

Final Environmental Assessment

for Big Game and Upland Game Hunting on Bamforth National Wildlife Refuge

July 2020

Prepared by

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Date: July 2020

This environmental assessment (EA) is being prepared to evaluate the effects associated with this proposed action and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 Code of Federal Regulations [CFR] 1500–1508) and Department of the Interior (43 CFR 46; 516 DM 8) and United States (U.S.) Fish and Wildlife Service (Service) (550 FW 3) regulations and policies. NEPA requires examination of the effects of proposed actions on the natural and human environment.

1.0 Introduction

1.1 Proposed Action

The Service is proposing to open hunting opportunities for big game (pronghorn, mule deer, and white-tailed deer) and upland game (cottontail rabbits, ring-necked pheasant, sharp-tailed grouse, wild turkey, chukar, and gray partridge) on Bamforth National Wildlife Refuge (NWR). These hunting opportunities would be available on all three units of the refuge totaling 1,166 acres (Figure 1). This final EA and companion hunting plan (USFWS 2020a) are being proposed in accordance with the comprehensive conservation plan (CCP), as amended, for the Laramie Plains NWRs (which covers Bamforth, Hutton Lake, and Mortenson Lake NWRs) (USFWS 2007, Appendix B). Currently, the refuge is closed to all forms of hunting.

This proposed action is often iterative and evolves over time during the process as the agency refines its proposal and learns more from the public, tribes, and other agencies. Therefore, the final proposed action may be different from the original. The final decision on the proposed action will be made at the conclusion of the public comment period for the EA and the Draft 2020–2021 Refuge-Specific Hunting and Sport Fishing Regulations. The Service cannot open a refuge to hunting and/or fishing until a final rule has been published in the Federal Register formally opening the refuge to hunting and/or fishing.

1.2 Background

National wildlife refuges are guided by the mission and goals of the National Wildlife Refuge System (Refuge System), the purposes of an individual refuge, Service policy, and laws and international treaties. Relevant guidance includes the National Wildlife Refuge System Administration Act of 1966 (NWRSA), as amended by the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act), Refuge Recreation Act of 1962, and selected portions of the Code of Federal Regulations and Fish and Wildlife Service Manual.

The refuge was established on January 29, 1932, by Executive Order 9321. The refuge was established with 201 acres withdrawn from the public domain in 1932, and 965 acres purchased with Migratory Bird Conservation Act funds in 1933. The primary purpose of the refuge is to provide “a refuge and breeding ground for birds and wild animals.”



U.S. Fish & Wildlife Service
Bamforth National Wildlife Refuge

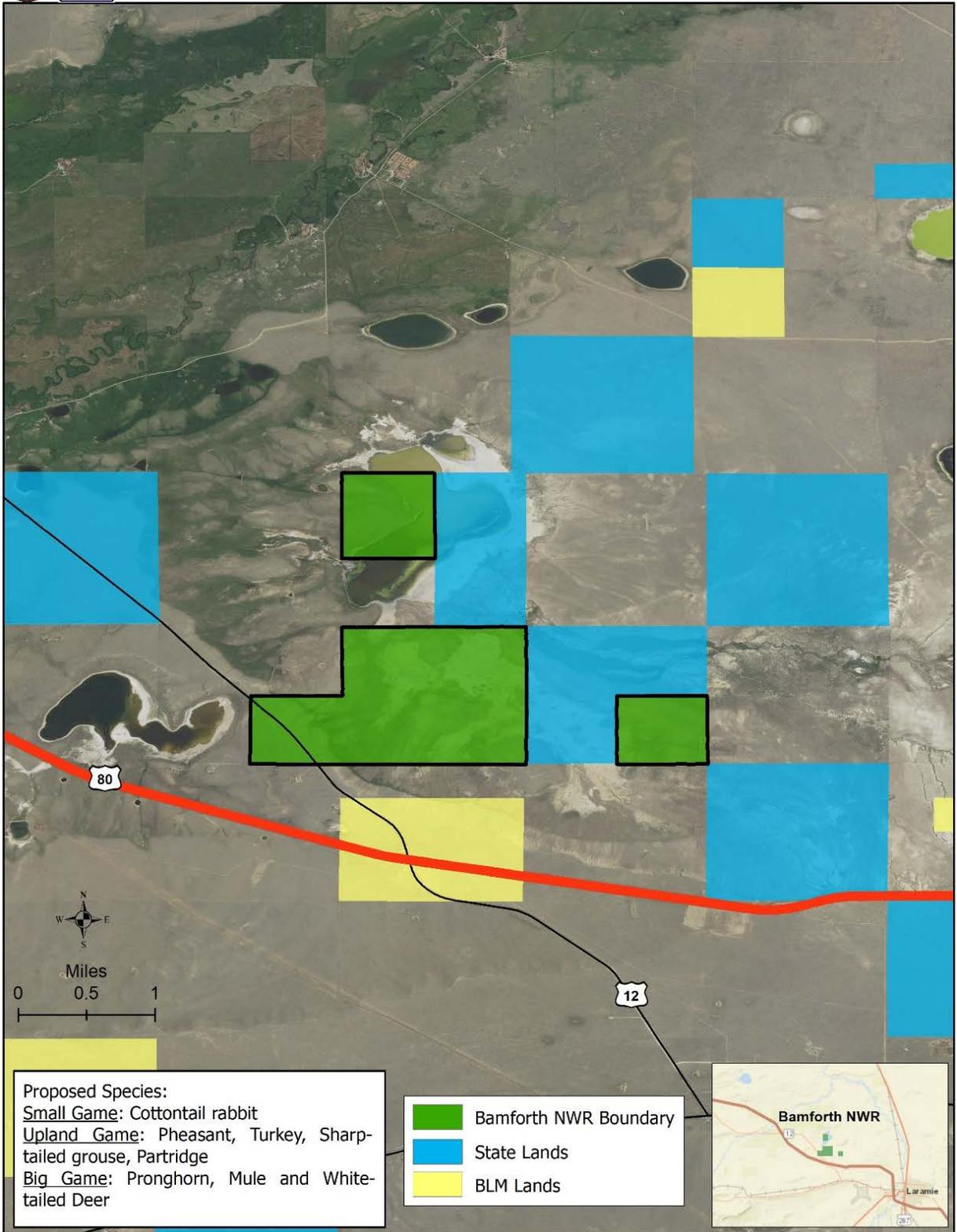


Figure 1. Bamforth National Wildlife Refuge Proposed Hunting Opportunities.

The mission of the Refuge System, as outlined by the NWRSA, as amended by the Improvement Act (16 U.S. Code 668dd et seq.), is

“. . . to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

The NWRSA mandates the Secretary of the Interior in administering the Refuge System to (16 U.S. Code 668dd[a][4]):

- provide for the conservation of fish, wildlife, and plants, and their habitats within the Refuge System;
- ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained for the benefit of present and future generations of Americans;
- ensure that the mission of the Refuge System described at 16 U.S. Code 668dd(a)(2) and the purposes of each refuge are carried out;
- ensure effective coordination, interaction, and cooperation with owners of land adjoining refuges and the fish and wildlife agency of the states in which the units of the Refuge System are located;
- recognize compatible wildlife-dependent recreational uses as the priority general public uses of the Refuge System through which the American public can develop an appreciation for fish and wildlife;
- ensure that opportunities are provided within the Refuge System for compatible wildlife-dependent recreational uses; and
- monitor the status and trends of fish, wildlife, and plants in each refuge.

Therefore, it is a priority of the Service to provide for wildlife-dependent recreation opportunities, including hunting and fishing, when those opportunities are compatible with the purposes for which the refuge was established and the mission of the Refuge System.

Previously, no public use has been allowed on the refuge (USFWS 2007, Appendix B). The refuge comprises three parts arranged roughly in an L-shaped pattern, with the segments one-half mile apart (Figure 1). Lands next to and in between refuge parcels are owned by the State of Wyoming and private parties. The refuge is in a closed basin hydrologic system that contains Bamforth Lake, but most of the lake falls outside the refuge boundary. The fragmented parcels, closed basin hydrology, and minimal water rights have contributed to the lack of active management of this refuge.

1.3 Purpose and Need for the Proposed Action

The purpose of this proposed action is to provide compatible wildlife-dependent recreational opportunities on Bamforth NWR. The need of the proposed action is to meet the Service’s priorities and mandates as outlined by the NWRSA to “recognize compatible wildlife-dependent recreational uses as the priority general uses of the NWR” and “ensure that opportunities are provided within the NWR for compatible wildlife-dependent recreational uses” (16 U.S. Code 668dd[a][4]). Furthermore, this proposed action supports Secretarial Order 3356, which continues the Department of Interior’s efforts to enhance conservation stewardship;

increase outdoor recreation opportunities for all Americans, including opportunities to hunt and fish; and improve the management of game species and their habitats for this generation and beyond.

In the CCP for the Laramie Plains NWRs (which includes Mortenson Lake, Bamforth, and Hutton Lake NWRs), the vision statement included language that states that the Service would evaluate opportunities in the future to open refuge lands to compatible, wildlife-dependent recreation (USFWS 2007):

“The wetland complexes and uplands of the Laramie Plains refuges are important resource components of this semiarid region that provide key habitat for the Wyoming toad, migratory birds, and resident wildlife.”

“These refuges will be evaluated to direct management decisions to provide natural and enhanced habitat, thereby maximizing the unique potential of each refuge. Wildlife-dependent recreation will be evaluated for each refuge to determine potential appropriate public use opportunities.”

The CCP, as amended (Appendix B), also includes the following visitor services goal for the refuge:

“Provide wildlife-dependent recreational opportunities to a diverse audience when the administration of these programs does not adversely affect habitat management objectives.”

The objectives of a hunting program on the refuge are to:

- provide wildlife-dependent recreation opportunities in accordance with federal laws and Service policy and in alignment with state regulations;
- meet the refuge establishing purposes, which includes keeping at least 60 percent of the refuge closed to hunting to provide inviolate sanctuary for migratory birds;
- provide increased opportunities for a hunting experience on refuge lands;
- provide nearby hunting access for local communities; and
- assist with hunter education.

Conservation and outdoor recreation go together. As public land stewards, we, the Service, face many challenges managing America’s natural resources for recreation. Luckily, hunters, anglers, and other outdoor enthusiasts have been major supporters of our work. But over the years, fewer people have been participating in traditional outdoor activities, making it harder to achieve our conservation missions. We are looking to maintain current recreation participation while also attracting new audiences and providing new opportunities.

Through recruitment, retention, and reactivation, we are seeking to create new participants or increase participation rates of current or lapsed outdoor recreationists. Outdoor recreationists engage in outdoor wildlife and fisheries-dependent recreation including, but not limited to, hunting, fishing, wildlife observation, photography, education, and interpretation. While the reasons for engaging in outdoor activities are more varied than they were in the past, connecting with nature and each other remains a driving factor for all recreationists.

2.0 Alternatives

2.1 Alternatives Considered

Alternative A – Open Bamforth National Wildlife Refuge to Big Game and Upland Game Hunting – Proposed Action Alternative

The refuge has prepared a hunting plan (USFWS 2020a), which is presented in this document as the Proposed Action Alternative.

Under the Proposed Action Alternative, we would open the refuge (Figure 1) for big game hunting (pronghorn, mule deer, and white-tailed deer) and upland game hunting (cottontail rabbits, ring-necked pheasant, sharp-tailed grouse, chukar, and gray partridge), in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.

Nontoxic shot (steel or other federally approved nontoxic shot) would be required when taking or attempting to take upland game birds or small game with a shotgun on the refuge.

This alternative offers increased opportunities for public hunting and fulfills the Service's mandate under the Improvement Act. The Service has determined that the hunting plan is compatible with the purposes of the refuge and the mission of the Refuge System (USFWS 2020b). The estimated annual cost to run a big game and upland game hunting opportunity is approximately \$1,000 annually with an additional one-time cost of \$500 to develop a new brochure. No additional infrastructure would be added to the refuge.

Alternative B – Current Management – No Action Alternative

Currently, no public use is allowed on the refuge. The refuge lands are separated into three parcels with private or state lands between them and have seen little active management in several decades. One public road (Highway 12) traverses the southwest corner of the southwest parcel of the refuge, which offers distant views of area wetlands and other habitats on the refuge.

