

Final Environmental Assessment

for Sport Fishing on Alamosa National Wildlife Refuge

July 2020

Prepared by

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Table of Contents

| | | |
|------------|---|----------|
| 1.0 | Introduction..... | 3 |
| 1.1 | Proposed Action..... | 3 |
| 1.2 | Background..... | 3 |
| 1.3 | Purpose and Need for the Proposed Action | 6 |
| 2.0 | Alternatives..... | 6 |
| 2.1 | Alternatives Considered..... | 6 |
| | Alternative A – Open Refuge to Recreational Sport Fishing – Proposed Action Alternative | 6 |
| | Alternative B – Current Management – No Action Alternative | 8 |
| 3.0 | Affected Environment and Environmental Consequences | 8 |
| 3.1 | Affected Environment..... | 8 |
| | Riparian Habitat on the Refuge..... | 8 |
| | Wetland Habitat on the Refuge..... | 9 |
| | Upland Habitat on the Refuge..... | 10 |
| 3.2 | Environmental Consequences of the Action..... | 11 |
| 3.3 | Cumulative Impact Analysis..... | 27 |
| 3.4 | Mitigation Measures and Conditions | 29 |
| 3.5 | Monitoring | 29 |
| 3.6 | Summary of Analysis..... | 29 |
| | Alternative A – Proposed Action Alternative | 31 |
| | Alternative B – No Action Alternative | 31 |
| 3.7 | List of Sources, Agencies, and Persons Consulted..... | 31 |
| 3.8 | List of Preparers | 32 |
| 3.9 | State Coordination | 32 |
| 3.10 | Tribal Consultation | 32 |
| 3.11 | Public Outreach..... | 32 |
| 3.12 | Determination | 37 |
| 3.13 | References..... | 38 |

List of Figures

| | |
|---|---|
| Figure 1. Proposed Fishing Areas on Alamosa National Wildlife Refuge..... | 4 |
|---|---|

List of Tables

| | |
|---|----|
| Table 1. Affected Natural Resources and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives. | 12 |
| Table 2. Affected Visitor Use and Experience and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives..... | 21 |
| Table 3. Affected Cultural Resources and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives..... | 22 |
| Table 4. Affected Refuge Management and Operations and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives..... | 23 |
| Table 5. Affected Socioeconomics and Anticipated Direct and Indirect Impacts of the Proposed Action and Any Alternatives. | 25 |
| Table 6. Anticipated Cumulative Impacts of the Proposed Action and Any Alternatives. | 27 |
| Table 7. Summary of Anticipated Impacts of the Proposed Action and Any Alternatives | 30 |

Appendices

| | | |
|-------------------|---|-----------|
| Appendix A | Other Applicable Statutes, Executive Orders, and Regulations | 42 |
| Appendix B | Finding of No Significant Impact..... | 43 |
| Appendix C | Intra-Service Section 7 Biological Evaluation Form – Region 6..... | 52 |

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Date: July 2020

This final environmental assessment (EA) reflects the proposed action as presented in the draft EA, our responses to public comments, and any subsequent changes based on comments. Based on our analysis of public comments, no changes to the draft proposed actions were made. However, we, the United States (U.S.) Fish and Wildlife Service (Service), added a regulation that launching or removing any type of watercraft on refuge lands, including the Rio Grande and the Chicago Ditch, is prohibited. We added language to address the inadvertent omission in our analysis of yellow-billed cuckoos (Table 1). Additionally, the Service completed its Intra-Service Section 7 consultation for the proposed action, including for southwestern willow flycatchers and yellow-billed cuckoos. The draft EA was 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 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 sport fishing opportunities on Alamosa National Wildlife Refuge (NWR) in accordance with the refuge’s sport fishing plan (see Figure 1 for proposed fishing locations). Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing. Public fishing would be conducted according to State of Colorado regulations, except where other refuge-specific conditions may apply to reduce habitat, wildlife disturbance, or other use conflicts.

This proposed action is often iterative and evolves 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 Sport Fishing Regulations. The Service cannot open a refuge to fishing until a final rule has been published in the federal register formally opening the refuge to 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 covers 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 parts of the Code of Federal Regulations and Fish and Wildlife Service Manual.

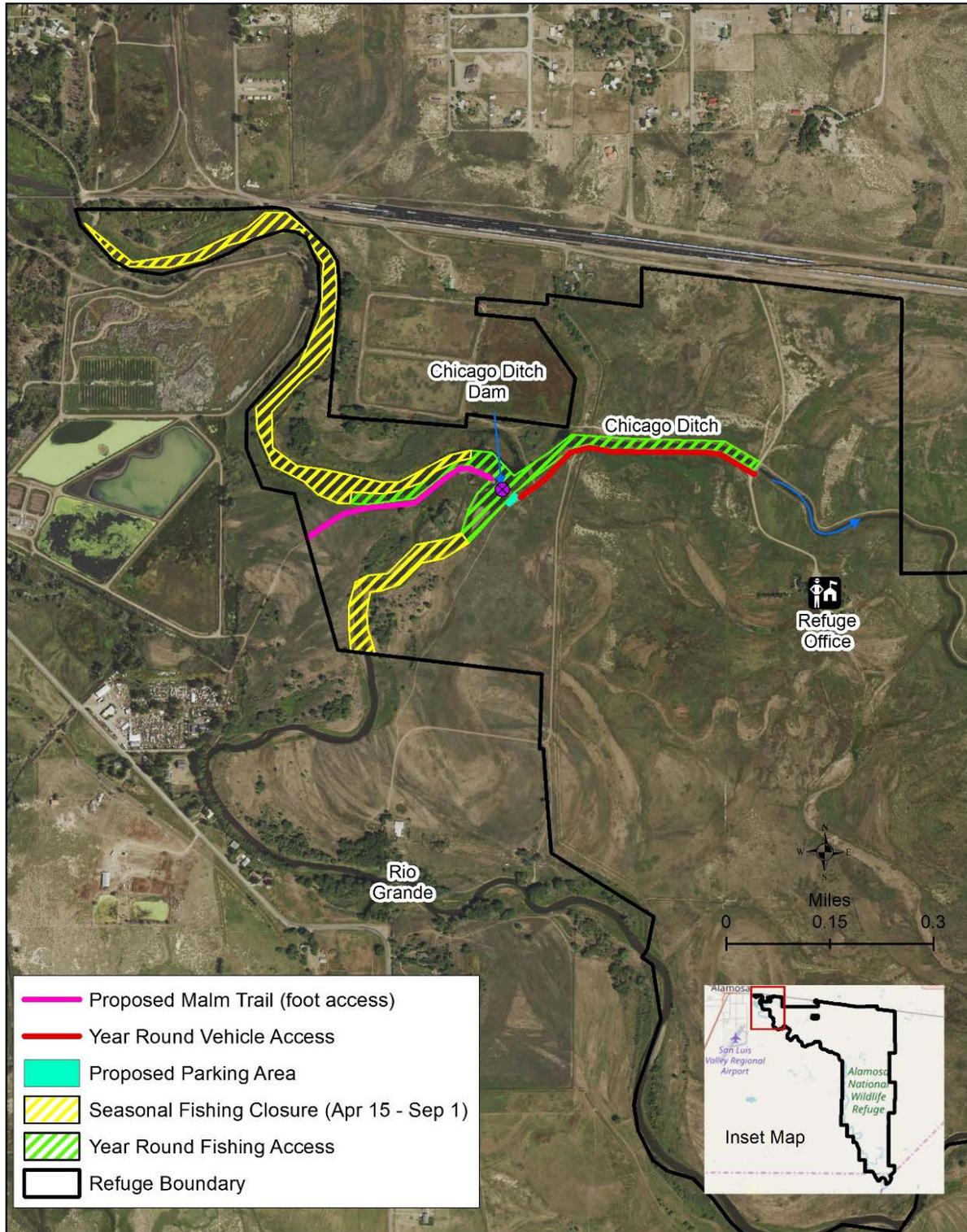


Figure 1. Proposed Fishing Areas on Alamosa National Wildlife Refuge.

Alamosa NWR was established July 25, 1963 under the authority of the 1929 Migratory Bird Conservation Act (45 Stat. 1222; 16 U.S. Code Section 715d) “. . . for use as inviolate sanctuaries, or for any other management purposes, for migratory birds.”

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 U.S. 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;
- assist in the maintenance of adequate water quantity and water quality to fulfill the mission of the Refuge System and the purposes of each refuge;
- recognize compatible wildlife-dependent recreational uses as the priority 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.

Before acquisition (in 2003) of the part of the refuge where opening sport fishing is being proposed, local citizens would access the area to fish for game fish (primarily northern pike and common carp). After the acquisition of this parcel, the area was closed to recreational sport fishing. Throughout the development of the San Luis Valley NWR Complex (refuge complex) comprehensive conservation plan (CCP) and environmental impact statement (EIS; USFWS 2015), some members of the public expressed a desire to open this area for sport fishing. Currently, no sport fishing opportunities exist on the 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 Alamosa NWR. The need of the proposed action is to meet the Service's priorities and mandates as outlined by the NWR SAA to "recognize compatible wildlife-dependent recreational uses as the priority general uses of the [Refuge] System" and "ensure that opportunities are provided within the [Refuge] System for compatible wildlife-dependent recreational uses" (16 U.S. Code 668dd[a][4]).

The San Luis Valley NWR Complex CCP and EIS (2015) proposed to provide new recreational sport fishing opportunities on a part of the refuge.

The objectives of the sport fishing plan directly support several of the refuge's long-term management goals. In general, the objective of this sport fishing plan is to provide anglers with a safe, high quality fishing experience while: (1) maintaining fish populations at optimum levels, (2) minimizing negative effects to other wildlife populations, and (3) minimizing conflicts with other wildlife-dependent public uses on the refuge. For a complete review of the refuge's management goals and objectives, see the refuge complex 2015 CCP and EIS. The fishing program would be conducted to meet these objectives, which covers providing quality recreational fishing opportunities for the public. The Service believes these objectives would support healthy fish and wildlife populations besides supporting the maintenance of the biological integrity, diversity, and environmental health of the refuge.

Recreational fishing would provide the public with a wildlife-dependent recreational opportunity while promoting an appreciation and wise use of the refuge's aquatic resources. There would be opportunities to observe natural relationships and the diversity necessary for a healthy ecosystem. The public would gain valuable knowledge through brochures, maps, and interpretive literature available and distributed at the refuge. Providing sport fishing opportunities could help instill a conservation ethic and stewardship of natural resources. Regulation and information signs would also be available at sites open for fishing. Through these resources, the public would obtain an understanding of natural resource management and of the Service's role in preserving and protecting natural resources. Visitors would also develop an appreciation and an awareness of the roles they play within the ecosystem.

2.0 Alternatives

2.1 Alternatives Considered

Alternative A – Open Refuge to Recreational Sport Fishing – Proposed Action Alternative

The refuge has prepared a fishing plan (USFWS 2020a), presented with this document, and referred to here as the Proposed Action Alternative. Under the Proposed Action Alternative, public fishing would be conducted according to Colorado Parks and Wildlife (CPW) regulations, with some added refuge-specific conditions to protect fish, wildlife, and habitat, and reduce potential conflicts among other public uses.

Sport fishing opportunities would be allowed along the banks of the Rio Grande, in areas just above and below the Chicago Dam as well as the Chicago Ditch from the Chicago Ditch Diversion to the crossing (culvert) of the entrance road to the current San Luis Valley NWR

Complex headquarters office (Figure 1). At this time, although difficult to estimate, the level of use by anglers would be five or less use days per week (less than 200 use days annually).

Bank fishing would be allowed with rod and reel, hook and line, bow, or any other method of take allowed per state regulations. The use would be conducted along the banks of bodies of water in designated areas. Anglers would use existing access points along the Chicago Ditch as well as a proposed access trail. Anglers would be allowed to park along the road paralleling the Chicago Ditch from the access road to the San Luis Valley NWR Complex headquarters to the Chicago Ditch Diversion. A parking area near the Chicago Dam would need to be developed. Signage and informational brochures would be developed to show designated sport fishing areas and refuge-specific regulations. The voluntary use of non-lead sinkers is encouraged.

Under this alternative, parts of the designated sport fishing area would be closed seasonally (April 15 to September 1, annually) to reduce effects from angler disturbance on the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*). Areas to be closed would be signed and identified in informational brochures.

Under the proposed action alternative, opening the refuge to fishing would promote one of the priority public uses of the Refuge System. Providing opportunities for visitors to fish could promote stewardship of our natural resources and increase public appreciation and support for the refuge.

All or parts of the refuge open for sport fishing could be closed at any time if necessary for public safety, providing wildlife sanctuary, or any other administrative reasons.

In general, sport fishing would be consistent with state regulations about proper licensing rules, species, seasons, and method of take. Additionally, the following refuge-specific regulations would apply.

- Fishing is only allowed within the designated fishing area.
- Launching or removing any type of watercraft, such as boats, float tubes, canoes, kayaks, or paddleboards, from the Rio Grande or Chicago Ditch is prohibited
- Fires are prohibited, except portable gas stoves in established parking areas.
- The refuges are open for day use access from one hour before sunrise until one hour after sunset.
- Camping and overnight parking is prohibited.
- All personal property, including fishing line, bait containers, and other trash must be removed at the end of each day.
- Use or possession of alcohol or controlled substances on the refuges is prohibited.
- The entire designated fishing area or any part thereof may be closed to fishing for the protection of habitat and wildlife resources, management activities, or safety issues as decided by the project leader.

This alternative offers increased opportunities for public fishing and fulfills the Service's mandate under the Improvement Act. The Service has found that fishing is compatible with the purposes of the refuge and the mission of the Refuge System (USFWS 2020b).

Alternative B – Current Management – No Action Alternative

Under the No Action Alternative, current management direction would continue. Under this alternative, the refuge would remain closed to fishing. Carrying out this alternative would not facilitate wildlife-dependent priority use that has been found to be compatible with the purposes of the refuge and the mission of the Refuge System.

