Mesa County Resource Management Plan.

One commenter suggested that all of the issues dismissed from detailed evaluation in the EIS should be analyzed in detail.

**Representative Quote:** States where wolves are present are impacting livestock and grazing patterns and distribution of livestock grazing across the landscape. This very real impact needs to be included in the final document and conveyed to the USFS and BLM so that permittees are not penalized for wolf impacts going forward.

**Representative Quote:** The DEIS does not address potential impacts on the mining, oil and gas, and timber industries (e.g., Section 3.5.2). Precedent indicates that lawsuits with speculative claims of impacts on wolves will attempt to restrict these industries. The EIS can help prevent such lawsuits with proactive assessments.

**Representative Quote:** Recreation should absolutely be considered and discussed in the EIS because locals familiar with the areas where wolves will be located understand the increased risk of spending time in the wilderness with the introduction of wolves. Hikers, horseback riders, and others will often have their pets with them, and this is an attraction to wolves. We believe there will be situations where the recreation will definitely be impacted either by perception and/or real encounters with wolves. Therefore, recreation will be reduced which impacts our local economy and citizen’s freedom to enjoy the wilderness.

**Representative Quote:** We see nothing in your proposed rule that discusses the likelihood that these wolves will move into NM or of the damage they will cause. There should be. What is your response?

**Response:** Table 3-2 in section 3.1.1 of the FEIS has been revised to briefly address issues identified in public comments, including recreation (aside from potential effects on hunting and outfitters and guides) and the mining, oil and gas, and timber industries. The Service has dismissed the resources and issues discussed in table 3-2 from detailed analysis because they would not be affected by the Service’s proposed action to provide management flexibility for gray wolves that would be reintroduced to Colorado. In response to other concerns raised under this concern statement, section 4.9.2, “Cumulative Impacts Analysis,” in the FEIS has been revised to discuss potential socioeconomic impacts on livestock producers as a result of changes in grazing patterns from wolves on the landscape and potential socioeconomic impacts in other states from reintroduced wolves dispersing outside Colorado. Considerations related to consistency with the Mesa County Resource Management Plan have been noted in section 4.9.3, “Regulatory Compliance and Consistency with Approved State or Local Plans or Laws.”

**CONCERN STATEMENT 117:** Commenters asked the Service to consider evaluating the impacts of wolves causing ungulates with chronic wasting disease to disperse into new habitats and potentially spread the disease. A commenter also requested an analysis of how wolves could act as disease vectors by transporting prions via their digestive tracts. Commenters also requested the Service address other disease risks that may be caused or exacerbated by wolves, including Echinococcus and Hydatid Disease.

**Representative Quote:** 3-2 Biological Resources Ecosystem Dynamics: “While the introduction of wolves by the State could result in potential changes in vegetation communities, watersheds, water quality, and other ecosystem dynamics due to changes in wildlife populations, providing management flexibility through a regulatory framework is not expected to result in impacts to ecosystem dynamics. These impacts are further discussed in cumulative impacts.” The EIS needs to evaluate the impact of wolves dispersing ungulates that are infected with chronic wasting disease; and the need for control measures to stop wolves from pushing infected animals into new habitat. Additionally, wolves may act as a vector transporting prions in their digestive tract to previously uninfected habitat.

**Representative Quote:** Under Chapter 2.3.3 Human health and Safety was not analyzed. CCA has scientific evidence that disease carried by wolves are a real and present danger to human health and the livestock industry. CCA will require the USFWS to complete an “Infections Disease Study” on Canadian gray wolf Echinococcus Canadensis and present their findings to the state of Colorado and

local county health officials prior to release of wolves. CCA has attached as backup a “bulletin entitled” Canadian Gray wolf Vector of Echinococcus canadensis for the USFWS review.

**Response:** Potential changes in the geographic extent of diseases or disease vectors as a result of the presence of gray wolves on the landscape would be a potential consequence of the State’s plan to reintroduce wolves and would not be influenced by issuing and implementing the 10(j) rule; therefore, it is outside the scope of the 10(j) rule and FEIS. Potential disease risks to humans and other wildlife species as a result of wolf reintroduction are addressed briefly in section 3.1.1 (table 3-2) of the FEIS. The discussion in table 3-2 has been expanded to address the concerns raised by commenters.

## ***CUMULATIVE IMPACTS***

**CONCERN STATEMENT 118:** Commenters noted that the presence of wolves would result in indirect impacts on the Gunnison sage-grouse as a result of displacement of existing predators that may prey on sage-grouse and add to the predation pressure on this species.

**Representative Quote:** 5. The Western Slope of Colorado is habitat for the threatened Gunnison Sage Grouse and Greater Sage Grouse. The EIS indicates that it is not likely that wolves will negatively impact grouse, what is not delineated is the impact on current predators that will be displaced by the presence of wolves. While we agree the introduction areas for wolves do not initially overlap sage grouse habitat, other predators, especially coyotes and foxes, will be forced into those areas and will have a significant impact. This movement and new territory for existing predators will add to the existing current predation pressure on the sage grouse. Specifically, the potential exists for predator species like coyotes, foxes, raptors, and corvids to impact sage grouse to a greater degree.

**Response:** Potential impacts of wolf reintroduction on Gunnison sage-grouse are described in the cumulative impact analysis. As noted in the FEIS, Gunnison sage-grouse populations in Colorado have declined sharply since 1980 in the absence of wolves, and the main drivers are considered to be habitat loss, fragmentation, and degradation. The FEIS acknowledges that there could be localized impacts from predation but notes that declines in Gunnison sage-grouse populations have not been documented as a result of previous wolf reintroductions elsewhere in North America (either directly or indirectly) and are not anticipated to result from the reintroduction of wolves in Colorado. As described in Concern Response 104, the FEIS notes that predation is not a driving factor in the decline of sage-grouse (both Gunnison and greater sage-grouse) populations, nor is it considered a barrier to recovery success for Gunnison sage-grouse. As noted in the FEIS, habitat loss, fragmentation, and degradation are the major drivers of sage-grouse population declines in Colorado.

**CONCERN STATEMENT 119:** Commenters noted potential impacts that may result in surrounding states as gray wolves disperse outside Colorado, including impacts on ungulate populations from predation.

**Representative Quote:** Dispersal, and/or establishment of Northern gray wolves in Arizona, which is outside of historical range in Arizona also has the potential to negatively impact ungulate populations. The Service must safeguard against unacceptable impacts to these species, species under full Commission and Department responsibility, in the establishment of the Statewide NEP in Colorado.

**Response:** Impacts of wolf dispersal are not a result of the 10(j) rulemaking but of the State’s reintroduction effort (see FEIS section 1.2, Regulatory Authorities). As noted above in Concern Statement 110 and in Chapter 5 of FEIS, the Service continues to coordinate with the States of Arizona,

Colorado, New Mexico, and Utah to address potential impacts, including continued coordination to develop a permitting process to mitigate potential impacts.
<b>CONCERN STATEMENT 120:</b> One commenter noted revisions to the State Plan will need to be captured in the FEIS, particular the removal of phase 4 in the draft State Plan, which would have allowed hunting of wolves.
<b>Representative Quote:</b> On page 4-31 of the DEIS, Phase 4 of the state plan is described. This phase has been removed from the Revised Draft that was presented to the Parks and Wildlife Commission in April 2023. A revised Table 3 will appear in the Final plan, anticipated to be presented and approved by the Commission in May 2023.
<b>Response:</b> The FEIS has been updated to address changes to the State Plan.

**OTHER**

<b>CONCERN STATEMENT 121:</b> Commenters expressed concerns regarding funding for the management of reintroduced gray wolves. One commenter noted, in response to language in the rule stating that the rulemaking would not impose a cost of \$100 million or more in any given year on local or State governments or private entities, that costs below this amount could still significantly or uniquely affect local governments. Multiple commenters noted that the Service is ultimately responsible for the success of the reintroduction and requested that the reintroduction be paused until a long-term funding source is established. Commenters requested that the Service complete a federalism assessment pursuant to the provisions of Executive Order 13132 with input from organizations representing local governments in Colorado and the local governments most likely to be affected. Another commenter suggested that the Service ensure it is adequately funded to manage wolves that disperse outside the experimental population boundary.
<b>Representative Quote:</b> 57 (rule) “(1) This proposed rule would not “significantly or uniquely” affect small governments. We have determined and certify pursuant to the Unfunded Mandates Reform Act, that, if adopted, this rulemaking would not impose a cost of \$100 million or more in any given year on local or State governments or private entities.” Our federal government is fundamentally flawed if agencies believe that a cost of not more than \$100 million in any given year on local or State governments or private entities would not “significantly or uniquely” affect small governments.
<b>Representative Quote:</b> 5. Finally, the Service should ensure they are adequately staffed and funded, in conjunction with the state of Colorado, so any costs associated with the management of Gray wolves dispersing outside the 10(j) area, and possibly into Arizona, are not the burden and responsibility of the Arizona Game and Fish Department.
<b>Representative Quote:</b> Forced reintroduction of wolves into Colorado should not be executed by the USFW as it is a complete waste of Federal taxpayers dollars due to current, ongoing natural dispersal of wolves from the NRM packs. USFW should not expend any resources in support of the misguided decision by Colorado voters and Colorado should be solely responsible for all activities and funding related to reintroduction to Colorado.
<b>Representative Quote:</b> 7. Funding is a significant long-term deficiency of the implementation of this plan. As the USFWS is ultimately responsible for the success of the program, we adamantly urge the

<p>management of wolves NOT to be delegated to the state and NO further wolves are to enter Colorado until a long-term, sustainable, and permanent funding source is in place.</p>
<p><b>Response:</b> The costs of reintroduction and management of gray wolves in Colorado are addressed in the State Plan and are the responsibility of CPW and the State of Colorado.</p>
<p><i>CONCERN STATEMENT 122:</i> Commenters requested additional actions related to or by other federal agencies in response to the State Plan. One commenter requested that the Service decision documents and interagency agreements specify that reintroduced gray wolves will not be provided additional protections as sensitive species on lands managed by other federal agencies, including the Bureau of Land Management (BLM) and US Forest Service (USFS). Commenters requested that other federal agencies, including the BLM, USFS, and National Park Service, update their resource management plans to address potential impacts from the proposed reintroduction before publication of the FEIS.</p>
<p><b>Representative Quote:</b> Additionally, we believe the USFWS agency and respective decision documents provide assurances the NEP wolves from Colorado do not get additional protection as a sensitive species under other federal agencies, such as the Bureau of Land Management or the US Forest Service. As an example, the Medicine Bow and Routt National Forests are contiguous landscapes between Wyoming and Colorado. WDA strongly opposes the NEP gray wolf status on the Routt National Forest having the same status or protection for persistence and viability as a sensitive species on the Medicine Bow National Forest. WDA suggests considering memorializing this into Memorandums of Understanding or some other agreed upon legal document prior to the release of any gray wolves into the State of Colorado.</p>
<p><b>Representative Quote:</b> Under chapter 3.4.4 “Government to Government Consultation” the following Federal Agencies must update their “Resource Management Plan” for wolf reintroduction. These plans must be updated prior to any wolf release in Colorado. - United States Department of Interior “BLM” - United States Department of Agriculture “USFS” - Rocky Mountain National Park</p>
<p><b>Representative Quote:</b> Federal land management agencies (BLM, Forest Service, Park Service) should amend their wildlife plans and assess impacts of wolves on wildlife and livestock prior to approval of a final EIS. As stated in the DEIS (Page ii) “wolves can disperse long distances and may eventually occur throughout the state and will in all likelihood occur on federal lands.</p>
<p><b>Response:</b> Actions planned for or undertaken by the Service or other federal agencies that are not directly related to this 10(j) rulemaking, including revision of existing land use or resource management plans, are outside the scope of the proposed action and are not addressed in the EIS.</p>
<p><i>CONCERN STATEMENT 123:</i> Commenters questioned or recommended changes to the language and maps in the rule. These changes include specifying that a reference to “previous reintroduction efforts” refer to efforts in other states, replacing the terms “we,” “us,” and “our” throughout the rule with the U.S. Fish and Wildlife Service or Service, and correcting the proposed deadline for State reintroduction in the preamble. Multiple commenters requested that the Service update the map of the State's proposed release sites to show currently proposed release sites. One commenter additionally requested the Service include the percentage of federally managed land in the release areas and distance to other federally managed lands outside the release areas. One commenter asked why the</p>

Service is planning to prepare annual reports to evaluate progress toward achieving State downlisting and delisting criteria, questioning if the State is planning to downlist or delist wolves in Colorado.

**Representative Quote:** In relation to the 10(j) rule... Moffat County encourages a word search to replace "we," "our," and "us" throughout the entire 10j proposed rule and replace those words with "US Fish and Wildlife Service" or "The Service." We specifically noticed the need for this technical correction on pages 21 and 22. The entire document should be word-searched.

**Representative Quote:** Page 40: In conjunction with previous reintroduction efforts, implementation of this proposed rule, if finalized would reflect continuing success in recovering gray wolves through longstanding cooperative and complementary programs by a number of Federal, State, and Tribal agencies. In particular, the stakeholder engagement process developed by CPW in support of its Gray Wolf Restoration and Management Plan development is broadly based and includes a diverse array of stakeholders in the State, which has helped to address potential adverse effects to gray wolves through Federal, State, or private actions. Therefore, Federal, State, or private actions and activities in Colorado that are ongoing and expected to continue are not likely to have significant adverse effects on gray wolves within the proposed NEP area. Comment: There have been no previous reintroduction efforts in Colorado, so the statement referring to previous reintroduction efforts does not apply. The concluding statement appears to be intentionally naive in assuming that agreements made before wolves are reintroduced into Colorado will be honored. Recommendation: That it be made clear that "reintroduction efforts" refers to other states, not to Colorado.

**Representative Quote:** In the preamble, under Proposed Reintroduction Areas and Release Sites, there are a couple of points that need clarification. It is stated that all release sites will be located west of the Continental Divide, and north of Highway 50, as outlined in Figure 3 of the proposed rule. The map depicted in Figure 3 of the proposed rule has major discrepancies from where the proposed reintroductions may take place, as it excludes areas west of the Continental Divide, but south of Highway 50. We request that the map in the final rule accurately reflects the area under consideration in our Draft Plan to reduce confusion. In the same paragraph, the Preamble states that CPW will release 10-15 wolves each year for up to 3 consecutive years. In accordance with our Draft Plan, this may be conducted for up to 5 years, and perhaps longer, depending on the success we have in reintroducing animals to the state. The legend in Figure 3 should be corrected to reflect this. This timeline is also described in the last paragraph in the Effects on Wild Populations section and should be corrected.

**Representative Quote:** 39 (of the rule) "A large proportion of Colorado is composed of publicly owned Federal lands (approximately 36 percent; Congressional Research Service 2020). Public lands include National Forests, National Parks, National Monuments, and National Wildlife Refuges, which comprise approximately 63 percent of all public lands in Colorado. In addition, the Bureau of Land Management manages approximately 35 percent of public land in Colorado, much of which is in the western portion of the State where reintroduction efforts for gray wolves will take place (figure 3)." The percentage of public lands should be given in the release zones, and the Western Slope. Furthermore, the distance between the proposed release sites and federal lands should be disclosed.

**Representative Quote:** Page 61: 5. Annual report "To evaluate progress toward achieving State downlisting and delisting criteria, the Service will summarize monitoring information in an annual report by Colorado Parks and Wildlife. Comment: Has the State of Colorado sought to downlist or delist wolves in Colorado? Did not the passage of Proposition 114 say just the opposite?"

**Response:** The Service's responses to the comments summarized under this concern statement are provided below:

- The Service's use of the words "we," "our," and "us" is appropriate and consistent with previous 10(j) rules.

<ul style="list-style-type: none"> <li>• The reference to “previous reintroduction efforts” refers to wolf reintroductions that have occurred within the United States and is appropriate as stated.</li> <li>• Changes in the final State Plan have been reviewed and incorporated in the Service's final rule as appropriate.</li> <li>• The Service is proposing annual reports be submitted to evaluate progress toward achieving State downlisting and delisting criteria because the proposed 10(j) nonessential experimental population will be limited to the State of Colorado. The State Plan discusses the phases of the wolf reintroduction effort and criteria that would need to be met before the State would consider delisting the species.</li> </ul>
<p><b>CONCERN STATEMENT 124:</b> Commenters noted that the Service must use the best available science in determining the presence of suitable habitat for gray wolves in Colorado and developing the 10(j) rule. Commenters suggested that computer models should not be considered “best available science” in determining habitat suitability and potential wolf occupancy. One commenter noted that the Service must base actions under the ESA on evidence supported by the best scientific and commercial data available.</p>
<p><b>Representative Quote:</b> 33 (of the rule) “Models developed to assess habitat suitability and the probability of wolf occupancy indicate that Colorado contains adequate habitat to support a population of gray wolves, although the number of wolves that the State could support varies among the models.” Computer models designed to project wildlife population growth or potential habitat are at best inaccurate and speculative. Computer models should not be considered the best available science.</p>
<p><b>Representative Quote:</b> When acting under the ESA, an “agency must base its actions on evidence supported by the best scientific and commercial data available.” <i>San Luis &amp; Delta-Mendota Water Auth. v. Jewell</i>, 747 F.3d 581, 60102 (9th Cir. 2014) (citations omitted). Under this standard, an agency is prohibited “from disregarding available scientific evidence that is in some way better than the evidence [it] relies on.” <i>Id.</i> at 602 (quoting <i>Kern Cnty. Farm Bureau v. Allen</i>, 450 F.3d 1072, 1080 (9th Cir. 2006)). In other words, “FWS ~cannot ignore available biological information.” <i>Id.</i> This requirement applies equally to agency action under Section 10(j). See <i>Ctr. for Biological Diversity v. Jewell</i>, No. CV-16-00094-TUC-JGZ, 2018 WL 1586651, at *5 (D. Ariz. Mar. 31, 2018) (“[A]n experimental population may only be released if the Secretary finds the release will ~further the conservation of [the] species.’ . . . The Secretary is required to make this determination using the best scientific and commercial data available.” (citations omitted)). The increased “management flexibility” provided to the agency under Section 10(j) does not “override[] the duty to use the best available science.” <i>Id.</i> at *16. Failure to abide by this standard similarly renders a rule promulgated under Section 10(j) invalid. <i>Id.</i> at *19 (“[T]he agency’s decision [under Section 10(j)] without consideration of the best available information was arbitrary and capricious.”); <i>id.</i> at *21 (“[A]dopting a decision made 17 years prior without explanation does not satisfy the agency’s duty to base its decision on the best available science.”). As such, a 10(j) rule must be based on and reflect an understanding of the best available information at the time of its promulgation.</p>
<p><b>Response:</b> The Service used a number of resources in the analysis of impacts, as noted in the FEIS References section. References suggested during the public comment period were also reviewed and incorporated into the FEIS as appropriate. Per the NEPA implementing regulations, 40 CFR §1502.23, “Agencies shall ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental documents. Agencies shall make use of reliable existing data and resources.</p>

Agencies may make use of any reliable data sources, such as remotely gathered information or statistical models.” Based on these regulations, the use of models is appropriate.

**CONCERN STATEMENT 125:** One commenter requested that the Service revise the 10(j) rule to allow wolf hunting when authorized by State or Tribal authorities. One commenter noted that allowing hunting when allowed by State or Tribal authorities would allow the State to manage an overly abundant wolf population.

**Representative Quote:** The 10(j) rule should allow wolf hunting when authorized by State or Tribal authorities. Finally, to provide full management flexibility for State and Tribal authorities, the 10(j) rule should authorize wolf hunting when those authorities implement a wolf hunting season. If Colorado’s wolves are still listed under the ESA when the State or Tribal authorities establish a hunting season, the wolves’ federally listed status should not preclude a hunt. Indeed, allowing wolf hunting in such a situation is consistent with the ESA’s definition of “conservation,” which recognizes that regulated hunting may be used to manage abundant populations of a species. See 16 U.S.C. § 1532(3) (defining “conservation” to include “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary,” which, “in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking). The Service should ensure that the State has sufficient flexibility to properly manage an overly abundant wolf population, especially if the gray wolf is delisted under State law before it is “again” delisted under federal law.