2.2 Alternative(s) Considered, But Dismissed from Further Consideration

Allow Migratory Bird Hunting on Bamforth National Wildlife Refuge

The Service considered opening the refuge to migratory bird hunting. Most of the refuge was acquired under the authority of the Migratory Bird Hunting and Conservation Act (16 U.S. Code 718a) and designated as inviolate sanctuaries for migratory birds. On refuge lands acquired under the Migratory Bird Hunting and Conservation Act authority with the designation as an inviolate sanctuary, up to 40 percent could be opened for the taking of migratory game birds. However, given the way the refuge is situated in three parcels relative to available wetland habitat, it would be difficult to provide a quality hunting opportunity on less than 40 percent of the refuge. In addition, the lack of enough water quantity and management capability on the refuge often means that migratory bird habitat in the fall, when hunting would occur, is very limited.

3.0 Affected Environment and Environmental Consequences

3.1 Affected Environment

This section describes the existing environmental and socioeconomic setting in the action area. Bamforth NWR consists of approximately 1,166 acres in Albany County, Wyoming (Figure 1).

The refuge is in a 4,000-acre natural depression known as the Big Basin, northwest of Laramie. The bottom of the basin is dominated by alkali flats, small ponds, and Bamforth Lake. Bamforth Lake is owned mostly by the State of Wyoming, with approximately 100 acres of the 550-acre lake located in the refuge boundary. The soils along the bottom of the basin, including the ponds when dry, are strongly saline, resulting in minimal emergent or submergent vegetative growth.

The lake comprises half of the refuge, while the other half is greasewood dominated upland, alkali flats, and a limited amount of grassland. Before 1950, Bamforth Lake was an important area for many wildlife species due to a dependable water supply. With the full development of the Wheatland Irrigation District, however, Bamforth Lake lost its major water supply due to junior refuge water rights. The loss of water for the refuge diminished the ability of the refuge to support migratory bird species from the mid-1950s to the present day.

For more information regarding the affected environment, please see Chapter 3 of CCP for the Laramie Plains NWRs (USFWS 2007), which can be found here: www.fws.gov/mountain-prairie/refuges/completedPlanPDFs_A-E/bmf_htl_mrl_2007_ccpfinal_all.pdf.

Tables 1 through 6 provide additional, brief descriptions of each resource affected by the proposed action.

3.2 Environmental Consequences of the Action

This section analyzes the environmental consequences of the action on each affected resource, including direct and indirect effects. This EA only has the written analyses of the environmental consequences on a resource when the effects on that resource could be more than negligible and therefore considered an “affected resource.” Any resources that will not be more than negligibly affected by the action have been dismissed from further analyses.

Tables 1 through 5 provide:

- a brief description of the affected resources in the proposed action area; and
- effects of the proposed action and any alternatives on those resources, including direct and indirect effects.

Table 6 provides a brief description of the cumulative impacts of the proposed action and any alternatives.

Impact Types:

- *Direct effects* are those that are caused by the action and occur at the same time and place.
- *Indirect effects* are those that are caused by the action and are later or farther removed in distance but are still reasonably foreseeable.
- *Cumulative impacts* result from the incremental impact of the action when added to other past, present, and future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions.

Table 1. Affected Natural Resources and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives.

<p>Affected Resources</p>	<p><u>Alternative A (Proposed Action)</u> <i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p><u>Alternative B (No Action)</u> <i>The refuge would remain closed to the public.</i></p>
<p>Big Game</p>		
<p><i>Pronghorn (Antelope)</i> Pronghorn are common in the area around the refuge but are not year-round residents on the refuge. The refuge lies in the WGFD Cooper Lake Hunt Unit (43). The Cooper Lake pronghorn herd is very productive and has recovered quickly from the 2012 drought and epizootic hemorrhagic disease event. The 2018 population estimate of approximately 6,000 is well above the post-season population management objective (3,000) and remaining stable, even with increased licenses. Good fawn production, high buck ratios, and landowner observations suggest that the Cooper Lake pronghorn population continues to increase. Landowners would like the WGFD to continue to make a concerted effort to manage the Cooper Lake pronghorn herd closer to the population management objective (3,000) (WGFD 2018a).</p> <p><i>Mule Deer and White-tailed Deer</i> The refuge lies within WGFD deer management unit 74. Unit 74 has the Sheep Mountain mule deer herd. The white-tailed deer in the area of the refuge are part an open herd with Colorado and Nebraska. Mule deer and white-tailed deer occasionally may be present on the refuge.</p>	<p><i>Pronghorn (Antelope)</i> The proposed action would provide an additional 1,166 acres of public access for pronghorn hunters. However, there is very little variation in terrain on the refuge; therefore, it could be difficult to hunt. Most of the vegetation is shortgrass prairie and pronghorn are well distributed throughout the surrounding hunt unit. The estimated number of pronghorn expected to be harvested on the refuge each year is less than five. Therefore, the proposed action may help to decrease the Cooper Lake herd size to bring it closer to population objectives, but the impact is likely to be minor.</p> <p><i>Mule Deer and White-tailed Deer</i> As mentioned under the pronghorn section, the refuge terrain, vegetation and distribution of the deer herds across a wide area make it likely that few deer (less than five each year) would be harvested as a result opening the refuge to hunting. Therefore, any impact to the deer population due to hunting on the refuge would be minor.</p>	<p>Under this alternative, the refuge would remain closed to hunting. The Cooper Lake pronghorn herd resides predominately within private lands and large working ranches within the herd unit. Limited public access has hindered efforts to decrease the population of this herd through harvest. Currently, most public hunting is limited to the Diamond Lake and Laramie River Hunter Management Areas. The WGFD is concerned that they have reached the threshold for hunters on the two hunter management areas (WGFD 2018a). Deer overpopulation can result in habitat destruction, and increase the potential for outbreak of wildlife disease, malnutrition, and starvation in deer during severe winters.</p>

<p style="text-align: center;">Affected Resources</p>	<p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>The refuge would remain closed to the public.</i></p>
<p>The 2019 post-season population estimate for the Sheep Mountain mule deer herd is approximately 6,300 deer, a decline from 7,000 in 2018 (WGFD 2018a). Most of the herd’s summer range is in dense lodgepole or spruce forests that were heavily logged in the 1960s and 1970s. There has been a large-scale forest die-off from pine and spruce beetles and the full effects on the herd unit are currently unknown. Winter and transition range is currently limited. Disease continues to be a threat to this herd. The WGFD continues to take steps to manage the herd to maintain hunter opportunity that is congruent with the current mule deer resource (WGFD 2018a).</p> <p>Although there was an increase in hunters and harvest in 2017 and 2018, the Sheep Mountain herd unit has one of the lowest rates of hunter success in the state.</p> <p>There is not a reliable post-season population estimate for white-tailed deer in Hunt Unit 74 that includes the refuge. Population trends vary with weather conditions and disease outbreaks. Most occupied white-tailed deer habitat is on private land, which complicates management since there is limited access. Management is driven primarily by local WGFD personnel’s perception of population trend and landowner tolerance for this species. The WGFD’s objective for white-tailed deer is to provide opportunity and reduce damage and maintain a hunter satisfaction level greater than 60 percent.</p>		

<p style="text-align: center;">Affected Resources</p>	<p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>The refuge would remain closed to the public.</i></p>
<p>Upland Game</p>		
<p><i>Cottontail Rabbit</i></p> <p>Although the State of Wyoming designates (cottontail rabbit; snowshoe hare; red, gray, and fox squirrel) as small game in their hunting regulations, only cottontail rabbits are known to occur on the refuge.</p> <p>No current data on cottontail rabbit populations exist for the refuge. The refuge does have suitable habitat, and depending on population cycles and environmental conditions, cottontail rabbits are expected to occur on the refuge.</p> <p><i>Upland Game Birds</i></p> <p>The refuge is generally on the edge of the distributions for upland game bird species (sharp-tailed grouse, ring-necked pheasant, wild turkey, chukar, and gray partridge). The habitat on the refuge is also not considered optimal for these species. However, these birds may occasionally be found on the refuge.</p>	<p>Hunting mortality of cottontail rabbits has little or no impact on populations (WGFD 2007). Harvest is regulated by the “law of diminishing returns.” During periods of lower populations, harvest success declines and hunters lose interest. The result is lower harvest rates, which protect the breeding stock during unfavorable environmental conditions. In addition, small game species have extremely high reproductive potentials, enabling them to recover rapidly from even very low densities when favorable conditions return. Cottontail rabbits periodically cause localized damage to standing crops, rangeland, ornamental plants, or stored foods. There would be mortality to cottontail rabbits on the refuge; however, this would have a negligible impact on the overall population.</p> <p>Given the location of the refuge on the edge of the distribution of these species and the suboptimal upland game bird habitat on the refuge, it is unlikely that opening the refuge to hunting for these birds would result in more than an occasional harvest of a transient bird. This is likely to have little to no impact on the local or regional populations of sharp-tailed grouse, ring-necked pheasant, wild turkey, chukar, or gray partridge.</p>	<p>Under this alternative, the refuge would remain closed to hunting. Thus, no effects on upland game (cottontail rabbits, sharp-tailed grouse, ring-necked pheasant, wild turkey, chukar, or gray partridge) would be expected.</p>

<p style="text-align: center;">Affected Resources</p>	<p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>The refuge would remain closed to the public.</i></p>
<p>Other Wildlife and Aquatic Species</p>		
<p>Before 1950, Bamforth Lake was an important area for many wildlife species due to a dependable water supply. With the full development of the Wheatland Irrigation District, however, Bamforth Lake lost its major water supply due to junior refuge water rights. The loss of water for the refuge diminished the ability of the refuge to support wetland dependent migratory bird species. The large wetland basins have some marginal water in the fall approximately eight out of ten years, and the smaller basins have enough water to support fall migrating waterfowl and waterbirds approximately four out of ten years.</p> <p>Approximately half of the refuge is upland grassland/shrub habitat. Most of the grass and shrubland nesting birds (for example, Brewer’s sparrow, sage thrasher, western meadowlark, and McCown’s longspur) complete rearing of young by July-August and depart for wintering grounds by mid-September (Griscom and Keinath 2010; WFGD 2017).</p> <p>An island in Bamforth Lake, but not on refuge property, is used by American white pelicans, double-crested cormorants, and California gulls for nesting. As wetland conditions allow, the area is also used by American avocets and killdeer, and occasionally by other migrating shorebirds and waterfowl. Peak fall migration for shorebirds and waterfowl occurs mid-August through mid-October (WGF 2017).</p>	<p>Opening the refuge to hunting would result in short-term disturbance to other wildlife. This includes temporary displacement of birds and other resident wildlife from foot traffic moving through the area and gunshots.</p> <p>The active breeding season for most birds (except for winter breeding raptors) is within April–July. Hunting would not occur within this period; therefore, no conflict is expected. Gunfire, and associated hunter activity, would disrupt wetland bird and raptor activities (feeding and resting) within the hunting area during legal (daylight) shooting hours and likely cause temporary dispersal. This would only affect wetland birds during years when there is adequate water to support migration.</p> <p>Disturbance to upland migratory birds (for example, sage thrashers, McCown’s Longspurs) would be expected to be minimal to nonexistent due to their absence from the refuge (due to migration).</p> <p>Upland nesting bird species of concern that have not yet migrated by the onset of the hunting season may be disturbed as hunters gain access to hunting areas. In years when there is enough fall water, migrating shorebirds also may be disturbed during fall migration. This impact would be temporary and have a negligible impact. Given that most birds will have departed by October, the overall long-term effect is minimal.</p> <p>Golden eagles are present in the area during the hunting season. These birds may be disturbed by hunters gaining access to the refuge. The disturbance would be short term, causing the birds to temporarily move and then likely return to the site. Eagles would use the refuge primarily for feeding and resting. The refuge does not contain suitable habitat for nesting.</p>	<p>Under this alternative, the refuge would remain closed to hunting. Thus, there would be no direct effects on other wildlife, and aquatic species would be expected. However, as discussed in the big game section above, if deer become overpopulated, this can lead to increased mortalities during severe winters. The dead deer may attract higher numbers of predators. The increase in predators may lead to indirect negative effects such as increased predation of nesting migratory and resident birds.</p>