3.0 Affected Environment and Environmental Consequences

3.1 Affected Environment

Alamosa NWR, encompassing 12,026 acres in Alamosa County, is located within the San Luis Valley (SLV), Colorado. The SLV is a large, flat intermountain basin ranging in elevation from 2,286 to 2,2438 meters that is bounded by the San Juan Mountains to the west and the Sangre de Cristo Mountains to the north and east. Classified as a cold desert, the SLV exhibits cool dry summers and cold winters. Mean annual precipitation for the valley floor ranges from 18 to 23 centimeters, most of which falls during the months of July and August.

Across the refuge, the diversity of vegetation, soils, and hydrologic conditions provide many habitat types for a wide array of wildlife species. Some species are generalists, while others need a specific combination of resources to meet annual lifecycle needs. The following describes the riparian, wetland, and upland habitats that comprise the refuge.

Riparian Habitat on the Refuge

Riparian habitat on the refuge is restricted to approximately 229 acres near the Rio Grande. Overstory riparian vegetation consists primarily of coyote willow (*Salix exigua*), peach-leaf willow (*Salix amygdaloides*), and crack willow (*Salix fragilis*), as well as narrowleaf cottonwood (*Populus angustifolia*). Other shrub species include wood's rose (*Rosa woodsii*) and golden currant (*Ribes aureum*). The herbaceous understory consists of various grasses, sedges, Baltic rush (*Juncus balticus*), and forbs. Narrowleaf cottonwoods are a small part of the woody vegetative community and crack willow occurs as scattered, individual plants. Peach-leaf willow, while abundant in a few patches, is primarily represented by scattered individuals or small groups of plants throughout the riparian corridor.

Characteristic Wildlife

Observations by refuge staff and infrequent surveys have documented more than 80 bird species using riparian habitats for foraging, migration, or nesting. Primary nesting birds include red-tailed hawk (*Buteo jamaicensis*), Swainson's hawk (*Buteo swainsoni*), American kestrel (*Falco sparverius*), northern flicker (*Colaptes auratus*), western kingbird (*Tyrannus verticalis*), western wood-pewee (*Contopus sordidulus*), American robin (*Turdus migratorius*), yellow warbler (*Dendroica petechia*), common yellowthroat (*Geothlypis trichas*), song sparrow (*Melospiza melodia*), American goldfinch (*Carduelis tristis*), Brewer's blackbird (*Euphagus cyanocephalus*), and Bullock's oriole (*Icterus bullockii*). Although numbers have declined in recent years, the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*) nests in the willow habitat on the refuge. Small and medium-sized mammals using riparian habitats include deer mouse (*Peromyscus maniculatis*), meadow vole (*Microtus pennsylvanicus*), long-tailed vole (*Microtus longicaudus*), masked shrew (*Sorex cinereus*), western harvest mouse (*Reithrodontomys megalotis*), least chipmunk (*Tamias minimus*), beaver

(*Castor canadensis*), porcupine (*Erithizon dorsatum*), and raccoon (*Procyon lotor*). Bat species such as Yuma myotis (*Myotis yumanensis*) and little brown bat (*Myotis lucifugus*) are also regularly found in riparian habitats. Large mammals include mule deer (*Odocoileus hemionus*) and elk (*Cervus canadensis*). Amphibians using riparian habitats include chorus frog (*Pseudacris triseriata*), northern leopard frog (*Rana pipiens*), and tiger salamander (*Ambystoma tigrinum*), as well as reptiles, including the western terrestrial garter snake (*Thamnophis elegans*).

Wetland Habitat on the Refuge

The refuge supports a diversity of wetland types, including temporary or ephemeral wetlands interspersed with native shrublands, semi-permanent wetlands, such as oxbows along the Rio Grande, and created wetlands. Collectively, these wetlands support a range of plant communities that vary in composition and structure, including open water with aquatic vegetation, short-emergent, tall-emergent, playa, and transitional communities dominated by saltgrass (*Distichlis spicata*).

Short-emergent, or wet meadow, habitat is the most abundant wetland type on the refuge, encompassing approximately 5,426 acres. Grasses and grass-like plants characterize the wet meadow habitat, which is seasonally flooded to depths less than 15 inches. The dominant species in this habitat are cool-season plants that require water early in the growing season. Most of the short-emergent habitat on the refuge is dominated by a dense growth of Baltic rush, although other species such as spikerush (*Eleocharis* spp.), alkali muhly (*Muhlenbergia asperifolia*), curly dock (*Rumex crispus*), Calamagrostis spp., foxtail barley (*Hordeum jubatum*), short-awn foxtail (*Alopecurus aequalis*), and sedges (*Carex* spp.) are locally abundant. Invasive weeds such as Canada thistle (*Cirsium arvense*) and tall whitetop (*Lepidium latifolium*) are present in some areas.

Tall-emergent habitat on the refuge, encompassing approximately 1,561 acres, is associated with semi-permanent to permanent water that is usually more than 15 inches deep. Cattails (*Typha* spp.), hardstem bulrush (*Schoenoplectus acutus*), and phragmites (*Phragmites australis*) dominate these deeper water areas. This vegetative community is typically found lining edges of ponds, levees, and canals, or as large contiguous patches or islands in areas of open water.

Characteristic Wildlife

Wetlands in the SLV, particularly those found on the refuge, are vitally important to birds because they provide migration, foraging, resting, and breeding habitat. More than 100 bird species have been documented using the wetland habitats on the refuge complex. At least 11 species of waterfowl nest on the refuge, such as Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), gadwall (*Anas strepera*), blue-winged teal (*Anas discors*), cinnamon teal (*Anas cyanoptera*), green-winged teal (*Anas crecca*), northern shoveler (*Anas clypeata*), northern pintail (*Anas acuta*), redhead (*Aythya americana*), American wigeon (*Anas americana*), and ruddy duck (*Oxyura jamaicensis*). Many shorebirds use refuge wetlands, especially short-emergent and transition habitats, for foraging and nesting. American avocet (*Recurvirostra americana*), black-necked stilt (*Himantopus mexicanus*), Wilson's phalarope (*Phalaropus tricolor*), Wilson's snipe (*Gallinago delicata*), killdeer (*Charadrius vociferous*), and spotted sandpiper (*Actitis macularia*) have been documented nesting on the refuge. White-faced ibis (*Plegadis chihi*) forage extensively in wetland habitats on the refuge, as do snowy egret (*Egretta thula*) and black-crowned night-heron (*Nycticorax nycticorax*). Species such as American bittern

(*Botaurus lentiginosus*), sora (*Porzana carolina*), and Virginia rail (*Rallus limicola*) also nest and forage in wetland habitats on the refuge. Common yellowthroat, yellow-headed blackbird (*Xanthocephalus xanthocephalus*), red-winged blackbird (*Agelaius phoeniceus*), western meadowlark (*Sturnella neglecta*), marsh wren (*Cistothorus palustris*), savannah sparrow (*Passerculus sandwichensis*), and vesper sparrow (*Pooecetes gramineus*) can be found foraging and nesting in and around the wetland habitats.

Many species of mammals use wetland habitat on the refuge, including elk, deer, coyote (*Canis latrans*), muskrat (*Ondatra zibethicus*), weasel (*Mustela* spp.), deer mice, and meadow vole. The SLV is a cold mountain desert and, as such, supports a limited number of amphibians and reptiles; however, tiger salamander (*Ambystoma tigrinum*), chorus frog (*Pseudacris triseriata*), leopard frog (*Rana pipiens*), Woodhouse's toad (*Bufo woodhousii*), plains spadefoot toad (*Scaphiopus bombifrons*), great plains toad (*Bufo cognatus*), and western terrestrial garter snake (*Thamnophis elegans*) are found on the refuge.

Upland Habitat on the Refuge

Salt desert shrub communities and dominate most upland habitats on the refuge. Fourwing saltbush (*Atriplex canescens*), shadscale (*Atriplex confertifolia*), and winterfat (*Krascheninnikovia lanata*) may also be abundant locally. Native bunchgrasses occupy the understory, but the distribution and density of these species is dependent on precipitation. Typical species include Indian ricegrass (*Oryzopsis hymenoides*), alkali sacaton (*Sporobolus airoides*), western wheat grass (*Pascopyrum smithii*), needle and thread (*Hesperostipa comata*), ring muhli (*Muhlenbergia torreyi*), and blue grama (*Bouteloua gracilis*). Native forbs are abundant in the understory during years of high precipitation.

Characteristic Wildlife

Bird diversity and densities tend to be relatively low in semi-desert shrubland and other upland habitats because of structural and floristic simplicity. Species common to these upland habitats are mourning dove (*Zenaida macroura*), western meadowlark, loggerhead shrike (*Lanius ludovicianus*), sage thrasher (*Oreoscoptes montanus*), and Brewer's sparrow (*Spizella breweri*). Areas where grasses dominate have the potential to support rare grassland dependent species such as vesper sparrow.

Many mammal species use upland habitats on the refuge, including elk, white-tailed jackrabbit (*Lepus townsendii*), Wyoming ground squirrel (*Spermophilus elegans*), northern grasshopper mouse (*Onychomys leucogaster*), northern pocket gopher (*Thomomys talpoides*), Ord's kangaroo rat (*Depodomys ordii*), plains pocket mouse (*Perognathus flavescens*), silky pocket mouse (*Perognathus flavus*), and thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*).

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

For more information about the affected environment, please see Chapter 2 of the San Luis Valley NWR Complex CCP and EIS, available at www.fws.gov/mountain-prairie/refuges/planningPDFs/SLV/SLV%20CCP%20HIGH%20RES.pdf.

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 covers 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 would 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
- impacts 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 which are caused by the action and occur at the same time and place.
- *Indirect effects* are those which are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable.
- *Cumulative impacts* result from the incremental effects 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.

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>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p><u>Alternative B (No Action)</u> <i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|---|---|---|
| <p>Species to be Fished</p> | | |
| <p>Recreational fishing would be open for the seasons and species as regulated by CPW. Some areas upstream and downstream of the Chicago dam would be seasonally closed during the growing and breeding season, occurring April 15 to September 1st annually, to reduce effects to willow and cottonwood regeneration and human disturbance for the federally endangered southwest willow flycatcher. Fishing pressure would maintain itself as the availability of fish increase and decrease with wet and dry cycles, whether managed or naturally occurring.</p> <p>The Rio Grande is currently open to fishing on other public lands as well as surrounding private land. The composition of fish species that may occur in the reaches of the Rio Grande on the refuge include common carp, tench, northern pike, black bullhead, fathead chub, Rio Grande chub, white sucker, and possibly brown trout and largemouth bass.</p> | <p>Recreational fishing could potentially cause negative effects to fish populations if it occurs at unsustainably high levels or is not managed properly. Potential effects from fishing include direct mortality from harvest and catch and release, injury to fish caught and released, changes in age and size class distribution, changes in reproduction capacity and success, loss of genetic diversity, altered behavior, and changes in ecosystems and food webs (Cline et al. 2007; Lewin et al. 2006).</p> <p>Of the species allowed to be fished in waters on the refuge, only common carp, northern pike, and bullhead are likely to be taken. For these species, quantified population estimates do not exist on the refuge because these species are not a focus of conservation or sport fishing priorities for CPW. However, general observations reveal that these species are plentiful in the waters of the refuge. There is a possibility that trout species (rainbow and brown) could be taken. However, warmer water temperatures and altered river flows highly restrict trout species from occurring in waters on the refuge.</p> <p>In general, anglers tend to target older and larger fish which often have greater reproductive capacity. Selective removal could reduce the population's overall reproductive success. Catch and release fishing could also affect individual fish, including injury and immediate or delayed mortality. The likelihood of mortality depends on the type of fishing gear used, where the fish was hooked, how the fish is handled, angler experience, and environmental conditions. Fish caught and released with nonlethal injuries could be exposed to parasites, or bacterial or fungal infections. Handling fish also increases stress, which could lead to changes in physiology and behavior (Lewin et al. 2006).</p> | <p>Under this alternative, all refuge waters would continue to be closed to recreational fishing. Disadvantages of this alternative include inability to promote a priority use of the Refuge System. There would be no additional cost or economic improvements associated to surrounding towns. There would be no additional effects to fish species.</p> |

| <p style="text-align: center;">Affected Resources</p> | <p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|--|--|--|
| <p>Of these species, it is anticipated that northern pike and common carp (both non-native species to this area) would be the most popular species sought after by anglers. Other species would most likely be incidentally caught in low numbers.</p> | <p>Since fishing generally removes individuals from a population, at high levels it could lead to reduced population sizes and loss of genetic diversity. The loss of genetic diversity could ultimately reduce a population’s fitness, resilience, and ability to adapt to environmental changes and stressors. The higher the fishing mortality, the greater these types of effects would be (Lewin et al. 2006).</p> <p>While fishing does remove individuals from the population, we, the Service, do not expect that projected fishing pressure would affect the refuge’s fish population as a whole. Additionally, it is predicted that the species most affected would be common carp and northern pike, both of which are non-native.</p> <p>Furthermore, because of their behavior, carp are known to increase the ammonia content, the turbidity or level of sedimentation in the water, and the biomass of phytoplankton, that is, algae (Badiou and Goldsborough 2015). Excess levels of algae could deplete oxygen, kill aquatic vegetation, and leach toxins into the waterway (Anderson et al. 2002). It is possible that increased mortality of common carp by fishing could help mitigate some of their effects and improve habitat for other fish species and aquatic vegetation. However, it is unknown whether fishing would decrease carp populations enough to have an effect.</p> <p>Additionally, anglers are most likely to target northern pike, which are known to feed opportunistically on a variety of fish, their own species, leeches, frogs, crayfish, mice, muskrats, and ducks (Harvey 2009). Increased fishing could potentially remove some of the pressure on the population of these prey species from the northern pike. However, there is some research showing that culling northern pike has backfired by decreasing the intraspecific competition and cannibalism rates (Harvey 2009).</p> <p>The refuge’s fishing pressure is projected to be sustainable. We estimate less than 200 angler use days annually. Although it is difficult to estimate angler success, it is anticipated that fewer than 200 common carp, 40 northern pike, and less than 20 bullhead would be removed from waters on the refuge. This constitutes a small percentage of the overall population size for these species. The proposed area to be open for fishing comprises only a small part of the entire Rio Grande River, and it is predicted that the population throughout the water way would replace the removed fish. Anglers would be required to abide by state laws and regulations besides the seasonal closure of some fishing areas by the refuge.</p> | |