**Response:** The hunting of wolves is not included in the finalized State Plan as a management option. Importantly, hunting of wolves is not allowed while the species is listed and this 10(j) rule is in effect. If wolves are delisted, management of the species, including hunting, becomes the responsibility of the State. According to the State Plan, the State "currently takes no position as to whether the Parks and Wildlife Commission has the statutory authority to reclassify wolves as a game species" upon removal from the State Threatened and Endangered List.

### ***PAPERWORK REDUCTION ACT***

**CONCERN STATEMENT 126:** Commenters requested that in the section of the rule related to the Paperwork Reduction Act, text be edited to read “The report, due by June 30 of each year, will describe wolf conservation and management activities that occurred in Colorado each calendar or biological year up until 5-years post reintroduction.”

**Representative Quote:** In the Paperwork Reduction Act section, number 5 ‘Annual Report’, the last full sentence should read: “The report, due by June 30 of each year, will describe wolf conservation and management activities that occurred in Colorado each calendar or biological year up until 5-years post reintroduction”.

**Response:** The wording provided in the rule related to the annual report is considered appropriate.

### ***ESSENTIAL OR NONESSENTIAL***

**CONCERN STATEMENT 127:** Commenters expressed a preference for reintroduced gray wolves to be designated an essential experimental population based on the reported ecosystem effects of wolf populations, desires to restore a native species, and perceived risks to wolves in Colorado or across the



species' range if the population is designated nonessential. One commenter noted reintroduced wolves in Colorado would be relatively genetically isolated from other populations of the species as rationale for designating reintroduced wolves as essential. One commenter suggested that the nonessential designation should be timebound and lifted once biodiversity standards have been met. Commenters also stated that the nonessential population designation has had adverse effects on the recovery of the Mexican wolf in New Mexico.

**Representative Quote:** What's most important to me in bringing wolves back to Colorado, is that they are Protected and able to build a population without fear of being hunted. Why else would we bring them back? The fact that you call this "a Nonessential Experimental Population" shows me that you are already on the wrong track. Wolves are absolutely essential to healthy ecosystems. There's nothing Experimental about it. They were here for thousands of years before being hunted to near extinction by humans.

**Representative Quote:** The proposed geographic boundary of the NEP comprises the entire state of Colorado, a significant portion of the gray wolf's historic range. That means the regulations decided upon to manage the NEP will not just impact the wolves that are reintroduced to Colorado; these regulations will also impact the lives of wolves that disperse into the state naturally. Designating the entire state's population of wolves "non-essential" puts Colorado's current and future gray wolves at risk of being fully extirpated from this important part of their historic range in the future.

**Representative Quote:** Second, I propose adding a clause in the Review and Evaluation of the Success or Failure of the NEP section of the proposed rule for the sun setting of the NEP designation for the gray wolf in Colorado once specific biodiversity standards have been met. Factors like health of ungulate herds (concerning population and disease) and erosion on riverbanks should be taken into account when deciding the appropriate time to sunset the NEP designation. These biodiversity factors can be added to the annual and 5-year summary reports. When these biodiversity standards are met and it can be said that the intentions of Proposition 114 have been satisfied on behalf of the voters, the NEP designation should be lifted with the exception of "take provisions" for intentional harassment, incidental, threats to livestock and scientific purposes.

**Representative Quote:** Mexican gray wolves (*Canis lupus bailey*) have suffered BECAUSE they were labeled "experimental, nonessential." The reintroduction program has struggled to attain minimum viable populations. One of the most salient reasons for this is the large numbers of Mexican wolves killed because of being accused of killing livestock. Many of these lethal removals have turned on fraudulent claims by ranchers. The system under which the Livestock Indemnity Program issues compensation to ranchers for purported losses to Mexican wolves appears to actively incentivize the inflation of livestock losses to wolves, as these inflated numbers (and lax agency accountability in investigating them) lead to inflated payments to unscrupulous ranchers. The problem was the provisions of the rule that capped the number of reintroduced animals and created more flexibility to manage human-wolf conflicts in response to opposition to the reintroduction from certain states and private landowners. LESSON: DON'T MAKE THE SAME MISTAKE WITH COLORADO WOLVES

**Response:** The Service has explained its determination in the "Is the Proposed Experimental Population Essential or Nonessential" section of the rule. The proposed population is not considered essential to the continued existence of the species based on the best available scientific and commercial data.

**CONCERN STATEMENT 128:** One commenter suggested that the determination to establish the reintroduced population of gray wolves as "essential" or "nonessential" should be analyzed under the

NEPA process and stated the NEPA document fails to take a “hard look” at this issue. Specifically, the commenter stated the DEIS does not look at the impact of the rule on Mexican wolves and does not consider whether potential benefits may exist in allowing a zone of integration between Mexican wolves and gray wolves. The commenter also stated that the EIS does not consider the impacts of lethal take that would be allowed under the rule on the remainder of the listed entity (gray wolves) in the lower 44 states.

**Representative Quote:** Second, the DEIS fails to meet NEPA’s “hard look” mandate on multiple accounts. The Service should take a hard look at whether its determination that the proposed experimental population is “essential” or “nonessential” to the species continued existence. The impacts of this determination should be fully analyzed via the NEPA process. The DEIS also fails to take an adequately hard look at the impacts of the Draft Rule on Mexican wolves, including by failing to consider whether potential benefits may exist in allowing for a zone of intergradation between Mexican wolves and gray wolves via the reintroduction effort, or whether provisions of the Draft Rule may harm the Mexican wolf recovery effort. The DEIS also fails to take a hard look at the impacts of the Draft Rule’s excessive lethal take allowance on the remainder of the listed entity (the Lower 44 State population).

**Response:** In the “Is the Proposed Experimental Population Essential or Nonessential” section of the rule, the Service explains its determination and the rationale behind this determination. Additional information regarding potential genetic impacts on Mexican wolves as a result of the State’s reintroduction effort has been added to the FEIS in the section, “Cumulative Impacts Analysis,” based on input provided by cooperating agencies and the Service’s Mexican Wolf Recovery Program. Additional discussion of potential impacts on the remainder of the listed entity in the lower 44 states from implementation of the rule has been added to the same section of the FEIS.

### ***REQUESTS FOR EXTENSION***

**CONCERN STATEMENT 129:** One commenter asked for an additional 60 days to provide comments on the DEIS. The commenter noted the length of the document and requested more time for research before submitting comments.

**Representative Quote:** The Colorado wolf introduction DEIS is 270 pages long. Like the majority of the livestock producers, outfitters and the general public who will be most affected, the CMDA Board of Directors is a voluntary organization. While our main task is the evaluation of how this release will ultimately affect our wildlife, we are not oblivious to the ones who will be paying the most personal costs. This time period to complete needed research is creating a hardship upon our organization, and the general public as a whole. The 60 day comment period on the DEIS is not enough time allowed to sufficiently review all its content and formalize a comprehensive response with our concerns and questions. We humbly ask for an additional 60 days to compile a complete and precise comment.

**Response:** The Service is unable to extend the public review period because of the December 31, 2023, deadline set by Colorado Revised Statute 33-2-105.8. The State of Colorado requested the Service issue a 10(j) rule by the end of calendar year 2023 to allow the State to meet its obligations under the statute to take the steps necessary to begin reintroductions of gray wolves to a portion of the species’ historical range in Colorado by December 31, 2023. The Service must hold to its timeline to complete this request.

## REFERENCES

Bassing, S.B., D.E. Ausband, M.S. Mitchell, P. Lakacs, A. Keever, G. Hale, and L. Waits

2019 “Stable pack abundance and distribution in a harvested wolf population” *The Journal of Wildlife Management* 83(3): 577-590.

Bergerud, A.T. and J. P. Elliott

1998 “Wolf predation in a multiple-ungulate system in northern British Columbia” *Canadian Journal of Zoology* 76: 1554-1559. Accessed July 12, 2023. Available at: [https://idahoforwildlife.com/files/pdf/tomBergerud/bergerid%20amd%20elliot%2098%20\(1\).pdf](https://idahoforwildlife.com/files/pdf/tomBergerud/bergerid%20amd%20elliot%2098%20(1).pdf)

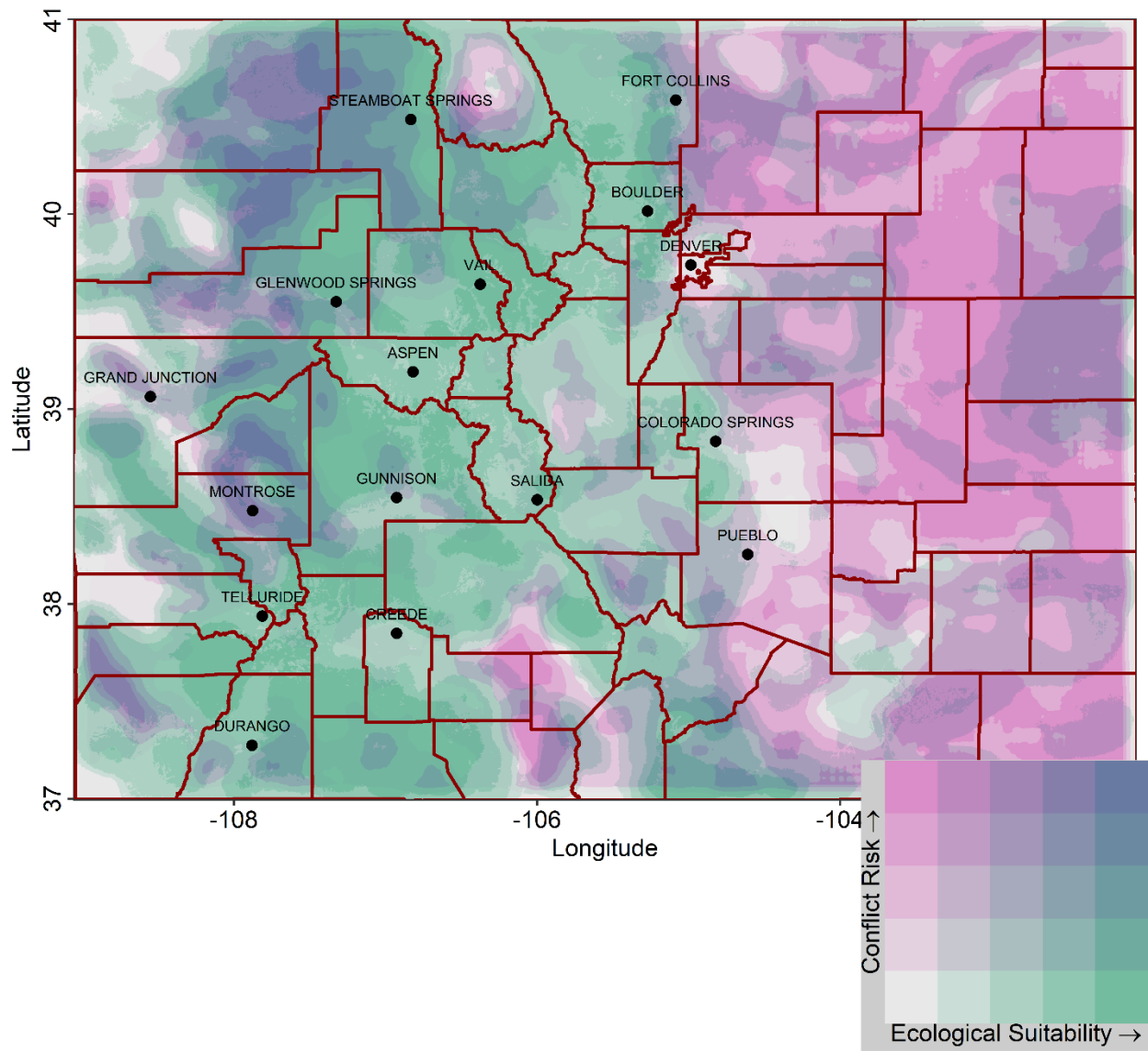
Hayes, R.D., A.S. Harestad

2000 “Demography of a recovering wolf population in the Yukon” *Canadian Journal of Zoology* 78: 44-46. Accessed July 12, 2023. Available at: <https://wrrb.ca/sites/default/files/Hayes%202000%20Demography.pdf>

U.S. Fish and Wildlife Service (USFWS)

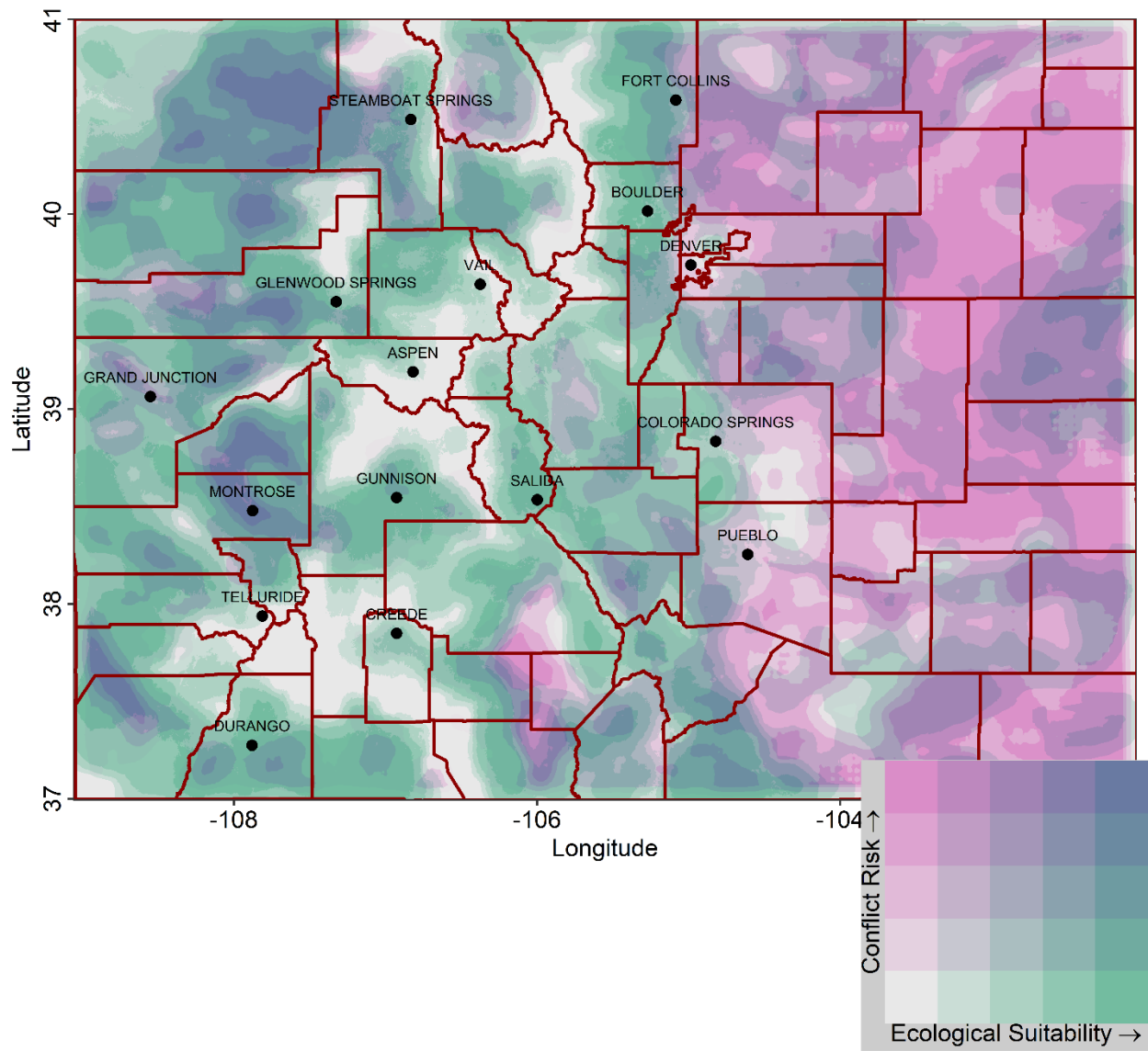
2020 Gray wolf biological report. Information on the species in the lower 48 United States. October 13, 2020.

**APPENDIX E: MAPS OF SOCIAL-ECOLOGICAL SUITABILITY AND  
CONFLICT HOT SPOTS**



Source: Ditmer et al. 2022

**Figure 1. Ecological Suitability and Conflict Risk for Gray Wolves in Colorado (Summer)**



Source: Ditmer et al. 2022

**Figure 2. Ecological Suitability and Conflict Risk for Gray Wolves in Colorado (Winter)**

## **APPENDIX F: TRIBAL HISTORY AND DETAILED SITES**

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# 1 TRIBAL RESOURCES

## 1.1 CULTURE HISTORY

Various Native American groups have occupied western Colorado for at least the last 12,000 years. The era before the arrival of Euro-Americans in this area is referred to as the prehistoric period, and it has been subdivided into the Paleoindian (11,500–6400 B.C.), Archaic (at least 6500–400 B.C.), Formative (400 B.C.–A.D. 1300), Late Prehistoric (A.D. 1300–1650), and Protohistoric (A.D. 1650–1881) periods (Conner et al. 2015).

The Late Prehistoric and Protohistoric periods (A.D. 1300–1881) represent the time between the disappearance of Formative-era peoples, which coincides with the end of a regional drought and possibly with the influx of Numic-speaking people from the western and central Great Basin, and the relegation of Tribal people to reservations (Conner et al. 2015). The Protohistoric period was also culturally dynamic, judging from archaeological, ethnohistoric, and linguistic data. Some researchers (e.g., Aikens and Witherspoon 1986) have suggested that Numic speakers coexisted with non-Numic foragers and horticulturalists throughout the Formative period.

Generally considered to be the ancestors of the Ute, these Numic-speaking peoples were highly mobile hunter-gatherers who moved in seasonal rounds, built temporary wooden structures ("wickiups") for shelter, and ephemeral brush structures for game drives (Bailey 2005). They made small brown ware vessels and hunted with bows and arrows tipped with bi- and tri-notched projectile points, including Desert Side-notched and Cottonwood Triangular forms. They appear to have focused on gathering berries, pinyon nuts, and small seeds and hunting game, such as deer (*Odocoileus* sp.), elk (*Cervus canadensis*), mountain sheep (*Ovis canadensis*), bison (*Bos bison*), and rodents within relatively small catchment areas, although those lifeways changed to some extent when Late Prehistoric people adopted a nomadic horse culture.

Before contact with Europeans, the Ute people inhabited a vast expanse of land, including portions of present-day Utah, Colorado, and northern New Mexico. They are generally believed to have first appeared as a distinct people in A.D. 1000-1200 in the southern part of the Great Basin, an area roughly located in eastern California and southern Nevada (Simmons 2000:14). The Ute people migrated to Colorado by 1300, from where they continued to disperse across Colorado's Rocky Mountains over the next two centuries (Simmons 2000:14).

As they expanded across the Great Basin, the Utes were connected by the Southern Numic language, a division of the Uto-Aztecan language family. The Numic branch spread with the dispersal of the Utes from the southern Great Basin, with three linguistic divisions eventually emerging west of the Rockies: Western Numic, which includes Monos, Northern Paiutes, Snakes, and Bannocks; Central Numic, spoken by Comanches, Gosiutes, and Shoshones; and Southern Numic, which includes the Southern Paiutes, Kawaiisus, Chemehuevis, and Utes (Callaway et al. 1986:336; Simmons 2000:14-15). While there were regional differences in Ute speech, all dialects were mutually intelligible (Callaway et al. 1986:336). This mutual

intelligibility implies a single speech community and many overlapping social networks, despite the considerable expanse the Ute inhabited.

Although there is disagreement regarding the earliest prehistory of Numic speakers, it is generally agreed that by A.D. 1100, they expanded from the southwest Great Basin into Utah and Western Colorado (Madsen and Rhode 1994). Brown ware ceramics and increasing numbers of Desert Side-notched and Cottonwood triangular projectile points appeared in these areas at about A.D. 1100 (Reed 1994:196), and these may indicate the earliest markers of Numic-speaking people in western Colorado. Over the next 500 years, Utes continued to expand their territory, and by the early 17<sup>th</sup> century, they occupied portions of the Great Basin, the Colorado Plateau, and the Central and Southern Rockies. This extensive area was inhabited by a population estimated at upwards of 5,000-10,000 (Baker 1988:179; Simmons 2000:16), although lower population levels may be more likely given that they formed a single speech community.

Based on archaeological evidence, researchers have proposed three phases for the Numic occupation in Western Colorado, which encompass both the Late Prehistoric and Protohistoric periods: Canella phase (A.D. 1300–1650), Antero phase (A.D. 1650–1881), and Refugee Ute (A.D. 1881–1920s) (Reed and Metcalf 1999; Martin et al. 2006).

The Canella phase (A.D. 1300–1650) represents early Numic occupation of the region, which is characterized by frequent but relatively small-scale mobility and the use of Uncompahgre Brown Ware ceramics. Toward the end of the phase, Numic peoples began to incorporate small amounts of European trade goods into their material assemblages.

The Antero Phase (A.D. 1650–1881) represents Numic people's adoption of a fully equestrian lifestyle. After contact with colonizing Spaniards and the acquisition of horses in the early 1600s, the Ute expanded their territories and came into regular contact with other cultural groups, including native Puebloans to the south. With contact came regular trade and increasing use of Euro-American glass and metal items. Metal projectile points and firearms increasingly replaced Desert Side-notched and Cottonwood Triangular projectile points and probably subsumed them by 1840. The end of this period is defined by the year (1881), when the federal government formally forced the Ute onto reservations.

The informally defined Refugee Ute period (A.D. 1881–1920s) encompasses the time when many Ute individuals and families continued to live off-reservation, still using wickiups, in western Colorado and eastern Utah. During this same period, many Utes, who lived within reservations, also traveled off-reservation (Martin et al. 2006). Ute sites in western Colorado during the Refugee Ute period consist primarily of open lithic scatters with temporally diagnostic artifacts, although rockshelters and wooden and brush structures are also known. Many wickiups have been recorded in the region.

While a definitive listing of Ute bands is made difficult by their fluid membership and high mobility, a loose confederation of 13 bands was in place by the 17<sup>th</sup> century that included seven eastern bands, composing the Eastern Ute, with ranges primarily in present-day Colorado (Yampa, Parianuche, Sabuagan, Tabeguache, Weenuche [Weeminuche]<sup>1</sup>, Capote,

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<sup>1</sup> The band eventually composing the Ute Mountain Ute people are referred to in historic texts as both the Weeminuche and Weenuche. The preferred name is Weenuche, but Weeminuche is used here when citing historic texts that use that term.

and Muache), and six western bands of present-day Utah (Uintah, Timpanogots, Pahvant, Sanpits, Seuvarits, and Moanunts) (Callaway et al. 1986:338- 340; Jorgensen 1965; Simmons 2000:17-22) (Figure 1). By the 1860s, these bands were described in terms of three amalgamated groups, the "Uncompahgre," White River," and "Weenuche" bands. By the 1890s, these amalgamated bands resided on three distinct reservations in eastern Utah and southwestern Colorado. The Ute Mountain Ute reservation comprised the Weenuche band who were assigned to an unallotted western portion of the Consolidated (Southern) Ute Reservation (Burns 2004).

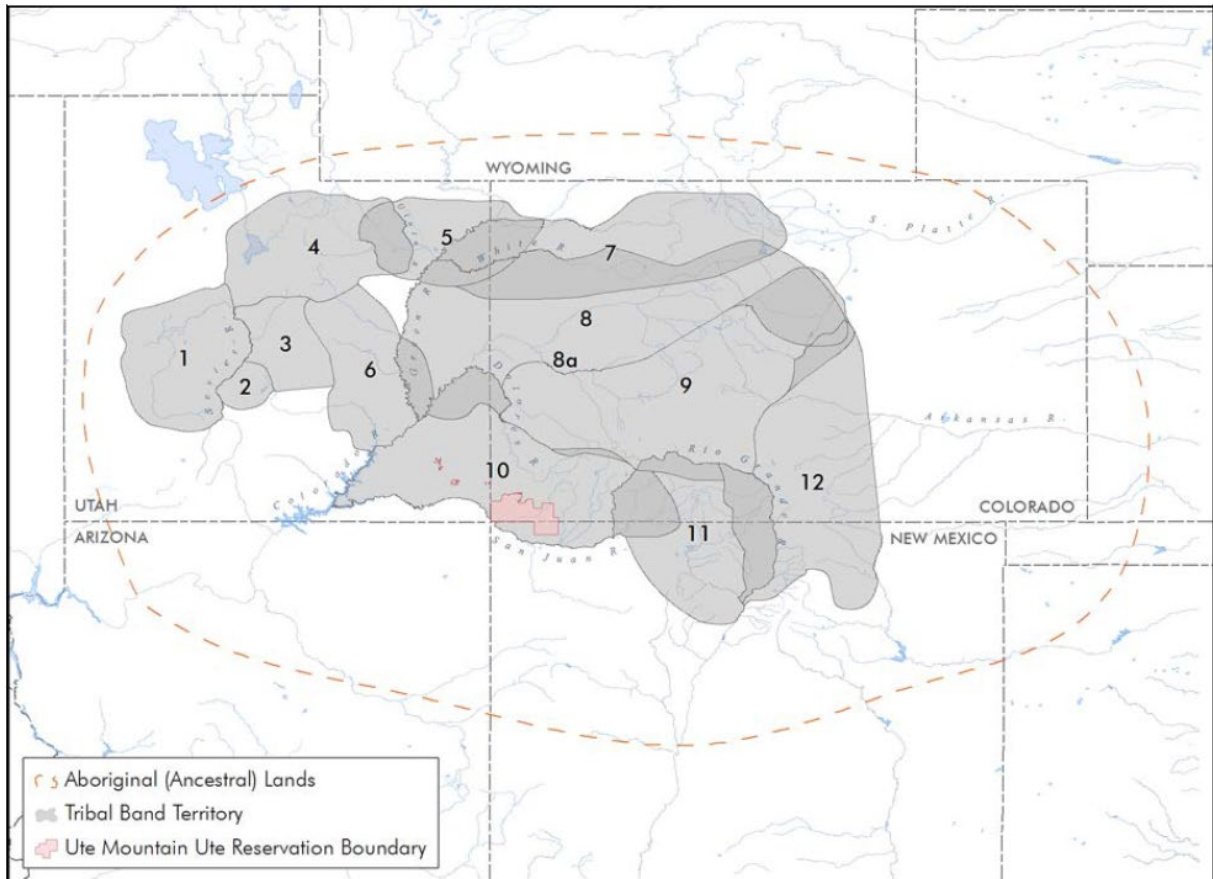


Figure 1. Extent of Ute aboriginal (ancestral) lands and distribution of Ute Bands by early 17th century. 1. Pahvant, 2. Moununt, 3. Sanpits, 4. Timpanogots, 5. Uintah, 6. Seuvarits, 7. Yampa, 8. Parianuche, 8a. Sabuagan, 9. Tabegauche, 10. Weenuche, 11. Capote, 12. Muache. Adapted from Simmons (2000).

Given that the Utes and their ancestors had no written records, prehistoric evidence of Numic and Ute occupation of western Colorado relies entirely on the archaeological record. However, when Europeans arrived and began interacting with the Utes, we begin to see historical documentation of these interactions. The earliest known records of European contact with indigenous inhabitants in western Colorado are from Juan Maria de Rivera, who explored the region during two expeditions in 1765 (Sanchez 1997). Rivera recorded a group he called the Sabaugans, which Baker et al. (2007) suggest were the same group that later came to be called the Uncompahgre. A decade later, Fray Francisco Antanasio Dominguez and his partner Escalante traveled farther north, reaching White River in 1776, then west as

far as Utah. The Dominguez-Escalante journal mentions various encounters with "Sabuagana Yutas" in areas around the Colorado River near Grand Mesa and the Roan Plateau (Ott 2009:52).

The Utes were among the first indigenous groups in North America to acquire and master the horse, which contributed to their remarkable success in the 17<sup>th</sup> and early 18<sup>th</sup> centuries. In the decades following the Dominguez-Escalante expedition (1765), until the 1820s, Euro-Americans had few incursions into west-central Colorado. However, the early contact lifeways of the Eastern Utes, particularly the Weenuche, were increasingly transformed during this time by the acquisition of horses and trade items introduced by the Spanish (Baker et al. 2007; Lewis 1994). Simmons (2000:29) writes that the Utes first acquired the horse in 1640 when captive Utes escaping from the Spanish in Santa Fe stole horses. Silbernagel (2011:51) suggests that the Utes may have acquired their first horses before 1600. Regardless, "by the 1820s the Eastern Utes were widely enjoying an equestrian lifeway" (Ott 2009:53). Jorgensen (1972) describes them in the 1800s as fine horsemen with vast herds of horses living seasonally, through parts of the spring and summer, in large encampments of 200 or more lodges.

The horse allowed the Utes to travel farther distances for their subsistence than was previously possible. They expanded the seasonal circuits within their traditional territory, venturing as far east as the panhandles of Texas and Oklahoma (which expanded their aboriginal or ancestral lands to include areas outside traditional band territories (Figure 1). Because travel times decreased, they were able to stay together for longer periods of time throughout the year. The size and importance of winter encampments also grew as Utes were able to pack additional food and supplies capable of sustaining larger numbers of people.

As the Ute bands became adept and skilled riders, the horse became an integral part of their culture. Horses were one of their most prized possessions and were a principal symbol of wealth and pride (Simmons 2000: 30). Through both trade and theft, the Utes amassed large herds, which thrived on the native grasses of the mountain valleys and plains, multiplying quickly without selective breeding. They often rode bareback or used leather pads with short stirrups (Simmons 2000:30). These special stirrups hung from the horse's mane and allowed the rider to drop to one side and shoot under the horse during battle. They also developed their own saddles, sometimes using animal horns to make the pommel in the front of the saddle and the cantle in the back (Silbernagel 2011:52). In his description of changes in Ute society sparked by the appearance of the horses, Lewis (1994:30) notes their accumulation of more material goods and elaboration of Ute material culture, adoption of Plains cultural traits, expansion of their territory as noted horse raiders, and their role as important middlemen on the intertribal horse trade.

With their newfound mobility and mastery of the horse, the Utes were among the most feared and powerful Tribes in the Four Corners by the early 18<sup>th</sup> century. They raided in northern New Mexico throughout the 17<sup>th</sup> and 18<sup>th</sup> centuries, stealing horses and goods from the Spaniards, Pueblo peoples, the Jicarilla Apaches to the east, and the Navajos to the southwest.

They raided the unmounted Western Shoshone and Southern Paiutes to steal women and children, which they sold to the Spanish in New Mexico for use as domestics and shepherds (Callaway et al. 1956:354; see also Cameron 2011). While the Utes entered into a treaty with the Spanish in 1670, they sided with the Pueblo people during the 1680 Pueblo Revolt, and subsequently used the opportunity to raid the pueblos, including the Hopi (Callaway et al. 1986:354; Simmons 2000:30). By 1700, the Utes were aligned with the Comanche, who first acquired horses via the Utes in the late 17<sup>th</sup> century, and they carried out extensive raids together against their surrounding neighbors intermittently for the next fifty years.

Other outside forces that began to affect the Utes were the trappers and traders that began arriving in increasing numbers in the early 19<sup>th</sup> century (Husband 1984:IV-12). Since their arrival, the Spanish had been largely successful in limiting the Utes' trade with outside peoples (Simmons 2000:47). But as trade restrictions were relaxed in 1810, the Utes were gradually able to interact with more outsiders. With Mexico's independence in 1821, the doors were opened even wider to foreign traders and trappers. French Canadians and Americans soon arrived, seeking beaver, otter, and other furs, which all but ended the isolation of the Utes (Simmons 2000: 48). Adding to this was the additional traffic brought on by the Old Spanish Trail, a trade route between Santa Fe and California that by the late 1820s was being used extensively by pack trains (Simmons 2000:48-49). While it provided the Utes new opportunities for trading and looting, the trail also opened their traditional territory to a flood of newcomers seeking land and resources. Trading posts and Euro-American trade goods became a part of the "Ute landscape" during this period (Ott 2009:57).

Throughout the early part of the Antero phase (A.D. 1650–1881), the eastern and southern bands of the Ute were able to maintain their traditional lands and were minimally affected by white expansion. The geographic location of the three bands of Southern Utes changed little from the arrival of the Spanish through the 1840s. However, with the end of the Mexican-American War in 1848 and the subsequent transfer of Alta, California to the United States, drastic encroachments on the Utes' territory would soon ensue. The American victory in the Mexican-American War (1846-1848) marked "the beginning of the end for Ute sovereignty in the region" (Husband 1984; Ott 2009: 57).

In 1849, 28 principal and subordinate Ute chiefs signed the "Treaty with the Utah," also known as the Calhoun Treaty (Kappler 1904b:585). Generally considered the first treaty with the Utes, it submitted the Tribe to the jurisdiction of the United States and agreed to peace with United States citizens and their allies (Simmons 2000:86). The Calhoun Treaty resulted in the seven Ute bands agreeing to recognize American sovereignty, in exchange for continued use by the Ute of their customary lands. The treaty also provided the people of the United States with free passage through Ute territory and allowed for the establishment of military and trading posts. In exchange for these concessions, the Utes were promised protections against depredations by American citizens, as well as providing donations, presents, and farming implements (Simmons 2000:87). Additionally, the United States government hoped that by persuading Native Americans to live a settled, agricultural existence, they might be able to curb the raids that had sustained the Tribes in the preceding years. However, this policy did not address the fact that the Utes had led a migratory existence for centuries, and as settlement was forced upon them, they became increasingly hostile toward the Americans (Clemmer and Stewart 1986:525; Simmons 2000:87).

Gold was discovered in Colorado in 1859, and thousands of people consequently rushed to the area. Although not all stayed, those who did began to farm and encroach on the land that the Utes had used for hundreds of years. Even more significant was Congress's authorization and establishment of the Territory of Colorado in 1860 and its organization the following year. The creation of the Colorado Territory and its western boundary indiscriminately placed many of the Utes into separate jurisdictions, ignoring extended kinships and friendships (Simmons 2000:111). With reduced trade relations and diminished access to game, the Utes became increasingly dependent on the United States government. In response, the government established agencies at Abiquiu, Tierra Amarilla, and Cimarron to provide food and supplies before each winter and spring.

The Colorado gold rush increased Anglo settlers in the area, and in 1861 the Colorado Territory was established. The Hunt Treaty of 1868 established a single reservation for seven Ute bands, reducing their lands to roughly one-third of the Colorado Territory. The Hunt Treaty confined Utes to a reservation west of the Continental Divide (Simmons 2000:89). Also known as the "Treaty with the Ute, 1868" (Kappler 1904:990), it was signed by most of the Colorado Ute bands in 1868, reducing their lands from approximately 56 million acres to about 18 million acres<sup>2</sup> (Callaway et al. 1986:355). This treaty established the first Ute reservation in Colorado and promised the Utes that non-Native Americans could not pass through, settle on, or reside in the reservation.

A series of subsequent treaties and land cessions would constrain the Utes into ever smaller territories. Ute reservation boundaries were repeatedly reduced as increasing numbers of Americans flooded into Colorado. Two agencies were developed on the reservation as part of the 1868 treaty, the Los Piños and White River Agencies. Originally the Conejos Agency, in 1869 the Los Piños agency moved to a site on the Ute Reservation, near the current town of Saguache (Simmons 2000:89).

Soon after the 1868 Hunt Treaty, large mineral deposits were discovered in the San Juan Mountains, and under pressure from mining interests, the United States government negotiated the Brunot Agreement in 1874 (Kappler 1904a:151). Under what was to be the last request the government would ever make of the Utes, the government appropriated an additional 3.45 million acres from the Colorado Utes (Callaway et al. 1986:355) (Figure 1). As a result of this agreement, only a narrow strip of land along the western boundary of Colorado connected the northern portion of Ute reservation with the south. The southern portion, still home to the three southern bands, was a section of land approximately 110 miles long running east from the Utah boundary along the New Mexico Colorado border, and 15 miles wide, beginning with the New Mexico boundary and running due north.

The second half of the 1870s was characterized by anger, frustration, and tragedy as the various Ute bands adjusted to their difficult and unfamiliar living conditions. Reluctant to take up permanent residences, the Muache and Capote were beginning to yield to life on a reservation and moved north out of northern New Mexico. The Weenuche maintained a degree of independence, sustaining themselves in the Four Corners region (Simmons 2000:169). However, situations were in constant flux, as evidenced by the passage of two

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<sup>2</sup> Ute bands who signed the treaty include the Tabeguache, Uintah, Sabuagan, Yampa, Muache, Capote, and Weenuche.

bills by Congress in 1878 that forcibly removed the Southern Ute and Tabeguache Bands to the White River portion of the reservation (Figure 2). After several attempts to move the three southern Ute Bands failed, Congress finally instructed the executive branch of the government to negotiate again with the Utes for their removal.

In 1880, 665 Utes from the White River Agency were forcibly relocated to the Uintah Reservation, where they found 800 Utes from various bands. A total of 361 Uncompahgre Utes were also forced to sell their lands and move under armed guard to Ouray, a new reservation that was established by executive order in 1882 (Figure 2) (Callaway et al. 1986:355; Kappler 1904a:834). This new reservation was located adjacent to the south of the Uintah reservation.

As conditions continued to deteriorate through the 1880s and 1890s, the federal government passed the Dawes Act. Also known as the General Allotment Act of 1887 (Indian Land Tenure Foundation 2022), it divided the nation's Native American lands into allotments that belonged to individual Tribal members. Family heads were to receive 160 acres and single individuals 60 acres, although the allotments were more haphazard in reality (Callaway et al. 1986:355; Simmons 2000:207). The thought was that Native American individuals could enter into conventional American life with land of their own. While a portion of the land after the allotment process was to be left to the Tribe, it eventually became public domain after ensuing acts (Desert Land Acts of 1877 and 1891, and the Timber and Stone Act of 1878) gave it to homesteading white settlers at minimal prices (Callaway et al. 1986:356).

The Weenuche resisted the Dawes Act, while the Muache and Capote bands decided to accept the allotment. The Weenuche band, under Chief Ignacio's leadership, found the allotment idea so alien to their tradition that they moved to the western portion of the Southern Ute Indian Reservation, which later became the Ute Mountain Ute Reservation. They refused to accept allotments. Lands not allotted, or about 85 percent of the reservation, were declared "excess" by the federal government in 1895 and thrown open to white settlers.

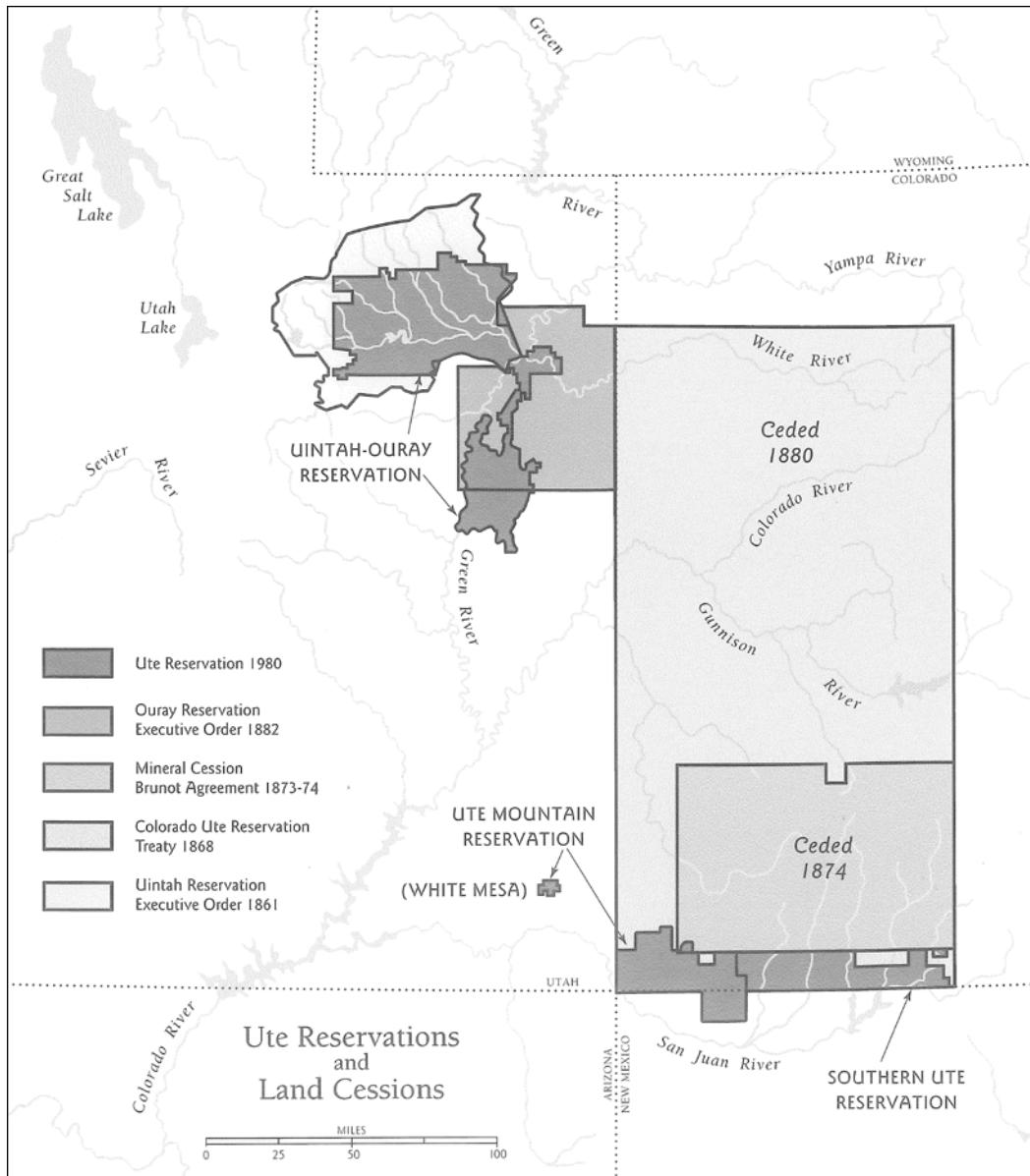


Figure 2. Ute reservations and land cessions, 1861 to present. Adapted from Callaway et al. 1986:355

By 1896, 371 Muache and Capote adults and minors had received allotments of land totaling approximately 73,000 acres, with the much larger portion of the eastern segment of the Consolidated Ute Reservation (523,079 acres) becoming public domain and subsequently opened to homesteaders (Simmons 2000:218). The Weenuche, having refused to agree to the allotment, maintained a portion of the southwestern corner of Colorado. This approximately 15 x 50-mile tract of land (plus nearly six adjacent townships in New Mexico) eventually became the Ute Mountain Ute reservation by the early 1900s.



In 1911, one of the last pieces of land taken from the Ute people was the area that now makes up Mesa Verde National Park. The federal government acquired more than 52,000 acres of land in 1911 for the park in exchange for some irregularly shaped acreage on the northern boundary of the Ute Mountain Ute Reservation.

By the 1930s, government policies began shifting from the internal colonialism of the 1800s and early 1900s. In 1934, the Wheeler-Howard Act (Indian Land Tenure Foundation 2022), also known as the Indian Reorganization Act, or the Indian New Deal, provided for self-government by Indian Tribes through Tribal councils composed of elected members and a chairman. The Wheeler-Howard Act began the trend toward Indian self-governance. Up until 1970, Tribal constitutions and by-laws required the approval of the Bureau of Indian Affairs (BIA), moneys provided to Tribes by the federal government were managed by the BIA, and Tribal budgets were subject to approval by the Secretary of the Interior. It was President Richard M. Nixon who in 1970 publicly proclaimed a new era in Indian affairs—that of true Indian self-determination.

*We must assure the Indian that he can assume control of his life without being separated involuntarily from the tribal group. And we must make it clear that Indians can become independent of federal control without being cut off from federal concern and federal support.* (Richard M. Nixon, July 8, 1970, Special Message to the Congress on Indian Affairs)

The Ute people did not hesitate to establish themselves as self-governing sovereign nations. Indeed, well before Nixon's proclamation of Indian self-determination, the Southern Ute Indian Tribe adopted a constitution and established a Tribal council in 1936. The Ute Mountain Ute followed suit in 1940. As a result of these newly formed and recognized governments petitioning Washington, in 1937, the Restoration Act returned 222,000 acres to the Southern Utes, and in 1938, 30,000 acres were returned to the Ute Mountain Ute Tribe.

## 1.2 INVENTORY OF CULTURAL RESOURCES WITHIN THE APE, BY COUNTY

A review of the Colorado Office of Archaeological and Historic Preservation (OAHP) Compass database showed that almost 2,000 Ute archaeological and historical sites are within the area of potential effect (APE). **Table 1** quantifies these sites by county within the APE. Of these 1,677 cultural sites within the APE, 780 are eligible for the National Register of Historic Places. These 780 sites preserve important elements of Ute history and culture and/or have the potential to yield more information about Ute history through further research.

The remainder of this section summarizes the types of sites by county, roughly from north to south within the APE, highlighting particularly significant sites for the Ute. Some sites have multiple cultural components or time periods and thus are listed in multiple categories. For **Table 1**, however, each site is listed only once for an accurate total count.

Table 1. Total Ute Archaeological Sites by County in APE.

County	Total Quantity	Quantity Eligible
Archuleta	117	44
Custer	2	2
Delta	21	9
Dolores	50	15
Eagle	41	7
Garfield	121	41
Grand	26	10
Gunnison	48	18
Huerfano	4	0
Jackson	17	7
La Plata	145	73
Larimer	16	8
Mesa	256	133
Moffat	42	20
Montezuma	147	79
Montrose	155	49
Ouray	24	8
Rio Blanco	272	143
Routt	12	6
Saguache	91	73
San Miguel	70	35
<b>Total in APE</b>	<b>1677</b>	<b>780</b>

### 1.2.1 Moffat County

Table 2. Ute Archaeological Sites in Moffat County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	1	0
Open Camp	Prehistoric	18	10
Sheltered Camp	Prehistoric	2	1
Open Architectural	Prehistoric	6	5

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Sheltered Architectural	Prehistoric	1	1
Rock Art	Prehistoric	10	6
Burial	Prehistoric	2	2
Quarry	Prehistoric	1	1
Isolated Find	Prehistoric	7	1
Camp	Historic	5	3
Carving-Rock or Wood	Historic	1	1
Farming/Ranching	Historic	1	1
Habitation	Historic	2	1
Rock Art	Historic	1	1

### 1.2.2 Routt County

Table 3. Ute Archaeological Sites in Routt County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	1	0
Open Camp	Prehistoric	2	1
Sheltered Camp	Prehistoric	2	2
Open Architectural	Prehistoric	2	1
Rock Art	Prehistoric	5	5
Quarry	Prehistoric	1	0
Isolated Find	Prehistoric	3	0
Farming/Ranching	Historic	1	1
Habitation	Historic	1	1

### 1.2.3 Jackson County

Table 4. Ute Archaeological Sites in Jackson County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	3	1
Open Camp	Prehistoric	1	0
Open Architectural	Prehistoric	6	3
Sheltered Architectural	Prehistoric	1	1
Burial	Prehistoric	1	0
Isolated Find	Prehistoric	2	0
Defense	Historic	1	1
Road/Trail	Historic	1	0
Trash Dump	Historic	1	1

## 1.2.4 Larimer County

Table 5. Ute Archaeological Sites in Larimer County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Architectural	Prehistoric	4	1
Cambium Tree	Prehistoric	2	2
Isolated Find	Prehistoric	1	0
Isolated Feature	Prehistoric	5	2
Camp	Historic	1	1
Road/Trail	Historic	3	2

## 1.2.5 Rio Blanco County

Table 6. Ute Archaeological Sites in Rio Blanco County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	9	2
Open Camp	Prehistoric	56	18
Sheltered Camp	Prehistoric	7	4
Open Architectural	Prehistoric	79	49
Sheltered Architectural	Prehistoric	7	5
Rock Art	Prehistoric	26	19
Isolated Find	Prehistoric	23	2
Isolated Feature	Prehistoric	2	1
Animal Capture/Remains	Historic	3	1
Burial	Historic	1	0
Camp	Historic	11	5
Defense	Historic	2	1
Farming/Ranching	Historic	9	4
Habitation	Historic	6	4
Road/Trail	Historic	18	18
Rock Art	Historic	14	12
Trash Dump	Historic	3	2

## 1.2.6 Garfield County

Table 7. Ute Archaeological Sites in Garfield County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	22	5
Open Camp	Prehistoric	34	10
Sheltered Camp	Prehistoric	3	1
Open Architectural	Prehistoric	28	17
Sheltered Architectural	Prehistoric	2	1
Rock Art	Prehistoric	7	5
Isolated Find	Prehistoric	16	2
Camp	Historic	3	3
Habitation	Historic	1	0
Recreation	Historic	1	0
Road/Trail	Historic	3	0
Rock Art	Historic	3	2
Trash Dump	Historic	3	0

## 1.2.7 Eagle County

Table 8. Ute Archaeological Sites in Eagle County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	10	0
Open Camp	Prehistoric	14	3
Open Architectural	Prehistoric	10	5
Sheltered Architectural	Prehistoric	1	1
Kill Site	Prehistoric	1	0
Rock Art	Prehistoric	1	1
Isolated Find	Prehistoric	5	0
Isolated Feature	Prehistoric	1	0
Camp	Historic	1	0
Road/Trail	Historic	1	0

## 1.2.8 Delta County

Table 9. Ute Archaeological Sites in Delta County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	2	1
Open Camp	Prehistoric	5	2
Sheltered Camp	Prehistoric	1	1
Sheltered Camp	Prehistoric	1	1
Open Architectural	Prehistoric	2	2
Rock Art	Prehistoric	2	2
Isolated Find	Prehistoric	7	0
Rock Art	Historic	2	2
Historic Habitation	Historic	1	1
Isolated Find	Historic	1	1

## 1.2.9 Grand County

Table 10. Ute Archaeological Sites in Grand County.

Site Type	Site Time Period	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	7	1
Open Camp	Prehistoric	3	1
Open Architectural	Prehistoric	9	5
Cambium Tree	Prehistoric	1	0
Isolated Find	Prehistoric	2	1
Open Architectural	Historic	2	1
Trash Dump	Historic	1	1
Isolated Find	Historic	1	0
Road/Trail	Multicomponent	1	1
Burial	Unknown	1	0

## 1.2.10 Gunnison County

Table 11. Ute Archaeological Sites in Gunnison County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	13	3
Open Camp	Prehistoric	11	8
Sheltered Camp	Prehistoric	1	1
Open Architectural	Prehistoric	3	3
Rock Art	Prehistoric	1	1
Quarry	Prehistoric	3	1

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Cambium Tree	Prehistoric	4	1
Isolated Find	Prehistoric	10	0
Camp	Historic	2	1
Historic Habitation	Historic	3	3
Rock Art	Historic	1	1
Rock Art	Historic	1	1
Historic Cambium Tree	Historic	1	1
Trash Dump	Historic	2	1
Isolated Find	Unknown	2	0

### 1.2.11 Mesa County

Table 12. Ute Archaeological Sites in Mesa County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	22	5
Sheltered Lithic	Prehistoric	2	2
Open Camp	Prehistoric	74	39
Sheltered Camp	Prehistoric	13	8
Open Architectural	Prehistoric	47	35
Sheltered Architectural	Prehistoric	3	3
Rock Art	Prehistoric	21	19
Burial	Prehistoric	1	1
Quarry	Prehistoric	2	1
Cambium Tree	Prehistoric	32	23
Isolated Find	Prehistoric	26	0
Isolated Feature	Prehistoric	1	0
Camp	Historic	16	8
Farming/Ranching	Historic	3	1
Habitation	Historic	2	1
Open Architectural, Historic Structure/Foundation/Alignment	Historic	5	4
Rock Art	Historic	8	6
Railroad	Historic	1	1
Trail/Road	Historic	3	0
Trash Dump	Historic	7	3
Isolated Find	Historic	7	4
Isolated Feature, Cambium Tree	Historic	11	4
Water Control	Historic	1	0
Road/Trail	Multicomponent	2	1
Open Camp	Unknown	1	0

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Burial	Unknown	1	1
Isolated Find	Unknown	1	0
Isolated Feature, Rock Art	Unknown	1	1
Open Architectural	Unknown	4	0

### 1.2.12 San Miguel County

Table 13. Ute Archaeological Sites in San Miguel County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	13	2
Open Camp	Prehistoric	13	6
Sheltered Camp	Prehistoric	2	1
Open Architectural	Prehistoric	14	12
Sheltered Architectural	Prehistoric	3	2
Rock Art	Prehistoric	1	1
Quarry	Prehistoric	2	1
Cambium Tree	Prehistoric	12	9
Isolated Find	Prehistoric	10	0
Camp	Historic	1	1
Carving-Rock or Wood Cambium Tree	Historic	1	1
Logging	Historic	1	1
Mining	Historic	1	1
Road/Trail	Historic	1	1
Structure/Foundation/Alignment- Unspecified	Historic	2	1
Trash Dump	Historic	2	2
Isolated Find	Historic	1	0

### 1.2.13 Montrose County

Table 14. Ute Archaeological Sites in Montrose County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	28	2
Open Camp	Prehistoric	55	23
Sheltered Camp	Prehistoric	2	0
Open Architectural	Prehistoric	22	12
Sheltered Architectural	Prehistoric	3	3
Rock Art	Prehistoric	4	3



Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Cambium Tree	Prehistoric	17	9
Isolated Find	Prehistoric	19	1
Isolated Feature	Prehistoric	3	1
Burial	Historic	1	0
Camp	Historic	12	4
Farming/Ranching	Historic	1	1
Habitation	Historic	1	1
Road/Trail	Historic	1	0
Rock Art	Historic	3	2
Structure/Foundation/Alignment-Unspecified (Government Building)	Historic	1	1
Trash Dump	Historic	4	0
Isolated Find	Historic	4	0
Open Architectural	Historic	3	1
Open Camp	Unknown	1	0
Burial	Unknown	1	0
Corral	Unknown	1	0
Cambium Tree	Unknown	1	0

### 1.2.14 Ouray County

Table 15. Ute Archaeological Sites in Ouray County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	6	0
Open Lithic, Cambium Tree	Prehistoric	1	0
Open Camp	Prehistoric	1	0
Open Camp	Prehistoric	1	1
Open Architectural	Prehistoric	2	0
Cambium Tree	Prehistoric	3	2
Isolated Find	Prehistoric	1	1
Historic Animal Capture/Remains	Historic	1	1
Historic Camp	Historic	1	0
Historic Recreation	Historic	1	0
Historic Habitation	Historic	3	3
Historic Camp	Historic	1	0
Historic Burial (Cemetery)	Historic	1	1
Burial	Historic	3	0

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Structure/Foundation/Alignment-Unspecified	Historic	1	1

### 1.2.15 Saguache County

Table 16. Ute Archaeological Sites in Saguache County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	12	6
Open Camp	Prehistoric	11	8
Sheltered Camp	Prehistoric	5	5
Open Architectural	Prehistoric	9	9
Sheltered Architectural	Prehistoric	2	2
Rock Art	Prehistoric	6	6
Burial	Prehistoric	1	1
Cambium Tree	Prehistoric	38	35
Isolated Find	Prehistoric	3	0
Burial	Historic	1	0
Cairn	Historic	1	1
Camp	Historic	2	2
Defense	Historic	1	0
Rock Art	Historic	1	1
Structure/Foundation/Alignment-Unspecified	Historic	14	12
Trash Dump	Historic	2	2

### 1.2.16 Custer County

Table 17. Ute Archaeological Sites in Custer County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Cambium Tree	Prehistoric	2	2

### 1.2.17 Huerfano County

Table 18. Ute Archaeological Sites in Huerfano County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	3	0
Sheltered Architectural	Prehistoric	1	0

## 1.2.18 Dolores County

Table 19. Ute Archaeological Sites in Dolores County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	6	4
Sheltered Lithic	Prehistoric	1	1
Open Camp	Prehistoric	10	4
Open Architectural	Prehistoric	2	2
Quarry	Prehistoric	1	1
Cambium Tree	Prehistoric	11	1
Isolated Find	Prehistoric	5	0
Isolated Feature	Prehistoric	11	0
Defense	Historic	1	1
Structure/Foundation/Alignment-Unspecified	Historic	5	3
Water Control	Historic	1	1

## 1.2.19 Montezuma County

Table 20. Ute Archaeological Sites in Montezuma County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	6	3
Open Camp	Prehistoric	25	19
Sheltered Camp	Prehistoric	1	1
Open Architectural	Prehistoric	14	9
Sheltered Architectural	Prehistoric	2	2
Rock Art	Prehistoric	13	7
Burial	Prehistoric	1	1
Cambium Tree	Prehistoric	5	3
Isolated Find	Prehistoric	7	0
Isolated Feature	Prehistoric	1	0
Burial	Historic	1	1
Camp	Historic	20	7
Farming/Ranching	Historic	4	3
Habitation	Historic	9	5
Rock Art	Historic	21	16
Trash Dump	Historic	3	1
Water Control	Historic	1	1

## 1.2.20 Archuleta County

Table 21. Ute Archaeological Sites in Archuleta County.

Site Type	Site Time PD	Total Quantity	Total Eligible
Open Lithic	Prehistoric	4	1
Open Camp	Prehistoric	11	7
Open Architectural	Prehistoric	4	4
Cambium Tree	Prehistoric	32	28
Isolated Find	Prehistoric	4	0
Isolated Feature	Prehistoric	52	0
Camp	Historic	3	1
Farming/Ranching	Historic	2	0
Habitation	Historic	3	3
Logging	Historic	1	0
Trash Dump	Historic	4	3

## 1.2.21 La Plata County

Table 22. Ute Archaeological Sites in La Plata County.

Site Type	Site Time Pd	Total Quantity	Quantity Eligible
Open Lithic	Prehistoric	4	1
Open Camp	Prehistoric	48	32
Sheltered Camp	Prehistoric	2	1
Open Architectural	Prehistoric	19	15
Rock Art	Prehistoric	1	1
Quarry	Prehistoric	1	1
Cambium Tree	Prehistoric	13	2
Isolated Find	Prehistoric	9	1
Isolated Feature	Prehistoric	7	0
Camp	Historic	21	11
Farming/Ranching	Historic	3	0
Habitation	Historic	11	5
Mining	Historic	1	0
Trash Dump	Historic	3	2
Water Control	Historic	2	1

## 2 REFERENCES CITED

- Aikens, C. Melvin, and Younger T. Witherspoon  
1986 Great Basin Numic Prehistory: Linguistics, Archaeology, and Environment. In *Anthropology of the Desert West*, edited by Carol J. Condie and Don D. Fowler, pp. 9–20. Anthropological Papers No. 110. University of Utah, Salt Lake City.
- Bailey, Cristina  
2005 *Ute Corrals*. Ashley National Forest–Intermountain Region, U.S. Forest Service.
- Baker, Steven G.  
1988 Historic Ute Culture Change in West-Central Colorado. In *Archaeology of the Eastern Ute: A Symposium*, edited by P. R. Nickens, pp. 157-189. Occasional Paper 1. Colorado Council of Professional Archaeologists, Denver.
- Baker, Steven G., Richard F. Carrillo, and Carl D. Spath  
2007 Protohistoric and Historic Native Americans. In *Colorado History: A Context for Historical Archaeology*, edited by M. C. Church, S. G. Baker, B. J. Clark, R. F. Carrillo, J. C. Horn, C. D.
- Burns, Sam  
2004 The Ute Relationships to the Lands of West Central Colorado: An Ethnographic Overview Prepared for the U. S. Forest Service. Office of Community Services, Fort Lewis College, Durango, Colorado. Electronic document, <http://swcenter.fortlewis.edu/inventory/utelands.htm>, accessed June 18, 2013.
- Callaway, Donald, Joel Janetski, and Omer C. Stewart  
1986 Ute. In *Great Basin*, edited by Warren L. D'Azevedo, pp. 336-367. Handbook of North American Indians, Vol. 11, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.
- Cameron, Catherine M.  
2011 Captives and Culture Change: Implications for Archaeology. *Current Anthropology* (52):169-209.
- Clemmer, Richard O. and Omer C. Stewart  
1986 Treaties, Reservations, and Claims. In *Great Basin*, edited by Warren L. D'Azevedo, pp. 525–557. Handbook of North American Indians, Vol. 11, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.
- Conner, Carl, Michael Berry, Claudia Berry, Rich Ott, and Curtis Martin  
2015 Summary of the Prehistoric and Historic Native American Occupations in West Central Colorado. Grand River Institute, Grand Junction, Colorado.
- Denison, B.  
2019 Dirt and Morality during Ute Removal. *Pacific Historical Review*, 88(1), pp.127-154.

Denver Public Library

2003 Chief Ouray's house in Montrose, photographer Thomas M. McKee, late 19<sup>th</sup> century. Digitized 2003. Available online at: <https://digital.denverlibrary.org/digital/collection/p15330coll21/id/14491>. Accessed August 30, 2022.

U.S. Fish and Wildlife Service (FWS)

2022 Tribal Eagle Aviary Permit. <https://www.fws.gov/service/permits>

Givón, T.

2011 *Ute reference grammar* (Vol. 3). John Benjamins Publishing.

Husband, Michael B.

1984 Colorado Plateau Country Historic Context. Colorado Historical Society, Denver.

Indian Land Tenure Foundation

2022 Land Tenure History. <https://iltf.org/land-issues/history/>

Janetski, J.C.

1992 *Ute Tales*.

Jones, J.A.

1955 The Sun Dance of the Northern Ute. *Bureau of American Ethnology Bulletin*.

Jorgensen, Joseph Gilbert

1965 The Ethnohistoric and Acculturation of the Northern Ute. Ph.D. dissertation, Department of Anthropology, Indiana University. University Microfilms, Inc. Ann Arbor, Michigan.

1972 *The Sun Dance Religion*. University of Chicago Press, Chicago.

Kappler, Charles Joseph

1904a *Indian Affairs: Laws and Treaties Vol. 1*. Government Printing Office, Washington, D.C. Available online at: <https://dc.library.okstate.edu/digital/collection/kapplers/id/26941>.

1904b *Indian Affairs: Laws and Treaties Vol. 2*. Government Printing Office, Washington, D.C. Available online at: <https://dc.library.okstate.edu/digital/collection/kapplers/id/29743/>.

1941 *Indian Affairs: Laws and Treaties Vol. 5*. Government Printing Office, Washington, D.C. Available online at: <https://dc.library.okstate.edu/digital/collection/kapplers/id/25053>.

Lewis, David R.

1994 *Neither Wolf Nor Dog: American Indians, Environment, and Agrarian Change*. Oxford University Press, Oxford.

Madsen, David B., and David Rhode (eds.)

1994 *Across the West: Human Population Movement and the Expansion of the Numa..* University of Utah Press, Salt Lake City.

Martin, Curtis, Richard Ott, and Nicole Darnell

- 2006 The Colorado Wickiup Project Volume III: Recordation and Re-evaluation of Twelve Aboriginal Wooden Structure Sites in Eagle, Garfield, Mesa, and Rio Blanco Counties, Colorado. Prepared for The Colorado Historical Society State Historical Fund Project No. 2006-M1-013 and Bureau of Land Management Assistance Agreement No. 1422CA30007. Dominguez Archaeological Research Group, Grand Junction.

Michele

- 2019 Local History Thursday: The Surrender Tree. Mesa County Libraries. Available online at: <https://mesacountylibraries.org/2019/09/local-history-thursday-the-surrender-tree/>. Accessed August 30, 2022.

National Park Service

- 2016 Gathering of Certain Plants or Plant Parts by Federally Recognized Indian Tribes for Traditional Purposes. *Federal Register: The Daily Journal of the United States Government*. <https://www.federalregister.gov/documents/2016/07/12/2016-16434/gathering-of-certain-plants-or-plant-parts-by-federally-recognized-indian-tribes-for-traditional>

Nie, Martin

- 2008 The Use of Co-Management and Protected Land-Use Designations to Protect Tribal Cultural Resources and Reserved Treaty Rights on Federal Lands. *Natural Resources Journal*/Vol 48.

Ott, Richard

- 2009 Perspectives on Ute Ethnohistory in West Central Colorado. Dominguez Archaeological Research Group, Inc. Manuscript not for general distribution, provided by the Ute THPO to the author.

Reed, Alan D.

- 1994 The Numic Occupation of Western Colorado and Eastern Utah during the Prehistoric and Protohistoric Periods. In *Across the West: Human Population Movement and the Expansion of the Numa*, edited by D. B. Madsen and D. Rhode. University of Utah Press, Salt Lake City.

Reed, Alan D., and Michael D. Metcalf

- 1999 Colorado Prehistory: A Context for the Northern Colorado River Basin. Colorado Council of Professional Archaeologists. Denver.

Rupp, Frank G.

- 1996 Site Reevaluation for Site 5GA49, the Ute Fort Near Granby, Grand County, Colorado. On file at the State Historic Preservation Office, Denver, CO.

Sanchez, Joseph P.

- 1997 Explorers, Traders, and Slavers: Forging the Old Spanish Trail, 1678-1850. University of Utah Press, Salt Lake City.

Silbernagel, Robert

2011 *Troubled Trails: The Meeker Affair and the Expulsion the Utes from Colorado*. The University of Utah Press. Salt Lake City.

Simmons, Virginia McConnell

2000 *The Ute Indians of Utah, Colorado, and New Mexico*. University Press of Colorado, Boulder, Colorado.

Southern Ute Indian Tribe

2022 <https://www.southernute-nsn.gov/>

U.S. Government

n.d. Protection of Historic Properties. Code of Federal Regulations, 36 CFR Part 800.  
<http://www.achp.gov/regs-rev04.pdf>

n.d. National Register of Historic Places. Code of Federal Regulations, 36 CFR Part 60.  
<http://www.law.cornell.edu/cfr/text/36/60>

n.d. Determinations of Eligibility for Inclusion in the National Register of Historic Places. Code of Federal Regulations, 36 CFR Part 63.  
<http://archnet.asu.edu/topical/crm/usdocs/36cfr63.html>





## **APPENDIX G: REFERENCES**

- Adams, L.G., R.O. Stephenson, B.W. Dale, R.T. Ahgook, and D.J. Demma  
2008 "Population dynamics and harvest characteristics of wolves in the central Brooks Range, Alaska." *Wildlife Monographs* 170(1): 1–25.
- Advisory Council on Historic Preservation (ACHP)  
2018 Tribal treaty rights in the section 106 process. Accessed September 6, 2022. Available at: <https://www.achp.gov/native-american/information-papers/tribal-treaty-rights>
- Åkesson, M., O. Liberg, H. Sand, P. Wabakken, S. Bensch, and Ø. Flagstad  
2016 "Genetic rescue in a severely inbred wolf population." *Molecular Ecology* 25: 4745–4756.
- Anaya, M.J.  
2010 "Southern Ute Tribal Profile." *Tribal Law Journal* 10, 1. Accessed September 8, 2022. Available at: <https://digitalrepository.unm.edu/tlj/vol10/iss1/3>
- Ausband, D.E., M.S. Mitchell, C.R. Standbursy, J.L. Stenglein, and L.P. Waits  
2017 "Harvest and group effects on pup survival in a cooperative breeder." *Proceedings of the Royal Society B* 284: 20170580. Available at: <https://dx.doi.org/10.1098/rspb.2017.0580>
- Bailey, V.  
1931 "Mammals of New Mexico." *North American Fauna* 53: 1–412.
- Baker, M.J.  
2023 Personal communication between M.J. Baker, Chairman, Southern Ute Indian Tribe, and M. Hogan, U.S. Fish and Wildlife Service, via letter with comments on the draft EIS, dated April 11, 2023.
- Baker, J., A. Meade, M. Pagel, and C. Venditti  
2015 "Adaptive evolution toward larger size in mammals." *Proceedings of the National Academy of Sciences* 112: 5093–5098.
- Ballard, W.B., L.N. Carbyn, and D.W. Smith  
2003 Wolf interactions with non-prey. U.S Geological Survey Northern Prairie Wildlife Research Center. 325. Available at: <https://digitalcommons.unl.edu/usgsnpwrc/325>.
- Ballard, W.B., D. Lutz, T.W. Keegan, L.H. Carpenter, J.C. deVos, Jr.  
2001 "Deer-predator relationships: a review of recent North American studies with emphasis on mule deer and black-tailed deer." *Wildlife Society Bulletin* 29(1): 99-115.
- Ballard, W.B., J.S. Whitman, and C.L. Gardner  
1987 "Ecology of an exploited wolf population in south-central Alaska." *Wildlife Monographs* 98.

Barber-Meyer, S.M., T.J. Wheeldon, and L.D. Mech

- 2021 “The importance of wilderness to wolf (*Canis lupus*) survival and cause-specific mortality over 50 years.” *Biological Conservation* 258 (2021): 109145.

Barnowe-Meyer, K.K., P.J. White, T.L. Davis, and J.A. Byers

- 2009 “Predator-specific mortality of pronghorn on Yellowstone's northern range.” *Western North American Naturalist* 69(2): 186-194.

Bartnick, T.D., T.R. Van Deelen, H.B. Quigley, and D. Craighead

- 2013 “Variation in cougar (*Puma concolor*) predation habits during wolf (*Canis lupus*) recovery in the southern Greater Yellowstone ecosystem.” *Canadian Journal of Zoology* 91(2): 82–93.

Bednarz, J.A.

- 1988 “The Mexican wolf: biology, history, and prospects for reestablishment in New Mexico.” U.S. Fish and Wildlife Service, Albuquerque, New Mexico, Endangered Species Report 18.

Bergman, E.J., P.F. Doherty, G.C. White, and A.A. Holland

- 2015 “Density dependence in mule deer: a review of evidence.” *Wildlife Biology* 21(1): 18–29. Available at: <https://dx.doi.org/10.2981/wlb.00012>

Bickel, A.K., D. Duval, and G. Frisvold

- 2020 “Paying for prevention: evaluating Arizona rancher spending to avoid or reduce livestock conflicts with the Mexican gray wolf.” *Proceedings of the Vertebrate Pest Conference*. August.

Blumhardt, M.

- 2022 With wolves in Colorado, here’s everything you need to know: It’s complicated. *Fort Collins Coloradan*. January 31, 2022. Accessed September 2, 2022. Available at: <https://www.coloradan.com/story/news/2022/01/31/colorado-wolves-wolf-faq-types-attacks-behavior-history-environmental-impact/9242810002/>

Bogan, M.A. and P. Mehlhop

- 1983 “Systematic relationships of gray wolves (*Canis lupus*) in southwestern North America.” *Occasional Papers of the Museum of Southwestern Biology* 1: 1–20.

Boyd, D.

- n.d. “A review of lessons learned to inform Colorado wolf reintroduction & management.” Accessed October 11, 2022. Available at: [https://www.nwf.org/-/media/PDFs/Rocky-Mountain/NWF\\_Boyd\\_Wolf\\_Report\\_Web-compressed\\_FINAL.ashx?la=en&hash=B0EB93BEE478F8706AC4BC9B75085C4A24AE9B](https://www.nwf.org/-/media/PDFs/Rocky-Mountain/NWF_Boyd_Wolf_Report_Web-compressed_FINAL.ashx?la=en&hash=B0EB93BEE478F8706AC4BC9B75085C4A24AE9B)

Boyd, D.K., P.C. Paquet, S. Donelon, R.R. Ream, D.H. Pletscher, and C.C. White

- 1995 “Transboundary movements of a recolonizing wolf population in the Rocky Mountains.” In: L.N. Carbyn, S.H. Fritts, and D.R. Seip (Eds.), *Ecology and Conservation of Wolves in a Changing World* (pp 135-140). Canadian Circumpolar Institute, Occasional Publication Number 35.

- Bradley, E.H., D.H. Pletscher, E.E. Bangs, K.E. Kunkel, D.W. Smith, and C.M. Mack
- 2005 “Evaluating wolf translocation as a nonlethal method to reduce livestock conflicts in the northwestern United States.” *Conservation Biology* 19, 1498–1508.
- Bradley E.H., H.S. Robinson, E.E. Bangs, K. Kunkel, M.D. Jimenez, J.A. Gude, and T. Grimm
- 2015 “Effects of wolf removal on livestock depredation recurrence and wolf recovery in Montana, Idaho, and Wyoming.” *Journal of Wildlife Management* 79: 1337–1346.
- Brainerd, S.M., Andrén, H., Bangs, E.E., Bradley, E.H., Fontaine, J.A., Hall, W., Iliopoulos, Y., Jimenez, M.D., Jozwiak, E.A., Liberg, O. and C.M. Mack
- 2008 “The effects of breeder loss on wolves.” *The Journal of Wildlife Management* 72(1): 89–98.
- Brand C.J., M.J. Pybus, W.B. Ballard, and R.O. Peterson
- 1995 “Infectious and parasitic diseases of the gray wolf and their potential effects on wolf populations in North America.” *Ecology and Conservation of Wolves in a Changing World* (Occasional Publication No. 35). Canadian Circumpolar Institute, Edmonton, Alberta, 419–429.
- Braun, C.E.
- 1998 “Sage grouse declines in western North America: What are the problems?” *Proceedings of the Western Association of Fish and Wildlife Agencies* 78: 139–156.
- Bruns A., M. Waltert, and I. Khorozyan
- 2020 “The effectiveness of livestock protection measures against wolves (*Canis lupus*) and implications for their coexistence with humans.” *Global Ecology and Conservation* 21: e00868. Available at: <https://doi.org/10.1016/j.gecco.2019.e00868>
- Bureau of Labor Statistics (BLS)
- 2022 State and area employment, hours, and earnings. Accessed July 14, 2022. Available at: [https://data.bls.gov/timeseries/SMS08000007000000001?amp%253bdata\\_tool=XGtable&output\\_view=data](https://data.bls.gov/timeseries/SMS08000007000000001?amp%253bdata_tool=XGtable&output_view=data)
- Buskirk, S.W., L.F. Ruggiero, and C. J. Krebs
- 2000 “Habitat fragmentation and interspecific competition: implications for lynx conservation.” In: Ruggiero, L.F., K.B. Aubry, S.W. Buskirk, G. M. Koehler, C. J. Krebs, K.S. McKelvey, and J.R. Squires, (Eds.), *Ecology and Conservation of Lynx in the Contiguous United States* (pp 83–100). Boulder, CO: University Press of Colorado.
- California Department of Fish and Game
- 2022 Gray wolf. Accessed July 11, 2023. Available at: <https://wildlife.ca.gov/Conservation/Mammals/Gray-Wolf - 559682741-known-wolves-in-california>

- Callan, R., N.P. Nibbelink, T.P. Rooney, J.E. Wiedenhoef, and A.P. Wydeven  
 2013 “Recolonizing wolves trigger a trophic cascade in Wisconsin (USA).” *Journal of Ecology* 101(4): 837–845.
- Cariappa, C.A., J.K. Oakleaf, W.B. Ballard, and S.W. Breck  
 2011 “A reappraisal of the evidence for regulation of wolf populations.” *Journal of Wildlife Management* 75(3): 726–730.
- Carpenter, L.H., D.J. Decker, and J.F. Lipscomb  
 2000 “Stakeholder acceptance capacity in wildlife management.” *Human Dimensions of Wildlife* 5(3): 5–19.
- Carroll, C., M.K. Phillips, N.H. Schumaker, and D.W. Smith  
 2003 “Impacts of landscape change on wolf restoration success: Planning a reintroduction program based on static and dynamic spatial models.” *Conservation Biology* 17(2): 536–548.
- Carroll, C., M.K. Phillips, C.A. Lopez-Gonzalez, and N.H. Schumaker  
 2006 “Defining recovery goals and strategies for endangered species: The wolf as a case study.” *BioScience* 56(1): 25–37.
- Carroll, C., D.J. Rohlf, B.M. VonHoldt, A. Treves, and S.A. Hendricks  
 2021 “Wolf delisting challenges demonstrate need for an improved framework for conserving intraspecific variation under the Endangered Species Act.” *BioScience* 71(1): 73–84.
- Cassidy, K.A., D.R. MacNulty, D.R. Stahler, D. Smith, and L.D. Mech  
 2015 “Group composition effects on aggressive interpack interactions of gray wolves in Yellowstone National Park.” *Behavioral Ecology* 26: 1352–1360.
- Center for Human-Carnivore Coexistence  
 2020a Wolves and Livestock – 8.010. Colorado State University Extension. Accessed September 2, 2022. Available at: <https://extension.colostate.edu/topic-areas/people-predators/wolves-and-livestock-8-010/>
- 2020b Wolf Economics – 8.012. Colorado State University Extension. Available at: <https://extension.colostate.edu/topic-areas/people-predators/wolf-economics-8-012/>. Accessed September 4, 2022.
- Colorado Natural Heritage Program (CNHP)  
 n.d. Ecological Systems of Colorado. Available at: <https://cnhp.colostate.edu/projects/ecological-systems-of-colorado/>
- Colorado Parks and Wildlife (CPW)  
 2015 *State Wildlife Action Plan*. Accessed July 2022. Available at: [https://cpw.state.co.us/Documents/WildlifeSpecies/SWAP/CO\\_SWAP\\_FULLVERSION.pdf](https://cpw.state.co.us/Documents/WildlifeSpecies/SWAP/CO_SWAP_FULLVERSION.pdf)

- 2018 The 2017 economic contributions of outdoor recreation in Colorado, July 23. Accessed July 14, 2022. Available at:  
[https://cpw.state.co.us/Documents/Trails/SCORP/2017EconomicContributions\\_SCORP.pdf](https://cpw.state.co.us/Documents/Trails/SCORP/2017EconomicContributions_SCORP.pdf)
- 2020a Genetic tests confirm presence of wolves in Colorado. Accessed July 2022. Available at:  
<https://cpw.state.co.us/Lists/News%20Releases/DispForm.aspx?ID=2657>
- 2020b Status of Colorado’s deer, elk and moose populations. February 2020. 12 pp. Accessed July 2022. Available at:  
[https://cpw.state.co.us/Documents/Hunting/BigGame/Colorado\\_Big\\_Game\\_Population\\_Status\\_and\\_Management\\_Summary2\\_2020.pdf](https://cpw.state.co.us/Documents/Hunting/BigGame/Colorado_Big_Game_Population_Status_and_Management_Summary2_2020.pdf)
- 2020c Colorado desert bighorn sheep 2020 post-hunt population estimates. Draft. December 9, 2020. Accessed July 2022. Available at:  
<https://cpw.state.co.us/Documents/Hunting/BigGame/Statistics/DesertBighornSheep/2020DesertBighornPopulationEstimates.pdf>
- 2020d Colorado mountain goat 2020 post-hunt population estimates. Draft. December 9, 2020. Accessed July 2022. Available at:  
<https://cpw.state.co.us/Documents/Hunting/BigGame/Statistics/MountainGoat/2020MountainGoatPopulationEstimates.pdf>
- 2021a Colorado elk hunting statistics. 2021 Population Estimate Report. Available at:  
<https://cpw.state.co.us/Documents/Hunting/BigGame/Statistics/Elk/2021ElkPopulationEstimates.pdf>
- 2021b Colorado deer hunting statistics. 2021 Population Estimate Report. Available at:  
<https://cpw.state.co.us/Documents/Hunting/BigGame/Statistics/Deer/2021DeerPopulationEstimates.pdf>
- 2021c CPW confirms wolf depredation incident in Jackson County. CPW News Release published November 21, 2021. Accessed November 2022. Available at:  
<https://cpw.state.co.us/aboutus/Pages/News-Release-Details.aspx?NewsID=3325>
- 2021d Colorado pronghorn hunting statistics. 2021 Population Estimate Report. Available at:  
<https://cpw.state.co.us/Documents/Hunting/BigGame/Statistics/Pronghorn/2021PronghornPopulationEstimates.pdf>
- 2021e Colorado moose hunting statistics. 2021 Population Estimate Report. Available at:  
<https://cpw.state.co.us/Documents/Hunting/BigGame/Statistics/Moose/2021MoosePopulationEstimates.pdf>
- 2022a Draft Colorado Wolf Restoration and Management Plan. Available at:  
<https://cpw.state.co.us/learn/Pages/CON-Wolf-Management.aspx>. Accessed December 2022.
- 2022b Colorado Parks and Wildlife investigating report of wolf depredations on U.S. Forest Service land near Meeker. CPW News Release published October 7, 2022. Accessed November 2022. Available at: <https://cpw.state.co.us/aboutus/Pages/News-Release-Details.aspx?NewsID=3670>

- 2022c Mammals. Accessed July 2022. Available at: <https://cpw.state.co.us/learn/Pages/Mammals.aspx>
- 2023a *Colorado Wolf Restoration and Management Plan*. 2023. Colorado Parks and Wildlife. Denver, CO. 261 pages. Accessed June 2023. Available at: <https://cpw.state.co.us/Documents/Wolves/2023-Final-CO-Wolf-Plan.pdf>
- 2023b Wolves in Colorado FAQ. Accessed June 2023. Available at: <https://cpw.state.co.us/learn/Pages/Wolves-in-Colorado-FAQ.aspx>
- 2023c CPW News Release: Colorado Parks and Wildlife closes Meeker investigation, cause of death of calf losses in Meeker still unconfirmed. Accessed June 2023. Available at: <https://cpw.state.co.us/aboutus/Pages/News-Release-Details.aspx?NewsID=3750>

#### Colorado Ski Country USA

- 2015 Economic study reveals ski industry’s \$4.8 billion annual impact to Colorado, December 9. Accessed July 19, 2022. Available at: [https://www.coloradoski.com/media\\_manager/mm\\_collections/view/183](https://www.coloradoski.com/media_manager/mm_collections/view/183)

#### Colorado State Land Board

- n.d. Maps. Accessed July 26, 2022. Available at: <https://slb.colorado.gov/maps>

#### Colorado Wolf Management Plan Technical Working Group (TWG)

- 2021 Final report on wolf restoration logistics recommendations. Report prepared for Colorado Parks and Wildlife, November 2021. 26 pp. Accessed August 2022. Available at: [https://cpw.state.co.us/Documents/Commission/2021/November/Item.21-November\\_2021\\_Final\\_TWG%20Report\\_Wolf\\_Restoration\\_Logistics\\_Recommendations-Eric\\_Odell-DNR.pdf](https://cpw.state.co.us/Documents/Commission/2021/November/Item.21-November_2021_Final_TWG%20Report_Wolf_Restoration_Logistics_Recommendations-Eric_Odell-DNR.pdf)
- 2022a Final report on technical and experiential feedback on wolf management considerations. Appendix H in Final Summary of Technical Working Group, August 2022. Accessed October 2022. Available at: <https://www.wolfengagementco.org/advisory-groups>
- 2022b Final report on technical recommendations for Colorado State Listing/Delisting Thresholds and Phasing. Report prepared for Colorado Parks and Wildlife, May 2022. 8 pp. Accessed August 2022. Available at: [https://cpw.state.co.us/Documents/Commission/2022/June/Item.12-Final\\_%20May\\_2022\\_TWG\\_State\\_Listing\\_and\\_Delisting\\_Thresholds\\_Report.pdf](https://cpw.state.co.us/Documents/Commission/2022/June/Item.12-Final_%20May_2022_TWG_State_Listing_and_Delisting_Thresholds_Report.pdf)
- 2022c Final summary of recommendations for the Colorado wolf restoration and management plan. Report prepared for Colorado Parks and Wildlife, August 2022. 19 pp. Accessed October 2022. Available at: <https://www.wolfengagementco.org/advisory-groups>.

#### Colorado Wolf Management Working Group

- 2004 Findings and recommendations for managing wolves that migrate into Colorado. Available at: [https://cpw.state.co.us/Documents/WildlifeSpecies/SpeciesOfConcern/Wolf/Wolf\\_Working%20Group\\_Recommendations\\_2004.pdf](https://cpw.state.co.us/Documents/WildlifeSpecies/SpeciesOfConcern/Wolf/Wolf_Working%20Group_Recommendations_2004.pdf)



Conservation Biology Institute (CBI)

- 2011a Black bear overall range in Colorado, USA. Available at:  
<https://databasin.org/datasets/efeca481799141ec8864b0ea4c80e55a/>
- 2011b Pronghorn antelope overall range in Colorado, USA. Available at:  
<https://databasin.org/datasets/371a49720fd741acb67d68e3d912f33e/>
- 2011c Moose overall range in Colorado, USA. Available at:  
<https://databasin.org/datasets/de88063d8c5346cf863e594b190e8ede/>

Coppinger, R., L. Coppinger, G. Langeloh, L. Gettler and J. Lorenz

- 1988 “A decade of use of livestock guarding dogs.” *Proceedings of the Thirteenth Vertebrate Pest Conference*, 13, 209–214.

Council on Environmental Quality, Executive Office of the President (CEQ)

- 2005 Memo to heads of federal agencies regarding guidance on the consideration of past actions in cumulative effects analysis. Available at:  
[https://www.energy.gov/sites/default/files/nepapub/nepa\\_documents/RedDont/G-CEQ-PastActsCumulEffects.pdf](https://www.energy.gov/sites/default/files/nepapub/nepa_documents/RedDont/G-CEQ-PastActsCumulEffects.pdf)

Creel, S., D.A. Christianson, and J.A. Winnie Jr.

- 2011 “A survey of the effects of wolf predation risk on pregnancy rates and calf recruitment in elk.” *Ecological Applications* 21(8): 2847–2853.

Cubaynes, S., D.R. MacNulty, D.R. Stahler, K.A. Quimby, D.W. Smith, and T. Coulson

- 2014 “Density-dependent Intraspecific Aggression Regulates Survival in Northern Yellowstone Wolves (*Canis lupus*).” *Journal of Animal Ecology* 83: 1344–1356. Available at:  
<https://dx.doi.org/10.1111/1365-2656.12238>

Davidson-Nelson, S.J. and T.M. Gehring

- 2010 “Testing fladry as a nonlethal management tool for wolves and coyotes in Michigan.” *Human–Wildlife Interactions* 4, 87–94.

Dean Runyan Associates

- 2021 Colorado TravelStats Dashboard. Accessed July 14, 2022. Available at:  
<https://www.travelstats.com/dashboard/colorado>
- 2022 The economic impact of travel in Colorado, June. Available at:  
[https://oedit.colorado.gov/sites/coedit/files/documents/Dean%20Runyan%20Associates\\_2021%20Economic%20Impact%20Report\\_7.22%20%281%29.pdf](https://oedit.colorado.gov/sites/coedit/files/documents/Dean%20Runyan%20Associates_2021%20Economic%20Impact%20Report_7.22%20%281%29.pdf)

DeCesare N.J., S.M. Wilson, E.H. Bradley, J.A. Gude, R.M. Inman, N.J. Lance, K. Laudon, A.A. Nelson, M.S. Ross, and T.D. Smucker

- 2018 “Wolf-livestock Conflict and the Effects of Wolf Management.” *The Journal of Wildlife Management* 82: 711–722.

- Decker D.J. and K.G. Purdy
- 1988 “Toward a concept of wildlife acceptance capacity in wildlife management.” *Wildlife Society Bulletin* 16: 53–57.
- Denison, B.
- 2019 “Dirt and morality during Ute removal.” *Pacific Historical Review* 88(1): 127–154. (as cited in Appendix E)
- Denver Museum of Nature and Science (DMNS)
- 2022 Colorado’s last grizzly bear. Available at: <https://www.dmns.org/science/featured-collections/zoology/colorados-last-grizzly-bear/>
- Department of the Interior (DOI)
- 2005 *New U.S. Fish and Wildlife Service Regulation Allows Maximum Management of Gray Wolves For the States of Montana and Idaho*. Press Release, January 3, 2005. Accessed September 20, 2022. Available at: [https://www.doi.gov/sites/default/files/archive/news/archive/05\\_News\\_Releases/050103.htm](https://www.doi.gov/sites/default/files/archive/news/archive/05_News_Releases/050103.htm)
- 2021 Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty and Reserved Rights. Accessed September 6, 2022. Available at: <https://www.doi.gov/sites/doi.gov/files/interagency-mou-protecting-tribal-treaty-and-reserved-rights-11-15-2021.pdf>
- Dickman A.J.
- 2010 “Complexities of conflict: the importance of consideration social factors for effectively resolving human-wildlife conflict.” *Animal Conservation* 13: 458–466.
- Ditmer, M.A.
- 2022 Maps of social-ecological suitability and conflict hot spots (summer and winter) with Colorado county boundaries. Personal communication with the Service.
- Ditmer, M.A., G. Wittemyer, S.W. Breck, and K.R. Crooks
- 2022 “Defining ecological and socially suitable habitat for the reintroduction of an apex predator.” June. *Global Ecology and Conservation*, 38. Available at: <https://dx.doi.org/10.1016/j.gecco.2022.e02192>
- Dorj, U. and B. Namkhai
- 2013 “Reproduction and mortality of re-introduced Przewalski's horse *Equus przewalskii* in Hustai National Park, Mongolia.” *Journal of Life Sciences*, 7(6): 623.
- Elbroch, L.M. J. M. Ferguson, H. Quigley, D. Craighead, D.J. Thompson and H. U. Wittmer
- 2020 “Reintroduced wolves and hunting limit the abundance of a subordinate apex predator in a multi-use landscape.” *Proceedings of the Royal Society B* 287: 20202202. <http://dx.doi.org/10.1098/rspb.2020.2202>

Erb, J. and C. Humpal

- 2021 Minnesota wolf population update 2020. Minnesota Department of Natural Resources, Forest Wildlife Populations and Research Group.

Estes, J.A., J. Terborgh, J.S. Brashares, M.E. Power, J. Berger, W.J. Bond, S.R. Carpenter, T.E. Essington, R.D. Holt, J.B. Jackson, and R.J. Marquis

- 2011 “Trophic downgrading of planet Earth.” *Science* 333(6040): 301–306.

Federal Interagency Working Group on Environmental Justice & NEPA Committee

- 2016 Promising Practices for EJ Methodologies in NEPA Reviews.

Fitzpatrick, T.

- 2021 Tribal lands: an overview. Congressional Research Service. October 14. Accessed September 6, 2022. Available at: <https://sgp.fas.org/crs/misc/IF11944.pdf>

Forrester, T.D. and H.U. Wittmer

- 2013 “A Review of the Population Dynamics of Mule Deer and Black-tailed Deer *Odocoileus hemionus* in North America.” *Mammal Review* 43(4): 292–308.

Fortin, D., H.L. Beyer, M.S. Boyce, D.W. Smith, T. Duchesne, and J.S. Mao

- 2005 “Wolves influence elk movements: behavior shapes a trophic cascade in Yellowstone National Park.” *Ecology* 86(5): 1320–1330.

Fritts, S.H., E.E. Bangs, J.A. Fontaine, M.R. Johnson, M.K. Phillips, E.D. Kock, and J.R. Gunson

- 1997 “Planning and implementing a reintroduction of wolves to Yellowstone National Park and central Idaho.” *Restoration Ecology* 5(1): 7–27.

Fritts, S.H., and L.D. Mech

- 1981 “Dynamics, movements, and feeding ecology of a newly protected wolf population in northwestern Minnesota.” *Wildlife Monographs* 80: 3–79.

Fuller, T.K.

- 1989 “Population Dynamics of Wolves in North-Central Minnesota.” *Wildlife Monographs* 105: 3–41.

Fuller T.K., L.D. Mech, and J. Fitts-Cochran

- 2003 Wolf Population Dynamics. In: L.D. Mech and L. Boitani (Eds.), *Wolves: Behavior, Ecology, and Conservation* (pp. 161–191). Chicago, IL: University of Chicago Press.

Gable, T.D. and S.K. Windels

- 2018 “Kill rates and predation rates of wolves on beavers.” *The Journal of Wildlife Management* 82(2): 466–472.

Gable, T.D., S.M. Johnson-Bice, A.T. Homkes, S.K. Windels, and J.K. Bump

- 2020 “Outsized effect of predation: wolves alter wetland creation and recolonization by killing ecosystem engineers.” *Science Advances* 6(46): eabc5439. Available at: <https://dx.doi.org/10.1126/sciadv.abc5439>

Geffen, E., M. Kam, R. Hefner, P. Hersteinsson, A. Angerbjorn, L. Dalen, E. Fuglei, K. Noren, J. Adams, J. Vucetich, T. Meier, L.D. Mech, B. VonHoldt, D. Stahler, and R.K. Wayne

- 2011 “Kin encounter rate and inbreeding avoidance in canids.” *Molecular Ecology* 20: 5348–5358.

Gese E.M., J.P. Hart, and P.A. Terletzky

- 2021 “Gray wolves.” *Wildlife Damage Management Technical Series*. USDA-APHIS, WS National Wildlife Research Center. Fort Collins, CO. 29 pp.

Ginsberg, J.R. and D.W. Macdonald

- 1990 “Foxes, wolves, jackals, and dogs: an action plan for the conservation of canids. IUCN/SSC Canid Specialist Group.” Prepared for the International Union for Conservation of Nature and Natural Resources, Gland, Switzerland. 123 pp. Accessed July 2022. Available at: <https://portals.iucn.org/library/efiles/documents/1990-008.pdf>

Givón, T.

- 2011 *Ute reference grammar* (Vol. 3). John Benjamins Publishing. (as cited in Appendix E)

Griffin K.A., M. Hebblewhite, P. Zager, H.R. Robinson, S. Barber-Meyer, D. Christianson, S. Creel, N.C. Harris, M.A. Hurley, D.H. Jackson, B.K. Johnson, L.D. Mech, W.L. Myers, J.D. Raitzel, M. Schlegel, B.L. Smith, C. White, and P.J. White

- 2011 “Neonatal mortality of elk driven by climate, predator phenology and predator diversity.” *Journal of Animal Ecology* 80: 1246–1257.

Grinnell, George Bird

- 1893 “Pawnee Mythology.” *The Journal of American Folklore* 6(21): 113–130. Accessed September 20, 2022. Available at: <https://www.jstor.org/stable/pdf/533298.pdf>

Gude, J.A., M.S. Mitchell, R.E. Russell, C.A. Sime, E.E. Bangs, L.D. Mech, and R.R. Ream

- 2012 “Wolf population dynamics in the US Northern Rocky Mountains are affected by recruitment and human-caused mortality.” *The Journal of Wildlife Management* 76(1):108–118.

Gunnison Sage-grouse Rangewide Steering Committee

- 2005 Gunnison sage-grouse rangewide conservation plan. Colorado Division of Wildlife, Denver, CO.

Gunther, K.A. and D.W. Smith

- 2004 “Interactions between wolves and female grizzly bears with cubs in Yellowstone National Park.” *Ursus* 232–238.

- Harris, R.  
2020 “Economic instruments to encourage coexistence between Montana livestock producers and large carnivores.” Background and Discussion Paper, Montana Fish, Wildlife and Parks.
- Hazen, S.R.  
2012 The impact of wolves on elk hunting in Montana. Doctoral Dissertation. Montana State University-Bozeman, College of Agriculture.
- Heart, M.  
2023 Personal communication between M. Heart, Chairman, Ute Mountain Ute Tribe, and C. Besnette Hauser, Chairwoman, CPW, via letter regarding comments on the draft Colorado Wolf Restoration and Management Plan, dated February 17, 2023.
- Hebblewhite, M.  
2011 “Unreliable knowledge about economic impacts of large carnivores on bovine calves.” *Journal of Wildlife Management* 75: 1724–730.
- Hebblewhite, M., C.A. White, C.G. Nietvelt, J.A. McKenzie, T.E. Hurd, J.M. Fryxell, S.E. Bayley, and P.C. Paquet  
2005 “Human activity mediates a trophic cascade caused by wolves.” *Ecology* 86(8): 2135–2144.
- Hebblewhite, M. and J. Whittington  
2020 “Wolves without borders: transboundary survival of wolves in Banff National Park over three decades.” *Global Ecology and Conservation* 24: e01293. Available at: <https://dx.doi.org/10.1016/j.gecco.2020.e01293>
- Heffelfinger, J.R., R.M. Nowak, and D. Paetkau  
2017a “Clarifying historical range to aid recovery of the Mexican wolf.” *Journal of Wildlife Management* 81: 766–777. Available at: <https://doi.org/10.1002/jwmg.21252>  
2017b “Revisiting revising Mexican wolf historical range: A reply to Hendricks et al.” *Journal of Wildlife Management* 81: 1334–1337.
- Hidalgo-Mihart, M.G., L. Cantú-Salazar, C. A. López-González, E. Martínez-Meyer, and A. González-Romero  
2001 “Coyote (*Canis latrans*) food habits in a tropical deciduous forest of western México.” *American Midland Naturalist* 146: 210–216.
- Hill J.E., H.M. Boone, M.G. Gantchoff, T.M. Kautz, K.F. Kellner, E.K. Orning, J. Parchizadeh, T.R. Petroelje, N.H. Wehr, S.P. Finnegan, and N.L. Fowler  
2022 Quantifying anthropogenic wolf mortality in relation to hunting regulations and landscape attributes across North America. *Ecology and Evolution* 12(5):e8875. Available at: <https://doi.org/10.1002/ece3.8875>

Hodges, K.E., L.S. Mills, and K.M. Murphy

- 2009 “Distribution and abundance of snowshoe hares in Yellowstone National Park.” *Journal of Mammalogy* 90(4): 870–878.

Hoffmeister, D. F.

- 1986 *Mammals of Arizona*. University of Arizona Press and Arizona Game and Fish Department, Tucson, USA.

Hollenbeck, J.P. and W.J. Ripple

- 2008 “Aspen snag dynamics, cavity-nesting birds, and trophic cascades in Yellowstone's northern range.” *Forest Ecology and Management* 255(3-4): 1095–1103.

Idaho Department of Fish and Game

- 2023 Gray Wolf Management Plan 2023–2028. Draft. January 2023. 50 pp. Accessed July 2023. Available at: <https://idfg.idaho.gov/form/wolf-plan-2023>

Jackson County

- n.d. Visit North Park Colorado. Accessed July 27, 2022. Available at: <https://jacksoncountycogov.com/>

Janeiro-Otero A., T.M. Newsome, L.M. Van Eeden, W.J. Ripple, and C.F. Dormann

- 2020 “Grey wolf (*Canis lupus*) predation on livestock in relation to prey availability.” *Biological Conservation* 243: 108433.

Janetski, J.C.

- 1992 Ute tales. (as cited in Appendix E)

Jimenez, M.D., E.E. Bangs, D.K. Boyd, D.W. Smith, S.A. Becker, D.E. Ausband, S.P. Woodruff, E.H. Bradley, J. Holyan, and K. Laudon

- 2017 “Wolf dispersal in the Rocky Mountains, western United States: 1993–2008.” *Journal of Wildlife Management* 81(4): 581–592. Available at: <http://dx.doi.org/10.1002/jwmg.21238>

Johnson, M.R., D.K. Boyd, and D.H. Pletscher

- 1994 “Serologic investigations of canine parvovirus and canine distemper in relation to wolf (*Canis lupus*) pup mortalities.” *Journal of Wildlife Diseases* 30(2): 270–273.

Jones, J.A.

- 1955 The Sun Dance of the Northern Ute. *Bureau of American Ethnology Bulletin*. (as cited in Appendix E)

Jost, C., G. Devulder, J.A. Vucetich, R.O. Peterson, and R. Arditi

- 2005 “The wolves of Isle Royale display scale-invariant satiation and ratio-dependent predation on moose.” *Journal of Animal Ecology*: 809–816.

Kelly, B.T., P.S. Miller, and U.S. Seal

- 1999 Population and habitat viability assessment workshop for the red wolf (*Canis rufus*). Conservation Breeding Specialist Group (SSC/IUCN), Apple Valley, MN.

Keystone Policy Center

- 2022 Advisory Groups. Accessed October 11, 2022. Available at: <https://www.wolfengagementco.org/advisory-groups>

Kohn, B.E., R. Thiel, and J.L. Hansen

- 2001 “Road density as a factor in habitat selection by wolves and other carnivores in the Great Lakes Region.” *Carnivore Conservation in the Twenty-first Century* 97(18): 110–114.

Kortello, A.D., T.E. Hurd, and D.L. Murray

- 2007 “Interactions between cougars (*Puma concolor*) and gray wolves (*Canis lupus*) in Banff National Park, Alberta.” *Ecoscience* 14(2): 214–222.

Landers, R.

- 2014 “Tab for Huckleberry wolf pack operations \$53K.” *The Spokesman Review*. Accessed September 22, 2022. Available at: <https://www.spokesman.com/blogs/outdoors/2014/sep/29/tab-huckleberry-wolf-pack-operation-53k/>

Leopold, A.S.

- 1959 *Wildlife of Mexico: the game birds and mammals*. University of California Press, Berkeley.

Liberg O, G. Chapron, P. Wabakken, H.C. Pedersen, N. Thomson Hobbs, and H. Sand

- 2012 Shoot, shovel and shut up: cryptic poaching slows restoration of a large carnivore in Europe. *Proceedings of the Royal Society B* 279: 910–915.

López-Bao, J.V., V. Sazatornil, L. Llana, and A. Rodríguez

- 2013 “Indirect effects on heathland conservation and wolf persistence of contradictory policies that threaten traditional free-ranging horse husbandry.” *Conservation Letters*, 6(6):448–455.

Lukacs, P.M., M.S. Mitchell, M. Hebblewhite, B.K. Johnson, H. Johnson, M. Kauffman, K.M. Proffitt, P. Zager, J. Brodie, K. Hersey, A.A. Holland, M. Hurley, S. McCorquodale, A. Middleton, M. Nordhagen, J.J. Nowak, D.P. Walsh, and P.J. White

- 2018 “Factors influencing elk recruitment across ecotypes in the western United States.” *Journal of Wildlife Management* 82 (4): 698–710. Available at: <https://dx.doi.org/10.1002/jwmg.21438>

MacNulty, D.R., D.W. Smith, L.D. Mech, and L.E. Eberly

- 2009 “Body size and predatory performance in wolves: is bigger better?” *Journal of Animal Ecology* 78: 532–539.

MacNulty, D.R., A. Tallian, D.R. Stahler, and D.W. Smith

- 2014 “Influence of group size on the success of wolves hunting bison.” *PloS One* 9(11): e112884.

Madden, F. and B. McQuinn

- 2014 “Conservation’s blind spot: the case for conflict transformation in wildlife conservation.” *Biological Conservation* 178: 97–106.

Martínez-Meyer, E., A. González-Bernal, J. A. Velasco, T. L. Swetnam, Z. Y. González-Saucedo, J. Servín, C. A. López González, J. K. Oakleaf, S. Liley, and J. R. Heffelfinger

- 2021 “Rangewide habitat suitability analysis for the Mexican wolf (*Canis lupus baileyi*) to identify recovery areas in its historical range.” *Diversity and Distributions* 27: 642–654.

McLaren, B.E. and R.O. Peterson

- 1994 “Wolves, moose, and tree rings on Isle Royale.” *Science* 266(5190): 1555–1558.

McManus, J.S., A.J. Dickman, D. Gaynor, B.H. Smuts, and D.W. Macdonald

- 2015 “Dead or alive? Comparing costs and benefits of lethal and nonlethal human-wildlife conflict mitigation on livestock farms.” *Oryx* 49(4): 687–695.

Mech, L.D.

- 1988 “Longevity in wild wolves.” *Journal of Mammalogy* 69(1): 197–198.
- 1989 “Wolf population survival in an area of high road density.” *The American Midland Naturalist* 121(2): 387–389.
- 2012 “Is science in danger of sanctifying the wolf?” *Biological Conservation* 150: 143–149.
- 2017 “Where can wolves live and how can we live with them.” *Biological Conservation* 210: 310–317. Available at: <https://dx.doi.org/10.1016/j.biocon.2017.04.029>

Mech, L.D., F. Isbell, J. Krueger, and J. Hart

- 2019 “Gray wolf (*Canis lupus*) recolonization failure: A Minnesota case study.” *Canadian Field-Naturalist* 133(1): 60–65. Available at: <https://dx.doi.org/10.22621/cfn.v133i1.2078>

Mech, L.D. and L. Boitani

- 2003 “Wolf social ecology.” In: L.D. Mech and L. Boitani (Eds.), *Wolves: Behaviour, Ecology and Conservation* (pp. 1–34). Chicago, IL: University of Chicago Press.

Mech, L.D. and S.M. Barber-Meyer

- 2015 “Yellowstone wolf (*Canis lupus*) density predicted by elk (*Cervus elaphus*).” *Canadian Journal of Zoology* 93 (6): 499–502. Available at: <https://dx.doi.org/10.1139/cjz-2015-0002>

Mech, L.D., S.M. Goyal, W.J. Paul, and W.E. Newton

- 2008 “Demographic effects of canine parvovirus on a free-ranging wolf population over 30 years.” *Journal of Wildlife Diseases* 44(4): 824–836.



- Merkle, J.A., D.R. Stahler, and D.W. Smith
- 2009 “Interference competition between gray wolves and coyotes in Yellowstone National Park.” *Canadian Journal of Zoology* 87(1): 56–63.
- Messier, F.
- 1985 “Solitary living and extraterritorial movements of wolves in relation to social status and prey abundance.” *Canadian Journal of Zoology* 63: 239–245.
- 1994 “Ungulate population models with predation: a case study with the North American moose.” *Ecology* 75(2): 478–488.
- Metz, M.C., D.W. Smith, J.A. Vucetich, D.R. Stahler, and R.O. Peterson
- 2012 “Seasonal patterns of predation for gray wolves in the multi-prey system of Yellowstone National Park.” *Journal of Animal Ecology* 81(3): 553–563.
- Michigan Department of Natural Resources (Michigan DNR)
- 2015 *Michigan Wolf Management Plan*. Updated 2015. Michigan Department of Natural Resources Wildlife Division Report No. 3604. June 11, 2015. 101 pp. Accessed September 2022. Available at: [https://www.michigan.gov/-/media/Project/Websites/dnr/Documents/WLD/Mgt/Wolf/wolf\\_management\\_plan.pdf?rev=3c38cb057cdf4cee9edcdb89b66eee5f](https://www.michigan.gov/-/media/Project/Websites/dnr/Documents/WLD/Mgt/Wolf/wolf_management_plan.pdf?rev=3c38cb057cdf4cee9edcdb89b66eee5f)
- 2022 *Draft Michigan Wolf Management Plan*. Updated 2022. Michigan Department of Natural Resources Wildlife Division Report No. 3703. July 2022.
- Miller, J.R.
- 1982 “Game availability and hunter participation: a study of Washington elk hunting.” *The Annals of Regional Science* 16(3): 79–94. *Springerlink*. Web. 2 Jan. 2012.
- Mladenoff, D.J., T.A. Sickley, R.G. Haight, and A.P. Wydeven
- 1995 “A regional landscape analysis and prediction of favorable gray wolf habitat in the northern Great Lakes region.” *Conservation Biology* 9: 279–294.
- Morales-Gonzalez, A., A. Fernandez-Gil, M. Quevedo, and E. Revilla
- 2022 “Patterns and determinants of dispersal in grey wolves (*Canis lupus*).” *Biological Reviews* 97: 466–480
- Morehouse, A.T., J. Tigner, and M.S. Boyce
- 2018 “Coexistence with large carnivores supported by a predator compensation program.” *Environmental Management* 61: 719–731.
- Muhly, T.B. and M. Musiani
- 2009 “Livestock depredation by wolves and the ranching economy in the northwestern U.S.” *Ecological Economics* 68(8-9): 2439–2450. June 2009. Accessed September 2, 2022. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0921800909001347?via%3Dihub>

- Murphy, K.M., T.M. Potter, J.C. Halfpenny, K.A. Gunther, M.T. Jones, P.A. Lundberg, and N.D. Berg  
 2006 “Distribution of Canada lynx in Yellowstone National Park.” *Northwest Science* 80(3): 199–206.
- Murray, D.L., D.W. Smith, E.E. Bangs, C. Mack, J.K. Oakleaf, J. Fontaine, D. Boyd, M. Jiminez, C. Niemeyer, T.J. Meier, D. Stahler, J. Holyan, and V.J. Asher  
 2010 “Death from anthropogenic causes is partially compensatory in recovering wolf populations.” *Biological Conservation* 143: 2514–2524.
- National Park Service (NPS)
- 2016 Gathering of certain plants or plant parts by federally recognized Indian Tribes for traditional purposes. *Federal Register*. Available at: <https://www.federalregister.gov/documents/2016/07/12/2016-16434/gathering-of-certain-plants-or-plant-parts-by-federally-recognized-indian-tribes-for-traditional>
- 2018 Environmental Impact Statement to Address the Presence of Wolves. U.S. Department of the Interior, National Park Service, Isle Royale National Park.
- 2022a Yellowstone National Park: Gray Wolf. Updated March 10, 2022. Available at: <https://www.nps.gov/yell/learn/nature/wolves.htm>
- 2022b Yellowstone National Park - Elk. Available at: <https://www.nps.gov/yell/learn/nature/elk.htm>
- Nelson, E.W. and E.A. Goldman  
 1929 “A new wolf from Mexico.” *Journal of Mammalogy* 10:165–166.
- Newsome, T.M., L. Boitani, G. Chapron, P. Ciucci, C.R. Dickman, J.A. Dellinger, J.V. López-Bao, R.O. Peterson, C.R. Shores, A.J. Wirsing, and W.J. Ripple  
 2016 “Food habits of the world's grey wolves.” *Mammal Review* 46(4):255–69.
- Nie, M.  
 2008 “The use of co-management and protected land-use designations to protect Tribal cultural resources and reserved treaty rights on federal lands.” *Natural Resources Journal* Vol. 48. (as cited in Appendix E)
- Nowak, R.M.  
 1979 “North American Quaternary Canis.” *Monograph of the Museum of Natural History (University of Kansas)* 6:1–154.
- 1995 “Another look at wolf taxonomy”. In: L.N. Carbyn, S.H. Fritts, and D.R. Seip (Eds.), *Ecology and Conservation of Wolves in a Changing World* (pp 375-397). Occasional Publication No 35. Canadian Circumpolar Institute, Edmonton, Alberta, Canada.
- 2003 “Wolf evolution and taxonomy.” In: L.D. Mech and L. Boitani (Eds.), *Wolves: Behavior, Ecology, and Conservation* (pp. 161–191). Chicago, IL: University of Chicago Press.

Odell, E.

- 2023 Personal communication via telephone with E. Odell, Species Conservation Program Manager, CPW, and M. Bacon, WSP (and others), regarding the number of wolves in the state.

Odell, E.A., J.R. Heffelfinger, S.S. Rosenstock, C.J. Bishop, S. Liley, A. González-Bernal, J.A. Velasco, and E. Martínez-Meyer

- 2018 “Perils of recovering the Mexican wolf outside of its historical range.” *Biological Conservation* 220: 290–298.

Office of Economic Development and International Trade

- 2021 Updated economic data from US BEA on impact of outdoor recreation industry shows industry gains, losses and overall economic impact, November 12. Accessed July 14, 2022. Available at: <https://oedit.colorado.gov/press-release/updated-economic-data-from-us-bea-on-impact-of-outdoor-recreation-industry-shows>

Olson E.R., J.L. Stenglein, V. Shelley, A.R. Rissman, C. Browne-Nuñez, Z. Voyles, A.P. Wydeven, and T. Van Deelen

- 2015 “Pendulum swings in wolf management led to conflict, illegal kills, and a legislated wolf hunt.” *Conservation Letters* 8(5): 351–360. Available at: <https://doi.org/10.1111/conl.12141>

O’Neil, S.T.

- 2017 The spatial ecology of gray wolves in the Upper Peninsula of Michigan, 1994–2013. Doctoral dissertation, Michigan Technological University. Available at: <https://digitalcommons.mtu.edu/cgi/viewcontent.cgi?article=1502&context=etdr>

O’Neil, S.T., J.A. Vucetich, D.E. Beyer Jr., S.R. Hoy, and J.K. Bump

- 2020 “Territoriality drives preemptive habitat selection in recovering wolves: implications for carnivore conservation.” *Journal of Animal Ecology* 89: 1433–1447.

Oregon Department of Fish and Wildlife (Oregon DFW)

- 2018 Oregon Wolf Conservation and Management 2017 Annual Report. Oregon Department of Fish and Wildlife, 4034 Fairview Industrial Drive SE. Salem, OR, 97302.
- 2019 Oregon Wolf Conservation and Management 2018 Annual Report. Oregon Department of Fish and Wildlife, 4034 Fairview Industrial Drive SE. Salem, OR, 97302.
- 2020 Oregon Wolf Conservation and Management 2019 Annual Report. Oregon Department of Fish and Wildlife, 4034 Fairview Industrial Drive SE. Salem, OR, 97302.
- 2021 Oregon Wolf Conservation and Management 2020 Annual Report. Oregon Department of Fish and Wildlife, 4034 Fairview Industrial Drive SE. Salem, OR, 97302.
- 2022 Oregon Wolf Conservation and Management 2021 Annual Report. Oregon Department of Fish and Wildlife, 4034 Fairview Industrial Drive SE. Salem, OR, 97302.

2023 Oregon Wolf Conservation and Management 2022 Annual Report. Oregon Department of Fish and Wildlife, 4034 Fairview Industrial Drive SE. Salem, OR, 97302.

Palomares, F. and T.M. Caro

1999 “Interspecific killing among mammalian carnivores.” *The American Naturalist* 153(5): 492–508.

Parks, M., K. Podruzny, S. Sells, T. Parks, N. Lance, W. Cole, T. Smucker, and S. Bhattacharjee

2023 Montana Gray Wolf Conservation and Management 2022 Annual Report. Montana Fish, Wildlife & Parks. Helena, Montana. 53 pages. Accessed July 2023. Available at: [https://fwp.mt.gov/binaries/content/assets/fwp/conservation/wolf/draft-2022-wolf-report\\_final\\_6.21.23.pdf](https://fwp.mt.gov/binaries/content/assets/fwp/conservation/wolf/draft-2022-wolf-report_final_6.21.23.pdf)

Paquet, P.C. and L.N. Carbyn

2003 “Gray Wolf.” In *Wild Mammals of North America: Biology, Management and Conservation*. Page 482–510.

Parsons, D.R.

1996 “Case study: the Mexican wolf.” In: E.A. Herrera and L.F. Huenneke (Eds.), *New Mexico's Natural Heritage: Biological Diversity in the Land of Enchantment* (pp. 161–191). New Mexico Journal of Science 36.

Peyton, R.B., P.A. Bull, and R.H. Holsman

2007 Measuring social carrying capacity for gray wolves in Michigan. Unpublished manuscript. Department of Fisheries and Wildlife, Michigan State University, Lansing, MI. Accessed November 2022. Available at: [https://www.michigan.gov/-/media/Project/Websites/dnr/Documents/WLD/Wolf/Peyton\\_SCC\\_wolves.pdf?rev=e3711131ad764bb7ac80de2a550f98fd](https://www.michigan.gov/-/media/Project/Websites/dnr/Documents/WLD/Wolf/Peyton_SCC_wolves.pdf?rev=e3711131ad764bb7ac80de2a550f98fd)

Pletscher, D.H., R.R. Ream, D.K. Boyd, M.W. Fairchild, and K.E. Kunkel

1997 “Population dynamics of a recolonizing wolf population.” *Journal of Wildlife Management* 61 (2): 459–465.

Pooley S., M. Barua, W. Beinart, A. Dickman, G. Holmes, J. Lorimer, A.J. Loveridge, D.W. Macdonald, G. Marvin, S. Redpath, and C. Sillero-Zubiri

2017 An interdisciplinary review of current and future approaches to improving human–predator relations. *Conservation Biology* 31(3): 513–23.

Ramler, J.P., M. Hebblewhite, D. Kellenberg, and C. Sime

2014 “Crying wolf? A spatial analysis of wolf location and depredations on calf weight.” *American Journal of Agricultural Economics* 96(3): 631–656.

Ripple, W.J. and R.L. Beschta

2012 “Trophic cascades in Yellowstone: The first 15 years after wolf reintroduction.” *Biological Conservation* 145(1): 205–213.

- Ripple, W.J., J.A. Estes, R.L. Beschta, C.C. Wilmers, E.G. Ritchie, M. Hebblewhite, J. Berger, B. Elmhagen, M. Letnic, M.P. Nelson, and O.J. Schmitz
- 2014 “Status and ecological effects of the world’s largest carnivores.” *Science* 343(6167): 1241484.
- Ruth, T.K., M.A. Haroldson, K.M. Murphy, P.C. Buotte, M. G. Hornocker, and H.B. Quigley
- 2011 “Cougar survival and source-sink structure on Greater Yellowstone’s northern range.” *Journal of Wildlife Management* 75(6): 1381–1398.
- Sawyer, H. and F. Lindzey
- 2002 A review of predation on bighorn sheep (*Ovis canadensis*). Wyoming Domestic Sheep/Bighorn Sheep Working Group. 36 pp.
- Sazatornil, V., A. Rodriguez, M. Klaczek, M. Ahmadi, F. Alvares, S. Arthur, J.C. Blanco, B.L. Borg, D. Cluff, Y. Cortés, E.J. García, E. Geffen, B. Habib, Y. Iliopoulos, M. Kaboli, M. Krofel, L. Llana, F. Marucco, J.K. Oakleaf, D.K. Person, H. Potočnik, N. Ražen, H. Rio-Maior, H. Sand, D. Unger, P. Wabakken, and J.V. López-Bao
- 2016 “The role of human-related risk in breeding site selection by wolves.” *Biological Conservation* 201: 103–110. <https://dx.doi.org/10.1016/j.biocon.2016.06.022>
- Schaaf, A.
- 2022 Gray wolves within the Brunot Area. April 5, 2022. Archuleta County Board of County Commissioners. Accessed October 11, 2022. Available at: <http://www.archuletacounty.org/AgendaCenter/ViewFile/Item/10438?fileID=8156>
- Schroeder, M.A., J.R. Young, and C.E. Braun
- 1999 “Sage grouse (*Centrocercus Urophasianus*).” *The Birds of North America* (425): 28. (not seen, as cited in USFWS 2019)
- Seip, D.R.
- 1992 “Factors limiting woodland caribou populations and their interrelationships with wolves and moose in southeastern British Columbia.” *Canadian Journal of Zoology* 70(8): 1494–1503.
- Sells, S.N., M.S. Mitchell, K.M. Podruzny, D.E. Ausband, D.J. Emlen, J.A. Gude, T.D. Smucker, D.K. Boyd, and K.E. Loonam
- 2022 “Competition, prey, and mortalities influence gray wolf group size.” *The Journal of Wildlife Management* 86(3): p.e22193.
- Simmons, Virginia McConnell
- 2000 *The Ute Indians of Utah, Colorado, and New Mexico*. Boulder, CO: University Press of Colorado,. (as cited in Appendix E)
- Smith, D.W., L.D. Mech, M. Meagher, W.E. Clark, R. Jaffe, M.K. Phillips, and J.A. Mack
- 2000 “Wolf-bison interactions in Yellowstone National Park.” *Journal of Mammalogy* 81 (4): 1128–1135.

Smith D.W., R.O. Peterson, and D.B. Houston

2003 “Yellowstone after wolves.” *Bioscience* 53: 330–340.

Smith, D.W., D.R. Stahler, and D.S. Guernsey

2004 *Yellowstone Wolf Project: Annual Report, 2003 (YCR-NR-2004–04)*. Yellowstone National Park (WY): National Park Service. Available at: <https://www.nps.gov/yell/learn/nature/upload/wolfrpt03.pdf>

Smith, D.W., E.E. Bangs, J.K. Oakleaf, C. Mack, J. Fontaine, D. Boyd, M. Jimenez, D.H. Pletscher, C.C. Niemeyer, T.J. Meier, D.R. Stahler, J. Holyan, V.J. Asher, and D.L. Murray

2010 “Survival of colonizing wolves in the northern Rocky Mountains of the United States, 1982–2004.” *J. Wildl. Manag.* 74 (4), 620–634. Available at: <https://dx.doi.org/10.2193/2008-584>

Smith, D.W., R.O. Peterson, D.R. MacNulty, and M. Kohl

2019 “The big scientific debate: trophic cascades.” National Park Service, Yellowstone National Park. *Yellowstone Science* 24 (1). Available at: <https://www.nps.gov/articles/the-big-scientific-debate-trophic-cascades.htm>

Smith, D.W., K.A. Cassidy, D.R. Stahler, D.R. MacNulty, Q. Harrison, B. Balmford, E.E. Stahler, E.E. Brandell, and T. Coulson

2020 “Population Dynamics and Demography.” In: Smith, D.W., D.R. Stahler and D.R. MacNulty (Eds.), *Yellowstone Wolves: Science and Discovery in the World’s First National Park* (pp 77–92). Chicago, IL: University of Chicago Press.

Sommers, A.P., C.C. Price, C.D. Urbigkit, and E.M. Peterson

2010 “Quantifying economic impacts of large-carnivore depredation on bovine calves.” *Journal of Wildlife Management* 74: 1425–1434.

Southern Ute Indian Tribe

2021 2021–2022 Brunot Area Hunting & Fishing Proclamation for Brunot Area Hunting & Fishing by Southern Ute Tribal Members. Accessed September 6, 2022. Available at: <https://www.southernute-nsn.gov/wp-content/uploads/sites/15/2021/05/Brunot-Proc-2021-22.pdf>

2022 Southern Ute Indian Tribe. Southern Ute Reservation, Colorado. Available at: <https://www.southernute-nsn.gov/> (as cited in Appendix E)

Sparkman, A.M., J.M. Adams, T.D. Steury, L.P. Waits, and D.L. Murray

2012 “Pack social dynamics and inbreeding avoidance in the cooperatively breeding red wolf.” *Behavioral Ecology* 23: 1186–1194.

Stahler, D.R., D.R. MacNulty, R.K. Wayne, B. VonHoldt, and D.W. Smith

2013 “The adaptive value of morphological, behavioral and life-history traits in reproductive female wolves.” *Journal of Animal Ecology* 82: 222–234.

Stahler, D.R., D.W. Smith, and D.S. Guernsey

- 2006 “Foraging and feeding ecology of the gray wolf (*Canis lupus*): lessons from Yellowstone National Park, Wyoming, USA.” *The Journal of Nutrition* 136 (7): 1923S–1926S. Available at: <https://dx.doi.org/10.1093/jn/136.7.1923S>

Stahler, D.R., D.W. Smith, and R. Landis

- 2002 “The acceptance of a new breeding male in to a wild wolf pack.” *Canadian Journal of Zoology* 80: 360–365.

Steele, J.R., B.S. Rashford, T.K. Foulke, J.A. Tanaka, and D.T. Taylor

- 2013 “Wolf (*Canis lupus*) predation impacts on livestock production: Direct effects, indirect effects, and implications for compensation ratios.” *Rangeland Ecology & Management*, 10.2111/REM-D-13-00031.1, 66(5): 539–544.

Stenglein, J.L., A. P. Wydeven, T. R. Van Deelen

- 2018 “Compensatory mortality in a recovering top carnivore: wolves in Wisconsin.” *Oecologia* 187(1): 99–111.

Stevens County Cattleman’s Association

- 2012 Wedge pack removal costs set for repeat. Web Post, November 15, 2012. Accessed November 7, 2022. Available at: <https://stevenscountycattlemen.com/2012/11/16/wedge-pack-removal-costs-set-for-repeat/>

Steward, J.H.

- 1932 “A Uintah Ute Bear Dance.” *American Anthropologist* 1932(34)2: 263–273. Accessed October 12, 2022. Available at: <https://anthrosource.onlinelibrary.wiley.com/doi/pdf/10.1525/aa.1932.34.2.02a00060>.

Treves, A., K.A. Artelle, C.T. Darimont, and D.R. Parsons

- 2017a “Mismeasured mortality: correcting estimates of wolf poaching in the United States.” *Journal of Mammalogy* 98(5): 1256–1264.

Treves, A., J.A. Langenberg, J.V., López-Bao, and M.F. Rabenhorst

- 2017b “Gray wolf mortality patterns in Wisconsin from 1979 to 2012.” *Journal of Mammalogy* 98(1): 17–32.

U.S. Census Bureau

- 2010 U.S. Decennial Census. Accessed July 13, 2022. Available at: <https://data.census.gov/cedsci>

- 2020 U.S. Decennial Census. Accessed July 13, 2022. Available at: <https://data.census.gov/cedsci>

- 2020a 2020 Decennial Census, DEC Redistricting Data (PL 94-171), Race and Ethnicity data for Colorado. Accessed July 21, 2022. Available at: <https://data.census.gov/cedsci/table?t=Race%20and%20Ethnicity&g=0400000US08&y=2020&tid=DECENNIALPL2020.P2>

- 2020b 2020 American Community Survey 5-year Estimates, Table ID: S1701, Poverty data for Colorado. Accessed July 21, 2022. Available at: <https://data.census.gov/cedsci/table?t=Poverty&g=0400000US08&y=2020&tid=ACSST5Y2020.S1701>
- 2020c 2020 Decennial Census, DEC Redistricting Data (PL 94-171) Race and Ethnicity data for All Counties within Colorado. Accessed August 29, 2022. Available at: <https://data.census.gov/cedsci/table?t=Race%20and%20Ethnicity&g=0400000US08%240500000&y=2020&tid=DECENNIALPL2020.P2&tp=false>
- 2020d 2020 American Community Survey 5 Year Estimates, Table ID: S1701, Poverty data for All Counties within Colorado. Accessed August 29, 2022. Available at: <https://data.census.gov/cedsci/table?t=Poverty&g=0400000US08%240500000&y=2020>
- 2020e 2020 American Community Survey 5 Year Estimates, Table ID: S0101 Age and Sex Data for Colorado. Accessed September 28, 2022. Available at: <https://data.census.gov/cedsci/table?g=0500000US08007>
- 2022 American Community Survey Five-Year Estimates, 2016-2020. Accessed July 13, 2022. Available at: <https://data.census.gov/cedsci>

#### U.S. Department of Agriculture (USDA)

- 2015 Sheep and lamb predator and nonpredator death loss in the United States, 2015, September. Accessed June 14, 2023. Available at: [https://www.aphis.usda.gov/animal\\_health/nahms/sheep/downloads/sheepdeath/SheepDeathLoss2015.pdf](https://www.aphis.usda.gov/animal_health/nahms/sheep/downloads/sheepdeath/SheepDeathLoss2015.pdf)
- 2017 Death loss in U.S. cattle and calves due to predator and nonpredator causes, 2015, December. Accessed June 2, 2023. Available at: [https://www.aphis.usda.gov/animal\\_health/nahms/general/downloads/cattle\\_calves\\_deathloss\\_2015.pdf](https://www.aphis.usda.gov/animal_health/nahms/general/downloads/cattle_calves_deathloss_2015.pdf)
- 2019 2017 Census of Agriculture, February 11. Available at: [https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/Colorado/](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Colorado/)

#### U.S. Department of Agriculture-National Agricultural Statistics Service (USDA-NASS)

- 2017 2017 Census of Agriculture Volume 1, Chapter 2 – County Level. Table 11-CO, Table 12-CO, Table 13-CO, Table 18-CO, Table 27-CO, Table 11-OR, Table 13-OR, Table 11-WA, Table 13-WA, Table 11-WY, Table 13-WY. Accessed June 12, 2023. Available at: [https://www.nass.usda.gov/Publications/AgCensus/2017/Full\\_Report/Volume\\_1\\_Chapter\\_2\\_County\\_Level/](https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1_Chapter_2_County_Level/)

#### U.S. Environmental Protection Agency (USEPA)

- 1999 Consideration of Cumulative Impacts in EPA Review of NEPA Documents. Accessed August 9, 2023. Available at: <https://www.epa.gov/sites/default/files/2014-08/documents/cumulative.pdf>



2022 Environmental justice. Accessed July 15, 2022. Available at:  
<https://www.epa.gov/environmentaljustice>

U.S. Fish and Wildlife Service (USFWS)

- 1994 *The reintroduction of gray wolves to Yellowstone National Park and Central Idaho. Final environmental impact statement.* Prepared by the U.S. Department of the Interior Fish and Wildlife Service, Helena MT. May 1994. 414 pp.
- 1996 *Reintroduction of the Mexican wolf within its historic range in the southwestern United States: final environmental impact statement.* USFWS, Region 2, Albuquerque, New Mexico.
- 2010 *Mexican Wolf Conservation Assessment. Region 2, Albuquerque, New Mexico, USA.* Available at:  
[https://irp-cdn.multiscreensite.com/4cf33c6f/files/uploaded/2010-mexican\\_wolf\\_conservation\\_assessment\\_130pgs.pdf](https://irp-cdn.multiscreensite.com/4cf33c6f/files/uploaded/2010-mexican_wolf_conservation_assessment_130pgs.pdf)
- 2012 *Endangered and Threatened Wildlife and Plants; Removal of the Gray Wolf in Wyoming From the Federal List of Endangered and Threatened Wildlife and Removal of the Wyoming Wolf Population's Status as an Experimental Population* (77 FR 55529, September 10, 2012), Lakewood, Colorado.
- 2015 *Revision to the Regulations for the Nonessential Experimental Population of the Mexican Wolf* (80 FR 2512, January 16, 2015), Albuquerque, New Mexico.
- 2016 510 FW 1 The Service's Native American Policy. January 20. Accessed September 20, 2022. Available at: <https://www.fws.gov/policy/510fw1.pdf>
- 2017a Canada lynx (*Lynx Canadensis*) 5-year review: summary and evaluation. U.S. Fish and Wildlife Service, Mountain Prairie Region, Lakewood, CO.
- 2017b Species status assessment for the Canada lynx (*Lynx canadensis*) contiguous United States distinct population segment. Version 1.0, October, 2017. Lakewood, CO.
- 2017c Mexican Wolf Biological Report: Version 2. Region 2, Albuquerque, New Mexico, USA. Available at:  
<https://www.fws.gov/southwest/es/mexicanwolf/pdf/2017MexicanWolfBiologicalReportFinal.pdf>
- 2018 "What is a 10(j) rule?" Available at: <https://www.fws.gov/media/section-10j-endangered-species-act>. Accessed June 13, 2022.
- 2019 Species status assessment report for Gunnison sage-grouse (*Centrocercus minimus*). Version: April 20, 2019. Lakewood, CO.
- 2020a *Gray wolf final delisting determination questions and answers.* FAQ. Press release, October 29, 2020. Accessed July 2022. Available at: <https://www.fws.gov/press-release/2020-10/gray-wolf-final-delisting-determination-questions-and-answers>

- 2020b Endangered and threatened wildlife and plants: removing the gray wolf (*Canis lupus*) from the list of endangered and threatened wildlife. 50 CFR Part 17 [Docket No. FWS-HQ-ES-2018-0097; FF09E22000 FXES1113090FEDR 212]. *Federal Register*, Vol. 85, No. 213. November 3, 2020. 118 pp. Accessed July 2022. Available at: <https://www.govinfo.gov/content/pkg/FR-2020-11-03/pdf/2020-24171.pdf>
- 2020c Final recovery plan for Gunnison sage-grouse (*Centrocercus minimus*). October 2020. U.S. Fish and Wildlife Service, Upper Colorado River Region, Lakewood, CO. 32 pages.
- 2020d Gray wolf biological report. Information on the species in the lower 48 United States. October 13, 2020.
- 2022a “2022 Gray wolf questions and answers.” Accessed June 6, 2022. Available at: <https://www.fws.gov/initiative/protecting-wildlife/gray-wolf-recovery-news-and-updates>
- 2022b Wolf. Accessed July 2022. Available at: <https://www.fws.gov/species/wolf-canis-lupus>
- 2022c ECOS (Environmental Conservation Online System). Threatened & Endangered Species. U.S. Fish & Wildlife Service. Accessed July 2022. Available at: <https://ecos.fws.gov/ecp/>
- 2022d IPaC (Information for Planning and Consultation). Colorado Endangered Species. U.S. Fish & Wildlife Service. Accessed July 2022. Available at: <https://ipac.ecosphere.fws.gov/location/YBRSIK6JPBEBLEYI3E7VNQSR6U/resources>
- 2022e Tribal eagle aviary permit. <https://www.fws.gov/service/permits> (as cited in Appendix E)
- 2022f Mexican Wolf Recovery Program Progress Report #24. Reporting Period: January 1 – December 21, 2021. Accessed June 2023. Available at: <https://www.fws.gov/sites/default/files/documents/Mexican-Wolf-2021-Progress-Report-Final.pdf>.
- 2022g Mexican Wolf Recovery Plan. Second revision, September 2022. U.S. Fish and Wildlife Service, Southwest Region, Albuquerque, New Mexico. Accessed October 2022. Available at: [https://ecos.fws.gov/docs/recovery\\_plan/Final%20Mexican%20Wolf%20Recovery%20Plan%20Second%20Revision%202022%20signed\\_508%20compliant\\_1.pdf](https://ecos.fws.gov/docs/recovery_plan/Final%20Mexican%20Wolf%20Recovery%20Plan%20Second%20Revision%202022%20signed_508%20compliant_1.pdf)
- 2022h Final SEIS for the proposed revision to the regulations for the nonessential experimental population of the Mexican wolf (*Canis lupus baileyi*). May. Available at: <https://www.fws.gov/media/final-seis-proposed-revision-regulations-nonessential-experimental-population-mexican-wolf>
- 2023 Mexican Wolf Recovery Program Quarterly Update, First Quarter 2023 (January, February, March). Accessed July 11, 2023. Available at: <https://www.fws.gov/sites/default/files/documents/Quarterly%20Report%20First%202023%20FINAL.pdf>

U.S. Fish and Wildlife Service, Nez Perce Tribe, National Park Service, and USDA Wildlife Services

- 2001 Rocky Mountain Wolf Recovery 2000 Annual Report. T. Meier, ed. USFWS, Ecological Services, Helena, MT. 43 pp. Accessed July 2022. Available at:  
<https://digitalcommons.unl.edu/wolfrecovery/>

U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration (USFWS and NOAA)

- 2016 “Candidate conservation agreements with assurances policy.” *Federal Register*. FR Number 2016-10479. Accessed June 30, 2022. Available at:  
<https://www.federalregister.gov/documents/2016/05/04/2016-10479/candidate-conservation-agreements-with-assurances-policy#:~:text=Candidate%20Conservation%20Agreement%20%28CCA%29%20means%20an%20agreement%20signed,will%20voluntarily%20undertake%20to%20conserve%20the%20covered%20species>

U.S. Forest Service

- 2010 U.S. National Atlas Federal and Indian Land Areas, June 30. Available at:  
<https://www.fs.usda.gov/detail/r1/landmanagement/gis/?cid=stelprdb5299259>
- 2021 “Chapter 1 – Introduction.” *Final San Juan National Forest Land and Resource Management Plan*. Accessed September 6, 2021. Available at:  
[https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd894631.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd894631.pdf)

Utah Division of Wildlife Resources.

- 2018 Wolves: Ute Indian Tribe resolution regarding wolves. Accessed October 11, 2022. Available at:  
<https://wildlife.utah.gov/ute-tribe-wolves.html>

Ute Mountain Ute Tribe

- 2020 Natural resources. Accessed October 12, 2022. Available at:  
<https://www.utemountainutetribe.com/natural%20resources.html>

Vail Valley Economic Development

- n.d. Economic Data Center. Accessed July 2022. Available at:  
<https://vailvalleymeansbusiness.com/data-center/>

Van Duyne, C., E. Ras, A.E. De Vos, W.F. De Boer, R.J. Henkens, and D. Usukhjargal

- 2009 “Wolf predation among reintroduced Przewalski horses in Hustai National Park, Mongolia.” *The Journal of Wildlife Management*, 73(6):836–843.

Vila, C., I. R. Amorim, J. A. Leonard, D. Posada, J. Castroviejo, F. Petrucci-Fonesca, K. A. Crandall, H. Ellegren, and R. K. Wayne

- 1999 “Mitochondrial DNA phylogeography and population history of the gray wolf *Canis lupus*.” *Molecular Ecology* 8:2089–2103.

vonHoldt, B. M., D. R. Stahler, D. W. Smith, D. A. Earl, J. P. Pollinger, and R. K. Wayne

2008 “The genealogy and genetic viability of reintroduced Yellowstone grey wolves.” *Molecular Ecology* 17:252–274.

vonHoldt, B. M., J. P. Pollinger, D. A. Earl, J. C. Knowles, A. R. Boyko, H. Parker, E. Geffen, M. Pilot, W. Jedrzejewski, B. Jedrzejewska, V. Sidorovich, C. Greco, E. Randi, M. Musiani, R. Kays, C. D. Bustamante, E. A. Ostrander, J. Novembre, and R. K. Wayne

2011 “A genome-wide perspective on the evolutionary history of enigmatic wolf-like canids.” *Genome Research* 21:1–33.

Wabakken, P., H. Sand, I. Kojola, B. Zimmermann, J. Arnemo, H. C. Pedersen, and O. Liberg

2007 “Multi-stage, long-range dispersal by a GPS-collared Scandinavian wolf.” *Journal of Wildlife Management* 71: 1631–1634.

Washington Department of Fish and Wildlife, Confederated Tribes of the Colville Reservation, Spokane Tribe of Indians, USDA-APHIS Wildlife Services, and U.S. Fish and Wildlife Service (Washington DFW et al.)

2018 Washington Gray Wolf Conservation and Management 2017 Annual Report. Washington Department of Fish and Wildlife, Ellensburg, WA.

2019 Washington Gray Wolf Conservation and Management 2018 Annual Report. Washington Department of Fish and Wildlife, Ellensburg, WA.

2020 Washington Gray Wolf Conservation and Management 2019 Annual Report. Washington Department of Fish and Wildlife, Ellensburg, WA.

2021 Washington Gray Wolf Conservation and Management 2020 Annual Report. Washington Department of Fish and Wildlife, Ellensburg, WA.

2022 Washington Gray Wolf Conservation and Management 2021 Annual Report. Washington Department of Fish and Wildlife, Ellensburg, WA.

2023 Washington Gray Wolf Conservation and Management 2022 Annual Report. Washington Department of Fish and Wildlife, Ellensburg, WA.

Western Watersheds Project

2021 Idaho Department of Fish and Game Spent \$67,000 in FY21 to kill 22 wolves—average cost of \$3,000 per wolf. press release, May 19, 2021. Accessed November 7, 2022. Available at: <https://www.westernwatersheds.org/2021/05/idaho-department-of-fish-and-game-spent-67000-in-fy21-to-kill-22-wolves-average-cost-of-3000-per-wolf/>

White, R.

1982 “The cultural landscape of the Pawnees.” *Great Plains Quarterly* 1676. Accessed September 20, 2022. Available at: <https://digitalcommons.unl.edu/greatplainsquarterly/1676>

Wisconsin Department of Natural Resources (Wisconsin DNR)

- 2016 NHI Screening Guidance for Gray Wolf. Accessed October 10, 2022. Available at: <https://dnr.wi.gov/topic/EndangeredResources/documents/wolfScreeningGuidance.pdf>
- 2022 Wisconsin Gray Wolf Monitoring Report 15 April 2021 through 14 April 2022. Wisconsin Department of Natural Resources, Bureau of Wildlife Management. Madison, WI.

Wyoming Game and Fish Department, U.S. Fish and Wildlife Service, National Park Service, USDA-APHIS-Wildlife Services, and Eastern Shoshone and Northern Arapahoe Tribal Fish and Game Department (Wyoming GFD et al.)

- 2018 Wyoming Gray Wolf Monitoring and Management 2017 Annual Report. K.J. Mills, ed. Wyoming Game and Fish Department, 5400 Bishop Blvd. Cheyenne, WY.
- 2019 Wyoming Gray Wolf Monitoring and Management 2018 Annual Report. K.J. Mills, ed. Wyoming Game and Fish Department, 5400 Bishop Blvd. Cheyenne, WY.
- 2020 Wyoming Gray Wolf Monitoring and Management 2019 Annual Report. K.J. Mills, ed. Wyoming Game and Fish Department, 5400 Bishop Blvd. Cheyenne, WY.
- 2021 Wyoming Gray Wolf Monitoring and Management 2020 Annual Report. K.J. Mills, ed. Wyoming Game and Fish Department, 5400 Bishop Blvd. Cheyenne, WY.
- 2022 Wyoming Gray Wolf Monitoring and Management 2021 Annual Report. K.J. Mills, ed. Wyoming Game and Fish Department, 5400 Bishop Blvd. Cheyenne, WY.
- 2023 Wyoming Gray Wolf Monitoring and Management 2022 Annual Report. K.J. Mills, ed. Wyoming Game and Fish Department, 5400 Bishop Blvd. Cheyenne, WY.

Young, J.R., C.E. Braun, S.J. Oyler-McCance, C.L. Aldridge, P. Magee, and M.A. Schroeder

- 2015b “Gunnison sage-grouse *Centrocercus minimus*.” (not seen, as cited in USFWS 2019)

Young, J.K., Z. Ma, A. Laudati, and J. Berger

- 2015a “Human-carnivore interactions: lessons learned from communities in the American West.” *Human Dimensions of Wildlife* 20: 349–366.

Young, S.P., and E.A. Goldman

- 1944 *The wolves of North America*. American Wildlife Institute, Washington, D.C., and Dover Publishers, New York, New York, USA.