<p style="text-align: center;">Affected Resources</p>	<p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>The refuge would remain closed to the public.</i></p>
<p>The refuge is part of the Laramie Plains Wetland Complex in portions of Albany and Carbon Counties and is one of nine focus wetland complexes identified as a statewide conservation priority (Copeland et al. 2010). The Intermountain West Joint Venture recognizes the Laramie Plains region as a priority area for bird habitat conservation (IWJV 2013). In addition, Wyoming Audubon designated the refuge as an Important Bird Area in 2003 (USFWS 2007).</p> <p>Ten bird species of special concern have recently been documented on the refuge (Griscom and Keinath 2010). Most of these species use the refuge for summer breeding and/or fall migration. Golden eagle can be found in the area year-round.</p> <p>The swift fox has been documented on the refuge and in the surrounding area (USFWS 2007, WYNDD 2019). Mating occurs between December and February, with most young born in March or April. Swift fox diet in Wyoming is broad and tends to track prey abundance. However, the consumption of mammalian prey, including scavenged pronghorn, is common year round.</p>	<p>The swift fox is considered uncommon in Wyoming. However, they seem to be expanding in abundance and range, as populations recover from incidental poisonings in the mid-1900s. Swift fox may be sensitive to disturbance. The swift fox is more active at night; however, swift fox activity may peak at sunrise and sunset and females with pups may move during daytime hours. Most of the potential disturbance would likely occur in the fall during big game and upland game seasons, which is before the swift fox mating season. Only a limited number of small game hunters would be expected during the winter months. Swift fox maintain several dens and move among them when disturbed. Swift fox may inadvertently ingest lead bullet fragments when feeding on pronghorn and deer carcasses; however, as discussed below, this effect is expected to be minor. Overall, the proposed action would be expected to have a minor negative impact on swift fox.</p> <p>Nontoxic shot must be used when hunting any small game animals or game birds on the refuge. Possessing shotshells loaded with shot other than nontoxic shot is illegal.</p> <p>Opening the refuge to big game hunting may result in some additional lead exposure to eagles, coyotes, swift fox and other scavengers that may feed on the leftover carcasses of pronghorn and deer harvested with lead bullets. However, the home range of swift fox is more than double the size of the refuge and the home range of eagles is more than 30 times the size of the refuge. In most instances, birds and scavenging wildlife are unlikely to mistake an intact, spent bullet as anything edible. However, bullets that shatter on a pronghorn or deer bone may result in fragments small enough for scavengers to inadvertently ingest while feeding on the carcass or gut pile. Hunters may minimally affect birds in wetlands if the hunter misses or the bullet exits the animal. In these cases, the shot may end up on the ground or in the water where birds, such as waterfowl, feed or ingest gizzard stones. Due to the low populations of deer and pronghorn on the refuge, the low relative abundance of hunters expected to harvest these animals, and the small size of the refuge relative to home ranges of sensitive species, the additional lead remnants are expected to have a minor negative impact.</p>	

<p style="text-align: center;">Affected Resources</p>	<p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>The refuge would remain closed to the public.</i></p>
Threatened and Endangered Species and Other Special Status Species		
<p>We reviewed six species for possible effects of the Proposed Action: Wyoming toad, least tern, piping plover, whooping crane, pallid sturgeon, and western prairie fringed orchid (USFWS IPAC database, 2019). Except for Wyoming toad, the remaining species are within a broader “Platte River System” species group. The refuge does fall within the North Platte drainage of the Platte River System. Because these species can be affected by water depletions in the Platte River System, they are included even though they may or may not occur on or in the vicinity of the refuge.</p> <p>We do not expect the least tern, piping plover, pallid sturgeon, western prairie fringed orchid, and whooping crane to occur on the refuge or in the surrounding counties.</p> <p>The Wyoming toad, listed in 1984, is one of the four most endangered amphibians in North America. It occurs in the wild at Mortenson Lake NWR, approximately 12 miles south of the refuge and at four Safe Harbor sites in the Laramie Plains area. Wyoming toads are not known to occur on the refuge.</p>	<p>The proposed action does not affect or change the way the refuge uses water during the spring and summer. Nothing in the proposed action would change the amount of water in the North Platte River System. Therefore, for any water-related effects on the Platte River species listed above, we expect no effect. Since no Wyoming toads occur on the refuge, this alternative would result in no effect on this species.</p>	<p>Under this alternative, the refuge would remain closed to hunting; thus, no effects on threatened and endangered species or species of special concern would be expected.</p>

<p style="text-align: center;">Affected Resources</p>	<p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>The refuge would remain closed to the public.</i></p>
Vegetation		
<p>The refuge is located in a 4,000-acre natural depression known as the Big Basin northwest of Laramie. The bottom of the basin is dominated by alkali flats, small ponds, and Bamforth Lake. The lake comprises half of the refuge, while the other half is upland habitat.</p> <p>Uplands range from the top of the bench forming the Big Basin through an area intermittently irrigated by the Park ditch to poorer soils abutting alkali flats or alkaline ponds. The vegetation on the bench is sparse grasses including western wheatgrass, needle and thread, and bluegrass, as well as some rabbitbrush and sagebrush. The area influenced by irrigation is more grass dominated with less bare ground; grasses are assumed to have western and bluebunch wheatgrass and possibly introduced forage-producing species. The area closer to the alkaline sites can be quite barren, with 80–90 percent bare ground and only greasewood or black sage for vegetative cover, although certain spots have saltgrass in the mix.</p>	<p>Under this alternative, access to hunting areas would be walk-in only and generally involve walking cross country to reach desired hunting areas because there are no existing trails on the refuge.</p> <p>Minimal disturbance or trampling of individual shrubs or grasses is expected as hunters navigate the landscape to hunting areas. If hunter-created trails develop from repeated trampling and compaction, the effects would be more moderate; however, this is unlikely given the nature of access and habitat types (grasslands/shrublands). Most effects would be short-term, although excessive, repeated disturbance of the same area may cause moderate effects in localized areas. The spread of invasive species would be possible via hunter activity; however, we would not expect it to be significant.</p>	<p>Under this alternative, the refuge would remain closed to hunting; thus, no effects on refuge vegetation would be expected.</p>

Key: WGFD = Wyoming Game and Fish Department; NWR = National Wildlife Refuge

Note: The effects on refuge soils, geology, air quality, water resources, wetlands, and floodplains are all effects considered to be nonexistent to negligible and have not been analyzed further.

Table 2. Affected Visitor Use and Experience and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives.

<p>Affected Resources</p>	<p><u>Alternative A (Proposed Action)</u> <i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p><u>Alternative B (No Action)</u> <i>The refuge would remain closed to the public.</i></p>
<p>There is currently no public use on the refuge.</p>	<p>This alternative would provide new opportunities for hunting that can help to maintain current participation and attract new participation in wildlife-dependent, outdoor recreation. We estimate numbers of hunters annually to be as follows: big game hunting less than ten visits, upland game birds and small game less than five visits.</p> <p>The refuge is in big game hunt units (pronghorn 43, deer 74) that are noted by the WGFD as an area with difficult public access. There is very little variation in terrain in this hunt area; therefore, it can be difficult to hunt. Most of the vegetation is shortgrass prairie. Pronghorn, deer, upland birds, and small game are well distributed throughout the hunt area. Given relatively poor access to public lands in this area, hunter crowding can be a concern on accessible public lands.</p> <p>Overall, the proposed action is expected to be a minor benefit to hunters in the area by providing additional public land for hunting.</p> <p>In addition, there is a potential for a direct and indirect user conflict to develop. It is possible that hunting may affect members of the public engaged in wildlife observation or photography from the road or other refuge boundaries. Given that we expect less than 15 hunter use days annually, the impact would be small. In addition, because the refuge is not open to other public uses, allowing hunters onto the refuge may cause a perception of favoritism for one user group over another.</p>	<p>Under this alternative, the refuge would remain closed to hunting and all other public uses; thus, no effects would occur.</p>

Key: WGFD = Wyoming Game and Fish Department

Table 3. Affected Cultural Resources and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives

<p>Affected Resources</p>	<p><u>Alternative A (Proposed Action)</u> <i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p><u>Alternative B (No Action)</u> <i>The refuge would remain closed to the public.</i></p>
<p>There have not been any cultural resource inventories on the refuge. Archaeological and architectural remains representing over 12,000 years of human occupation are potentially located on the Laramie Plains NWRs. Little is known about the archaeology of the region because the land is mostly privately owned, and very few formal cultural resource surveys have been done in the area. Cultural resources in the surrounding regions span the earliest Paleo-Indian occupations to the Euro-American presence beginning in the early eighteenth century. Nearby sites are in a variety of geographical settings and exhibit a wide range of artifacts and features, but definite trends in site types and changes through time are apparent.</p>	<p>Because of the temporary and superficial use of refuge habitats during hunting activities, there should be no direct effects on cultural resources under this alternative from visitors engaged in hunting activities as delineated in the hunting plan.</p>	<p>Under this alternative, the refuge would remain closed to hunting and there would be no change to existing environmental conditions; subsequently, no direct or indirect effects on cultural resources are anticipated under this alternative.</p>

Key: NWR = National Wildlife Refuge

Table 4. Affected Refuge Management and Operations and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives.

<p>Affected Resources</p>	<p><u>Alternative A (Proposed Action)</u> <i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p><u>Alternative B (No Action)</u> <i>The refuge would remain closed to the public.</i></p>
<p>Land Use</p>		
<p>The refuge comprises three parts arranged roughly in an L-shaped pattern, with the segments one-half mile apart (Figure 1). Lands next to and in between refuge parcels are owned by the State of Wyoming and private parties.</p> <p>Grazing occurs on neighboring private land and by permittees on the adjacent lands owned by the State of Wyoming. Lack of fencing limits the ability to manage grazing on the refuge.</p> <p>There is a private residence approximately 0.25 miles from the western boundary of the refuge.</p> <p>There is limited fencing and no boundary signs, parking areas, or other infrastructure on the refuge.</p>	<p>Under the proposed action, there would be no new signs, parking areas, or fences built or placed on the refuge. We would construct structures that would allow hunters to walk over existing fences. It would be the responsibility of the hunters to park safely and legally and to be aware of whose land they are on. Hunting on the neighboring private land and land owned by the State of Wyoming is subject to the state’s hunter access laws.</p> <p>Because grazing occurs on land next to the refuge and the refuge is not fenced, cows may be present on the refuge during the hunting season. Many areas of public land in Wyoming have permitted cattle grazing and hunting. It is the responsibility of the hunters to avoid harm to livestock. The impact of opening the refuge to hunting on neighboring livestock is expected to be negligible.</p>	<p>Under this alternative, the refuge would remain closed to hunting and subsequently no direct or indirect effects on land uses are anticipated under this alternative.</p>

<p style="text-align: center;">Affected Resources</p>	<p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>The refuge would remain closed to the public.</i></p>
<p>Administration</p>		
<p>Active management of the refuge is limited. The refuge is managed by Service staff headquartered at the Arapaho NWR as part of the Central Sage-Steppe NWR Complex. The Complex covers Arapaho, Seedskaadee, Cokeville Meadows, Bamforth, Hutton Lake, Mortensen Lake, and Pathfinder refuges. Law enforcement would be provided by an officer stationed at Seedskaadee NWR.</p>	<p>The estimated annual cost to run a big game and upland game hunting opportunity is approximately \$1,000 annually, with an additional one-time cost of \$500 to develop a new brochure and \$200 to build walk-over structures on fences. The proposed hunt program would not have added costs for infrastructure such as new parking lots, signs, or fencing. The proposed action would require 5 percent of the refuge’s law enforcement officer’s time to enforce hunting regulations on the refuge, as well as less than 5 percent of the refuge manager’s time for overseeing and implementing the hunt program on the refuge. While this would affect the administration of the Complex, it would not be significant because the Complex would still be able to carry out its other priority actions and obligations in meeting the purpose of the refuges and the mission of the Refuge System, such as habitat restoration and management and environmental education programs.</p>	<p>Under this alternative, the refuge would remain closed to hunting and subsequently there would be no direct or indirect effects on refuge administration of the refuge or the other units in the Central Sage-Steppe NWR Complex.</p>