| <p style="text-align: center;">Affected Resources</p> | <p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p style="text-align: center;"><i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p style="text-align: center;"><i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|--|--|---|
| <p>Other Wildlife and Aquatic Species</p> | | |
| <p>The diverse mix of wetland, riparian, and upland habitat on the refuge provide for the habitat needs of many assemblages of mammals, reptiles, amphibians, and birds, including the federally endangered southwestern willow flycatcher. More than 100 species of birds have been documented in the various habitats on the refuge. Some of these birds are year-round residents, but many pass through the refuge during migration to and from wintering and breeding grounds, while others come to the refuge to breed or spend the winter.</p> <p>Habitats on the refuge support many species of small, medium, and large mammals such as various rodent species, porcupines, skunk, and raccoons, as well as mule deer and elk. Although the altitude, climate, and relative isolation of the SLV limits the number of amphibians and reptiles found on the refuge, some of the more common species include western chorus frog, northern leopard frog, and western terrestrial garter snake.</p> <p>CPW is stocking Rio Grande chub, a state species of special concern, into rivers including the Rio Grande. The refuge supports the protection and perpetuation of Rio Grande chub populations.</p> | <p>The primary habitat type where sport fishing activities would occur is riparian habitat. Although riparian habitat occupies less than 1 percent of the land area in the western U.S., it is disproportionately important for wildlife, in general, and birds, in particular (Krueper 1993; Ohmart 1994; Pase and Layser 1977; Szaro 1980; Thomas et al. 1979). In the Southwest, riparian habitats support a higher diversity of breeding birds than all other western habitats combined (Anderson and Ohmart 1977; Johnson and Haight 1985; Rosenberg et al. 1991; and Skagen et al. 1998). As such, potential disturbance to wildlife, particularly birds, is certainly of concern.</p> <p>Fishing has the potential to disturb wildlife, particularly birds, that use riparian habitats within or immediately near the designated sport fishing area. It is anticipated that “trailing” would occur from anglers walking along the riverbanks, concentrating human activities to these areas.</p> <p>Disturbance from fishing activities, such as walking along the riverbanks or wading in the river, could have both immediate and long-term effects on birds. The immediate response of many birds to disturbance would be a change in behavior, such as cessation of foraging, fleeing, or altering reproductive behavior (Knight and Cole 1991). Over time, energetic losses from flight, decreased foraging time, or increased stress levels would come at the cost of energy resources needed for individuals’ survival, growth, and reproduction (Geist 1978). In addition, the presence of humans in wildlife habitat could result in animals avoiding parts of their normal range (Gander and Ingold 1997; Hamr 1988). This loss of otherwise suitable habitat could be sufficient to reduce the carrying capacity of some habitats for wildlife. Disturbance from humans could also affect nest defense if birds are continually flushing away from nesting sites.</p> <p>Many studies have documented altered bird communities in association with human disturbance. For example, Miller et al. (1998) found that the composition and abundance of bird species were altered near areas where recreational activity occurred, such as in trails, in both grassland and forest ecosystems.</p> | <p>Because there would be no fishing under this alternative, there would be negligible effects to other wildlife and aquatic species. Because northern pike are a predatory species, predation rates on other fish species and amphibians would remain unchanged. Common carp are known to reduce water quality and compete for resources in some situations. Under this alternative, effects on water quality and competition levels would remain unchanged.</p> |

| <p style="text-align: center;">Affected Resources</p> | <p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|--|---|--|
| <p>Other Wildlife and Aquatic Species continued</p> | <p>Some species, such as vesper sparrow, western meadowlark, grasshopper sparrow, western wood-pewee, pygmy nuthatch, solitary vireo, and chipping sparrow, did not occur or occurred in lower densities, near areas where human activity was common, like trails, whereas some species, mainly generalists, were more abundant. This study showed that most bird species were found in reduced numbers. The “zone of influence” of surrounding human activity appeared to be approximately 75 meters, however, Townsend’s solitaires appeared even more sensitive as they exhibited reduced numbers as far as 100 meters. Results described in Miller et al. (1998) concur with those of Hickman (1990), who found that nature trails, where human activity was higher, altered bird community composition. He reported that habitat edge species, such as blue jays, American robins, and brown-headed cowbirds, were more abundant on sites with human activity on nature trails.</p> <p>Kangas et al. (2010) also found that the occurrence and composition of a bird community was altered because of visitor use. In their study, ground-nesting birds were found in lower abundance near highly visited areas and seemed to be sensitive to human disturbance. Although birds nesting in trees and shrubs appeared to be more tolerant to human disturbance than ground nesters, they still showed decreased occurrence in locations with high levels of human disturbance. Similarly, Heil et al. (2007) found that areas of higher human use altered avian communities, guilds, and populations. Their research discovered that human use of trails negatively affected 6 of 28 bird species (four of which were species of conservation concern). Because habitat condition did not differ between areas with trails and without, they concluded that human use of the area decreased habitat quality.</p> <p>Additionally, van der Zande et al. (1984) reported a negative relationship between the intensity of recreation occurring on trails and the density for 8 of 13 avian species, with some being more sensitive than others. Similarly, van der Zande and Vos (1984) found that 11 of the 12 most common bird species exhibited lower numbers in areas where recreational use was more common than in areas with fewer visitors.</p> | |

| <p style="text-align: center;">Affected Resources</p> | <p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p><i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p><i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|--|---|--|
| <p>Other Wildlife and Aquatic Species continued</p> | <p>For some birds, human intrusion, such as, the presence of humans in the environment, can reduce abundance, species richness, and community composition (Kangas et al. 2010; Riffell et al. 1996), uncouple foraging relations within guilds (Skagen et al. 1991), reduce hatching and fledging success (Safina and Burger 1983), and compromise nest defense (Keller 1989). Reijnen and Foppen (1994) found that in areas where disturbance affected primary song, birds appeared reluctant to establish nesting territories. Gutzwiller et al. (1994) reported that even a single pedestrian moving through a bird's territory was enough to reduce the occurrence and consistency of primary song. Because their songs are an integral part of breeding behavior, such as territory defense and mate attraction, it is reasonable to believe that birds are sensitive to human disturbance and may be reluctant to establish nest sites where human activity is frequent (Gutzwiller et al. 1997).</p> <p>Not only has it been shown that areas of higher human activity can alter avian abundance and community composition, but rates of nest success could be affected. For example, Miller et al. (1998) found elevated rates of nest predation near trails versus further away. Similarly, in riparian habitats, Miller and Hobbs (2000) found that corvids, such as black-billed magpies, caused greater rates of nest predation near recreational trails versus further away, possibly as a result of this species being attracted to areas of human use (Knight and Temple 1995).</p> <p>Because of the preponderance of scientific literature documenting the effects of human activities on wildlife and birds, we expect minor to moderate short and long-term negative effects on the species richness, abundance, and breeding success as a result of the recreational sport fishing program. However, this could result in only negligible effects as the expected the number of anglers would be low.</p> | |

| Affected Resources | <u>Alternative A (Proposed Action)</u> <i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i> | <u>Alternative B (No Action)</u> <i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i> |
|--|---|--|
| Other Wildlife and Aquatic Species continued | <p>Mitigation measures to reduce the potential of human disturbance on riparian birds, especially the southwestern willow flycatcher, and other wildlife species include a seasonal closure (from April 15 to September 1, annually) of a part of the designated sport fishing area. A seasonal closure would also reduce the trampling and destruction of willow and cottonwood plants (southwestern willow flycatcher habitat), allowing these plant species a greater opportunity to reproduce, expand, and reach full stature. As such, the effects of angler disturbance are expected to be negligible because of the seasonal closure and low (less than 200 angler use days annually) fishing pressure.</p> <p>CPW is restocking the Rio Grande chub, a native fish species to the river. Historically, they were one of the most abundant species in Rio Grande basin, but have disappeared because of the introduction of nonnatives and land management practices (Rees et al. 2005). Nonnatives such as brown trout and northern pike have been known to feed on them, while common carp and white sucker can increase competition for resources (Rees et al. 2005). Increased fishing of common carp and northern pike could relieve some of the pressure caused by interspecific competition and predation on their populations.</p> | |
| Threatened and Endangered Species and Other Special Status Species | | |
| <p>The southwestern willow flycatcher is a small neotropical migrant whose breeding habitat is restricted to relatively dense stands of trees and shrubs in riparian ecosystems in the arid southwestern United States (USFWS 2002). The southwestern willow flycatcher was listed as federally endangered in 1995 (USFWS 1995). All riparian habitat on the refuge is designated critical habitat for southwestern willow flycatcher.</p> | <p>As described above, the primary habitat type where sport fishing activities would occur is riparian habitat. Although riparian habitat occupies less than 1 percent of the land area in the western U.S., it is disproportionately important for wildlife generally, and birds in particular (Krueper 1993; Ohmart 1994; Pase and Layser 1977; Szaro 1980; Thomas et al. 1979). In the Southwest, riparian habitats support a higher diversity of breeding birds than all other western habitats combined (Anderson and Ohmart 1977, Johnson and Haight 1985, Rosenberg et al. 1991; Skagen et al. 1998). As such, potential disturbance to wildlife, particularly birds, is certainly of concern.</p> | <p>Because there would be no fishing allowed under this alternative, there would be no effects to threatened and endangered species or other special status species.</p> |

| <p style="text-align: center;">Affected Resources</p> | <p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p style="text-align: center;"><i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p style="text-align: center;"><i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|---|---|--|
| <p>The yellow-billed cuckoo (YBC) lives in wooded habitat that offers dense cover and water nearby, including woodlands with low, scrubby vegetation and dense thickets along streams and marshes. In the Southwest, YBC are rare breeders in riparian woodlands of willows and cottonwoods. No YBC have been documented on the refuge. Based on published habitat requirements, suitable habitat does not exist on the refuge for yellow-billed cuckoos.</p> | <p>Because southwestern willow flycatchers rely almost exclusively on relatively dense stands of trees and shrubs for breeding, foraging, and migration, any potential negative effects of a recreational sport fishing program on either the physical destruction (breaking or destroying existing plants), reproduction and spread (seedling establishment and growth), or disturbance by humans is of high concern.</p> <p>It is anticipated that trails would be developed, through “trailing,” along the banks of the Rio Grande as anglers walk to and from fishing spots. As trails are formed, trampling and removal of vegetation are generally the first consequences (Roovers et al. 2004). Human use of trails often increases the bulk density of the soil, which decreases soil porosity and changes moisture content, aeration, and the availability of soil nutrients in ways that contribute to further losses of existing vegetation along trails and restrict new plant establishment (Hall and Kuss 1989; Kuss and Hall 1991; Kuss 1983; Weaver and Dale 1978). Because it is anticipated that trail formation would be primarily restricted to the bank of the river, negligible to minor effects would occur throughout the entire riparian area.</p> <p>As described above, many studies have documented changes to bird communities and reproductive success as a result of effects from human disturbance. Although there is a lack of information relating directly to southwestern willow flycatcher, it is reasonable to believe that this specialist species would show similar responses, such as lower abundance and breeding success, as other avian species.</p> <p>It is anticipated that there would be minor to moderate short- and long-term negative effects on southwestern willow flycatchers.</p> <p>Because the refuge does not contain suitable habitat for yellow-billed cuckoos, the proposed action alternative is not expected to affect this species.</p> | |

| <p style="text-align: center;">Affected Resources</p> | <p style="text-align: center;"><u>Alternative A (Proposed Action)</u></p> <p style="text-align: center;"><i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p style="text-align: center;"><u>Alternative B (No Action)</u></p> <p style="text-align: center;"><i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|--|---|--|
| Vegetation | | |
| <p>Refuge vegetation is comprised of three main categories: (1) riparian areas, (2) wetlands, and (3) uplands. Riparian areas are plant communities contiguous to and affected by surface or subsurface hydrologic features of perennial or intermittent rivers, streams, or drainage ways. Riparian areas on the refuge are primarily restricted to 229 acres along the Rio Grande and are dominated by multiple species of willows, cottonwood, and various grasses, sedges, Baltic rush, and forbs. Many small and medium-sized mammals use riparian habitat. Large mammals such as mule deer and elk, as well as amphibians, also use the riparian habitat.</p> <p>The refuge has multiple wetland types, and they feature a variety of vegetation such as cool season grasses, cattails, bulrush, and invasive weeds.</p> <p>Salt desert shrub communities comprised primarily of rubber rabbitbrush and greasewood typically dominate the upland habitat on the refuge.</p> <p>The refuge has put efforts into restoring willow and cottonwood along the riparian areas. They provide important habitat for the southwestern willow flycatcher and a variety of other species.</p> | <p>Opening fishing near the dam could cause trampling of vegetation and erosion from foot traffic as anglers walk to and access the Rio Grande and Chicago ditch. Increased foot traffic could lead to barren earth, compact soil, erosion, and increased sedimentation in waterways (O’Toole et al. 2009). Soil compaction often negatively affects the ability of plants to absorb water, which in turn leads to smaller leaf area and reduced levels of photosynthesis (Kozlowski 1999). Severe compaction can force plant roots into an anaerobic state because of impaired respiratory ability and can prevent seed germination and growth (Kozlowski 1999). Erosion of soil from foot traffic on trails and the riverbank could affect and alter the riparian vegetation and habitat and contribute to sedimentation.</p> <p>Another effect of vegetation trampling is reduced height, density, and diversity of the plant community (O’Toole et al. 2009). It is possible that increased traffic on current paths and creation of new paths for water access by anglers could contribute to the reduction of willow, cottonwood, and other riparian vegetation that species, such as the endangered southwestern willow flycatcher, require.</p> <p>Disturbed habitats associated with trails could encourage colonization and spread of invasive plant species, which are often adapted to disturbance (Flory and Clay 2009; Hobbs and Huenneke 1992; Pauchard and Alaback 2006). The invasion of habitats by invasive plant species is one of the leading threats to biodiversity and could alter ecosystem structure and function (Braithwaite et al. 1989; Vitousek et al. 1987; Walker and Smith 1997; Yurkonis et al. 2005).</p> <p>The refuge would mitigate effects from increased foot traffic by closing fishing in some of the area upstream and downstream of the Chicago Dam. A part of the sport fishing area would be closed from April 15 to September 1 annually to protect vegetation regeneration during the growing period. Part of the proposed trail (Malm Trail) has a pre-existing road. Use of this road for fishing access should not create additional effects to vegetation. Because the proposed area to be opened for fishing is small, the overall effect would be minimal.</p> | <p>There would be no effects to vegetation, because no fishing would be allowed and so there would be no additional human disturbance on vegetation.</p> |

| Affected Resources | <u>Alternative A (Proposed Action)</u> <i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i> | <u>Alternative B (No Action)</u> <i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i> |
|--|---|---|
| Geology and Soils | | |
| <p>The refuge has 29 soil series and land types, with three main associations. The Alamosa-Vastine-Alluvial association is the primary type surrounding the Rio Grande River, and covers the largest amount of area on the refuge. Deep, dark soils with a loamy and occasionally sandy or clay texture characterize association. This soil type is typical of areas that are flooded in the spring and that feature a high water table.</p> | <p>The creation of trails to access the river could cause some soil compaction and erosion. However, areas open to fishing would already include the Malm Trail and an access road, or would be seasonally closed during the growing season. We expect minimal effects on geological resources or soils.</p> | <p>There would be no additional effects to geological resources or soils.</p> |
| Water Resources | | |
| <p>The Rio Grande River passes through the refuge, and the Chicago Dam is used to divert the refuge's water right into the Chicago Ditch.</p> | <p>Fishing and the creation of trails near the river could lead to bank destabilization and erosion, both of which contribute to river sedimentation and other changes in river morphology. While this is a potential effect, the proposed sport fishing program should result in negligible to minor effects to bank destabilization and erosion because seasonal closures during periods of higher river flows, that is, spring and summer, would restrict access to areas that are most susceptible.</p> | <p>There would be no additional effects to water resources.</p> |

Key: CPW = Colorado Parks and Wildlife; NWR = National Wildlife Refuge; SLV = San Luis Valley; U.S. = United States; YBC = yellow-billed cuckoo

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></p> <p><i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p><u>Alternative B (No Action)</u></p> <p><i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|--|---|---|
| <p>The Alamosa NWR has an estimated average 3,975 visitor use days. Visitors enjoy a variety of recreational activities related to the six wildlife-dependent recreational uses, hunting, fishing, wildlife observation, photography, interpretation, and environmental education, which the Improvement Act identifies as the priority uses.</p> <p>There are opportunities for waterfowl, upland bird, and small game hunting in designated areas on the refuge. The four-mile Rio Grande Nature Trail, the Bluff Overlook Trail, and auto tour route all provide wildlife viewing and self-guided interpretation opportunities for visitors on the refuge. There are no areas now open to fishing nor significant environmental education programs on the refuge.</p> | <p>Under the proposed action, an increase of trail use near the fishing area would increase slightly on the Malm Trail. However, it is anticipated there would be negligible additional effects to current recreation from anglers. The Malm Trail would only allow foot travel to reduce soil erosion and noise pollution and would create new wildlife viewing and photography opportunities. We expect little to no negative effects on current visitor use and experience, because the recreation opportunities and areas of the refuge open to visitors are geographically separate from the proposed sport fishing area. In addition, the proposed action could positively affect the visitor use and experience on the refuge by offering a new opportunity.</p> | <p>There would be no additional effects to visitor use and experience. However, not conducting a recreational sport fishing program would not provide an additional wildlife-dependent visitor use opportunity.</p> |

Key: NWR = National Wildlife Refuge

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>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p><u>Alternative B (No Action)</u> <i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|--|--|--|
| <p>Alamosa NWR contains 100 or more recorded historical and archeological sites. These sites contain artifacts and structures that span a time frame up to 12,000 years ago.</p> | <p>We expect no effects to cultural resources in the proposed area because of the pre-existing disturbed state of that land because of the past installation of the Chicago Ditch and maintenance road.</p> | <p>There would be no additional effects to cultural resources.</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.

| Affected Resources | <u>Alternative A (Proposed Action)</u> <i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i> | <u>Alternative B (No Action)</u> <i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i> |
|---------------------------|--|---|
| Land Use | | |
| | <p>Under the proposed action, an increase in use of refuge trails and roads would occur. Foot access to the sport fishing area would occur on the proposed Malm Trail. However, the number of anglers anticipated to access the sport fishing area along the trail would be minimal, resulting in a minor increase in the total number of people using this trail. Additionally, the trail currently exists as a refuge administrative access road. We expect no additional negative effects on this trail as a result of anglers accessing the sport fishing area. Vehicle access to the sport fishing area would occur on an existing gravel administrative access road used frequently by refuge staff. No additional negative effects to this road are expected by the anticipated increased level of vehicle use by anglers. A parking area on the south side of the Chicago Dam is expected to be developed. However, this area is mostly graveled already, and refuge staff use it as a parking area and a vehicle “turn around” area. Additional signage and parking area fencing would be required. We expect negligible negative effects as a result of parking lot development.</p> | <p>There would be no change in use of refuge facilities (roads, trails, parking lots).</p> |

| Affected Resources | <u>Alternative A (Proposed Action)</u> <i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i> | <u>Alternative B (No Action)</u> <i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i> |
|---------------------------|---|---|
| Administration | | |
| | <p>Administering the fishing program would annually require staff time from the refuge managers, senior biologist, maintenance workers, administrative assistant, and law enforcement officers to coordinate with CPW staff; develop an informational publication with regulations; produce news releases; respond to angler inquiries; conduct angler and visitor outreach; reduce conflicts among users; conduct law enforcement; maintain boundary posting and parking areas; monitor effects to wildlife, habitat, and visitor use; and make sure of public safety. The annual cost of the refuge complex's proposed fishing program is estimated to be \$10,000 (0.77 percent) of the overall refuge complex's operating budget of approximately \$1,300,000. This cost covers staff and operating expenses for refuge law enforcement, refuge staff activities associated with evaluating potential adverse effects to other refuge resources, as well as preparing annual publications and special signage, managing habitat conditions and access, and monitoring recreational fishing activities.</p> <p>The proposed sport fishing program would require additional signage, potential new infrastructure, such as parking area development, and other start-up costs. Fully carrying out this proposed sport fishing program would become possible only with an increased budget. During the first few years, starting the program would be done with existing staffing, so it would redirect effort from other high-priority habitat and public use programs.</p> | <p>Under this alternative, there would be no additional costs or staff time.</p> |

Key: CPW = Colorado Parks and Wildlife; 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>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i></p> | <p><u>Alternative B (No Action)</u> <i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i></p> |
|--|---|---|
| <p>Local and Regional Economies</p> | | |
| <p>According to the data provided by the U.S. Census, the population of Alamosa County was 15,445 in 2010, with a predicted population of 16,683 (8.1 percent growth rate) in 2018. The town of Alamosa population was predicted to be 9,997 in 2018, a 12.9 percent increase from the 8,780 people recorded in the 2010 census. From 2010 to 2025, the population of the SLV is projected to increase by 14 percent, indicating slow growth compared to state growth rates for Colorado (26 percent increase).</p> <p>Residents in the City of Alamosa tend to be younger, less affluent, and less educated than the average person in Alamosa County and the state of Colorado. The number of people reported in poverty in Alamosa City is higher than Alamosa County and significantly higher than the average for Colorado. The SLV is one of the most impoverished regions in Colorado, with some counties almost half the state average income.</p> | <p>Because of the low socioeconomic status of the local community and surrounding counties, opening fishing on the refuge could provide a food source and low expense recreation opportunities that would positively affect the local economy. The proposed fishing area would be near the town, which could significantly cut the travel costs and time commitment required to reach fishing spots in the surrounding mountains.</p> <p>Additionally, because of the majority Latino population in Alamosa and SLV, this alternative could create opportunities for underrepresented populations to take part in fishing.</p> <p>In the 2011 National Survey of Fishing, Hunting, and Wildlife Associated Recreation, approximately 767,000 residents and non-residents fished in Colorado. The total expenditures for fishing-related activities in Colorado was equal to \$648,563,000 in 2011. Visitors participating in this use on the refuge could provide some economic improvement to local economies by purchasing goods and services at businesses around the refuge. However, because of a variety of nearby choices for fishing that feature more desirable fish, such as trout, opening fishing on the refuge would likely have minimal positive effect on the amount of visitors brought into the region.</p> <p>Overall, we expect minimal positive effects on the local economy and no negative effects.</p> | <p>There would be no additional effects to the socioeconomic status of the area.</p> |

| Affected Resources | <u>Alternative A (Proposed Action)</u> <i>Sport fishing opportunities would be opened on Alamosa NWR. Waters that can sustain a recreational fishing program, that pose minimal damage to sensitive habitats or species, and that have safe public access points would be opened to fishing, in accordance with state regulations and refuge-specific conditions.</i> | <u>Alternative B (No Action)</u> <i>Current management of Alamosa NWR would continue and the refuge would remain closed to fishing.</i> |
|--|---|---|
| Economically in 2009, 18 percent of employment was in the public administration sector; 11 percent of employment was in arts, entertainment, recreation, and accommodations and food service; and the third highest sector with 11 percent of total employment was agriculture, forestry, fishing, hunting, and mining. | | |
| Environmental Justice | | |
| 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 identifying and addressing disproportionately high or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. | 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 the low income and minority communities within the City of Alamosa, as well as the entire SLV, as potentially being positively affected by the proposed action. | There would be no additional effects to the low income and minority communities within the City of Alamosa, as well as the entire SLV. |

Key: NWR = National Wildlife Refuge; SLV = San Luis Valley; U.S. = United States

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 cumulative impacts report.

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 |
|---|--|
| Fishing | |
| <p>CPW supports new recreational sport fishing opportunities for resident and non-resident anglers. Opening sport fishing on Alamosa NWR would provide anglers, especially SLV residents, new fishing opportunities near the City of Alamosa.</p> | <p>In general, sport fishing would be consistent with state regulations about proper licensing rules, species, seasons, and method of take. Although other species of fish would be available to anglers, common carp and northern pike would be the most sought after because neither species has any bag, possession, or size limits. These non-native species provide unique and exciting fishing opportunities for anglers that are not found in the surrounding “high mountain” streams and rivers.</p> <p>Opening new recreational sport fishing opportunities on the refuge should have no to negligible effects on overall fish numbers or distribution in the Rio Grande. Few to no trout species are expected to be taken on the refuge. Because trout are not a species that would be expected to occur in waters on the refuge, no additional fishing pressure would occur for trout species. Although fishing pressure for common carp, northern pike, and bullhead would increase, it is expected to be minimal because of the limited number of anglers expected (less than 200 angler use days), coupled with the small overall area that is proposed to be open for recreational sport fishing.</p> |
| Other Wildlife-Dependent Recreation | |
| <p>Because the area encompassing the proposed fishing area is currently closed to public access, any increase in angler presence could affect the habitat and wildlife resources in the area.</p> | <p>Under the proposed action, an increase in foot traffic on the proposed Malm Trail, which would provide access to the fishing area would most likely occur. This could result in increased human disturbance along the trail. Access to parts of the designated fishing area would be closed during the growing and breeding season from April 15 to September 1 to reduce soil erosion and compaction, trampling of vegetation, and disturbance to wildlife, especially the southwestern willow flycatcher. Some anglers might walk off-trail to access the fishing area, creating new trails, trampling new vegetation, and affecting drainage. However, because anglers would not use the same path every time, we expect those effects to be minimal.</p> |

| Other Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment | Descriptions of Anticipated Cumulative Impacts |
|---|---|
| | <p>Most likely, level of use would not be large enough to create significant negative effects. Besides the Malm Trail, access to the designated fishing area would include vehicle access on an existing administrative access road to a proposed parking area near the Chicago Dam. The ease of vehicle access would result in an increase in human use of the area. However, it is not anticipated that levels of angler participation would be high, resulting in fairly low to moderate levels of human disturbance in the designated fishing area.</p> <p>In the 2011 National Survey of Fishing, Hunting, and Wildlife Associated Recreation, approximately 767,000 residents and non-residents fished in Colorado. The total expenditures for fishing-related activities in Colorado was equal to \$648,563,000 in 2011. Visitors participating in this use on the refuge could provide some economic improvement to local economies by purchasing goods and services at businesses around the refuge. However, because of a variety of nearby choices for fishing that feature more desirable fish, such as trout, opening fishing on the refuge would likely have minimal positive effect on the number of visitors brought into the region.</p> |
| Development and Population Increase | |
| <p>According to the data provided by the U.S. Census, the City of Alamosa population was predicted to be 9,997 in 2018, a 12.9 percent increase from the 8,780 people recorded in the 2010 census. From 2010 to 2025, the population of the SLV is projected to increase by 14 percent, indicating slow growth compared to state growth rates for Colorado (26 percent increase).</p> | <p>Alamosa City, Alamosa County, and surrounding areas all feature a small base population in addition to their slower growth rates. We expect negligible increases in fishing pressure as a result of these low growth rates. These lower growth rates, and the associated limited development pressure, would result in negligible effects to fish habitat quality throughout the drainage.</p> <p>Additionally, there are multiple fishing areas within a reasonable distance that have more desirable fish, such as trout. These locations would likely draw most anglers even as the area population increases. Furthermore, CPW was given the power to regulate the price of fishing licenses based on management costs and resource use (CPW 2019). This should allow the state to regulate and respond to the increase in fishing and population.</p> |
| Use of Lead Tackle | |
| | <p>Although lead sinkers are legal to use in Colorado, it would be discouraged in refuge waters through outreach with anglers. Anglers may choose to use non-lead alternatives such as tin, steel, or ceramic sinkers. This could reduce the effects of lead to wildlife and the environment. The overall effect of using lead sinkers in refuge waters is anticipated to be negligible due to the low number of anglers expected and would add little to the accumulation of lead in the environment.</p> |

| Other Past, Present, and Reasonably Foreseeable Activity Impacting Affected Environment | Descriptions of Anticipated Cumulative Impacts |
|---|---|
| Climate Change | |
| | Warming, whether it results from anthropogenic or natural sources, is expected to affect a variety of natural processes and associated resources. However, the complexity of ecological systems means that there is a tremendous amount of uncertainty about the effect climate change would have. Climate change predictions for the region include change in runoff, less snow, and less water because of lack of snowmelt. Climate change could affect flow and temperature of the river, while the increased angling could affect fish populations. However, the proposed action would most likely be completely sustainable as anglers would primarily target common carp and northern pike. Additionally, the refuge would mitigate effects of reduced water flow by closing the Malm Trail during the growing season to reduce the stress on the riparian plant community. The refuge does not foresee any significant effects that this sport fishing program would add to the already anticipated effects of climate change. |