Key: NWR = National Wildlife Refuge

Table 5. Affected Socioeconomics and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives

<p>Affected Resources</p>	<p><u>Alternative A (Proposed Action)</u> <i>The refuge would be opened for big game hunting and upland game hunting, in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.</i></p>	<p><u>Alternative B (No Action)</u> <i>The refuge would remain closed to the public.</i></p>
<p>Local and Regional Economics</p>		
<p>The Laramie Plains NWRs are located within Albany County. Two of Wyoming’s largest cities (Cheyenne and Laramie) are located within the study area and provide an ample tourist base for the refuges. Sales and office occupations are the largest employment sector at 30 percent (Figure 17). Professional and related occupations employ 22 percent, while farming, fishing, and forestry occupations employ 1 percent of the labor force.</p> <p>Laramie is the primary center for visitation and potential use for all three Laramie Plains NWRs. The city was home to 27,204 residents in 2000.</p> <p>The USDA Forest Service and Bureau of Land Management (BLM) manage 674,479 acres of land in Albany County available for hunting, fishing, and camping, and several state wildlife areas also allow these public uses.</p>	<p>Because the refuge has been closed to all public uses, opening the refuge to hunting would attract new users. As estimated above, if 20–25 hunters visit the refuge during the hunting season, it is expected that some of those users would occur from outside the local commuting area. These visitors would be expected to contribute more to the local economy than those who reside near the refuge. However, most users would be expected to be from the local commuting area. Changes in expenditures are unknown but expected to be minimal.</p>	<p>Under this alternative, the refuge would remain closed to hunting, and subsequently, we anticipate no direct or indirect socioeconomic effects under this alternative.</p>
<p>Environmental Justice</p>		
<p>Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all federal agencies to incorporate environmental justice into their missions by describing and addressing disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities.</p>	<p>The Service has not identified any potential high and adverse environmental or human health effects from this proposed action or any of the alternatives. The Service has identified no minority or low-income communities within the impact area. Minority or low-income communities would not be disproportionately affected by any effects from this proposed action or any of the alternatives.</p>	<p>Same as the Proposed Action.</p>

Key: USDA = U.S. Department of Agriculture; BLM = Bureau of Land Management

3.3 Cumulative Impact Analysis

Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7).

For more information on the national cumulative impacts of the Service’s hunting and fishing program on the Refuge System, see the “2019–2020 Cumulative Impacts Report National Wildlife Refuge Proposed Hunting and Sport Fishing Openings.”

Table 6. Anticipated Cumulative Impacts of the Proposed Action and Any Alternatives.

Other Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment	Descriptions of Anticipated Cumulative Impacts
Wildlife – Resident Game Species	
<p>Rangelands throughout Wyoming sustain more than half the pronghorn in the world. The species inhabits most non-forested habitats within the state and is even found in some alpine locations.</p> <p>Wyoming hosts both mule deer and white-tailed deer. Mule deer are Wyoming’s most abundant and sought-after deer. Mule deer are found from high in the western mountains to the low elevation creek bottoms of eastern Wyoming and most habitats in between. White-tails are abundant in the Black Hills of northeast Wyoming and are also found on farmland throughout Wyoming.</p> <p>Big game hunt areas are established within herd units to achieve harvest objectives and to distribute hunting pressure.</p> <p>Upland game bird species would only use the refuge occasionally because the refuge is outside their core range.</p> <p>Cottontail rabbits are abundant in the area, but population size is not known to be affected by hunting mortality.</p>	<p>Statewide estimates of harvest and hunter activity are summarized in the Annual Report of Big Game Harvest published by the WGFD (WGFD 2018a). More detailed summaries of data from hunt areas and herd units are maintained in the annual Job Completion Reports (JCR) (WGFD 2018b). JCRs have results of line-transect surveys, harvest data, classification data, mortality data, disease assessments, winter severity assessments, population models, management evaluations, applicable research reports, seasonal habitat maps, hunting seasons and justifications, and other pertinent information (WGFD 2007).</p> <p>Pronghorn</p> <p>Wyoming has the largest population of pronghorn (antelope) in North America. All Wyoming antelope hunt areas are managed under a limited quota framework, meaning there are a set number of licenses valid for each specific hunt area. Wyoming’s most sought-after antelope hunting is primarily found in south-central, central, and southwest Wyoming. Most hunt areas in these parts of Wyoming have ample public access on lands managed by the BLM. Public land hunt areas are typically hard to draw. In 2018, there were 1,067 active hunters/licenses purchased in the Cooper Lake Unit (43), where the refuge is located. In 2018, 878 pronghorn were harvested in this unit. The total number of pronghorn harvested statewide in 2018 were 46,676. This was an increase over the last few years, but less than the highest number over the last ten years (WGFD 2018b).</p>

Other Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment	Descriptions of Anticipated Cumulative Impacts
Wildlife – Resident Game Species continued	<p><i>Mule Deer and White-tailed Deer</i></p> <p>Total number of deer harvested in WY in 2018 was 45,279 (WGFD 2018b). This is like the previous year and about 8,000 less than the 10-year high. Recent research in Wyoming has demonstrated declines in both mule and white-tailed deer populations due to chronic wasting disease (CWD) in the core endemic area where prevalence is highest. In areas with lower prevalence, such as the unit surrounding the refuge, effects of CWD are poorly understood but are considered additive along with other factors that can negatively affect deer populations in Wyoming (that is, habitat loss, predation, and other diseases).</p> <p>The number of pronghorn and deer that are expected to be harvested on the refuge would be less than 0.01 percent of the total pronghorn or deer harvest in Wyoming. This would be a negligible effect compared to the statewide harvest.</p> <p><i>Upland Game Bird Species</i></p> <p>In 2018, statewide 54,000 pheasant, 10,000 partridge, 1,400 sharp-tailed grouse, and 3,500 wild turkey were harvested (WGFD 2018c). Harvest rate (grouse or pheasant per hunter-day) are used by the WGFD as an indicator of population trends. There is some indication of cyclical populations in each of the management areas and even statewide. The occasional upland game birds that may be harvested on the refuge each year would be less than 1 percent of the total harvest. This would be a negligible effect compared to the statewide harvest.</p> <p><i>Cottontail Rabbit</i></p> <p>In 2018, 18,000 rabbits were harvested statewide and 2,600 in the management area that covers the refuge. Although the Wyoming Game and Fish Department does not currently inventory small game populations, population trends can be assessed using data from the small and upland game harvest surveys (for example, hunter harvest, success, and effort). The Department maintains liberal hunting seasons and bag limits for small game because hunting has little or no effect on populations (WGFD 2007). Therefore, any harvest of rabbits on the refuge would not affect statewide populations.</p>

Other Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment	Descriptions of Anticipated Cumulative Impacts
Wildlife – Swift Fox	
<p>The swift fox is a protected nongame mammal (furbearer) in Wyoming. Wyoming encompasses between 5 percent and 20 percent of the species' North American range (Dark-Smilely and Keinath 2003). The swift fox is rare or local throughout its range or found locally in a restricted range (usually known from 21-100 occurrences). The swift fox is imperiled in Wyoming due to its rarity and several factors that demonstrably make it vulnerable to extinction.</p>	<p>The swift fox is facing habitat loss and degradation, anthropogenic impacts, and interspecific competition in much of its range, including Wyoming. The Wyoming contribution to the range-wide persistence of the species is considered high. Although Wyoming plays an important role in the recovery of the current swift fox population, much of the swift foxes' range occurs outside of Wyoming. Nine states and Canada are included in the swift foxes' current continental range.</p> <p>The swift fox population seems as though it may be increasing slowly over most of its range. In Wyoming, the swift fox experienced historic declines as well, but they now appear to be expanding into formerly occupied range and increasing in abundance (Dark-Smilely and Keinath 2003).</p> <p>The Wyoming population of the swift fox is probably more secure than other states' populations elsewhere within the species' range. This is due to several factors, including large areas of potential habitat that remain undisturbed and known, persistent populations in the state.</p> <p>Given the relative security of Wyoming's swift fox population and the negligible effects on local swift fox populations due to the proposed action (Table 1, Other Wildlife and Aquatic Species), the effects on the statewide or range-wide population of swift fox would be negligible.</p>
Hunter Access	
<p>Access to public for big game hunting in the units around the refuge is limited, with most State of Wyoming and BLM lands inaccessible to the public. Public land is only 12 percent of the hunt unit. There are three areas (East Allen Lake Public Access Area, Diamond Lake Area, and Laramie River Hunter Management Area) in the unit that total just over 94,000 acres.</p>	<p>By opening the refuge for hunting, new areas of Wyoming State land and BLM lands that were previously only accessible via private land would be become publicly accessible (Figure 1). Total acres include 1,600 acres of Wyoming state land and 160 acres of BLM land.</p> <p>Landowners in southeast Wyoming have observed an increase in white-tailed deer and have expressed concerns about densities, which may lead to greater hunter access on private lands.</p> <p>This would have a minor beneficial impact on hunter opportunities in the area.</p>

Other Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment	Descriptions of Anticipated Cumulative Impacts
Hunting Opportunities	
<p>In addition to the proposal in this document, in south-central Wyoming, the Service is also proposing to open Hutton Lake NWR to big game and upland game hunting and Pathfinder NWR to mourning dove hunting.</p>	<p>Collectively, if all these proposals are implemented, this would add 19,620 acres of new hunting opportunity in south-central Wyoming. Additional hunting opportunities may help to maintain current recreation participation while also attracting new audiences and providing new opportunities. Increased participation in the outdoors can lead to greater support for wildlife conservation and the Service's mission.</p> <p>The WGFD and the Service would continue to manage populations of big game, upland game, and migratory birds that are hunted on these refuges. Seasonal regulations and bag limits would be adjusted based on species' populations and hunter harvest. Collectively, the harvest on these refuges would be a small percentage of the overall harvest in Wyoming and nationwide. We expect no long-term effect on these species.</p>
Use of Lead Ammunition	
<p>At present, there is no prohibition on the use of lead ammunition for hunting big game on the refuge. Nontoxic shot is required for upland game bird and small game hunting on the refuge.</p>	<p>We estimate that less than five pronghorn and less than five deer would be harvested each year, and it is likely that any lead ammunition would remain in the animal following harvest. Missed shots can also happen. The refuge is 1 percent of public lands available for big game hunting in the surrounding management units. Opening hunting on the refuge would also provide public access to 1,760 acres of other public lands that previously did not have public access. This may increase the presence of lead ammunition on the adjacent public lands. Overall, this is 5 percent of hunt management units 43 and 74 open to public access for hunting, so the overall increase in lead ammunition in the environment is expected to be minor.</p> <p>In addition to potential impacts to wildlife, recent studies have found that lead ammunition can increase risks to human health due to the ingestion of lead (Hunt et al. 2009). While no lead poisoning of humans has been documented from ingestion of wild game, some experts, including the Center for Disease Control have recommended the use of nontoxic bullets when hunting to avoid lead exposure and that pregnant women and children under 6 should not consume wild-game shot with lead ammunition (Streater 2009). This recommendation comes after a study done in North Dakota found that those who ate wild game had significantly higher levels of lead in their blood than those who did not (Iqbal et al. 2009). Hunters on Bamforth NWR can reduce this risk by choosing to use nontoxic ammunition for all harvest activities. Nontoxic ammunition is becoming more available as the demand for this ammunition increases (Kelly et al. 2011), although it is currently more expensive. Copper ammunition is a good alternative since it is less toxic and frangible than lead ammunition (Hunt et al. 2006).</p>

Other Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment	Descriptions of Anticipated Cumulative Impacts
Climate Change	
<p>Ecological stressors are expected to affect a variety of natural processes and associated resources in the future. Precipitation availability may have a large effect on the availability of wetlands and grasslands across the primary breeding grounds in the United States and Canada. These habitat changes, if realized in the future, may reduce the amount and quality of both grassland and wetland for migratory birds that are hunted. As a result, wildlife would be displaced to other areas of available habitat.</p>	<p>While the effects of climate change on refuge wildlife and habitats are not certain, allowing hunting on the refuge would not add to the cumulative effects of climate change. The refuge uses an adaptive management approach for its hunt program, annually observing (through direct feedback from state and local user groups) and reviewing the hunt program annually and revising annually (if necessary). The Service would adjust the hunt program, as necessary, to ensure that it does not contribute to the cumulative effects of climate change on resident wildlife and migratory birds.</p>

Key: BLM = Bureau of Land Management; CWD = chronic wasting disease; JCR = Job Completion Report; NWR = National Wildlife Refuge; WGFD = Wyoming Game and Fish Department

3.4 Monitoring

The WGFD estimates big game populations as well as harvest and hunter activity annually for small game and upland game birds. These are reported each year on the WGFD website. In addition, refuge staff would periodically visit the refuge and assess any potential issues with hunter use or wildlife impacts. Refuge staff would also coordinate annually with the WGFD to discuss whether any changes or adjustments are warranted.