Key: CPW = Colorado Parks and Wildlife; NWR = National Wildlife Refuge; SLV = San Luis Valley; U.S. = United States

3.4 Mitigation Measures and Conditions

Because human disturbance has been shown to negatively affect wildlife communities by altering species richness, abundance, and breeding success, an annual seasonal closure (from April 15 to September 1) would be carried out on a part of the designated fishing area to protect habitat and breeding activities for the federally endangered southwestern willow flycatcher.

3.5 Monitoring

We plan to annually examine sport fishing activities on the refuge, and may administratively alter or close areas because of factors, such as staffing, safety issues, fishing demand, effects to other refuge programs like other public uses or habitat management activities, adjacent landowner issues and conflicts, climate change, wildlife disease, mission change, endangered species concerns, or any other compatibility issues.

3.6 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. Table 7 summarizes the anticipated impacts expected from the Proposed Action Alternative and the No Action Alternative.

Table 7. Summary of Anticipated Impacts of the Proposed Action and Any Alternatives

| Affected Environment | Proposed Alternative | No Action Alternative |
|---|--|------------------------------|
| Fished Species | Conducted in accordance with state regulations to make sure fish populations are sustainable and reduce adverse effects | No effects |
| Other Wildlife and Aquatic Species | <p>Minor to moderate short- and long-term negative effects could occur to various wildlife species, especially birds. Some changes to species richness, abundance, and breeding success could occur, with the level of change dependent on angler presence.</p> <p>A part of the designated sport fishing area would be closed annually from April 15 until September 1 to reduce effects from vegetation trampling and human disturbance on habitat and wildlife resources.</p> | No effects |
| Threatened and Endangered Species | Minor to moderate short- and long-term negative effects could occur on populations of the federally endangered southwestern willow flycatcher. Depending on the level of angler presence, effects to abundance and breeding success could occur. No effect on yellow-billed cuckoos. | No effects |
| Vegetation | Trailing along the banks of the Rio Grande is expected to occur, resulting in the reduction and possible elimination of vegetation on the trail. The extent of vegetation effects would most likely be restricted to the narrow trail and result in negligible negative effects across the designated fishing area as a whole. | No effects |
| Geology and Soils | Compaction of soil resulting from foot traffic is expected to occur as well as some increase in soil erosion. These effects are expected to be negligible. | No effects |
| Air Quality | No effects | No effects |
| Water Resources | Fishing and the creation of trails near the river could lead to bank destabilization and erosion, both of which contribute to river sedimentation and other changes in river morphology. While this is a potential consequence, it would have negligible to minor effects on water resources. | No effects |
| Cultural Resources | No effects | No effects |

| Affected Environment | Proposed Alternative | No Action Alternative |
|---|--|---|
| Visitor Use and Experience | Would add a new quality wildlife-dependent recreational activity for the public to take part in and enjoy. | Because no new recreational sport fishing opportunity would be available, negative effects would occur. |
| Socioeconomics | Would improve local economy and possibly state revenue through fishing license sales. | No economic improvements would occur. |
| Refuge Management and Operations | Negligible effects would occur. Some additional money would be necessary to develop a parking area. Some increase in refuge staff time, primarily that of law enforcement, would be necessary but minimal. | No effects |

Alternative A – Proposed Action Alternative

Providing recreational sport fishing opportunities on the refuge in accordance with CPW regulations, along with refuge-specific regulations as needed, such as an annual seasonal closure on a part of the designated fishing area, would result in minimal effects on habitat and wildlife resources or the human environment. Allowing recreational sport fishing on the refuge directly supports objectives of the San Luis Valley NWR Complex CCP and EIS (2015) by providing new recreational sport fishing opportunities on a part of the refuge as well as promoting a priority public use of the Refuge System. Providing sport fishing opportunities would support local economies and promote an appreciation and wide use of the refuge’s aquatic resources.

The Service plans to annually examine sport fishing activities on the refuge, and may administratively alter or close areas because of factors such as staffing; safety issues; fishing demand; effects to other refuge programs, such as other public uses or habitat management activities; adjacent landowner issues and conflicts; climate change; wildlife disease; mission change; endangered species concerns; or any other compatibility issues.

Alternative B – No Action Alternative

Under this alternative, all refuge waters would continue to be closed to recreational sport fishing. The no action alternative would result in the inability of the refuge to provide a priority wildlife-dependent public use opportunity on the refuge. There would be no additional cost to the refuge associated with this alternative, nor an economic improvement to the community. There would be no effect on habitat or wildlife resources.

3.7 List of Sources, Agencies, and Persons Consulted

The refuge’s sport fishing program has been developed in coordination CPW regional and area managers. This coordination was accomplished through formal and informal meetings. Public and tribal input on the proposed recreational sport fishing opportunities was solicited during the public scoping period during the development of the refuge complex CCP and EIS (USFWS 2015).

3.8 List of Preparers

| Name | Position | Work Unit |
|-----------------|-----------------------------|-----------------------------|
| Scott G. Miller | Wildlife Biologist | San Luis Valley NWR Complex |
| Elizabeth Tsang | Natural Resource Specialist | San Luis Valley NWR Complex |

3.9 State Coordination

The refuge's sport fishing program has been developed in coordination with CPW regional and area managers. This coordination was accomplished through formal and informal meetings as well as solicitation of CPW comments on the sport fishing objectives detailed in the refuge complex CCP and EIS (USFWS 2015).

Following the adoption of this sport fishing plan, conducting it would occur with consultation and coordination with CPW and would be a combination of formal and informal activities based upon the nature of issues, if any, to be addressed. Refuge and CPW staff would consult on issues about law enforcement.

3.10 Tribal Consultation

The details of this recreational sport fishing plan were outlined in the San Luis Valley NWR Complex CCP and EIS (USFWS 2015). Public scoping for the CCP and EIS began in March 2011 with the release of a public involvement summary and planning update that described the CCP process. The Service sent letters of notification about the planning process, including an invitation to join the planning team to the following tribes: Cochiti Pueblo, Pueblo of Santa Clara, Pueblo of Laguna, Pueblo of Zuni, Pueblo of Picuris, Pueblo of San Ildefonso, Pueblo of Acoma, Pueblo of Santa Ana, Pueblo of Taos, Pueblo of Jemez, Uintah and Ouray Ute Indian Tribe, Southern Ute Tribe, Ute Mountain Tribe, Jicarilla Apache Nation, Ohkay Owingeh, and Navajo Nation.

The Service sent notices to affected tribes regarding the proposed action alternative to open a portion of the refuge to fishing access following state and refuge-specific regulations. The Service did not receive any comments on the proposed action from tribal interests.

3.11 Public Outreach

The details of this recreational sport fishing plan were outlined in the San Luis Valley NWR Complex CCP and EIS (USFWS 2015). Public scoping for the CCP and EIS began in March 2011 with the release of a public involvement summary and planning update that described the CCP process. Nine public meetings during the scoping, development of the alternatives, and public review of the final CCP and EIS were held and information was posted on the refuge complex's webpage. Additionally, letters of notification about the CCP and EIS planning process were sent to many federal and state agencies and met and briefed the county.

We provided the draft EA, draft fishing plan, and draft compatibility determination to the public for a 30-day comment period (April 1 to 30, 2020) via the refuge's website. Additionally, the Federal Register notice for the national rule for all refuges involved in hunting or fishing changes was open for a total of 60 days and closed on June 8, 2020. We accepted, reviewed, and addressed all the comments received through June 8, 2020.

Comment (1): We received a request to extend the public comment period due to the National Emergency as it relates to the COVID-19 pandemic.

Response: We declined to extend the comment period for this rule. The standard public comment period for the annual rule governing hunting and sport fishing on national wildlife refuges and national fish hatcheries is 30 days. The Service provided a 60-day comment period for the 2020–2021 proposed rule. We recognize the impact of COVID-19 but believe that 60 days was an adequate amount of time for all interested parties to provide their comments through various means of doing so. The 60-day comment period allowed for a high volume of public input, as we received 3,177 comments through the Federal Register and many at the local level using the 30-day period.

We did not change the rule as a result of this comment.

Comment (2): We received several comments that fishing should not occur on national wildlife refuges, in general, and that there are ample places to fish in Colorado.

Response: While we agree that Colorado does have many places to fish, the NWRSA, as amended, stipulates that fishing, as well as hunting, wildlife observation and photography, and environmental education and interpretation, if found to be compatible, is a legitimate and priority public use of a refuge and should be facilitated. The Service has adopted policies and regulations implementing the requirements of the NWRSA that refuge managers comply with when considering hunting and fishing programs.

We allow fishing on national wildlife refuges only if such activity has been determined compatible with the established purpose(s) of the refuge and the mission of the Refuge System as required by the NWRSA. Fishing generally occurs consistent with state regulations, including season length, method of take, and creel limits. Refuge-specific fishing regulations can be more restrictive, but not more liberal, than state regulations and often are more restrictive in order to help meet specific refuge objectives. These objectives include resident wildlife population and habitat objectives, minimizing disturbance impacts to wildlife, maintaining high-quality opportunities for wildlife-dependent recreation, eliminating or minimizing conflicts with other public uses or refuge management activities, and protecting public safety.

We did not change the rule as a result of this comment.

Comment (3): We received a comment that opening Alamosa NWR to fishing is not compatible with the protection and recovery of native fish populations, specifically the Rio Grande chub and Rio Grande sucker. The commenter also suggested that allowing fishing could “overshadow the goal of conserve, restore, and enhance the ecological diversity and function of the San Luis Valley ecosystem to support healthy populations of native fish and wildlife.”

Response: We do not allow fishing on a refuge if it is found incompatible with the refuge’s purpose or with the mission of the Refuge System. We determined that fishing is compatible with stated stipulations in the compatibility determination. In addition, the Service’s biological integrity, diversity, and environmental health policy (601 FW 3) guides decision-making with respect to management of activities on refuges, including fishing. Regarding the two native fish species mentioned, the last known Rio Grande sucker in the Rio Grande near the refuge was sampled in 1934 (Estevan Vigil, personal communication, June 12, 2020). Although Rio Grande sucker have been reintroduced into several small streams throughout the drainage, the only remaining aboriginal population occurs in Hot Creek and Crestone Creek on Baca NWR. The

Rio Grande chub is present in the main stem Rio Grande due to limited stocking by CPW. Since 2017, CPW has released Rio Grande chubs on the refuge near the visitor center (Ted Smith, personal communication, June 13, 2020). If anglers inadvertently catch Rio Grande chubs on the refuge, state fishing regulations explicitly state they must be released back to the water immediately (CPW 2020). The Service believes that recreational fishing would provide the public with a wildlife-dependent recreational opportunity while promoting an appreciation of the Rio Grande ecosystem including its native fish and wildlife through educational outreach efforts.

We did not change the rule as a result of this comment.

Comment (4): We received the following comment questioning part of our analysis. “The Service claims that ‘increased fishing of common carp and northern pike may relieve some of the pressure caused by interspecific competition and predation on their populations.’ The Service does not provide any evidence, only speculation, for that assertion and more research and analysis appears to be necessary in order to make such a conclusion that would support compatibility.”

Response: We disagree with the assertion that we provided no evidence for this claim. We cite Rees et al. (2005) in the preceding two sentences prior to making the above statement in the draft EA. Their work shows that non-native species such as both brown trout and northern pike are known predators on these species, while common carp and white sucker (also non-natives) can increase competition for resources among native fish. Thus, we disagree that more research is necessary before a positive compatibility determination can be made.

Comment (5): We received a comment that opening the refuge to fishing is not compatible with the protection of migratory birds, in particular threatened and endangered species, including the southwestern willow flycatcher and yellow-billed cuckoo. We also received a comment that the Service should have analyzed impacts to yellow-billed cuckoos in the draft EA.

Response: The Service disagrees with this comment regarding the protection of migratory bird populations, in particular the two bird species mentioned for the reasons outlined below. We recognize that the yellow-billed cuckoo should have been included in the draft EA; this was an oversight. We have added language to the Table 1 in the final EA to address this concern. We have also included yellow-billed cuckoo in the Intra-Service Section 7 consultation for this project. Based on published literature, the refuge does not contain suitable habitat for yellow-billed cuckoo. They have also never been documented on the refuge. Ultimately, this oversight did not change our conclusions regarding potential impacts to yellow-billed cuckoos from the proposed action.

Regarding the southwestern willow flycatcher, the Service specifically designed the fishing program and refuge-specific regulations, including the fishing area and seasonal closure, to decrease disturbance and potential impacts to the southwestern willow flycatcher, which regularly breed on the refuge. The seasonal closure runs April 15 through September 1 and covers most of the fishing area with suitable flycatcher habitat, such as dense willows (Figure 1). The public can access the year-round fishing area from established Service roads and the newly established Malm Trail on the west side of the river. Non-suitable flycatcher habitat exists at the Chicago Ditch and near the Chicago Dam and, thus it was appropriate for year-round access. In addition, the Service has added a regulation to prohibit the launching or removal of any kind of watercraft from the refuge on the Rio Grande or Chicago Ditch in the fishing area to reduce disturbance to the southwestern willow flycatcher and other bird species. The Service would

install signs to delineate the seasonal closure area. Outreach with anglers and other visitors through direct contact in the field and through informational materials, including brochures and kiosks, would also highlight the value of riparian habitats to native wildlife, including southwestern willow flycatchers. As stated in the draft EA and fishing plan, the Service expects relatively few anglers and only minor to moderate overall disturbance to flycatchers. However, we plan to annually examine sport fishing activities on the refuge, and may administratively alter or close areas because of factors, such as staffing, safety issues, fishing demand, effects to other refuge programs like other public uses or habitat management activities, adjacent landowner issues and conflicts, wildlife disease, endangered species concerns, or any other compatibility issues.

We did not change the rule as a result of this comment. However, we did add a regulation prohibiting the launch or removal of any type of watercraft from the Rio Grande or Chicago Ditch.

Comment (6): We received several comments that the refuge should not allow lead tackle such as sinkers and jig heads and instead require non-lead alternatives like tungsten. One commenter cited Scheuhammer et al. (2003), “Virtually all species of piscivorous birds, as well as species that feed in nearshore soils and sediments, are at risk of lead poisoning from inadvertent consumption of lost or discarded lead sinkers.”

Response: The Service acknowledged the concern of lead in the environment in the draft EA. Given the low numbers of anglers expected, the anticipated cumulative effect of lead on the environment resulting from the proposed action would be negligible. Although lead alternatives to both ammunition and tackle are becoming more widely available and are used by hunters and anglers, they remain more expensive. The Service believes it is important to encourage refuge-state partnerships to reach decisions on lead usage. We would continue to collaborate with CPW on strategies to discourage its use both on and off the refuge through educational outreach with anglers. If the State of Colorado chooses to ban lead-based fishing tackle, the Service would do the same as our intent is to be consistent with state regulations as practicable.

We did not change the rule as a result of this comment.

Comment (7): We received a comment regarding concerns about discarded fishing line and its impacts on wildlife. They also request the Service install fishing line recycling containers.

Response: The Service thanks the commenter for this suggestion. The Service intends to implement a fishing line recycling program including providing containers in appropriate locations. Additionally, we plan to include statements in refuge materials regarding the detrimental effects of discarded fishing line on wildlife.

We did not change the rule as a result of this comment.

Comment (8): We received a comment asking whether the refuge would advocate for catch and release.

Response: We recognize that catch and release is a choice available to anglers. Because fishing on the refuge would follow state regulations, that decision is up to the individual angler. Given that anglers are most likely to catch non-native species such as northern pike and common carp, the Service would not advocate catch and release.

We did not change the rule as a result of this comment.

Comment (9): We received several comments regarding whether adequate staff and resources existed to implement a fishing program and whether this would detract from other conservation priorities. In addition, one commenter stated that no expansions should occur unless the Refuge System receives more money to ensure adequate management of refuge resources under the increased uses.

Response: Service policy (603 FW 2.12[7]) requires station managers to determine that adequate resources, including personnel, and therefore law enforcement, exist or can be provided by the Service or a partner to properly develop, run, and maintain the use in a way that would not materially interfere with or detract from fulfillment of the refuge purpose(s) and the Service mission. If resources are lacking for establishment or continuation of wildlife-dependent recreational uses, the refuge manager would make reasonable efforts to obtain more resources or outside assistance from states, other public agencies, local communities, or private and nonprofit groups before determining that the use is not compatible. The Service has analyzed the resources needed to successfully implement a fishing program on the refuge and found it to be compatible with the purpose and mission of the Refuge System. Existing refuge budgets and staff resources would cover the estimated annual cost of about \$10,000 to implement the program. Besides refuge resources, we would work cooperatively and in partnership with CPW conservation officers to provide added law enforcement and educational outreach to support the fishing program. As with any new program, refuge staff would adjust priorities to ensure a successful implementation of the fishing program.

Comment (10): One commenter specifically suggested that the Service needed to complete an EIS to assess the full range of environmental impacts of the proposed action, that the proposed action is too narrowly defined, and that other alternatives should have been developed to meet the purpose and need of the action. Additionally, the same commenter suggested that our reliance on public comments received during the development of the San Luis Valley NWR Complex's long-term planning effort in 2015 culminating in a final CCP and companion EIS, does not reflect sentiment in 2020 and therefore should not be included.

Response: The Service disagrees with the assertion that we should prepare an EIS before allowing fishing on the refuge. The Service's EA analysis of the impacts of the proposed action demonstrated that the action would not have significant impacts at the local, regional, or national level, and thus does not result in significant impacts to the human environment. In the final EA, we added language regarding potential effects on yellow-billed cuckoos, which we determined to have no effect on the species. As discussed above, we annually conduct management activities on refuges that decrease or offset impacts of activities such as hunting and fishing on physical and cultural resources, including establishing designated areas for hunting or fishing; restricting levels of use; confining access and travel to designated locations; providing education programs and materials for hunters, anglers, and other users; and conducting law enforcement activities.

We disagree that other activities could have been found compatible that would address the need and purpose of this action. The NWRSA stipulates that fishing, along with hunting, wildlife observation and photography, and environmental education and interpretation, if found to be compatible, is a legitimate and priority public use of a refuge and should be facilitated. At this time, fishing is the only priority public use not currently allowed on the refuge. We have determined that fishing is compatible with the refuge purpose and mission of the Refuge System. We also disagree that public sentiment received during the development of the CCP is not relevant to this effort. The Service acknowledged in the CCP, through the development of

specific public use goals and objectives, the importance of enhancing compatible, wildlife-dependent public uses, including fishing opportunities. The proposed action has undergone an open public review process, including 30 days at the station level and 60 days as part of the 2020 national rule for all hunting and fishing expansions.

We did not change the rule as a result of this comment.

3.12 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: _____ Date: _____

Name/Title/Organization: Sharon Vaughn, Project Leader, San Luis Valley National Wildlife Refuge 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, AND REGULATIONS

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

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

APPENDIX B FINDING OF NO SIGNIFICANT IMPACT

FINDING OF NO SIGNIFICANT IMPACT AND DECISION TO OPEN RECREATIONAL SPORT FISHING

ALAMOSA NATIONAL WILDLIFE REFUGE

Alamosa, Colorado

The United States (U.S.) Fish and Wildlife Service (Service) is opening recreational sport fishing opportunities on Alamosa National Wildlife Refuge (NWR) in accordance with the refuge's sport fishing plan. The objectives of the sport fishing plan directly support several of the long-term management goals for the San Luis NWR Refuge Complex (refuge complex). In general, the objective of this sport fishing plan is to provide anglers with a safe, high-quality fishing experience while: (1) maintaining fish populations at optimum levels, (2) minimizing negative impacts to other wildlife populations, and (3) minimizing conflicts with other wildlife-dependent public uses on the refuge.

An environmental assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) to provide decision-making framework that: (1) explores a reasonable range of alternatives to meet project objectives; (2) evaluate potential issues and impacts to the refuge, habitat and wildlife resources, and other values; and (3) identifies mitigation measures to lessen the degree or extent of these impacts. The EA evaluated the effects associated with no action and proposed action alternatives.

Selected Action

Alternative A – Proposed Action Alternative: The Service is proposing to open sport fishing opportunities on Alamosa NWR in accordance with the refuge's final sport fishing plan. Waters that can sustain a recreational fishing program, that pose minimal risk to sensitive habitats or species, and that have safe public access points would be opened to fishing. Public fishing would be conducted according to Colorado state regulations, except where other refuge-specific conditions may apply to minimize habitat, wildlife disturbance, or other use conflicts.

This alternative was selected over the other alternatives because:

Recreational fishing on the refuge would provide the public with a wildlife-dependent recreational opportunity, while promoting an appreciation for and wise use of the refuge's aquatic resources. There would be opportunities to observe natural relationships and the diversity necessary for a healthy ecosystem. The public would gain valuable knowledge through brochures, maps, and interpretive literature available and distributed at the refuges. Special fishing events would help to further instill a conservation ethic and stewardship of natural resources. Regulation and information signs would also be available at sites open for fishing. Through these resources the public would attain an understanding of natural resource management and of the Service's role in preserving and protecting natural resources. Visitors would also develop an appreciation and an awareness of the roles they play within the

ecosystem. This sport fishing program also supports the directive of the National Wildlife Refuge System Improvement Act of 1997 that refuges provide for priority public uses, including fishing, where compatible.

Other Alternatives Considered and Analyzed

Alternative B – No Action Alternative: Under the No Action Alternative, current management direction would continue. Under this alternative, the refuge would remain closed to fishing. Implementation of this alternative would not facilitate wildlife-dependent priority use that has been found to be compatible with the purposes of the refuge and the mission of the National Wildlife Refuge System (Refuge System).

This alternative was not selected because under this alternative, the public would not have the opportunity to participate in recreational sport fishing on the refuge, which is one of the priority public uses and is compatible with the purposes for which the refuge was established. Fishing is also a way for the public to gain an increased appreciation of the refuge and the Refuge System. By not allowing fishing, the Service would not be meeting a public use demand and public relations would not be enhanced with the local community.

Summary of Effects of the Selected Action

An EA was prepared in compliance with 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 no action and proposed action alternatives. It is incorporated as part of this finding.

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

- Recreational sport fishing could negatively affect fish populations if it occurs at unsustainably high numbers or is not managed properly. Because fishing generally removes individuals from a population, it could lead to reduced population sizes and loss of genetic diversity if it occurs at high levels. Loss of genetic diversity can ultimately reduce a population's fitness, resilience, and ability to adapt to environmental changes and stressors. While fishing does remove individuals from the population, we, the Service, do not anticipate that projected levels of fishing pressure would affect the refuge's fish populations as a whole. We anticipate that common carp and northern pike would be the most targeted fish species by anglers. Removal of these species may result in positive benefits for the environment. Common carp are known to increase ammonia content, turbidity, and biomass of phytoplankton in water, which can lead to depleted oxygen levels, a reduction in aquatic vegetation, and leaching of toxins into the waterway. Additionally, northern pike are known predators of other fish species and amphibians.
- Fishing has the potential to disturb wildlife, particularly birds, that use riparian habitats within or immediately adjacent to fishing areas. Disturbance from fishing activities may have both immediate and long-term effects, such as cessation of foraging, fleeing, or altering reproductive behavior. Over time, energetic losses from flight, decreased

foraging time, or increased stress levels come at the cost of energy resources needed for individuals' survival, growth, and reproduction. Disturbance from fishing activities can result in altered avian community composition, abundance, and breeding success. Depending on the level of angler activity, minor to moderate impacts could occur. However, if angler activity is low, negligible impacts would be expected. Of greatest concern is potential impacts on the federally endangered southwestern willow flycatcher. Disturbance from fishing could result in negative impacts to this small riparian dependent songbird similarly to other riparian bird species.

- Trails are expected to develop as a result of anglers walking to and from fishing spots. As a result, trampling of vegetation is likely to occur, reducing the height, density, and diversity of the plant community on and along these trails. However, these trails would be narrow linear features on the landscape, resulting in minor overall impacts to the whole vegetative community within the designated fishing area. There is also potential for invasive plant species to spread and establish as a result of vegetation and soil disturbance and the introduction of seeds via anglers along the trail.
- Because of the relatively low socioeconomic status of the local community and surrounding counties, opening fishing on the refuge could provide a food source and low expense recreational opportunity that could positively impact the local economy. Recreational fishing would provide the public with a wildlife-dependent recreational opportunity while promoting an appreciation and wise use of the refuge's aquatic resources and instilling a conservation ethic and stewardship of natural resources.

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

- Recreational fishing would be allowed along a section of this length upstream and downstream of the Chicago Dam and a section of the Chicago Ditch, as long as fishing activities do not interfere with the refuge's habitat and wildlife management objectives. An annual seasonal closure, from April 15 to September 1, would be implemented on a portion of the designated fishing area to protect habitat and breeding activities for the federally endangered southwestern willow flycatcher.
- We plan to annually examine sport fishing activities on the refuge, and may administratively update or close areas due to factors such as staffing, safety issues, fishing demand, impacts to other refuge programs, such as other public uses or habitat management activities, adjacent landowner issues or conflicts, climate change, wildlife disease, mission change, endangered species concerns, or any other compatibility issues.

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

- The Service works closely with the state to ensure that other 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 the biodiversity and ecological integrity of the refuge, as well as the wildlife-dependent recreational opportunities and socioeconomics of the local economy.

- The adverse direct and indirect effects of the proposed action on air, water, soil, habitat, wildlife, aesthetic and visual resources, and wilderness values are expected to be minor and short-term. The benefits to long-term ecosystem health that these efforts would accomplish far outweigh any of the short-term adverse impacts discussed in this document.
- The Refuge System uses an adaptive management approach to all wildlife management on refuges, monitoring and re-evaluating sport fishing opportunities on the refuge on an annual basis to ensure that the sport 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 action, along with mitigation measures such as prohibiting boat access or removal, would ensure there is low danger to the health and safety of refuge staff, visitors, and the anglers themselves.
- The action, along with mitigation measures including a seasonal closure, should result in minimal impact to threatened or endangered species, as well as critical habitat.
- The action would not affect any cultural or historical resources.
- The action would not affect any wilderness areas.
- There is no scientific controversy over the impacts of this action. 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 anglers must use established or proposed access points from trails, roads, and parking lots located away from sensitive habitats.