3.5 Summary of Analysis

The purpose of this EA is to briefly provide enough evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.

Alternative A – Proposed Action Alternative

The proposed action alternative would open 1,166 acres on the refuge for big game (pronghorn, mule deer, and white-tailed deer) and upland game (cottontail rabbits, ring-necked pheasant, sharp-tailed grouse, chukar, and gray partridge), in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with State of Wyoming seasons and regulations. We do not expect the direct effects of big game and upland game species harvest to have any population-level effects. Opening the refuge to hunting would result in short-term disturbance to wildlife. This covers temporary displacement of birds and other resident wildlife from foot traffic moving through the area and gunshots. Due to the low populations of deer and pronghorn on the refuge, and the low relative abundance of hunters expected to harvest these animals, the overall increase in risk to wildlife due to lead ammunition in the environment is expected to be minor. By opening the refuge for hunting, new areas of Wyoming state land and BLM lands that were previously only accessible via private land also would become publicly accessible. Overall, the proposed action is expected to be a minor benefit to hunters in the area by providing additional public land for hunting.

This alternative meets the purpose and needs of the Service as described above, because it provides hunting opportunities on the refuge and meets the refuge establishing purposes. The Service has the resources necessary to carry out this alternative and has determined that the proposed action described in this alternative is compatible with the purposes of the refuge and the mission of the Refuge System (USFWS 2020b).

Alternative B – No Action Alternative

This alternative does not meet the purpose and needs of the Service as described above, because it would not provide hunting opportunities.

There would be no added costs to the refuge under this alternative. There would be no change to current public use and wildlife management programs on the refuge under this alternative. The refuge would not increase its effect on the economy and would not provide hunting access opportunities. Although this alternative has the least direct effects on physical and biological resources, it would not support our mandates under the NWRSA and Secretarial Order 3356.

3.6 List of Sources, Agencies, and Persons Consulted

The following agencies and organizations were consulted during the development of this EA:

- WGFD

3.7 List of Preparers

Name	Position	Work Unit
Tom Koerner	Project Leader	Central Sage-Steppe National Wildlife Refuge Complex (Green River, WY)
Vanessa Fields	Wildlife Biologist	Mountain-Prairie Regional Office (Lakewood, CO)
Tara Wertz	Refuge Manager	Arapaho NWR/Laramie Plains NWRs (Walden, CO)
Allison Parrish	Zone Archaeologist (MT/UT/WY)	Mountain-Prairie Regional Office (Bozeman, MT)

3.8 State Coordination

The refuge reviewed the operations and regulations for neighboring state wildlife management areas and refuges to find consistency, where possible. WGFD leadership expressed interest in having the Service evaluate opening the refuge for hunting. This interest was congruent with the Department of Interior Secretarial Order 3356, “Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories.”

WGFD reviewed the draft EA, hunting plan, and compatibility determination during the 30-day comment period. WGFD expressed their support for the proposed action to open Bamforth NWR to big game and upland game hunting. We will continue to consult and coordinate on specific aspects of the hunting plan with WGFD to ensure safe and enjoyable recreational hunting opportunities.

3.9 Tribal Consultation

The Service mailed an invitation for comments to all tribes potentially affected by initiating an EA to open the refuge to big game and upland game hunting. The Service extended an invitation to engage in government-to-government consultation in accordance with Executive Order 13175. We did not receive a response from any of the tribes we contacted.

3.10 Public Outreach

On April 1, 2020, the Service put the hunting plan and EA out for a 30-day public review and comment. We made the public aware of the availability of the draft EA and hunting plan via public notices on the refuge's website and in Arapaho NWR's and Seedskaadee NWR's headquarters office. During the 30-day public comment period, the Service accepted comments in writing, in person, electronically, or in any other form the public wished to present comments or information. Upon close of the comment period, all comments and information were reviewed and considered. The Service received comments from two organizations and three individuals.

Comment (1): We received comments that opening the refuge to hunting was not a compatible use of the refuge and does not support the biological integrity, diversity, and environmental health of the system.

Response: The Service disagrees with this comment and based on the analysis in the EA (see Tables 1–6) and the compatibility determination, we have found big game and upland game hunting on Bamforth NWR to be a compatible use (see the final compatibility determination, USFWS 2020b). Part of the mission of the Refuge System is to ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained for the benefit of present and future generations of Americans (16 U.S. Code 668dd[a][4][B]). Therefore, each Service station manager uses his or her “sound professional judgment” (see the definition of this term in the Service Manual at 603 FW 2.6.U., available online at www.fws.gov/policy/603fw2.html) in making these inherently complex management decisions to ensure that each proposed action complies with this mandate. Each manager incorporates field experience, knowledge of refuge resources, considerations of the refuge's role within an ecosystem, applicable laws, and best available science in making these decisions. Service biologists and wildlife professionals, in consultation with the state, determine the optimal number of each game animal that should reside in an ecosystem and then establish hunt parameters (e.g., bag limits, sex ratios) based on those analyses. We carefully consider how a proposed hunt fits within individual refuge goals, objectives, and strategies before allowing the hunt. The new hunting opportunities proposed on Bamforth NWR are not expected to individually or collectively result in significant adverse direct, indirect, or cumulative impacts to hunted populations of migratory birds and resident wildlife, nonhunted migratory and resident wildlife, endangered and threatened species, habitat and plant resources, or other natural resources.

We did not make any changes to the EA as a result of this comment.

Comment (2): We received a comment that access to the refuge would be difficult for hunters.

Response: We agree with this comment and would install structures that would allow hunters to walk over the fences to access the refuge. These structures would be low maintenance and add less than \$200 to the anticipated costs of the proposal (see Table 4).

Comment (3): We received comments that there are other hunting opportunities in the area and opening the refuge is not necessary.

Response: We recognize that in Wyoming there are hunting opportunities for a variety of wildlife on other public lands, such as BLM lands, U.S. Forest Service lands, and State of Wyoming public lands (www.wgfd.wyo.gov/Public-Access/Access-Summary). However, as described in the cumulative impacts section (Table 6), hunting opportunities similar to the proposed action for big game and upland game are relatively limited in the surrounding area. Facilitating hunting opportunities is an important aspect of the Service's roles and responsibilities as outlined in the legislation establishing the Refuge System, and the Service will continue to facilitate these opportunities where compatible with the purpose of the specific refuge and the mission of the Refuge System.

We did not make any changes to the EA as a result of this comment.

Comment (4): We received a comment noting that Bamforth NWR has been designated as an Important Bird Area by the Audubon Society and expressing concern about the negative impact of the proposed action on avian species.

Response: We recognize and appreciate the refuge's designation as an Important Bird Area and the importance of the refuge to migratory birds in general. However, having an Important Bird Area designation does not place any additional legal restrictions related to migratory birds on management of the refuge. As discussed in Table 1, we expect the proposed action to have a minimal impact on migratory birds as the hunting activities, including the use of hunting dogs, would occur only in the uplands, which reduces impacts to wetland-dependent birds, and in the fall when many of the upland birds have migrated out of the area. For the birds that are present and may be displaced during big game and upland game hunting, we expect impacts to be short-term and minor, in part due to the relatively low number of hunters expected to use the refuge. Disturbance effects, such as short-term displacement, are not necessarily linked to disturbance impacts at the individual or population level (Hill et al 1997; Sokos et al 2013).

We did not make any changes to the EA as a result of this comment.

Comment (5): Another comment noted that hunting may impact nonconsumptive users of the refuge.

Response: Other uses of the refuge are not currently permitted. It is possible that hunting may affect members of the public engaged in wildlife observation or photography from the road or other boundaries of the refuge.

We have updated Table 2 to include this impact.

Comment (6): We received comments expressing concern over the effects of lead ammunition on wildlife and human health, as well as the cumulative impacts. Commenters also indicated that allowing lead ammunition for big game hunting was in opposition to our legal duty to ensure the biological integrity, diversity, and environmental health of refuge, in particular as it relates to eagles and swift fox. Commenters asked the Service to consider an alternative that would require the use of nontoxic ammunition for all hunting on the refuge.

Response: The Service shares the commenters' concerns regarding the bioavailability of lead in the environment and the fragments that can be deposited in killed game. Nontoxic ammunition (shot) must be used when hunting any small game animals or upland game birds on the refuge.

Possessing shotshells loaded with shot other than nontoxic shot on the refuge is illegal. In the case of big game hunting, the direct and indirect impacts of spent lead ammunition on predators and scavengers on Bamforth NWR are analyzed in Table 1, under “Impacts to Other Wildlife and Aquatic Species.” Due to the low populations of deer and pronghorn on the refuge (less than five expected to be harvested each year), and the low relative abundance of hunters expected to harvest these animals (less than hunter visits), the additional lead remnants are expected to have a minor negative impact on wildlife and human health.

This minor negative impact due to lead also applies to less common wildlife such as swift fox and eagles that may use the refuge. The home range of swift fox is more than double the size of the refuge and the home range of eagles is over 30 times the size of the refuge. The minor impact of additional lead in the environment as described above, coupled with the small size of the refuge, further indicates that opening the refuge to big game hunting will not have a significant impact on the biological diversity, integrity, and ecological health of Bamforth NWR due to lead.

We also analyzed the cumulative impacts of lead in Table 6. The number of pronghorn and deer that are expected to be harvested on the refuge would be less than 0.01 percent of the total pronghorn or deer harvest in Wyoming. This would be a negligible effect compared to the statewide harvest and would therefore not contribute to a significant increase in lead in the environment. The additional acres that would be opened to hunting as a result of the proposed action are only 5 percent of the land in hunt management units 43 and 74 open to public access. Therefore, the overall increase in lead ammunition in the environment, both in number of animals harvested and area impacted, is expected to be minor.

In addition to potential impacts on wildlife, recent studies have found that lead ammunition can increase risk on human health due to the ingestion of lead (Hunt et al. 2009). While no lead poisoning of humans has been documented from ingestion of wild game, some experts, including the Center for Disease Control have recommended the use of nontoxic bullets when hunting to avoid lead exposure and that pregnant women and children under six should not consume wild-game shot with lead ammunition (Streater 2009). This recommendation comes after a study done in North Dakota found that those who ate wild game had significantly higher levels of lead in their blood than those who did not (Iqbal et al. 2009).

The Service encourages refuge-state partnerships to reach decisions on usage, and would continue to encourage hunters to voluntarily use nontoxic ammunition for all harvest activities. Nontoxic ammunition is becoming more available as the demand for this ammunition increases (Kelly et al. 2011), although it currently remains more expensive. Copper ammunition is a good alternative since it is less toxic and frangible than lead ammunition (Hunt et al. 2006). The Service’s intent is to reduce the potential of lead poisoning on migratory birds and birds of prey, as well as lower the risk of lead exposure for humans ingesting wild game hunted on refuges.

We have added additional analysis to the direct impacts (Table 1) and the cumulative impacts (Table 6) in the EA. We did not make any other changes as a result of these comments.

Comment (7): We received a comment that the Service does not have adequate law enforcement to implement the proposed action.

Response: We have carefully considered the factors involved in this opening and find we have adequate staff coverage and funding for this use. Service policy (603 FW 2.12[7]) requires station managers to determine that adequate resources (including personnel, which in turn

includes law enforcement) exist or can be provided by the Service or a partner to properly develop, operate, and maintain the use in a way that will not materially interfere with or detract from fulfillment of the refuge purpose(s) and the Service's mission. If resources are lacking for establishment or continuation of wildlife-dependent recreational uses, the refuge manager would make reasonable efforts to obtain additional resources or outside assistance from states, other public agencies, local communities, and/or private and nonprofit groups before determining that the use is not compatible. When Service law enforcement resources are lacking, we are often able to rely upon state fish and game law enforcement capacity to assist in enforcement of hunting and fishing regulations.

We did not make any changes to the EA as a result of this comment.

Comment (8): We received comments that the Service should open Bamforth NWR to nonconsumptive public uses and/or consider other public uses.

Response: The current proposed action to open Bamforth NWR to big game and upland game hunting was developed as part of the annual review of hunting and sport fishing programs on refuges to determine whether to include additional stations or whether regulations governing existing programs need modifications (see 85 FR 20030). This process is specific to hunting and sport fishing opportunities. However, we are not opposed to considering other public uses on Bamforth NWR in the future. Similar to hunting and fishing, other public uses would need to be found compatible with the refuge purpose and would need to be evaluated through an additional planning process.

We did not make any changes to the EA as a result of this comment.

Comment (9): We received a comment that the analysis in the EA is inadequate.

Response: The Service disagrees with this assertion. The Service's NEPA-related analysis of the impacts of the proposed opening of Bamforth NWR to big game and upland game hunting demonstrated that the proposed action would not have significant impacts at the local, regional, or national level, and the commenter has provided no additional information that would change our conclusions.

Additionally, on April 9, 2020, the Service published the Draft 2020–2021 Refuge-Specific Hunting and Sport Fishing Regulations in the Federal Register (see 85 FR 20030). The Service received two public comments on the refuge-specific regulations proposed in conjunction with the refuge's hunting plan and EA. One of the commenters also submitted their comments directly to the refuge. These concerns are addressed in *Comment (1)*, *Comment (6)*, and *Comment (9)* above.

We did not make any changes to the EA as a result of this comment.

Comment (10): We received a comment expressing concern that we had amended the CCP for Bamforth NWR to allow hunting, when the refuge had been closed to all public use previously, without sufficient explanation.

Response: As mentioned in the response *Comment (8)* above, the current proposed action to open Bamforth NWR to big game and upland game hunting was developed as part of the annual review of hunting and sport fishing programs on refuges to determine whether to include additional stations or whether regulations governing existing programs need modifications (see 85 FR 20030). The NWRSA (16 U.S. Code 668dd[e]) anticipated that revisions may need to be

made to CCPs from time to time based on new information. Service policy allows minor revisions to CCP objectives and strategies as long as they do not significantly change the management direction of the refuge (603 FW 2). Appendix B of this EA provides the memorandum explaining the minor revision to the 2007 CCP for the Laramie Plains NWRs, which includes Bamforth NWR. The analysis provided in this EA finds the effects of this change to be negligible to minor (see Appendix C, Finding of No Significant Impact).

In addition, we do not allow hunting on a refuge if it is found incompatible with that individual refuge's purposes or with the mission of the Refuge System. Therefore, each Service station manager uses his or her sound professional judgment in making these inherently complex management decisions to ensure that each proposed action complies with this mandate (see the Service's Service Manual at 603 FW 2.6.U., available online at www.fws.gov/policy/603fw2.html). Each manager incorporates field experience, knowledge of refuge resources, considerations of the refuge's role within an ecosystem, applicable laws, and best available science in making these decisions. Based on our evaluation, opening Bamforth NWR to big game and upland game hunting is compatible with the refuge purpose and the mission of the Refuge System (see the final compatibility determination, USFWS 2020b).

We did not make any changes to the EA as a result of this comment.

3.11 Determination

This section will be filled out upon completion of any public comment period and at the time of finalization of the EA.

- The Service's action will not result in a significant impact on the quality of the human environment. See the attached "**Finding of No Significant Impact.**"
- The Service's action **may significantly affect** the quality of the human environment and the Service will prepare an Environmental Impact Statement.

Preparer Signature: Tom Koerner Date: 07/27/2020

Name/Title/Organization: Tom Koerner, Project Leader, Central Sage Steppe Complex

Reviewer Signature: _____ Date: _____

Name/Title: Noreen Walsh, Regional Director, Interior Regions 5 and 7, Lakewood, Colorado

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APPENDIX A OTHER APPLICABLE STATUTES, EXECUTIVE ORDERS & REGULATIONS

Statutes, Executive Orders, and Regulations
Cultural Resources
<p>American Indian Religious Freedom Act, as amended, 42 U.S.C. 1996 – 1996a; 43 CFR Part 7</p> <p>Antiquities Act of 1906, 16 U.S.C. 431-433; 43 CFR Part 3</p> <p>Archaeological Resources Protection Act of 1979, 16 U.S.C. 470aa – 470mm; 18 CFR Part 1312; 32 CFR Part 229; 36 CFR Part 296; 43 CFR Part 7</p> <p>National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470–470x-6; 36 CFR Parts 60, 63, 78, 79, 800, 801, and 810</p> <p>Paleontological Resources Protection Act, 16 U.S.C. 470aaa – 470aaa-11</p> <p>Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001–3013; 43 CFR Part 10</p> <p>Executive Order 11593 – Protection and Enhancement of the Cultural Environment, 36 Fed. Reg. 8921 (1971)</p> <p>Executive Order 13007 – Indian Sacred Sites, 61 Fed. Reg. 26771 (1996)</p>
Fish and Wildlife
<p>Bald and Golden Eagle Protection Act, as amended, 16 U.S.C. 668-668c, 50 CFR 22</p> <p>Endangered Species Act of 1973, as amended, 16 U.S.C. 1531-1544; 36 CFR Part 13; 50 CFR Parts 10, 17, 23, 81, 217, 222, 225, 402, and 450</p> <p>Fish and Wildlife Act of 1956, 16 U.S.C. 742 a–m</p> <p>Lacey Act, as amended, 16 U.S.C. 3371 et seq.; 15 CFR Parts 10, 11, 12, 14, 300, and 904</p> <p>Migratory Bird Treaty Act, as amended, 16 U.S.C. 703–712; 50 CFR Parts 10, 12, 20, and 21</p> <p>Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (2001)</p>
Natural Resources
<p>Clean Air Act, as amended, 42 U.S.C. 7401–7671q; 40 CFR Parts 23, 50, 51, 52, 58, 60, 61, 82, and 93; 48 CFR Part 23</p> <p>Wilderness Act, 16 U.S.C. 1131 et seq.</p> <p>Wild and Scenic Rivers Act, 16 U.S.C. 1271 et seq.</p> <p>Executive Order 13112 – Invasive Species, 64 Fed. Reg. 6183 (1999)</p>
Water Resources
<p>Coastal Zone Management Act of 1972, 16 U.S.C. 1451 et seq.; 15 CFR Parts 923, 930, 933</p> <p>Federal Water Pollution Control Act of 1972 (commonly referred to as Clean Water Act), 33 U.S.C. 1251 et seq.; 33 CFR Parts 320–330; 40 CFR Parts 110, 112, 116, 117, 230-232, 323, and 328</p> <p>Rivers and Harbors Act of 1899, as amended, 33 U.S.C. 401 et seq.; 33 CFR Parts 114, 115, 116, 321, 322, and 333</p> <p>Safe Drinking Water Act of 1974, 42 U.S.C. 300f et seq.; 40 CFR Parts 141–148</p> <p>Executive Order 11988 – Floodplain Management, 42 Fed. Reg. 26951 (1977)</p> <p>Executive Order 11990 – Protection of Wetlands, 42 Fed. Reg. 26961 (1977)</p>

Key: CFR = Code of Federal Regulations; U.S.C. = U.S. Code

**APPENDIX B LARAMIE PLAINS REVISION OF COMPREHENSIVE
CONSERVATION PLAN**



United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. Box 700
Green River, Wyoming 82935



In Reply Refer to:
FWS/IR05/IR07

FEB 28 2020

Memorandum

To: Assistant Regional Director, Refuges
Through: Refuge Supervisor, Mountain Zone
From: Project Leader, Central Sage-Steppe Complex
Subject: Request for Minor Revision to 2007 Comprehensive Conservation Plan for Bamforth, Hutton Lake and Mortenson Lake National Wildlife Refuges

The Service is currently drafting a Hunting Plan and associated Environmental Assessment for hunting on Hutton Lake National Wildlife Refuge (NWR, refuge). We are also drafting a Hunting Plan and associated Environmental Assessment for hunting on Bamforth National Wildlife Refuge. In 2007, the Service completed a Comprehensive Conservation Plan (CCP) for Hutton Lake, Bamforth and Mortenson Lake National Wildlife Refuges. Although the CCP covered all three refuges, separate goals and objectives were developed within the CCP for each refuge.

For Hutton Lake NWR, the Visitor Services Goal in the CCP is "Provide wildlife-dependent recreational opportunities to a diverse audience when the administration of these programs does not adversely affect habitat management objectives". I am proposing minor revisions to the CCP that will allow hunting on Hutton Lake National Wildlife Refuge and Bamforth National Wildlife Refuges. Specifically, I am proposing to add the Visitor Services Goal for Hutton Lake refuge to the goals for Bamforth NWR. In addition, I am proposing to add the following objective under the Visitor Services Goal for Hutton Lake and Bamforth National Wildlife Refuges: "Where compatible, allow hunting opportunities that foster an appreciation and understanding of the management and resources of the Refuge and the System". These changes will provide additional potential hunting opportunities to the public, as referenced in Secretarial Order 3356. These revisions would not apply to Mortenson Lake NWR because of concerns that opening this refuge to hunting may negatively impact the federally endangered Wyoming toad population on the refuge.

The National Wildlife Refuge System Improvement Act of 1997 and Service policy (Fish and Wildlife Service Manual chapters 602 FW 1 and 3) identify the need to periodically review and revise Comprehensive Conservation Plans. Specifically the Service Manual chapter 602 FW 3, (Comprehensive Conservation Planning Process) Section 3.2 states "We will revise the CCP

**INTERIOR REGION 5
MISSOURI BASIN**

KANSAS, MONTANA*, NEBRASKA, NORTH DAKOTA,
SOUTH DAKOTA

*PARTIAL

**INTERIOR REGION 7
UPPER COLORADO RIVER BASIN**

COLORADO, NEW MEXICO, UTAH, WYOMING

every 15 years ... or earlier if monitoring and evaluation determine that we need changes to achieve planning unit purpose(s), vision, goals, or objectives” 2

The addition of the Visitor Services Goal to Bamforth NWR and the addition of an objective to Bamforth and Hutton Lake refuges are considered a minor CCP revision because they do not significantly change the management direction of the refuges. The addition of an objective under the Visitor Services Goal for Hutton Lake and Bamforth NWRs does not change the overall intent of the CCP objectives. Compliance with the National Environmental Policy Act of 1969 (NEPA), meets the criteria for the following categorical exclusion: 516 DM 8.5 B (9) “Minor changes in existing master plans, comprehensive conservation plans, or operations, when no or minor effects are anticipated. Examples include minor changes in the type and location of compatible public use activities and land management practices.”

This memorandum complies with the National Wildlife Refuge System Improvement Act of 1997, which states that the “Secretary shall ... revise the plan at any time if the Secretary determines that conditions that affect the refuge or planning unit have changed significantly.” Examples of new information or changed conditions include but are not limited to the following: 1) changes in the acreage of a specific habitat type; 2) changes in water management or availability; 3) changes in the status of a listed species; 4) the need for changes to wildlife management or public use programs; 5) changes to Service policy; 6) the need to construct new facilities, and/or 7) changes in sea level or other climate related changes.

Submitted By

Project Leader: Tom Koerner Tom Koerner 02/27/2020
(Signature) (Date)

Concurrence:

Refuge Supervisor: Lisa Jalcott 2/28/20
(Signature) (Date)

Approval:

~~167~~ Assistant Regional Director, Refuges: Neil Hoya 2/28/20
(Signature) (Date)

APPENDIX C FINDING OF NO SIGNIFICANT IMPACT

FINDING OF NO SIGNIFICANT IMPACT AND DECISION TO OPEN BIG GAME AND UPLAND GAME HUNTING

BAMFORTH NATIONAL WILDLIFE REFUGE

Albany County, Wyoming

The United States (U.S.) Fish and Wildlife Service (Service) is opening hunting opportunities for big game (pronghorn, mule deer, and white-tailed deer) and upland game (cottontail rabbits, ring-necked pheasant, sharp-tailed grouse, wild turkey, chukar, and gray partridge) on Bamforth National Wildlife Refuge (NWR). These hunting opportunities would be available on all three units of the refuge—totaling 1,166 acres. This is in accordance with the comprehensive conservation plan (CCP), as amended, for the Laramie Plains NWRs (which covers Bamforth, Hutton Lake, and Mortenson Lake NWRs) and the hunting plan for Bamforth NWR (USFWS 2007; 2020a).

Selected Action

Alternative A – Proposed Action Alternative: Under the Proposed Action Alternative, the Service would open the refuge for big game hunting (pronghorn, mule deer, and white-tailed deer) and upland game hunting (cottontail rabbits, ring-necked pheasant, sharp-tailed grouse, chukar, and gray partridge), in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations.

Nontoxic shot (steel or other federally approved nontoxic shot) would be required when taking or attempting to take migratory birds, upland game birds, or small game with a shotgun on the refuge.

This alternative was selected over the other alternatives because it provides hunting opportunities on the refuge and meets the refuge establishing purposes. Public hunting that would result in a minimal impact on physical and biological resources, while meeting the Service's mandates under the National Wildlife Refuge System Administration Act of 1966 (NWRSA) and Secretarial Order 3356. The Service has the resources necessary to carry out this alternative and has determined that the proposed action described in this alternative is compatible with the purposes of the refuge and the mission of the National Wildlife Refuge System (Refuge System) (USFWS 2020b).

Other Alternatives Considered and Analyzed

Alternative B – No Action Alternative: Currently, no public use is allowed on the refuge and this would continue under this alternative. The refuge lands are separated into three parcels with private or state lands between them and have seen little active management in several decades. One public road (Highway 12) traverses the southwest corner of the southwest parcel of the

refuge, which offers distant views of area wetlands and other habitats on the refuge.

This alternative was not selected because it does not meet the purpose and needs of the Service and would not provide hunting opportunities. Although this alternative has fewer direct effects on physical and biological resources, it would not support our mandates under the NWRSA and Secretarial Order 3356.

Summary of Effects of the Selected Action

An environmental assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) to provide decision-making framework that (1) explored a reasonable range of alternatives to meet project objectives; (2) evaluated potential issues and impacts to the refuge, resources, and values; and (3) identified mitigation measures to lessen the degree or extent of these impacts. The EA evaluated the effects associated with opening Bamforth NWR for big game hunting (pronghorn, mule deer, and white-tailed deer), upland game hunting (cottontail rabbits, ring-necked pheasant, sharp-tailed grouse, chukar, and gray partridge) and fall wild turkey hunting. It is incorporated as part of this finding.

Implementation of the Service's decision would be expected to result in the following environmental, social, and economic effects:

- We, the Service, do not expect the direct effects of big game and upland game species harvest to have any population-level effects. Opening the refuge to hunting would result in short-term disturbance to wildlife, including temporary displacement of birds and other resident wildlife from foot traffic moving through the area and gunshots. Due to the low populations of deer and pronghorn on the refuge, and the low relative abundance of hunters expected to harvest these animals, the overall increase in risk to wildlife due to lead ammunition in the environment is expected to be minor. By opening the refuge for hunting, new areas of Wyoming state land and Bureau of Land Management lands that were previously only accessible via private land would become publicly accessible. Overall, the proposed action is expected to be a minor benefit to hunters in the area by providing additional public land for hunting.

Measures to mitigate and/or minimize adverse effects have been incorporated into the selected action. These measures include:

- Nontoxic shot (steel or other federally approved nontoxic shot) would be required when taking or attempting to take upland game birds or small game with a shotgun on the refuge.

While refuges, by their nature, are unique areas protected for conservation of fish, wildlife, and habitat, the proposed action would not have a significant impact on refuge resources and uses for several reasons:

- The number of pronghorn and deer that are expected to be harvested on the refuge would be less than 0.01 percent of the total pronghorn or deer harvest in Wyoming. The occasional upland game birds that may be harvested on the refuge each year would be less than 1 percent of the total statewide harvest. The Wyoming Game and Fish Department (WGFD) maintains liberal hunting seasons and bag limits for small game because hunting has little or no effect on populations (WGFD 2007). Overall, big game

and upland game hunting on Bamforth NWR would be a negligible effect compared to the statewide harvest. The Service works closely with the state to ensure that additional species harvested on a refuge are within the limits set by the state to ensure healthy populations of the species for present and future generations of Americans.

- The action would result in beneficial impacts to the human environment, including wildlife-dependent recreational opportunities and socioeconomics of the local economy.
- The adverse direct and indirect effects of the proposed action on soils, geology, air, water, habitat, and wildlife are expected to be negligible to minor and short-term.
- The Refuge System uses an adaptive management approach to all wildlife management on refuges, monitoring and re-evaluating the hunting and fishing opportunities on the refuge on an annual basis to ensure that the hunting and fishing programs continue to contribute to the biodiversity and ecosystem health of the refuge and these opportunities do not contribute to any cumulative impacts to habitat or wildlife from climate change, population growth and development, or local, state, or regional wildlife management.
- The proposed action, along with proposed mitigation measures, would ensure that there is low danger to the health and safety of refuge staff, visitors, and the hunters themselves.
- The proposed action is not in an ecologically sensitive area.
- The proposed action would not affect any threatened or endangered species; or any federally designated critical habitat.
- The proposed action would not affect any cultural or historical resources.
- The proposed action would not affect any wilderness areas.
- There is no scientific controversy over the impacts of this action and the impacts of the proposed action are relatively certain.
- The proposal is not expected to have any significant adverse effects on wetlands and floodplains, pursuant to Executive Orders 11990 and 11988 because the action of opening the refuge to hunting of big game and upland game would not cause any destruction or degradation of wetlands or result in any floodplain development.

Public Review

The proposal has been thoroughly coordinated with all interested and/or affected parties.

Coordination with Wyoming Game and Fish Department

The refuge reviewed the operations and regulations for neighboring state wildlife management areas and refuges to find consistency where possible. WGFD leadership expressed interest in having the Service evaluate opening the refuge for big game and upland game hunting. This interest was congruent with the Department of Interior Secretarial Order 3356, "Hunting, Fishing, Recreational Shooting, and Wildlife Conservation Opportunities and Coordination with States, Tribes, and Territories."

WGFD reviewed the draft EA, hunting plan, and compatibility determination during the 30-day comment period. WGFD expressed their support for the proposed action to open Bamforth NWR

to big game and upland game hunting. We would continue to consult and coordinate on specific aspects of the hunting plan with WGFD to ensure safe and enjoyable recreational hunting opportunities.

Tribal Coordination

The Service mailed an invitation for comments to all tribes potentially affected by initiating an EA to open the refuge to big game and upland game hunting. The Service extended an invitation to engage in government-to-government consultation in accordance with Executive Order 13175. We did not receive a response from any of the tribes we contacted.

Public Comment

On April 1, 2020, the Service put the hunting plan and EA out for a 30-day public review and comment. The Service received comments from two organizations and three individuals.

Comment (1): We received comments that opening the refuge to hunting was not a compatible use of the refuge and does not support the biological integrity, diversity, and environmental health of the system.

Response: The Service disagrees with this comment and based on the analysis in the EA (see Tables 1–6) and the compatibility determination, we have found big game and upland game hunting on Bamforth NWR to be a compatible use (see the final compatibility determination, USFWS 2020b). Part of the mission of the Refuge System is to ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained for the benefit of present and future generations of Americans (16 U.S. Code 668dd[a][4][B]). Therefore, each Service station manager uses his or her “sound professional judgment” (see the definition of this term in the Service Manual at 603 FW 2.6.U., available online at www.fws.gov/policy/603fw2.html) in making these inherently complex management decisions to ensure that each proposed action complies with this mandate. Each manager incorporates field experience, knowledge of refuge resources, considerations of the refuge’s role within an ecosystem, applicable laws, and best available science in making these decisions. Service biologists and wildlife professionals, in consultation with the state, determine the optimal number of each game animal that should reside in an ecosystem and then establish hunt parameters (e.g., bag limits, sex ratios) based on those analyses. We carefully consider how a proposed hunt fits within individual refuge goals, objectives, and strategies before allowing the hunt. The new hunting opportunities proposed on Bamforth NWR are not expected to individually or collectively result in significant adverse direct, indirect, or cumulative impacts to hunted populations of migratory birds and resident wildlife, nonhunted migratory and resident wildlife, endangered and threatened species, habitat and plant resources, or other natural resources.

We did not make any changes to the EA as a result of this comment.

Comment (2): We received a comment that access to the refuge would be difficult for hunters.

Response: We agree with this comment and would install structures that would allow hunters to walk over the fences to access the refuge. These structures would be low maintenance and add less than \$200 to the anticipated costs of the proposal (see Table 4).

Comment (3): We received comments that there are other hunting opportunities in the area and opening the refuge is not necessary.

Response: We recognize that in Wyoming there are hunting opportunities for a variety of wildlife on other public lands, such as Bureau of Land Management lands, U.S. Forest Service lands, and State of Wyoming public lands (www.wgfd.wyo.gov/Public-Access/Access-Summary). However, as described in the cumulative impacts section (Table 6), hunting opportunities similar to the proposed action for big game and upland game are relatively limited in the surrounding area. Facilitating hunting opportunities is an important aspect of the Service's roles and responsibilities as outlined in the legislation establishing the Refuge System, and the Service will continue to facilitate these opportunities where compatible with the purpose of the specific refuge and the mission of the Refuge System.

We did not make any changes to the EA as a result of this comment.

Comment (4): We received a comment noting that Bamforth NWR has been designated as an Important Bird Area by the Audubon Society and expressing concern about the negative impact of the proposed action on avian species.

Response: We recognize and appreciate the refuge's designation as an Important Bird Area and the importance of the refuge to migratory birds in general. However, having an Important Bird Area designation does not place any additional legal restrictions related to migratory birds on management of the refuge. As discussed in Table 1, we expect the proposed action to have a minimal impact on migratory birds as the hunting activities, including the use of hunting dogs, would occur only in the uplands, which reduces impacts to wetland-dependent birds, and in the fall when many of the upland birds have migrated out of the area. For the birds that are present and may be displaced during big game and upland game hunting, we expect impacts to be short-term and minor, in part due to the relatively low number of hunters expected to use the refuge. Disturbance effects, such as short-term displacement, are not necessarily linked to disturbance impacts at the individual or population level (Hill et al. 1997; Sokos et al. 2013).

We did not make any changes to the EA as a result of this comment.

Comment (5): Another comment noted that hunting may impact nonconsumptive users of the refuge.

Response: Other uses of the refuge are not currently permitted. It is possible that hunting may affect members of the public engaged in wildlife observation or photography from the road or other boundaries of the refuge.

We have updated Table 2 to include this impact.

Comment (6): We received comments expressing concern over the effects of lead ammunition on wildlife and human health, as well as the cumulative impacts. Commenters also indicated that allowing lead ammunition for big game hunting was in opposition to our legal duty to ensure the biological integrity, diversity, and environmental health of refuge, in particular as it relates to eagles and swift fox. Commenters asked the Service to consider an alternative that would require the use of nontoxic ammunition for all hunting on the refuge.

Response: The Service shares the commenters' concerns regarding the bioavailability of lead in the environment and the fragments that can be deposited in killed game. Nontoxic ammunition (shot) must be used when hunting any small game animals or upland game birds on the refuge. Possessing shotshells loaded with shot other than nontoxic shot on the refuge is illegal. In the case of big game hunting, the direct and indirect impacts of spent lead ammunition on predators and scavengers on Bamforth NWR are analyzed in Table 1, under "Impacts to Other Wildlife

and Aquatic Species.” Due to the low populations of deer and pronghorn on the refuge (less than five expected to be harvested each year), and the low relative abundance of hunters expected to harvest these animals (less than hunter visits), the additional lead remnants are expected to have a minor negative impact on wildlife and human health.

This minor negative impact due to lead also applies to less common wildlife such as swift fox and eagles that may use the refuge. The home range of swift fox is more than double the size of the refuge and the home range of eagles is over 30 times the size of the refuge. The minor impact of additional lead in the environment as described above, coupled with the small size of the refuge, further indicates that opening the refuge to big game hunting will not have a significant impact on the biological diversity, integrity, and ecological health of Bamforth NWR due to lead.

We also analyzed the cumulative impacts of lead in Table 6. The number of pronghorn and deer that are expected to be harvested on the refuge would be less than 0.01 percent of the total pronghorn or deer harvest in Wyoming. This would be a negligible effect compared to the statewide harvest and would therefore not contribute to a significant increase in lead in the environment. The additional acres that would be opened to hunting as a result of the proposed action are only 5 percent of the land in hunt management units 43 and 74 open to public access. Therefore, the overall increase in lead ammunition in the environment, both in number of animals harvested and area impacted, is expected to be minor.

In addition to potential impacts on wildlife, recent studies have found that lead ammunition can increase risk on human health due to the ingestion of lead (Hunt et al. 2009). While no lead poisoning of humans has been documented from ingestion of wild game, some experts, including the Center for Disease Control have recommended the use of nontoxic bullets when hunting to avoid lead exposure and that pregnant women and children under six should not consume wild-game shot with lead ammunition. (Streater 2009). This recommendation comes after a study done in North Dakota found that those who ate wild game had significantly higher levels of lead in their blood than those who did not (Iqbal et al. 2009).

The Service encourages refuge-state partnerships to reach decisions on usage, and would continue to encourage hunters to voluntarily use nontoxic ammunition for all harvest activities. Nontoxic ammunition is becoming more available as the demand for this ammunition increases (Kelly et al. 2011), although it currently remains more expensive. Copper ammunition is a good alternative since it is less toxic and frangible than lead ammunition (Hunt et al. 2006). The Service’s intent is to reduce the potential of lead poisoning on migratory birds and birds of prey, as well as lower the risk of lead exposure for humans ingesting wild game hunted on refuges.

We have added additional analysis to the direct impacts (Table 1) and the cumulative impacts (Table 6) in the EA. We did not make any other changes as a result of these comments.

Comment (7): We received a comment that the Service does not have adequate law enforcement to implement the proposed action.

Response: We have carefully considered the factors involved in this opening and find we have adequate staff coverage and funding for this use. Service policy (603 FW 2.12[7]) requires station managers to determine that adequate resources (including personnel, which in turn includes law enforcement) exist or can be provided by the Service or a partner to properly develop, operate, and maintain the use in a way that will not materially interfere with or detract from fulfillment of the refuge purpose(s) and the Service’s mission. If resources are lacking for

establishment or continuation of wildlife-dependent recreational uses, the refuge manager would make reasonable efforts to obtain additional resources or outside assistance from states, other public agencies, local communities, and/or private and nonprofit groups before determining that the use is not compatible. When Service law enforcement resources are lacking, we are often able to rely upon state fish and game law enforcement capacity to assist in enforcement of hunting and fishing regulations.

We did not make any changes to the EA as a result of this comment.

Comment (8): We received comments that the Service should open Bamforth NWR to nonconsumptive public uses and/or consider other public uses.

Response: The current proposed action to open Bamforth NWR to big game and upland game hunting was developed as part of the annual review of hunting and sport fishing programs on refuges to determine whether to include additional stations or whether regulations governing existing programs need modifications (see 85 FR 20030). This process is specific to hunting and sport fishing opportunities. However, we are not opposed to considering other public uses on Bamforth NWR in the future. Similar to hunting and fishing, other public uses would need to be found compatible with the refuge purpose and would need to be evaluated through an additional planning process.

We did not make any changes to the EA as a result of this comment.

Comment (9): We received a comment that the analysis in the EA is inadequate.

Response: The Service disagrees with this assertion. The Service's NEPA-related analysis of the impacts of the proposed opening of Bamforth NWR to big game and upland game hunting demonstrated that the proposed action would not have significant impacts at the local, regional, or national level, and the commenter has provided no additional information that would change our conclusions.

Additionally, on April 9, 2020, the Service published the Draft 2020–2021 Refuge-Specific Hunting and Sport Fishing Regulations in the Federal Register (see 85 FR 20030). The Service received two public comments on the refuge-specific regulations proposed in conjunction with the refuge's hunting plan and EA. One of the commenters also submitted their comments directly to the refuge. These concerns are addressed in *Comment (1)*, *Comment (6)*, and *Comment (9)* above.

We did not make any changes to the EA as a result of this comment.

Comment (10): We received a comment expressing concern that we had amended the CCP for Bamforth NWR to allow hunting, when the refuge had been closed to all public use previously, without sufficient explanation.

Response: As mentioned in the response *Comment (8)* above, the current proposed action to open Bamforth NWR to big game and upland game hunting was developed as part of the annual review of hunting and sport fishing programs on refuges to determine whether to include additional stations or whether regulations governing existing programs need modifications (see 85 FR 20030). The NWR SAA (16 U.S. Code 668dd[e]) anticipated that revisions may need to be made to CCPs from time to time based on new information. Service policy allows minor revisions to CCP objectives and strategies as long as they do not significantly change the management direction of the refuge (603 FW 2). Appendix B of the EA provides the

memorandum explaining the minor revision to the 2007 CCP for the Laramie Plains NWRs, which includes Bamforth NWR. The analysis provided in the EA finds the effects of this change to be negligible to minor (see Appendix C, Finding of No Significant Impact).

In addition, we do not allow hunting on a refuge if it is found incompatible with that individual refuge's purposes or with the mission of the Refuge System. Therefore, each Service station manager uses his or her sound professional judgment in making these inherently complex management decisions to ensure that each proposed action complies with this mandate (see the Service's Service Manual at 603 FW 2.6.U., available online at www.fws.gov/policy/603fw2.html). Each manager incorporates field experience, knowledge of refuge resources, considerations of the refuge's role within an ecosystem, applicable laws, and best available science in making these decisions. Based on our evaluation, opening Bamforth NWR to big game and upland game hunting is compatible with the refuge purpose and the mission of the Refuge System (see the final compatibility determination, USFWS 2020b).

We did not make any changes to the EA as a result of this comment.

Finding of No Significant Impact

Based upon a review and evaluation of the information contained in the EA as well as other documents and actions of record affiliated with this proposal, the Service has determined that the proposal to implement big game and upland game hunting on Bamforth NWR does not constitute a major federal action significantly affecting the quality of the human environment under the meaning of Section 102(2)(c) of NEPA (as amended). As such, an environmental impact statement is not required.

Decision

The Service has decided to open Bamforth NWR for big game hunting (pronghorn, mule deer, and white-tailed deer) and upland game hunting (cottontail rabbits, ring-necked pheasant, sharp-tailed grouse, chukar, and gray partridge), in accordance with State of Wyoming seasons and regulations. Wild turkey hunting would also be permitted during the fall in accordance with the State of Wyoming season and regulations. Nontoxic shot (steel or other federally approved nontoxic shot) would be required when taking or attempting to take upland game birds or small game with a shotgun on the refuge.

This action is compatible with the purposes of the refuge and the mission of the Refuge System (see the final compatibility determination, USFWS 2020b).

The action is consistent with applicable laws and policies regarding the establishment of hunting on national wildlife refuges. Refuge-specific regulations promulgated in conjunction with this action are in the process of being finalized (see 85 FR 20030). This action will not be implemented until the regulations are finalized.

Noreen Walsh
Regional Director, Interior Regions 5 and 7
U.S. Fish and Wildlife Service
Lakewood, Colorado

Date

**APPENDIX D INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM –
REGION 6**

Intra-Service Section 7 Biological Evaluation Form – Region 6

Originating Person: Tom Koerner

Date Submitted: 3/16/2020

Telephone Number: 307-875-2187

I. Service Program and Geographic Area or Station Name: Bamforth National Wildlife Refuge (NWR)

II. Flexible Funding Program: N/A

III. Location: Location of the project including County, State and TSR (township, section & range):

Geographic Area: Laramie Plains Basin
Albany County, Wyoming
T16N R74W S07

IV. Species/Critical Habitat: List federally endangered, threatened, proposed, and candidate species or designated or proposed critical habitat that may occur within the action area. To obtain species lists: <http://ecos.fws.gov/ipac/>

Wyoming toad (*Bufo baxteri*): The Wyoming toad, listed in 1984, is one of the four most endangered amphibians in North America. It is known to occur in the wild at four Safe Harbor Sites in the Laramie Plains region and at Mortenson Lake NWR (which was exclusively established for the protection of the toad), located approximately 12 miles south of Bamforth NWR. Wyoming toads are not known to occur on Bamforth NWR.

Platte River Species: These include the least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), pallid sturgeon (*Scaphirhynchus albus*), and western prairie-fringed orchid (*Platanthera praeclara*). These species are included in this review because actions that result in water depletions within the Platte River System may result in adverse effects to these species where they do occur. The refuge is located in the North Platte River drainage, a part of the overall Platte River System occurring in Wyoming.

V. Project Description: Describe proposed project or action or, if referencing other documents, prepare an executive summary (attach additional pages as needed):

The U.S. Fish and Wildlife Service (Service) is proposing to open hunting opportunities for big game (pronghorn, mule deer and white-tailed deer) and upland game (cottontail rabbits, ring-necked pheasant, sharp-tailed grouse, wild turkey, chukar and gray partridge) on Bamforth National Wildlife Refuge (NWR). These hunting opportunities would be available on all three units of the refuge totaling 1,166 acres (see map).

VI. Determination of Effects:

(A) Description of Effects: Describe the action(s) that may affect the species and critical habitat list in item IV. Your rationale for the Section 7 determination made below (B) should be described here.

- a. Wyoming Toad: Bamforth NWR has had no documented Wyoming toad.
- b. Platte River species: The proposed action (opening the refuge to big game and upland game hunting) will not affect or modify the way the refuge uses water during the spring and summer. Nothing in the proposed action would change the amount of water in the North Platte River system.

(B) Determination: Determine the anticipated effects of the proposed project on species and critical habitat lists in item IV. Check all applicable boxes and list the species (or attach a list) associated with each determination.

Because there are no Wyoming toads known to occur on the refuge and there are no effects to the amount of water in the North Platte River system, we expect No Effect to listed species.

Determination

No Effect

No Effect: This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. **No concurrence from ESFO required.**

May Affect but Not Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects, to individuals of listed species and/or designated critical habitat. **Concurrence from ESFO required.**

May Affect but Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species and/or designated critical habitat. **Formal consultation with ESFO required.**

May Affect but Likely to Adversely Affect but the proposed action is for the purpose of endangered or threatened species recovery and falls under Region 6's Programmatic Consultation on Service-initiated Recovery Actions: this determination is appropriate when the adverse effects are likely but the project is designated to assist with recovery of listed species and/or designated critical habitat. **Concurrence from the ESFO required that the project is covered by the programmatic consultation is required.**

May Affect but Not Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project may affect, but is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. **Concurrence from ESFO optional.**

Likely to Jeopardize candidate or proposed species/critical habitat:
This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. **Concurrence from ESFO required.**

Signature Tom Koerner Tom Koerner Date 03/16/2020
[Supervisor at originating station] Project Leader

Reviewing Ecological Services Office Evaluation (check all that apply):

A. Concurrence Nonconcurrence
Explanation of nonconcurrence

B. Formal Consultation Required _____
List species or critical habitat unit

C. Effects are addressed in the Programmatic Consultation _____
On R6's Recovery Program -- no further consultation needed

D. Conference required _____
List species or critical habitat unit

Name of Reviewing ES Official: _____