Public Review

The proposal has been thoroughly coordinated with all interested and affected parties. Parties contacted included:

Coordination with Colorado Parks and Wildlife

The refuge's sport fishing program has been developed in coordination Colorado Parks and Wildlife (CPW) regional and area managers. This coordination was accomplished through formal and informal meetings as well as solicitation of CPW comments on the sport fishing objectives detailed in the refuge complex CCP and EIS (USFWS 2015). CPW provided input and support of the draft proposal during the 30-day comment period.

Tribal Coordination

The Service mailed an invitation for comments to all tribes potentially impacted by initiating an EA to open Alamosa NWR to sport fishing. The Service extended an invitation to engage in government-to-government consultation in accordance with Executive Order 13175. We received one inquiry email for more information from the Santa Clara Pueblo. However, we did not receive any responses from them or from any of the other tribes we contacted.

Public Comments

We provided the draft EA, draft fishing plan, and draft compatibility determination to the public for a 30-day comment period from April 1 to 30, 2020) via the refuge website. Additionally, the federal register notice for the national rule for all refuges involved in hunting or fishing changes was open for 60 days and closed on June 8, 2020. We accepted, reviewed, and addressed all the comments received through June 8, 2020 pertaining to the opening of fishing at the refuge.

Comment (1): We received a request to extend the public comment period due to the National Emergency as it relates to the COVID-19 pandemic.

Response: We declined to extend the comment period for this rule. The standard public comment period for the annual rule governing hunting and sport fishing on national wildlife refuges and national fish hatcheries is 30 days. The Service provided a 60-day comment period for the 2020–2021 proposed rule. We recognize the impact of COVID-19 but believe that 60 days was an adequate amount of time for all interested parties to provide their comments through various means of doing so. The 60-day comment period allowed for a high volume of public input, as we received 3,177 comments through the Federal Register and many at the local level using the 30-day period.

We did not change the rule as a result of this comment.

Comment (2): We received several comments that fishing should not occur on national wildlife refuges, in general, and that there are ample places to fish in Colorado.

Response: While we agree that Colorado does have many places to fish, the National Wildlife Refuge System Administration Act of 1966 (NWRSA), as amended, stipulates that fishing, as well as hunting, wildlife observation and photography, and environmental education and interpretation, if found to be compatible, is a legitimate and priority public use of a refuge and should be facilitated. The Service has adopted policies and regulations implementing the requirements of the NWRSA that refuge managers comply with when considering hunting and fishing programs.

We allow fishing on national wildlife refuges only if such activity has been determined compatible with the established purpose(s) of the refuge and the mission of the Refuge System as required by the NWRSA. Fishing generally occurs consistent with state regulations, including season length, method of take, and creel limits. Refuge-specific fishing regulations can be more restrictive, but not more liberal, than state regulations and often are more restrictive in order to help meet specific refuge objectives. These objectives include resident wildlife population and habitat objectives, minimizing disturbance impacts to wildlife, maintaining high-quality opportunities for wildlife-dependent recreation, eliminating or minimizing conflicts with other public uses or refuge management activities, and protecting public safety.

We did not change the rule as a result of this comment.

Comment (3): We received a comment that opening Alamosa NWR to fishing is not compatible with the protection and recovery of native fish populations, specifically the Rio Grande chub and Rio Grande sucker. The commenter also suggested that allowing fishing could “overshadow the goal of conserve, restore, and enhance the ecological diversity and function of the San Luis Valley ecosystem to support healthy populations of native fish and wildlife.”

Response: We do not allow fishing on a refuge if it is found incompatible with the refuge's purpose or with the mission of the Refuge System. We determined that fishing is compatible with stated stipulations in the compatibility determination. In addition, the Service's biological integrity, diversity, and environmental health policy (601 FW 3) guides decision-making with respect to management of activities on refuges, including fishing. Regarding the two native fish species mentioned, the last known Rio Grande sucker in the Rio Grande near the refuge was sampled in 1934 (Estevan Vigil, personal communication, June 12, 2020). Although Rio Grande sucker have been reintroduced into several small streams throughout the drainage, the only remaining aboriginal population occurs in Hot Creek and Crestone Creek on Baca NWR. The Rio Grande chub is present in the main stem Rio Grande due to limited stocking by CPW. Since 2017, CPW has released Rio Grande chubs on the refuge near the visitor center (Ted Smith, personal communication, June 13, 2020). If anglers inadvertently catch Rio Grande on the refuge, state fishing regulations explicitly state they must be released back to the water immediately (CPW 2020). The Service believes that recreational fishing would provide the public with a wildlife-dependent recreational opportunity while promoting an appreciation of the Rio Grande ecosystem including its native fish and wildlife through educational outreach efforts.

We did not change the rule as a result of this comment.

Comment (4): We received the following comment questioning part of our analysis. "The Service claims that 'increased fishing of common carp and northern pike may relieve some of the pressure caused by interspecific competition and predation on their populations.' The Service does not provide any evidence, only speculation, for that assertion and more research and analysis appears to be necessary in order to make such a conclusion that would support compatibility."

Response: We disagree with the assertion that we provided no evidence for this claim. We cite Rees et al. (2005) in the preceding two sentences prior to making the above statement in the draft EA. Their work shows that non-native species such as both brown trout and northern pike are known predators on these species, while common carp and white sucker (also non-natives) can increase competition for resources among native fish. Thus, we disagree that more research is necessary before a positive compatibility determination can be made.

Comment (5): We received a comment that opening the refuge to fishing is not compatible with the protection of migratory birds, in particular threatened and endangered species, including the southwestern willow flycatcher and yellow-billed cuckoo. We also received a comment that the Service should have analyzed impacts to yellow-billed cuckoos in the draft EA.

Response: The Service disagrees with this comment regarding the protection of migratory bird populations, in particular the two bird species mentioned for the reasons outlined below. We recognize that the yellow-billed cuckoo should have been included in the draft EA; this was an oversight. We have added language to the Table 1 in the final EA to address this concern. We have also included yellow-billed cuckoo in the Intra-Service Section 7 consultation for this project. Based on published literature, the refuge does not contain suitable habitat for yellow-billed cuckoo. They have also never been documented on the refuge. Ultimately, this oversight did not change our conclusions regarding potential impacts to yellow-billed cuckoos from the proposed action.

Regarding the southwestern willow flycatcher, the Service specifically designed the fishing program and refuge-specific regulations, including the fishing area and seasonal closure, to

decrease disturbance and potential impacts to the southwestern willow flycatcher, which regularly breed on the refuge. The seasonal closure runs April 15 through September 1 and covers most of the fishing area with suitable flycatcher habitat, such as dense willows (Figure 1). The public can access the year-round fishing area from established Service roads and the newly established Malm Trail on the west side of the river. Non-suitable flycatcher habitat exists at the Chicago Ditch and near the Chicago Dam, and thus it was appropriate for year-round access. In addition, the Service has added a regulation to prohibit the launching or removal of any kind of watercraft from the refuge on the Rio Grande or Chicago Ditch in the fishing area to reduce disturbance to the southwestern willow flycatcher and other bird species. The Service would install signs to delineate the seasonal closure area. Outreach with anglers and other visitors through direct contact in the field and through informational materials, including brochures and kiosks, would also highlight the value of riparian habitats to native wildlife, including southwestern willow flycatchers. As stated in the draft EA and fishing plan, the Service expects relatively few anglers and only minor to moderate overall disturbance to flycatchers. However, we plan to annually examine sport fishing activities on the refuge, and may administratively alter or close areas because of factors, such as staffing, safety issues, fishing demand, effects to other refuge programs like other public uses or habitat management activities, adjacent landowner issues and conflicts, wildlife disease, endangered species concerns, or any other compatibility issues.

We did not change the rule as a result of this comment. However, we did add a regulation prohibiting the launch or removal of any type of watercraft from the Rio Grande or Chicago Ditch.

Comment (6): We received several comments that the refuge should not allow lead tackle such as sinkers and jig heads and instead require non-lead alternatives like tungsten. One commenter cited Scheuhammer et al. (2003), “Virtually all species of piscivorous birds, as well as species that feed in nearshore soils and sediments, are at risk of lead poisoning from inadvertent consumption of lost or discarded lead sinkers.”

Response: The Service acknowledged the concern of lead in the environment in the draft EA. Given the low numbers of anglers expected, the anticipated cumulative effect of lead on the environment resulting from the proposed action would be negligible. Although lead alternatives to both ammunition and tackle are becoming more widely available and are used by hunters and anglers, they remain more expensive. The Service believes it is important to encourage refuge-state partnerships to reach decisions on lead usage. We would continue to collaborate with CPW on strategies to discourage its use both on and off the refuge through educational outreach with anglers. If the State of Colorado chooses to ban lead-based fishing tackle, the Service would do the same as our intent is to be consistent with state regulations as practicable.

We did not change the rule as a result of this comment.

Comment (7): We received a comment regarding concerns about discarded fishing line and its impacts on wildlife. They also request the Service install fishing line recycling containers.

Response: The Service thanks the commenter for this suggestion. The Service intends to implement a fishing line recycling program including providing containers in appropriate locations. Additionally, we plan to include statements in refuge materials regarding the detrimental effects of discarded fishing line on wildlife.

We did not change the rule as a result of this comment.

Comment (8): We received a comment asking whether the refuge would advocate for catch and release.

Response: We recognize that catch and release is an option available to anglers. Because fishing on the refuge would follow state regulations, that decision is up to the individual angler. Given that anglers are most likely to catch non-native species such as northern pike and common carp, the Service would not advocate catch and release.

We did not change the rule as a result of this comment.

Comment (9): We received several comments regarding whether adequate staff and resources existed to implement a fishing program and whether this would detract from other conservation priorities. In addition, one commenter stated that no expansions should occur unless the Refuge System receives more funding to ensure adequate management of refuge resources under the increased uses.

Response: Service policy (603 FW 2.12[7]) requires station managers to determine that adequate resources, including personnel, and therefore 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 would not materially interfere with or detract from fulfillment of the refuge purpose(s) and the Service mission. If resources are lacking for establishment or continuation of wildlife-dependent recreational uses, the refuge manager would make reasonable efforts to obtain more resources or outside assistance from states, other public agencies, local communities, or private and nonprofit groups before determining that the use is not compatible. The Service has analyzed the resources needed to successfully implement a fishing program on the refuge and found it to be compatible with the purpose and mission of the Refuge System. Existing refuge budgets and staff resources would cover the estimated annual cost of about \$10,000 to implement the program. In addition to refuge resources, we would work cooperatively and in partnership with CPW conservation officers to provide additional law enforcement and educational outreach to support the fishing program. As with any new program, refuge staff would adjust priorities to ensure a successful implementation of the fishing program.

Comment (10): One commenter specifically suggested that the Service needed to complete an EIS to assess the full range of environmental impacts of the proposed action, that the proposed action is too narrowly defined, and that other alternatives should have been developed to meet the purpose and need of the action. Additionally, the same commenter suggested that our reliance on public comments received during the development of the San Luis Valley NWR Complex's long-term planning effort in 2015 culminating in a final CCP and companion EIS, does not reflect sentiment in 2020 and therefore should not be included.

Response: The Service disagrees with the assertion that we should prepare an EIS before allowing fishing on the refuge. The Service's NEPA EA analysis of the impacts of the proposed action demonstrated that the action would not have significant impacts at the local, regional, or national level, and thus does not result in significant impacts to the human environment. In the final EA, we added language regarding potential effects on yellow-billed cuckoos, which we determined to have no effect on the species. As discussed above, we annually conduct management activities on refuges that minimize or offset impacts of activities such as hunting and fishing on physical and cultural resources, including establishing designated areas for

hunting or fishing; restricting levels of use; confining access and travel to designated locations; providing education programs and materials for hunters, anglers, and other users; and conducting law enforcement activities.

We disagree that other activities could have been found compatible that would address the need and purpose of this action. The NWRSAA stipulates that fishing, along with hunting, wildlife observation and photography, and environmental education and interpretation, if found to be compatible, is a legitimate and priority public use of a refuge and should be facilitated. At this time, fishing is the only priority public use not currently allowed on the refuge. We have determined that fishing is compatible with the refuge purpose and mission of the Refuge System. We also disagree that public sentiment received during the development of the CCP is not relevant to this effort. The Service acknowledged in the CCP, through the development of specific public use goals and objectives, the importance of enhancing compatible, wildlife-dependent public uses, including fishing opportunities. The proposed action has undergone an open public review process, including 30 days at the station level and 60 days as part of the 2020 national rule for all hunting and fishing expansions.

We did not change the rule as a result of this comment.

Decision

The Service has decided to open Alamosa NWR to sport fishing following state and refuge specific regulations. This action will be implemented in the fall of 2020.

This action is compatible with the purpose 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 fishing on national wildlife refuges. Refuge-specific regulations promulgated in conjunction with this action are in the process of being finalized (see 85 Federal Register 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 C INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM –
REGION 6**

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM

[Note: This form provides the outline of information needed for intra-Service consultation. If additional space is needed, attach additional sheets, or set up this form to accommodate your responses.]

Originating Person:

Scott G. Miller

Telephone Number:

719-588-7268

Date:

06/15/2020

I. Region: 6

II. Service Activity (Program): National Wildlife Refuge System

III. Pertinent Species and Habitat:

A. Listed species and/or their critical habitat within the action area:

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)

Yellow Billed Cuckoo (*Coccyzus americanus*)

B. Proposed species and/or proposed critical habitat within the action area

None

C. Candidate species within the action area:

None

D. Include species/habitat occurrence on a map.

IV. Geographic area or station name and action:

Alamosa NWR, Colorado - Opening a portion of the Refuge to recreational sport fishing.

V. Location (attach map):

A. Ecoregion Number and Name: Arizona/New Mexico Plateau No. 22c

B. County and State: Alamosa County, Colorado

C. Section, township, and range (or latitude and longitude):

T37N, R10E, Sec. 12

D. Distance (miles) and direction to nearest town: 3 miles SE of Alamosa, CO

E. Species/habitat occurrence:

1) The Southwestern Willow Flycatcher is a small neotropical migratory songbird whose breeding habitat is restricted to relatively dense stands of trees and shrubs in riparian ecosystems in the arid southwestern United States. Southwestern willow flycatchers nest in patches as small as 0.1 ha and as large as 70 ha with a median patch size of 1.8 ha based on published literature. Nest sites typically have dense foliage from the ground level up to approximately 4 m above ground. Of particular importance is the presence of slow-moving or still surface water and/or saturated soil at or adjacent to breeding sites. Several years ago, a southwestern willow flycatcher territory was documented (using established protocol) immediately adjacent to the proposed designated sport fishing area. This area has not been surveyed since and, therefore, it is unknown whether flycatchers are still breeding in this location. However, current habitat conditions are considered suitable habitat for migrating and breeding flycatchers. Additionally, the entirety of the designated fishing area is designated critical habitat for southwestern willow flycatcher.

2) Yellow Billed Cuckoo use wooded habitat with dense cover and water nearby, including woodlands with low, scrubby, vegetation, and dense thickets along streams and marshes. In the Southwest, Yellow-Billed Cuckoos are rare breeders in riparian woodlands of willows and cottonwoods. No cuckoos have been documented on Alamosa NWR. Based on published habitat requirements, suitable habitat does not exist on the Refuge.

VI. Description of proposed action (attach additional pages as needed):

Opening public recreational sport fishing opportunities are being proposed on a portion of Alamosa NWR. For the most part, fishing will be conducted according to Colorado State

- Intra-Service Section 7 and Instructions -

2

regulations. We propose to open approximately 0.4 miles of the Rio Grande river and 0.35 miles of the Chicago Ditch (an irrigation ditch) to year-round bank fishing opportunities. An additional 1.3 miles of bank fishing opportunities will be available on the Rio Grande. However, these portions of the designated sport fishing area will be closed annually from April 15 to September 1 to protect migrating and breeding southwestern willow flycatchers.

Public fishing on the Refuge will be provided at designated fishing access points (the proposed Malm Trail and a current Service administrative access road). Number of anglers will not be restricted. At this time, it is difficult to determine the level of angler use that the designated fishing area will receive, but it is estimated that it would be approximately 5 or less angler use/days per week. It is anticipated that "trailing" (i.e., the creation of trails) will occur within the designated fishing area, especially along the banks of the river. Signage and informational material will be established/provided to limit the creation of trails and movement of people through riparian habitat, minimizing the degradation of riparian vegetation and human disturbance.

For the most part, the designated sport fishing area is located immediately adjacent to riparian habitat that ranges from no or sparse willow and cottonwood plants to dense willow and cottonwood plants (see attached Figures). Most areas that currently do not have willow or cottonwood plants have the potential to grow willow and cottonwood plants, especially with restoration activities.

VII. Determination of effects:

A. Explanation of effects of the action on species and critical habitats in items III. A, B, and C (attach additional pages as needed):

Although there are no anticipated impacts to existing or potential riparian habitat from the physical improvements that are being proposed as part of this sport fishing opportunity (construction of a parking area or the proposed Malm access trail), it is important to note what is known in the scientific literature about the impacts of human disturbance on avian communities.

Again, portions of the designated sport fishing area being proposed will be closed annually from April 15 to September 1 to protect migrating and breeding southwestern willow flycatchers (see attached maps for location of the designated sport fishing area).

As stated earlier, in addition to the mere presence of anglers within the designated sport fishing area, it is anticipated that trails will become established along the banks of the Rio Grande, immediately adjacent to or within riparian vegetation. Because trails are linear features that bisect habitats (e.g., forests, grasslands, wetlands), they may create habitat edges. Most studies of habitat edge have been conducted in deciduous forests of the eastern United States, in small, isolated forest fragments surrounded by agricultural fields (Paton 1994). Fewer studies have

examined how landscape modifications resulting in the development of “internal” edges (e.g., trails, roads, utility right-of-ways), rather than “external” edges (e.g., habitat islands), affect wildlife communities. It is well known that brood parasitism by brown-headed cowbirds (*Molothrus ater*) and nest predation typically increase in association with “habitat edges” (Whitcomb et al. 1981, Brittingham and Temple 1983, Paton 1994), which may, in turn, alter bird species diversity and composition (Ambuel and Temple 1983).

Millions of visitors annually are attracted to public lands to engage in outdoor recreational activities. In the past, many thought that outdoor recreational activities (e.g., hiking, fishing, wildlife observation and photography) were environmentally benign activities. Increasing evidence, however, indicates that these activities can have pronounced effects on wildlife individuals, populations, and communities by affecting behavior and health and by altering interspecific interactions (e.g., increased predation or competition for nesting sites). Because outdoor recreation is the second leading cause for the decline of federally threatened and endangered species on public lands (Losos et al. 1995) and the fourth leading cause on all lands (public and private) (Czech et al. 2000), natural resource managers are becoming increasingly concerned about impacts of outdoor recreation on wildlife. Additionally, Boyle and Samson (1985) reported that, in 81% of studies reviewed, non-consumptive (i.e., non-hunting or fishing) outdoor recreation had negative effects on wildlife.

Disturbance from outdoor recreation, such as fishing activities, may have both immediate and long-term effects on birds. The immediate response of many birds to disturbance is a change in behavior, such as cessation of foraging, fleeing, or altering reproductive behavior. Over time, energetic losses from flight, decreased foraging time, or increased stress levels come at the cost of energy resources needed for individuals’ survival, growth, and reproduction. In addition, the presence of humans in wildlife habitat may result in animals avoiding parts of their normal range. This loss of otherwise suitable habitat may be sufficient to reduce the carrying capacity of some public lands for wildlife. The energetic cost for birds responding to disturbance from outdoor recreation can also affect the carrying capacity of wildlife habitat. Disturbance from humans also has the potential to affect nest defense if birds are continually flushing away from nesting sites.

Numerous studies have documented altered bird communities in association with recreational activities and trails. For example, Miller et al. (1998) found that the composition and abundance of bird species were altered adjacent to recreational trails in both grassland and forest ecosystems. In particular, some species (vesper sparrow, western meadowlark, grasshopper sparrow, western wood-pewee, pygmy nuthatch, solitary vireo, chipping sparrow) did not occur, or occurred in lower densities, near trails than at greater distances from trails, whereas some species, mainly generalists, were more abundant near trails. This study showed that the majority of bird species found in reduced numbers near trails, the “zone of influence” around areas of human activity appears to be approximately 75 m, however, Townsend’s solitaires appeared even more sensitive as they exhibited reduced numbers as far as 100 m away from human activity and trails. Miller et al.’s (1998) results concur with those of Hickman (1990), who found that recreational trails altered bird community composition. He reported that habitat edge species, such as blue jays, American robins, and brown-headed cowbirds, were more abundant on sites

with recreational trails with human activity than on sites without.

Kangas et al. (2010) also found that the occurrence and composition of a bird community was altered due to visitor use. In their study, ground-nesting birds were found to have lower occurrences near highly visited trails and seemed to be sensitive to human disturbance. Although birds nesting in trees and shrubs appeared to be more tolerant to human disturbance than ground nesters, they still showed decreased occurrence in locations with high levels of human disturbance. Similarly, Heil et al. (2007) found that human use of recreational trails can alter avian communities, guilds, and populations. Their research discovered that 6 of 28 bird species (four of which were species of conservation concern) were negatively affected by human use of recreational trails. Because habitat condition did not differ between areas with trails and without, they concluded that human use of recreational trails decreased habitat quality.

Additionally, van der Zande et al. (1984) reported a negative relationship between the intensity of recreation occurring on trails and the density for 8 of 13 avian species, with some being more sensitive than others.

Some studies have found that bird communities can be altered with varying levels of human use, although not necessarily associated with recreational trails. For example, van der Zande and Vos (1984) found that 11 of the 12 most common bird species exhibited lower numbers in areas where recreation use was common than in areas with fewer visitors.

For some birds, human intrusion (i.e., the mere presence of humans in the environment) can reduce abundance, species richness, and community composition (Riffell et al. 1996, Kangas et al. 2010), uncouple foraging relations within guilds (Skagen et al. 1991), reduce hatching and fledging success (Safina and Burger 1983), and compromise nest defense (Keller 1989). Reijnen and Foppen (1994) found that in areas where primary song was affected by disturbance, birds appeared reluctant to establish nesting territories. Gutzwiller et al. (1994) reported that even a single pedestrian moving through a bird's territory was sufficient to reduce the occurrence and consistency of primary song. Because song is an integral component of breeding behavior (e.g., territory defense and mate attraction, it is reasonable to believe that birds sensitive to human disturbance may be reluctant to establish nest sites where human activity is frequent (Gutzwiller et al. 1997).

Not only has it been shown that human use of areas, including trails, can alter avian abundance and community composition, but rates of nest success can be affected. For example, Miller et al. (1998) found elevated rates of nest predation near trails versus further away. Similarly, in riparian habitats, Miller and Hobbs (2000) found that corvids, such as black-billed magpies, caused greater rates of nest predation near recreational trails versus further away, possibly as a result of these species being attracted to areas of human use.

It should be noted that although there is a preponderance of literature documenting negative impacts from outdoor recreational activities, numerous studies have not found any negative impacts.

We felt it important to mention that the possibility of negative impacts on avian communities exist, based on existing scientific literature. To our knowledge, there are no studies specifically looking at impacts of recreational trails on southwestern willow flycatchers. However, it is not unreasonable to expect that a specialist species such as the flycatcher has the potential to respond with similar effects.

It also should be noted that the entirety of the proposed designated sport fishing area is located within designated critical habitat for southwestern willow flycatcher.

Because yellow-billed cuckoo have not been documented on Alamosa NWR and the lack of suitable habitat, we have determined that there will be no effect to this species as a result of recreational sport fishing activities.

For southwestern willow flycatcher, the proposed opening of sport fishing and the associated human use is expected to have non-detectable or no negative effects due to the seasonal closure on portions of the designated fishing area adjacent to suitable habitat. As such, we feel that we are appropriate in selecting the determination of “may affect, not likely to adversely affect”.

B. Explanation of actions to be implemented to reduce adverse effects:

Construction/re-surfacing of access trails, roads, and parking areas will be conducted outside the migration or breeding season of southwestern willow flycatchers. These activities will occur between September 1 and mid-April.

For portions of the designated sport fishing area, there will be a seasonal closure from April 15 to September 1 annually to protect migrating and breeding southwestern willow flycatcher.

Information signs will be posted informing visitors of area closures, other Refuge-specific regulations, as well as information on how anglers can modify their behavior or activities to minimize impacts to riparian dependent bird species, especially southwestern willow flycatchers, and other wildlife species.

Should it become apparent that negative impacts from sport fishing become evident on any portions of the designated fishing area, additional restrictions or closures will be considered.

Additional conservation measures that will be implemented include monitoring of flycatcher populations and habitat in this area. Refuge staff will monitor flycatcher presence within the designated fishing area to determine if utilization of the habitat changes based on the presence of anglers and amount of angler pressure. As such, Refuge staff will conduct surveys for the flycatcher in all suitable habitat patches within and near the designated fishing area, both on the south and north side of the river both upstream and downstream of the Chicago Dam.

If a flycatcher is found during 2021 surveys, flycatcher monitoring will be continued in the same habitat patches for up to 5 years annually. Flycatcher's exhibit moderate philopatry, often returning to previously occupied habitat patches. As a result, multiple-year surveys will provide better data on habitat use and better data on whether flycatchers present in 2021 no longer use the habitat due to fishing-related disturbance. Should the Refuge find flycatchers within or close to the designated fishing area, we will continue to monitor both angler activities and flycatcher use. This will provide data specifically on angler effects to the flycatcher and will help manage the flycatcher not only on Alamosa Refuge but likely throughout its range.

VIII. Effect determination and response requested: [* = optional]

A. Listed species/designated critical habitat:

| <u>Determination</u> | <u>Response requested</u> |
|--|---------------------------|
| no effect to species/critical habitat | ___*Concurrence |
| Yellow-Billed Cuckoo | |
| may affect, but is not likely to adversely affect species/critical habitat | __X__ Concurrence |
| Southwestern Willow Flycatcher | |
| may affect, and is likely to adversely affect species/critical habitat (species/unit: _____) | ___ Formal Consultation |
| Southwestern Willow Flycatcher | |

B. Proposed species/proposed critical habitat:

| <u>Determination</u> | <u>Response requested</u> |
|--|---------------------------|
| no effect on proposed species/proposed critical habitat (species/unit: _____) | ___*Concurrence |
| is likely to jeopardize proposed species/ adversely modify proposed critical habitat (species/unit: _____) | ___ Conference |

C. Candidate species:

| <u>Determination</u> | <u>Response requested</u> |
|--|---------------------------|
| no effect (species: _____) | ___*Concurrence |
| is likely to jeopardize candidate species (species: _____) | ___ Conference |

SHARON VAUGHN Digitally signed by SHARON VAUGHN
Date: 2020.06.30 14:40:01 -06'00'

signature _____ date _____
[Title/office of supervisor at originating station]

IX. Reviewing ESO Evaluation:

A. Concurrence X Nonconcurrency _____

B. Formal consultation required _____

C. Conference required _____

D. Informal conference required _____

E. Remarks (attach additional pages as needed):

J. Creed Clayton

signature
[Title/office of reviewing official]

7/1/2020

date

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Figures Showing Proposed Designated Sport Fishing Area, Alamosa NWR, Colorado:

