

DRAFT
ENVIRONMENTAL ASSESSMENT

For
Rio Grande Turkey Hunt Plan

Washita National Wildlife Refuge
Butler, Oklahoma

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WASHITA NATIONAL WILDLIFE REFUGE HUNTING PLAN ENVIRONMENTAL ASSESSMENT

1. PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

The United States Fish and Wildlife Service (Service) is proposing to open Washita National Wildlife Refuge (Refuge) to Rio Grande turkey hunting on units that are currently open to deer, quail, rabbit, goose, and sandhill crane hunting. This Environmental Assessment (EA) is being prepared to evaluate the effects associated with this proposal and complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations (40 CFR 1500-1509) and Department of the Interior (516 DM 8) and Service (550 FW 3) policies (see section 1.7 for a list of additional regulations with which this EA complies). NEPA requires examination of the effects of proposed actions on the natural and human environment. In the following chapters, three alternatives are described and environmental consequences of each alternative are analyzed.

1.2 Location

Washita National Wildlife Refuge is located in western Oklahoma in Custer County, which is approximately 120 miles west of Oklahoma City. The refuge is approximately 7 miles from Butler and Hammon, Oklahoma, and is within 30 miles of Clinton and Elk City, Oklahoma. The 8,075 acres refuge is within the central mixed-grass prairie and is composed of a variety of habitats, including grasslands interspersed with patches of shrubs, non-commercial forests and woodlands, agricultural cropland, natural and man-made wetlands, and the open waters of Foss Reservoir.

1.3 Background

Washita NWR was established in 1961 as an overlay refuge on BOR lands and waters of Foss Reservoir and "...shall be administered by him [Secretary of Interior] directly or in accordance with cooperative agreementsand in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources, thereof, and its habitat thereon..." 16 U.S.C. § 664 (Fish and Wildlife Conservation Act), and "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds" 16 U.S.C. § 715d (Migratory Bird Conservation Act).

The Refuge covers 8,075 acres and includes the following habitats:

- 4,190 acres of uplands
- 1,800 acres of open water
- 85 acres of wetlands
- 2,000 acres of croplands

Habitats on the refuge have been shaped by the climatic and geologic history of the area, as well as past and present habitat management practices. Shell-encrusted rock formations emerge from the red dirt in some locations providing a look into the geological processes that gave rise to the local topography, which was once inundated under the Permian Sea. Sparsely vegetated areas occur where top soil was removed in the “Dust Bowl” era, leaving prominent sand hills as evidence of past land management practices and climatic conditions. Old homestead sites are marked by the presence of non-native trees and shrubs, often surrounding storm cellars, and an abandoned railroad path is evident where a straight line of elevated grasses and trees traverses the northern part of the refuge. The completion of Foss Reservoir greatly impacted surrounding land use, and flooded areas where crops and farm houses once stood. The availability of this open water habitat made the surrounding farmlands much more appealing to waterfowl, and an ideal place to establish a waterfowl refuge.

Washita NWR was established to provide feeding and resting habitat for migrating and wintering waterfowl and sandhill cranes. Large numbers of geese utilize refuge farm fields planted to wheat for green browse in the winter. Moist soil units are managed to provide feeding and resting areas for many species of ducks and shorebirds.

The Refuge currently receives approximately 40,000 visitors per year. These visitors take part in a variety of public use activities including hunting, fishing, wildlife observation, and wildlife photography. Current hunting opportunities on Washita NWR include white-tailed deer, bobwhite quail, cottontail rabbit, jackrabbit, goose, and sandhill crane hunting. Washita NWR is one of the top hunting refuges in the Southwest Region, with approximately 300 hunting visits per year. With the exception of a few special Refuge regulations, hunts are in accordance with State regulations established by the Oklahoma Department of Wildlife Conservation (ODWC).

1.4 Purpose and Need for the Proposed Action

The purpose of the EA is to evaluate the addition of adding turkey hunts to the hunting program on the Refuge. The purposes of the action are to manage turkey population numbers to provide high quality hunting recreation to the general public in accordance with the National Wildlife Refuge Improvement Act of 1997; and to contribute to achievement of the refuge purposes. The refuge establishing purposes are as follows:

“...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements... and in accordance with such rules and regulations for the conservation, maintenance and management of wildlife resources thereof, and its habitat thereon,...” 16 U.S.C. 664 (Fish and Wildlife Coordination Act).

“for use as an inviolate sanctuary, or for any other management purpose, for migratory birds.” 16 U.S.C. 715d (Migratory Bird Conservation Act).

“suitable for - (1) incidental fish and wildlife oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species...” 16 U.S.C. 460 k - 1 (Refuge Recreation Act)..

Providing hunting opportunities is consistent with the Refuge Comprehensive Conservation Plan (CCP, 2010) and U.S. Fish and Wildlife Service policies on wildlife dependent recreation and hunting as mandated by the National Wildlife Refuge System Improvement Act of 1997.

The guiding principles of the Refuge System’s hunting programs as outlined in the U.S. Fish & Wildlife Manual (605 FW 2) are to:

- Manage wildlife populations consistent with Refuge System-specific management plans approved after 1997 and, to the extent practicable, State fish and wildlife conservation plans;
- Promote visitor understanding of and increase visitor appreciation for America’s natural resources;
- Provide opportunities for quality recreational and educational experiences consistent with criteria describing quality found in 605 FW 1.6;
- Encourage participation in this deeply-rooted tradition in America’s natural heritage and conservation history; and
- Minimize conflicts with visitors participating in other compatible wildlife-dependent recreational activities.

Hunting in part fulfills the Refuge CCP which contains the following objective and strategy regarding hunting:

Goal 5, Objective 6: Continue to offer a variety of public hunting opportunities on the refuge.
Strategy 2: Periodically evaluate refuge hunting program for effectiveness and appropriateness of adding or reducing the number of hunter permits or species allowed to be hunted.

1.5 Decision to be Made

The Service’s Regional Director will review the recommendations assessed in this EA and select one of the three Alternatives presented. The Regional Director will also determine whether this EA is adequate to support a Finding of No Significant Impact (FONSI) or whether an Environmental Impact Statement will need to be prepared.

To initiate or expand hunting programs, the Service must publish in the Federal Register any proposed and final refuge-specific regulations pertaining to that use prior to implementing them. The regulations are only one element of a complete opening package, which is comprised

of the following documents: hunting plan; compatibility determination; documentation pursuant to compliance with the National Environmental Policy Act of 1969, as amended (NEPA) and appropriate NEPA decision document; Endangered Species Act section 7 evaluation; copies of letters requesting State involvement and the results of the request; draft news release; outreach plan; and the draft refuge-specific regulations.

This EA serves as the NEPA document which analyzes the impacts on environmental, cultural, and historical resources of continuing to provide hunting opportunities on the Aransas NWR. The Hunting Plan is presented in this document as the preferred alternative. Proposed uses within this plan have been determined to be appropriate and compatible with the mission of the Refuge System and purposes for which the Refuge was established.

1.6 Regulatory Compliance

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

The mission of the Refuge System is:

“... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans” (National Wildlife Refuge System Improvement Act of 1997, Public Law 105-57).

The goals of the Refuge System are to:

- *Conserve a diversity of fish, wildlife, and plants and their habitats, including species that are endangered or threatened with becoming endangered;*
- *develop and maintain a network of habitats for migratory birds, anadromous and interjurisdictional fish, and marine mammal populations that is strategically distributed and carefully managed to meet important life history needs of these species across their ranges;*
- *conserve those ecosystems, plant communities, wetlands of national or international significance, and landscapes and seascapes that are unique, rare, declining, or underrepresented in existing protection efforts;*
- *provide and enhance opportunities to participate in compatible wildlife-dependent recreation (hunting, fishing, wildlife observation and photography, and environmental education and interpretation); and*
- *foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants and their habitats.*

The NWRS Improvement Act of 1997 provides guidelines and directives for the administration and management of all areas in the NWRS. It states that national wildlife refuges must be protected from incompatible or harmful human activities to ensure that Americans can enjoy Refuge System lands and waters. Before activities or uses are allowed on a national wildlife refuge, the uses must be found to be compatible. A compatible use "... will not materially interfere with or detract from the fulfillment of the mission of the Refuge System or the purposes of the refuges." In addition, "wildlife-dependent recreational uses may be authorized on a refuge when they are compatible and not inconsistent with public safety." The act also recognized that wildlife-dependent recreational uses involving hunting, fishing, wildlife observation, photography, environmental education and interpretation, when determined to be compatible with the mission of the System and purposes of the refuges, are legitimate and appropriate public uses of the NWRS and they shall receive priority consideration in planning and management.

This EA was prepared by the Service and represents compliance with applicable Federal statutes, regulations, Executive Orders, and other compliance documents, including the following:

- American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996)
- Archaeological Resources Protection Act of 1979 (16 U.S.C. 470)
- Clean Air Act of 1972, as amended (42 U.S.C. 7401 et seq.)
- Clean Water Act of 1972, as amended (33 U.S.C. 1251 et seq.)
- Endangered Species Act of 1973, (ESA) as amended (16 U.S.C. 1531 et seq.)
- Executive Order 12898, Federal Action Alternatives to Address Environmental Justice in Minority Populations and Low Income Populations, 1994.
- Fish and Wildlife Coordination Act of 1958, as amended (16 U.S.C. 661 et seq.)
- Floodplain Management (Executive Order 11988)
- National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.)
- Regulations for Implementing the Procedural Provisions of NEPA (40 CFR 1500 et seq.)
- National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.)
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001 et seq.)
- Protection and Enhancement of the Cultural Environment (Executive Order 11593)
- Protection of Wetlands (Executive Order 11990)
- National Pollutant Discharge Elimination System, as amended (33 U.S.C. 1251 et seq.)
- Executive Order 13112, Invasive Species (issued in February 1999)
- Administrative Procedures Act (5 U.S.C. 551-559, 701-706, and 801-808) as amended
- Antiquities Act of 1906 (16 U.S.C. 431-433)

- Bald Eagle Protection Act (16 U.S.C. 668-668d) as amended
- Federal Land Recreation Enhancement Act (REA), 16 U.S.C.6803(c), Consolidated Appropriations Act (PL 108-447)
- Fish and Wildlife Act of 1956 (16 U.S.C. 742a-754j-2)
- Fish and Wildlife Conservation Act (16 U.S.C. 2901-2911) as amended
- Fish and Wildlife Improvement Act of 1978 (16 U.S.C. 7421)
- Migratory Bird Treaty Act (16 U.S.C. 703-712 as amended)
- National Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee) as amended
- Recreation Hunting Safety and Preservation Act of 1994 (16 U.S.C. 5201-5201)
- Refuge Recreation Act (16 U.S.C. 460K-460K-4) as amended
- Sikes Act (16 U.S.C. 670a-680o) as amended
- Soil and Water Conservation Act of 1977 (16 U.S.C. 2001-2009) as amended

Further, this EA reflects compliance with applicable State of Oklahoma and local regulations, statutes, policies, and standards for conserving the environment and environmental resources such as water and air quality, endangered plants and animals, and cultural resources.

1.7 Public Involvement and Issues Identified

Public scoping of the proposed action was initiated on May 13 through May 27, 2015. A Notice was posted in area post offices, convenience stores, and city halls and a news release was distributed to local media to solicit public comments on the proposed action. A letter was sent to ODWC requesting comments on the proposed action, and a reply was received in support of opening turkey hunting at Washita NWR. We received 3 verbal and 3 email comments. The majority of comments received during the scoping period were in support of additional hunting opportunities.

Internal scoping of refuge staff was also conducted to identify issues, concerns, and opportunities. Based on internal and external scoping, the following concerns were identified and considered in the development of alternative in this EA:

- There is interest in expanding turkey hunting opportunities on public lands due to the high cost and limited availability of private lands turkey hunting in western Oklahoma.
- There is a concern that there are too many turkeys and they may cause depredation on quail by turkeys.
- There is concern that there may not be enough turkeys to support a hunt.

The Turkey Hunt Plan, EA, and CD will be made available for review and public comment from September 2, 2015 through October 2, 2015 at the public libraries in Clinton and Elk City, Oklahoma, at the City Hall in Butler, Oklahoma, and at the refuge Headquarters. Notice of the availability of the plan will be placed in the Elk City and Clinton newspapers. A copy of the plan will be provided for comment to the Oklahoma Department of Wildlife Conservation.

2.0 ALTERNATIVES; INCLUDING PROPOSED ACTION ALTERNATIVE

This chapter discusses the alternatives considered for opening Rio Grande turkey hunting opportunities on the Refuge.

2.1 Alternative A – No Action (Current Management)

Currently, a total of 5,797 acres is open to hunting for white-tailed deer, feral hog, bobwhite quail, cottontail rabbit, jackrabbit, geese, and sandhill cranes. Deer and feral hog hunting is permitted through the ODWCs controlled hunts program on 5,797 acres. Quail and rabbit hunting are permitted during state seasons on 2,392 acres primarily located on the east side of the Refuge. Goose and sandhill crane hunts are operated through a draw hunt conducted by the Refuge on 212 acres located on the southwest portion of the Refuge. Under this alternative, hunting would continue as shown in 50 CFR 32.55; turkey hunting would not be allowed.

2.2 Alternative B – Proposed Action (Open to Limited Turkey Hunts)

Under the proposed action, outdoor recreational opportunities would be expanded while turkey population numbers are protected through limited public hunting. The number of hunters utilizing the refuge at one time, and the number of turkeys harvested on the refuge would be strictly controlled. Under this alternative, hunting conditions would be the same as A with the addition of turkey hunting on 5,797 acres through the ODWCs controlled hunts program.

Turkey hunting will be allowed during the Spring Turkey Season in established Turkey Hunt Areas (Figure 1). Hunts will be conducted through the ODWC Controlled Hunts Program. (For more information on the ODWC Controlled Hunts Program, please visit <http://www.wildlifedepartment.com/controlledhunts.htm>.) Up to 20 permits will be issued annually as determined by assessment of local turkey population numbers utilizing turkey survey results. Up to 2 hunters may be assigned to an area during an individual hunt. Hunts will each last 3 days, and up to 4 hunts may be held during the Spring Turkey Season. Hunt Areas will be assigned during hunter selection. Bag limit is one gobbler per hunter. Only federally approved, lead-free, non-toxic shot may be possessed if using a shotgun while hunting turkeys on the Refuge. All hunts will be in accordance with State regulations and Special Refuge Regulations. Baiting is prohibited. Shooting turkeys in roost trees is prohibited. Hunter check-in/out will be required. Vehicles will be allowed on established roads and parking areas only; no off-road access will be allowed. Washita NWR will monitor the turkey population and hunter success to allow for adaptive management and reduce or increase the number of permits offered as needed to ensure sound management. During the 3 day hunts, general public use of the hunt areas will be closed.

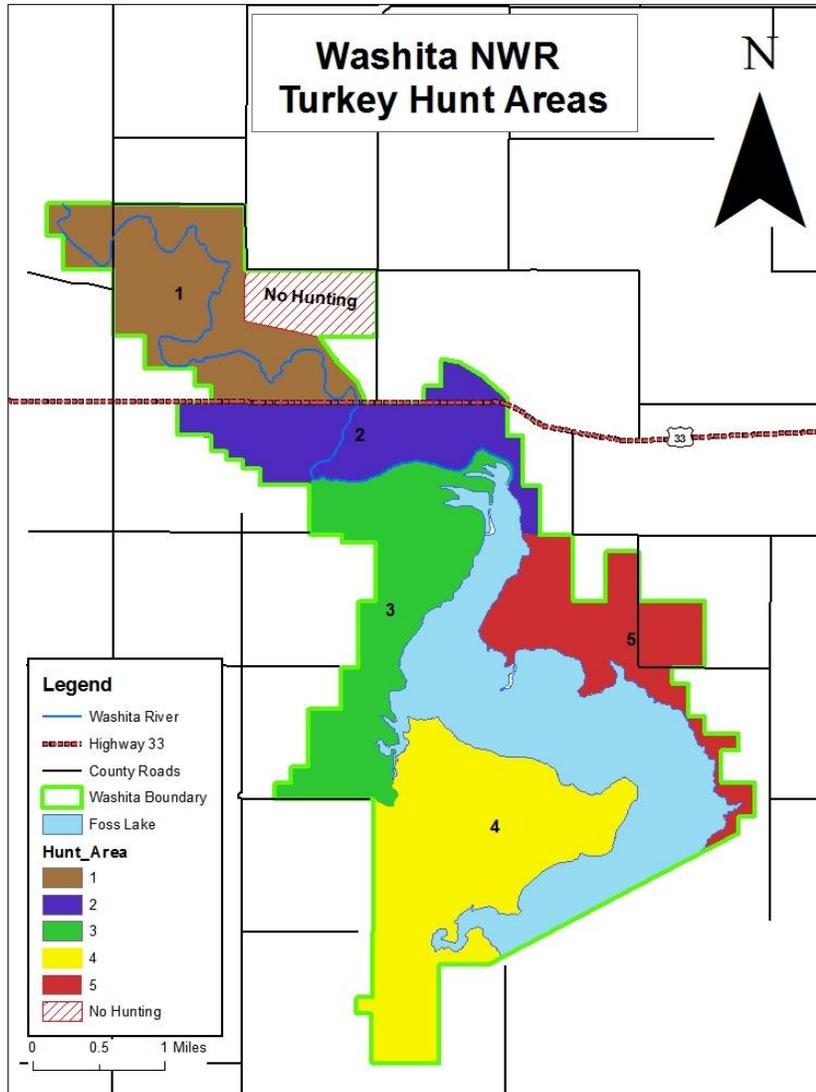


Figure 1. Washita NWR Hunt Areas

2.3 Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons

Under this alternative, the refuge would allow hunting of turkeys on the refuge in accordance with State hunting seasons (spring and fall) and bag limits determined by the State regulations. There would be no restrictions on the numbers of hunters. Under this alternative, hunting conditions would be the same as A with the addition of unrestricted turkey hunting on 5,797 acres during all state open seasons. This alternative was developed by the Refuge as an alternate means to implement a turkey hunt. However, operation of a turkey hunt under Alternative C would not allow the Refuge to adaptively manage the turkey hunt according to population surveys. The Refuge would have no means to control number of hunters, number of turkeys taken, or bag limits.

2.4 Alternative Considered But Dismissed From Detailed Analysis

All comments and suggestions received during scoping were considered during alternative development. Alternatives that were determined to be infeasible are discussed below.

Alternative D: Unrestricted Hunting of Wild Turkey during Selected State Open Seasons

Under this alternative, the refuge would allow hunting of turkey on the refuge during the State spring hunting season in accordance with bag limits determined by the State regulations. There would be no restrictions on the numbers of hunters. This option was dismissed as it was redundant with Alternative C: Unrestricted Hunting of Wild Turkey during State Open Seasons. Though Alternative D removed the Fall Turkey Season, which would likely reduce the number of turkeys that would be harvested, there is no reliable way to anticipate the differences in impacts between Alternatives C and D as the Refuge would have no control over numbers of hunters participating in these hunts.

3.0 AFFECTED ENVIRONMENT

Located in the mixed-grass prairie of western Oklahoma, the refuge provides an important stopover area for waterfowl and shorebirds in the central flyway. The refuge encompasses 8,075 acres, which consist of 4,190 acres of upland habitat, 85 acres of wetlands, 2,000 acres of croplands, and 1,800 acres of open water.

A complete description of refuge resources can be found in the Washita & Optima National Wildlife Refuges Comprehensive Conservation Plan (USFWS 2009). The following resources are not discussed in this EA because the proposed hunting activities are not expected to have any impacts on them: physiography, mineral, water quality and quantity, visual resources, and wilderness. Current and proposed hunting areas are located across the breadth of the refuge. The resources described below are those that could be impacted (directly or indirectly) by the alternatives discussed in this document.

3.1 Physical Environment

The Washita NWR is located in Custer County, Oklahoma on the north end of Foss Reservoir at elevations from 1,640 to 1,740 feet msl. The Washita River traverses approximately 6 miles of refuge lands before flowing into the north end of Foss Reservoir. Other watercourses which enter the lake through the refuge are Little Panther Creek, Big Panther Creek, Pitts Creek, and Crooked Creek. The riparian areas surrounding these watercourses provide not only important habitat for local fish, but also travel corridors for wildlife through the grasslands and farmlands on the refuge and feeding and nesting grounds for many species of birds.

Foss Reservoir was created to provide flood control and a dependable domestic water supply to surrounding areas. The water level in Foss Lake usually fluctuates a couple of feet each year. The normal pool elevation is 1642' above mean sea level (msl). The lake level has remained

below the normal pool since 2010. Lake levels are controlled by the Foss Reservoir Master Conservancy District (FRMCD) except when lake levels are in official flood stage (1642' msl – 1668' msl), during which time the U. S. Army Corps of Engineers dictates water level management.

3.1.1 Air Quality

The Refuge is located in a rural environment and the overall air quality is considered good. The closest Air Quality Monitoring Station is in Weatherford, OK, 42 miles southeast of the Refuge and 70 miles west of Oklahoma City. Data collected by the Oklahoma Department of Environmental Quality indicate that air quality in Oklahoma meets or exceeds national standards as listed in 40 CFR 81.337.

3.1.2 Soils

Sixteen soil types occur on the refuge. Six major range sites occur on the refuge: loamy bottomland, sandy prairie, loamy prairie, shallow prairie, eroded prairie, and deep sand. The majority of the refuge soils are well drained. The soil is a deep sandy loam or sandy silt loam which is highly erodible. The soil is over 10 feet deep in some areas of the refuge and generally overlies a sandy mineral horizon. Sand hills are encountered in some areas on the second terrace level where erosion has removed the topsoil. The Clairemont-Dale association is the most important soil type on the refuge. These sedimentary deposits make up the bottomland soils by the Washita River and are quite fertile. The major portion of the farming program is conducted on the highly productive Class I and Class II lands. Due to their silt-loam and sandy-loam composition, these soils are susceptible to wind erosion (physiography and soil descriptions summarized from Henson 1978).

3.2 Biological Environment

Historically, the refuge has been the site of heavy farming or grazing use. Refuge grasslands evolved with grazing by native ungulates as an inherent part of the environment and have been grazed by domestic livestock since the arrival of early settlers.

After settlement occurred in the late 1800s and early 1900s, a large portion of the rangelands of western Oklahoma were plowed and converted to croplands, and cotton was grown commercially. As early farming practices induced erosion, the uplands were denuded of the fertile soil and the bottomlands were transformed into fertile farm fields. These agricultural fields are the cornerstone of the waterfowl management effort on Washita NWR.

Present plant associations reflect changes caused by overgrazing, plowing native rangeland, and in a few instances, prairie restoration efforts. The riparian areas surrounding these watercourses provide not only important habitat for local fish, but also travel corridors for wildlife through the grasslands and farmlands on the refuge and feeding and nesting grounds for many species of birds.

3.2.1 Vegetation

The turkey hunt units identified in Figure 1 encompass all of the following habitat types:

Native Prairie

The refuge is located in a transition area from the tall-grass prairie of the east to the short-grass plains of the west. Important grasses are: switchgrass (*Panicum virgatum*), big bluestem (*Andropogon scoparius*), little bluestem (*Schizachyrium scoparium*), buffalograss (*Buchloe dactyloides*), Indiangrass (*Sorghastrum nutans*), and sideoats grama (*Bouteloua curtipendula*).

Riparian and Wetlands

Trees and shrubs are present along the stream courses. Dominant species include: hackberry (*Celtis occidentalis*), elms (*Ulmus spp.*), mulberry (*Morus spp.*), black locust (*Robinia pseudoacacia*), eastern redcedar (*Juniperus virginiana*), eastern cottonwood (*Populus deltoides*), and catalpa (*Catalpa bignonioides*). Found along ponds and waterways throughout the refuge are black willow (*Salix nigra*) and common button bush (*Cephalanthus occidentalis*).

Cropland

Refuge croplands produce more than one million pounds of browse to meet the forage requirements of geese, ducks, and cranes for roughly five months (a total of three million use days). Approximately 2,000 acres of the refuge are planted with winter wheat, winter peas, milo, and various other crops. Green browse and cereal grains are grown to be available to wintering waterfowl and cranes from October through February. White-tailed deer and wild turkey also extensively use these areas for food and cover.

3.2.2 Wildlife

The refuge supports a diversity of wildlife native to the mixed-grass prairie of western Oklahoma, as well as migratory species that utilize riparian areas, wetlands, and reservoirs. Over 270 species of birds, 48 species of mammal, 60 species of reptiles and amphibians, and at least 28 species of fish are known to inhabit the refuge. A more in-depth review of wildlife can be found in the refuge CCP (USFWS 2009).

Turkey

Wild turkeys have been a common sight at Washita NWR for over a decade. There has been no legal hunting of turkey on the refuge since establishment, though adjacent private lands are hunted. Changes in area farming practices have occurred, including switching from cotton to more palatable crops such as alfalfa, grain sorghum, and wheat. Turkey populations on the refuge, as well as throughout most of its range, have increased dramatically due to restocking efforts and habitat improvements. The following distribution map indicates that the density of the local Wild Turkey population in western Oklahoma is among the highest recorded in the country. Breeding Bird Surveys (BBS) are conducted annually near the refuge.

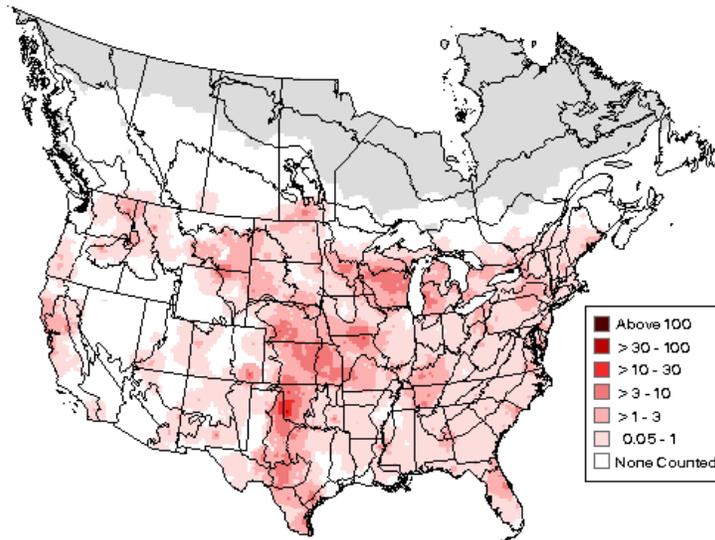


Figure 2. BBS Distribution Map for Wild Turkey, 2007-2013.

Observations made by Refuge staff, volunteers, and visitors indicate the Refuge wild turkey population has increased greatly in the last decade. Turkeys are now commonly seen in areas which formerly held few, if any, birds. Turkey Roost Surveys were initiated in February 2015, and these data will be used to inform refuge management of the turkey hunt. During the initial roost survey, 157 Rio Grande Wild Turkeys were counted on 4 roost sites on the Refuge. Based on these survey data, a limited recreational hunt can be sustained.

3.3 Threatened and Endangered Species and Species of Concern

Several Threatened or Endangered species utilize the refuge during migrations or are seasonal residents, including whooping cranes (*Grus americana*), and interior least terns (*Sterna antillarum athalassos*). The Arkansas river shiner (*Notropis girardi*) is found within the county. The lesser prairie chicken (*Tympanuchus pallidicinctus*), recently listed as Threatened, is present within the county, but has not been observed on the refuge in several years. The refuge provides habitat for a variety of rare or declining species, including two federally listed (threatened or endangered) species:

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS
<i>Grus americana</i>	Whooping Crane	Endangered	Endangered
<i>Sterna antillarum athalassos</i>	Interior Least Tern	Endangered	Endangered

3.4 Human Environment

3.4.1 Cultural Resources

Archeological finds on the refuge indicate a prior civilization of nomadic hunters. Bison horns, antlers, stone scrapers, and stone points chronicle the Native American's dependence on the wildlife resources. Pottery shards, fire rings and pole marks have also been found on the refuge. Initial surveys indicated the existence of a village site and burial grounds on Cheyenne Point dating back the 1500's. Most activity occurred on the second terrace level overlooking the Washita River. The area was probably also a camp ground for General Custer's 7th Calvary. Very little excavating has been done on the refuge. Known or suspected sites are protected from disturbance.

3.4.2 Socioeconomic Resources

Washita NWR is located in Custer County (population 25,230), approximately 26 miles northeast of Elk City (population 10,510) and approximately 25 miles northwest of the city of Clinton (population 8,364). Oklahoma City, with a population of 523,303, is approximately 100 miles east of the refuge. Several small towns are within 60 miles of the refuge. Populations are estimates by the U.S. Census Bureau for 2003 or 2004.

The presence and operation of Washita NWR has a definite socioeconomic effect on the surrounding communities, especially the towns of Butler, Hammon, Elk City, and Clinton. Refuge employees live in and/or shop in these four towns. The refuge buys many of its supplies locally. The majority of the refuge's annual budget is recycled in the local economy through the refuge staff, purchases with local stores for supplies, and contracts for local labor.

Refuge waters receive approximately 26,000 fishing visits each year. This figure includes many out of state visitors, especially from the Texas Panhandle. Refuge hunting programs attract approximately 500 visitors annually. Local community businesses including restaurants, grocery stores, bait and tackle shops, motels, service stations, and sporting goods stores all profit from these visitor services programs.

There are currently six gas producing wells on Washita NWR. Mineral rights for the majority of the refuge were retained by the previous landowners. The refuge is located in a portion of the Anadarko Basin, a large natural gas resource.

As required by the Refuge Revenue Sharing Act of 1978, Public Law 95-469, the Service annually compensates the county for federal lands taken off of county tax rolls. The revenue sharing check is calculated using a formula taking into account the land's appraised value and money available under the program. Checks are delivered annually to Custer County for the 14 acres of land that Washita NWR actually owns in fee title. The BOR still owns the remaining land.

3.4.3 Public Use/Recreation

The Refuge currently receives approximately 40,000 visitors per year. These visitors take part in a variety of public use activities including hunting, fishing, wildlife observation, and wildlife photography. Current hunting opportunities on Washita NWR include deer, quail, rabbit, goose, and sandhill crane hunting. Washita NWR is one of the top hunting refuges in the Southwest Region, with approximately 500 hunting visits per year. The refuge also hosts an annual Wildlife Tour in January and an Anniversary Celebration in April each year.

4.0 ENVIRONMENTAL CONSEQUENCES

This chapter analyzes and discusses the potential environmental effects or consequences that can reasonably be expected by the implementation of the proposed action. An analysis of the effects of the proposed management action and alternatives has been conducted on the physical environment (climate, air quality, and soils); biological environment (habitat, resident wildlife, migratory species, and threatened and endangered species); and socioeconomic environment (cultural resources, socioeconomic, visitor service/recreational opportunities, public health and safety, facilities, and visual and aesthetic resources).

It has been determined that none of the Alternatives will have impacts on hydrology, water quality or quantity, geology, mineral resources and visual/aesthetic resources; therefore there will be no further discussion of these resources in the analysis. Potential impacts on other physical, biological, and socioeconomic resources are addressed in the sections below. Potential impacts are described in terms of type, duration, intensity and context (scale). General definitions of terms used in this analysis can be found in Appendix A.

4.1 Effects Common to All Alternatives

4.1.1 Environmental Justice

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was signed by President Bill Clinton on February 11, 1994, to focus federal attention on the environmental and human health conditions of minority and low-income populations with the goal of achieving environmental protection for all communities. The Order directed federal agencies to develop environmental justice strategies to aid in identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Order is also intended to promote nondiscrimination in federal programs substantially affecting human health and the environment, and to provide minority- and low-income residents access to public information and participation in matters relating to human health or the environment. This EA has not identified any adverse or beneficial effects for any alternative unique to minority or low-income populations in the affected area. Additionally, none of the alternatives will disproportionately place any adverse environmental, economic, social, or health impacts on minority or low-income populations.

4.1.2 Climate Change

Climate change is already affecting fish, wildlife, plants and their habitats around the globe. The Service's Southwest Region has been working with the U.S. Geological Survey, the academic community, and other natural resource management agencies and interest groups to translate available and emerging science into concrete actions that reduce the impacts of a changing climate on the broadly diverse ecosystems in Arizona, New Mexico, Oklahoma and Texas.

The Refuge believes that its hunt program will have negligible impacts on Climate Change; however, much is unknown about this subject. The Service has recently addressed the subject of Climate Change with the issuance of the publication “Rising to the Urgent Challenge: Strategic Plan for Responding to Accelerating Climate Change.” This five year plan calls for developing long-term processes and protocols for biological planning and conservation at broad, landscape scales. This five year action plan calls for baseline data to be established. Refuges to date have no information or data regarding their carbon footprint. This subject will be further addressed as future direction is developed and provided on how to step this Strategic Plan down to the field level.

4.1.3 Impacts on Cultural Resources

Hunting, regardless of method or species targeted, is a consumptive activity that does not pose any threat to historic properties on and/or near the Refuge. In fact, hunting meets only one of the two criteria used to identify an “undertaking” that triggers a federal agency’s need to comply with Section 106 of the National Historic Preservation Act. These criteria, which are delineated in 36 CFR Part 800, state: 1) An undertaking is any project, activity, or program that can alter the character or use of an archaeological or historic site located within the “area of potential effect;” and 2) The project, activity, or program must also be either funded, sponsored, performed, licenses, or have received assistance from the agency. Consultation with the pertinent State Historic Preservation Office and federally recognized Tribes is, therefore, not required.

4.2 Physical Environment

4.2.1 Impacts on Air Quality

Alternative A - Current Management:

Under Alternative A, no additional impacts to air quality are expected from continuation of current hunting programs. The current levels of public use on the refuge do not appear to be impacting air quality, as current air quality in the area is considered good. Hunter traffic on roads and trails may cause a slight decrease in air quality due to vehicle emissions and the stirring of road dust. These impacts are expected to be negligible, short-term, and local because the small number of vehicles (at an average of 2 hunters per vehicle) therefore, there would not be a noticeable improvement in air quality if hunting opportunities were ceased.

Alternative B – Proposed Action:

Increased hunting traffic on roads and trails would result in a slight increase in vehicle emissions and stirring of dust; however, this impact is expected to be negligible and short-term at the local scale. During wild turkey hunts, an additional 5 vehicles per hunt are expected. Combined, all new hunts would result in an estimated 10 additional vehicles on actual hunt days and a few additional days for scouting. This small increase in the number of hunter visits when compared to overall public use on the Refuge, is considered insignificant; no changes to air quality are anticipated.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

Under this alternative, impacts to air quality would be greater than with Alternative A and B; however, we cannot quantify the extent of the potential impact because the Refuge would have no control over hunter numbers.

4.2.2 Impacts on Soils

Alternative A - Current Management:

Current management would continue to result in disturbance to surface soils due to compaction by foot traffic. This impact is expected to be short-term, negligible, and local, since current hunter densities are low across the Refuge. Vehicles would be confined to public access roads and parking areas, so soils would not be impacted by off-road vehicle use.

Alternative B - Proposed Action:

The proposed action would result in a negligible increase in disturbance to surface soils (compaction by foot traffic) compared to Alternative A. These impacts are expected to be negligible because vehicles would continue to be confined to public access roads and parking facilities currently in existence. Refuge regulations would not permit the use of off-highway vehicles (i.e., ATV's and utility vehicles). In addition, the increase in hunter visits compared to overall public use on the Refuge is considered insignificant.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

This action would result in an increase in disturbance to surface soils (compaction by foot traffic) compared to Alternative B. These impacts are expected to be negligible because vehicles would continue to be confined to public access roads and parking facilities currently in existence. Refuge regulations would not permit the use of off-highway vehicles (i.e., ATV's and utility vehicles). However, we cannot quantify the extent of the potential impact because the Refuge would have no control over hunter numbers.

4.3 Biological Environment

4.3.1 Impacts on Habitat

Alternative A - Current Management:

Under Alternative A, minor long-term adverse impacts to Refuge habitats are expected from continuation of current management. Spreading of invasive plants through hunter access could occur, but is considered minor due to the low number of hunt participants (approximately 500 hunter visits per year). Damage to roadsides and trails would continue.

Alternative B - Proposed Action:

Under Alternative B, minor long-term adverse impacts to Refuge habitats are expected similar to Alternative A. There is potential for localized damage due to increased traffic by hunters, damage to trees and other vegetation due to clearing of shooting lanes. These impacts would be minimized due to the limited number of hunters allowed on the refuge for turkey hunts and heightened supervision by refuge staff and volunteers during the limited hunt periods. Hunter visits would increase from approximately 500 annually to approximately 505-520 hunter visits per year. Based on this small increase, any change in impacts would be expected to be negligible.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

Under Alternative C, long-term adverse impacts to Refuge habitats could be greater than those caused by Alternatives A or B due to the increase in number of hunters. There would be localized damage due to increased foot traffic by hunters and damage to trees and other vegetation due to clearing of shooting lanes. However, we cannot quantify the extent of the potential impact because the Refuge would have no control over hunter numbers.

4.3.2 Impacts on Resident Wildlife

Alternative A - Current Management:

There would be some short-term negative impacts on small mammals, birds, and other wildlife due to disturbance in areas where human access for hunting activities occurs. These impacts are considered to be negligible due to the small number of hunters and the limited number of days per year on which these impacts occur. Additional mortality of wild turkeys would not occur under this alternative. Additional human disturbance to hunted and non-hunted wildlife species would not occur. The turkey population would probably continue to experience an increase in population until it meets or exceeds carrying capacity. Disease and increased predator numbers would probably influence (limit) population growth of turkeys at very high densities.

Alternative B - Proposed Action:

The turkey population on the refuge is expected to remain stable under this alternative. Turkey populations would likely experience little or no long-term impacts from the controlled harvest. Short-term disturbance to refuge wildlife would increase during hunts. There would be some

short-term negative impacts on small mammals, birds, and other wildlife due to disturbance in areas where human access for hunting activities occurs. Early spring nesting birds or wildlife with young could be temporarily disturbed or displaced due to a spring turkey hunt. However, time and space zoning established by Refuge regulations would minimize incidental disturbance. Controlling the number of hunters, type of weapon allowed, and days open to hunting would minimize disturbance, only occurring 6 days per year.

Hunters may encounter amphibians and reptiles during the spring hunts, but contact should be minimal at this time of the year. Invertebrates become more active as temperatures increase so an expected increase in interaction is expected during the spring turkey hunt. Less competition with other wildlife species for resources, less direct wildlife mortality from nest predation and consumption of birds, reptiles and amphibians would be expected, though negligible as wild turkeys are not known to be a significant source of predation on any resident wildlife species.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

This alternative would result in higher disturbance than Alternative B. Under this alternative, wild turkey hunting would occur during all state open seasons including a 1 month spring season and a 3.5 month fall season. Frequent, but short-term negative impacts on small mammals, birds, and other wildlife from disturbance in areas where human access for hunting activities occurs would be expected. Early spring nesting birds or wildlife with young would likely be temporarily disturbed or displaced. Effects to the turkey population would be increased; however, we cannot quantify the extent of the potential impact because the Refuge would have no control over hunter numbers.

The Unrestricted Hunting of Turkey during State Open Seasons Alternative would likely lead to excessive harvest of turkeys. Unrestricted access and hunting pressure would likely result in lower population levels of target and non-target wildlife due to mortality (shooting), and disturbance of breeding and feeding activity. Turkey populations would be drastically reduced. Fewer turkeys would reduce food for the larger predators such as coyote and bobcat. Goose and duck use of the refuge would be reduced during fall turkey season due to disturbance.

4.3.3 Impacts to Migratory Species

Alternative A - Current Management:

Migratory species present on the Refuge include waterfowl, other water birds, neo-tropical migrant birds, and raptors. There will be no impacts to these species beyond minor current impacts related to hunting and other public uses.

Alternative B - Proposed Action:

Potential impacts would be similar to Alternative A (minor disturbance related to increased human presence and noise associated with hunting and general public uses). However, they would occur on up to an additional 12 days per year.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

This alternative would cause moderate to substantial short-term disturbance (increased human presence and noise associated with hunting) to migratory birds that occur on the Refuge during all state open seasons, including a 1 month spring season and a 3.5 month fall season.

Waterfowl and waterbirds commonly feed in the upland agricultural fields, so this alternative could result in substantial disturbance to these species during the fall hunting season.

4.3.4 Impacts on Threatened, Endangered and Special Status Species

Alternative A - Current Management:

Under the No Action Alternative, the existing habitat conditions would likely be maintained. There would be no expected impacts to Threatened and Endangered Species.

Alternative B - Proposed Action:

Under this alternative, hunters are not likely to impact threatened and endangered species. A Section 7 Evaluation associated with this assessment determined that the proposed alternative is not likely to adversely affect any threatened or endangered species. Any impact to threatened and endangered species is likely to be negligible under any alternative as Washita NWR is not designated habitat for any listed or candidate species, and sightings of listed or candidate species rarely occur. The restriction on the number of hunters participating in Refuge hunts in April and May further reduces the likelihood of disturbance of listed species under this alternative.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

Under this alternative, more frequent hunter visits could increase the chance of affecting threatened and endangered species through disturbance. Any impact to threatened and endangered species is likely to be negligible under any alternative as Washita NWR is not designated habitat for any listed or candidate species, and sightings of listed or candidate species rarely occur.

4.4 Socioeconomic Environment

4.4.1 Impacts on Socioeconomic Resources

Alternative A - Current Management:

Under this alternative, there would be no change in revenues to the local economy associated with hunting on the refuge. The refuge would forgo public use benefits by not opening a turkey hunting program. No additional manpower or funding is required to implement the No Action Alternative. Law enforcement activity would be necessary to enforce the closure of the area to turkey hunting.

Alternative B - Proposed Action:

The proposed action could have a beneficial impact on the local economy. Hunters would likely purchase gas, food, lodging and other supplies from local merchants. Economic impacts

to the refuge would be minor. Costs and time spent by staff administering hunting on the refuge would increase. An increase in budget or a shift in funds would have to be made to underwrite the turkey hunt; however a portion of the monies from permit receipts would be retained to defray the cost of administering the hunt. Littering would likely increase.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

This alternative would likely have a greater beneficial impact on the local economy. A greater number of hunters would spend in communities near the refuge. Hunters would likely purchase gas, food, lodging and other supplies from local merchants. Adverse economic impacts to the refuge would be substantial. Refuge funds to conduct law enforcement would have to be increased. Damage to refuge property, such as signs, fences, gates, and roads would likely increase. Potential damage to oilfield facilities under these uncontrolled conditions could result in environmental damage. Littering would probably increase and there would be an increased likelihood of wildfires. There would be a greater risk of hunter related accidents. Costs and time spent by staff administering hunting on the refuge, and repairing and maintaining facilities and structures would increase. No revenue to the refuge would be generated by this alternative.

4.4.2 Impacts to Visitor Services/Recreation Opportunities

Alternative A - Current Management:

There would be no change in existing visitor services and recreational opportunities on the Refuge. The public would not have the opportunity to harvest a renewable resource, participate in wildlife-oriented recreation that is compatible with the purposes for which the Refuge was established, or have an increased awareness of Washita NWR and the National Wildlife Refuge System. Continued loss of opportunities to offer safe hunting on large parcels of public land in an area where few large parcels of land are available would persist. This alternative does not support the vision statement of Washita NWR, which reads in part “Hunting, fishing, and opportunities to view or photograph wildlife will continue to bring people to the refuge. Hunting programs will be expanded to provide additional educational and recreational opportunities...” (Washita-Optima CCP, USFWS 2009). This alternative does not support the management direction outlined in the Washita NWR CCP, specifically *Goal 5: Wildlife Dependent Recreational Uses, Objective 6.*

Non-hunters would feel free to enjoy other wildlife-dependent recreational activities without concerns related to additional hunting conflicts. It is known that some visitors avoid the Refuge during existing hunts.

Alternative B - Proposed Action:

Opening Washita NWR to wild turkey hunting would allow more opportunities for the public to harvest a renewable resource. The Refuge would be promoting a wildlife-dependent recreational opportunity that is compatible with the purposes for which the Refuge was established. Public awareness of Washita NWR and the National Wildlife Refuge System would increase. In addition, public demand for additional local hunting opportunities would be

met. This alternative would allow the public to enjoy hunting at an affordable rate in a region where public land is limited and private land lease prices are high.

Visitor activities such as wildlife observation and photography or hiking that could occur in hunt areas would be curtailed during the 6 days open to turkey hunting. The primary purpose of closing hunt areas to general public use is for public safety and to help ensure a high quality hunt. There are currently two nature trails at Washita NWR, the 1/3 mile Centennial Trail and the 1/2 mile Riverside trail, which will be closed during the turkey hunts. Hunting for white-tailed deer, rabbit, quail, and waterfowl have occurred at the Refuge since 1965 without conflict with non-hunters. Non-hunters would continue to enjoy other wildlife-dependent recreational activities with a limited increase in hunting conflicts. It is known that some visitors avoid the Refuge during existing hunts.

Fishing from a boat on Foss Reservoir, visiting the Refuge Visitor Center, and taking the Auto Tour would not be impacted. However, visitors using these open areas may hear gunshot or may encounter hunters.

As public use opportunities expand over time, conflicts between user groups may occur. Experience has proven that time and space zoning (i.e., establishment of separate use areas, use periods, and restrictions on the number of users) is an effective tool in eliminating and/or reducing conflicts between user groups. During upland game hunts, general public use of the open hunt unit is allowed, but discouraged. The Auto Tour remains open to all public use during all refuge hunts. All recreation areas and hunt areas are closed during controlled deer hunts. During turkey hunts, all 5 hunt units would be open to hunting, prohibiting general public entry.

This alternative supports the vision statement of Washita NWR, which reads in part “Hunting, fishing, and opportunities to view or photograph wildlife will continue to bring people to the refuge. Hunting programs will be expanded to provide additional educational and recreational opportunities...” (CCP, 2009). This alternative supports the management direction outlined in the Washita NWR CCP, specifically *Goal 5: Wildlife Dependent Recreational Uses, Objective 6*.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

This alternative would result in more conflicts with other priority public uses than Alternative B. Under this alternative, wild turkey hunting would occur during all state open seasons including a 1 month spring season and a 3.5 month fall season. It would be impractical to close the Refuge to other priority public uses for 4.5 months every year.

Under this alternative, there would be a higher chance of firearms accident relative to Alternative A or B. Essentially all Refuge property would be open with a greater number of hunters hunting over an increased period of time. Refuge visitors desiring to use closed trails and other facilities would be prevented from doing due to area closure. Some non-hunting Refuge visitors may be seasonally displaced due to concerns about safety while visiting the

Refuge during hunting season. This alternative would negatively impact all other (non-hunting) Refuge visitors. The quality and quantity of visitor opportunities would be drastically reduced.

Due to the displacement of other public uses for the extensive time period, this alternative does not support the vision statement of Washita NWR, which reads in part “Hunting, fishing, and opportunities to view or photograph wildlife will continue to bring people to the refuge. Hunting programs will be expanded to provide additional educational and recreational opportunities...” (CCP, 2009). This alternative does not support the management direction outlined in the Washita NWR CCP, specifically *Goal 5: Wildlife Dependent Recreational Uses, Objective 6*.

4.4.3 Impacts on Public Health and Safety

Alternative A— Current Management:

Under this alternative, there would be no change to impacts on public health and safety on the Refuge.

Alternative B – Proposed Action:

Under this alternative there are potential negative impacts on public health and safety, since there would be a minor increase in hunting activity on the Refuge.

There is only a very slight chance of a hunting accident during the turkey hunts as Refuge hunter densities are strictly limited and hunt areas are closed to public access during turkey hunts. There is a chance of a firearms accident involving another hunter or themselves. The risk of an accident on the Refuge would be minimized by limiting the number of hunters through a permit process, limiting the areas open for hunting, and conducting hunts on only up to 12 days per year. All hunters comply with the ODWC hunter education requirements. Hunter numbers and season lengths are very restrictive relative to State seasons under this alternative.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

Under this Alternative, impacts to public health and safety would be similar to those discussed under Alternative B, except there would be an increased number of participants in the turkey hunts.

4.4.4 Impacts on Refuge Facilities

Alternative A— Current Management:

Under this alternative, there would be no change to impacts on Refuge facilities.

Alternative B – Proposed Action:

Under this alternative minor additional use of roads, trails and parking areas to accommodate the hunt program would occur. Periodic maintenance or improvement of the existing small parking areas, roads, and trails would be similar to Alternative A. The slight increase in the volume of hunters would cause minimal negative impacts to Refuge facilities. With no new roads or parking areas required for the proposed hunts, costs should be minimal relative to total Refuge operations and maintenance costs and will not significantly diminish resources dedicated to other Refuge management programs.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

Under this alternative additional use of roads, trails and parking areas to accommodate the hunt program would occur. Periodic maintenance or improvement of the existing small parking areas, roads, and trails would increase relative to Alternative B. The substantial increase in the volume of hunters would cause negative impacts to Refuge facilities. With increased maintenance of existing roads, trails, and parking areas required for is alternative, costs may be significant relative to total Refuge operations and maintenance costs and could potentially diminish resources dedicated to other Refuge management programs.

4.4.5 Humaneness and Animal Welfare Concerns

Alternative A— Current Management:

Under this alternative, mortality of white-tailed deer, feral hogs, quail, rabbit, and waterfowl would occur. All hunters must comply with ODWC’s regulations regarding the possession of Hunters Education certification. During this course, established hunter ethics and responsibilities to help ensure hunters are using good judgment related to humaneness and animal welfare are addressed. Accurate, clean shots are expected. The target should be within the effective range of the firearm, ammunition, and the skills of the hunter; and a humane kill is likely.

There would be no changes in impacts on humaneness and animal welfare concerns under this alternative.

Alternative B – Proposed Action:

Under this alternative, mortality of white-tailed deer, feral hogs, quail, rabbit, and waterfowl would occur as in Alternative A, and additional mortality of wild turkey would occur. All hunters must comply with ODWC’s regulations regarding the possession of Hunters Education certification. During this course, established hunter ethics and responsibilities to help ensure hunters are using good judgment related to humaneness and animal welfare are addressed. Accurate, clean shots are expected. The target should be within the effective range of the firearm, ammunition, bow and arrow, and the skills of the hunter; and a humane kill is likely.

Alternative C - Unrestricted Hunting of Wild Turkey during State Open Seasons:

Impacts would be the same as Alternative B, but a much greater number of hunters would be participating in hunting activities which would result in higher mortality to wild turkeys.

4.5 Cumulative Impacts Analysis

A cumulative impact is defined as an impact on the environment that results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future action regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Cumulative impacts are the overall, net effects on a resource that arise from multiple actions. Impacts can “accumulate” spatially, when different actions affect different areas of the same resource. They can also accumulate over the course of time, from actions in the past, the present, and the future. Sometimes different actions counterbalance one another, partially canceling out each other’s effects on a resource. But more typically, multiple effects add up, with each additional action contributing an incremental impact on the resource.

4.5.1 Anticipated Direct and Indirect Impacts of Proposed Action Alternative on Wildlife Species

4.5.1.1 Resident Wildlife

Rio Grande Turkey

Regional Analysis:

Oklahoma hosts two sub-species of wild turkey: the Eastern, and Rio Grande. The species found on Washita NWR is the Rio Grande wild turkey, which has an estimated population of 112,000 birds statewide in Oklahoma (ODWC communication – Rod Smith, Southwest Region Supervisor, 2014). Historically, Rio Grande wild turkeys were found throughout western Oklahoma. However, due to loss of habitat and over hunting, this species was almost extirpated from the state by the mid-20th Century. The Oklahoma Department of Wildlife Conservation worked with landowners and conducted restocking activities, successfully restoring the Rio Grande wild turkey in Oklahoma more than a decade ago.

Local Analysis:

Observations made by Refuge staff, volunteers, and visitors indicate the Refuge wild turkey population has increased greatly in the last decade. Turkeys are now commonly seen in areas which formerly held few, if any, birds. Turkey Roost Surveys were initiated in February 2015, and these data will be used to inform refuge management of the turkey hunt. Based on turkey survey data, a limited recreational hunt can be sustained.

Other (Non-hunted) Resident Wildlife

Regional and Local Analysis:

The Refuge currently hosts hunts for white-tailed deer, feral hogs, quail, rabbit, and waterfowl. The Refuge is proposing to add a new hunt for wild turkey. Other resident wildlife species are

also present on the Refuge, including songbirds, wading birds, and raptors; small mammals such as voles, moles, mice, shrews, and bats; reptiles and amphibians such as snakes, skinks, turtles, lizards, salamanders, frogs and toads; and invertebrates such as butterflies, moths, other insects and spiders. Most of these species are common and widespread. In general these species are broadly distributed throughout the region and have limited home ranges. Hunting is not expected to affect any wildlife populations regionally. Some wildlife disturbance (increased human presence and sounds of gunshots) will occur locally during the hunting season; however, these impacts are expected to be minor for the following reasons. The hunting season is typically of short duration (anticipated 6 days of turkey hunting annually) and will only have minimal direct impacts on other resident wildlife. Nesting birds will likely not be impacted due to the timing of the hunts.

Many species of small mammals, including bats, are nocturnal, which reduces hunter interactions with small mammals. Amphibians and reptiles will be actively breeding when hunting occurs in the spring. The short duration of turkey hunts, held only 6 days per year, will minimize interactions with small mammals, reptiles, and amphibians. Negative cumulative impacts to these species are not expected.

4.5.1.2 Migratory Species

Migratory species present on the Refuge include waterfowl, other waterbirds, neo-tropical migrant birds, and raptors.

Waterfowl (Goose and Sandhill Cranes)

Regional and Local Analysis:

Waterfowl populations throughout the United States are managed through an administrative process known as flyways, of which there are four (Pacific, Central, Mississippi and Atlantic). The review of the policies, processes and procedures for waterfowl hunting are covered in a number of documents.

NEPA considerations by the Service for hunted migratory game bird species are addressed by the programmatic document, “Final Supplemental Environmental Impact Statement: Issuance of Annual Regulations Permitting the Sport Hunting of Migratory Birds (FSES 88– 14),” filed with the Environmental Protection Agency on June 9, 1988. The Service published a Notice of Availability in the Federal Register on June 16, 1988 (53 FR 22582), and the Record of Decision on August 18, 1988 (53 FR 31341). Annual NEPA considerations for waterfowl hunting frameworks are covered under a separate Environmental Assessment and Finding of No Significant Impact. Further, in a notice published in the September 8, 2005, Federal Register (70 FR 53776); the Service announced its intent to develop a new Supplemental Environmental Impact Statement for the migratory bird hunting program. Public scoping meetings were held in the spring of 2006, as announced in a March 9, 2006, Federal Register notice (71 FR 12216).

Because the Migratory Bird Treaty Act stipulates that all hunting seasons for migratory game birds are closed unless specifically opened by the Secretary of the Interior, the Service annually promulgates regulations (50 CFR Part 20) establishing the Migratory Bird Hunting Frameworks. The frameworks are essentially permissive in that hunting of migratory birds would not be permitted without them. Thus, in effect, Federal annual regulations both allow and limit the hunting of migratory birds.

The Migratory Bird Hunting Frameworks provide season dates, bag limits, and other options for the States to select that should result in the level of harvest determined to be appropriate based upon Service-prepared annual biological assessments detailing the status of migratory game bird populations. In North America, the process for establishing waterfowl hunting regulations is conducted annually. In the United States, the process involves a number of scheduled meetings (Flyway Study Committees, Flyway Councils, Service Regulations Committee, etc.) in which information regarding the status of waterfowl populations and their habitats is presented to individuals within the agencies responsible for setting hunting regulations. In addition, public hearings are held and the proposed regulations are published in the Federal Register to allow public comment.

For waterfowl, these annual assessments include the Breeding Population and Habitat Survey, which is conducted throughout portions of the United States and Canada, and is used to establish a Waterfowl Population Status Report annually. In addition, the number of waterfowl hunters and resulting harvest are closely monitored through both the Harvest Information

Program (HIP) and Parts Survey (Wing Bee). Since 1995, such information has been used to support the adaptive harvest management (AHM) process for setting duck-hunting regulations. Under AHM, a number of decision-making protocols render the choice (package) of pre-determined regulations (appropriate levels of harvest) which comprise the framework offered to the States that year. Texas's Parks and Wildlife Department then selects season dates, bag limits, shooting hours and other options from the Central Flyway package. Their selections can be more restrictive, but cannot be more liberal than AHM allows. Thus, the level of hunting opportunity afforded each State increases or decreases each year in accordance with the annual status of waterfowl populations.

Each National Wildlife Refuge considers the cumulative impacts to hunted migratory species through the Migratory Bird Frameworks published annually in the Service's regulations on Migratory Bird Hunting. Season dates and bag limits for National Wildlife Refuges open to hunting are never longer or larger than the State regulations. In fact, based upon the findings of an environmental assessment developed when a refuge opens a new hunting activity, season dates, and bag limits, and other aspects of a hunt may be more restrictive than the State allows.

In 2013 Oklahoma had approximately 20,200 waterfowl hunters (Raftovich et al 2014). The adjacent Foss State Park offers limited public waterfowl hunting opportunities. Few other public areas in western Oklahoma are available to the public for waterfowl hunting. Adjacent private properties regularly lease out fields or blinds for waterfowl hunting at prices far

exceeding those charged for public hunts. There is no check-in or mandatory reporting procedure for waterfowl hunting at Foss State Park or on adjacent private lands, so harvest estimates for the area are not available.

4.5.1.3 Endangered Species

It is the policy of the Service to protect and preserve all native species of fish, wildlife, and plants, including their habitats, which are designated as threatened or endangered with extinction.

Regional and Local Analysis

A Section 7 Evaluation associated with this assessment determined that the proposed alternative is not likely to adversely affect any threatened or endangered species. Any impact to threatened and endangered species is likely to be negligible under any alternative as Washita NWR is not designated habitat for any listed or candidate species, and sightings of listed or candidate species rarely occur. The restriction on the number of hunters participating in Refuge hunts in April and May and allowing hunts on only up to 12 days per year further reduces the likelihood of disturbance of listed species.

4.5.2 Anticipated Direct and Indirect of Proposed Action on Refuge Programs, Facilities, and Cultural Resources

4.5.2.1 Other Wildlife-Dependent Recreation

The Refuge has other wildlife-dependent public use opportunities that can be affected by the hunt program. During the hunts, signs and notices go out advising the general public of temporary closures on hunt units. This can interfere with wildlife observation, trail walking, boating, and fishing. Generally, many of these non-hunting activities do not occur frequently by the public during the spring turkey season. These conflicts are temporary and short-term.

By implementing the Proposed Action Alternative B, the Refuge would meet the demands of the public, as well as meeting the goals for which the Refuge was established. Implementing this hunt program would also bring a new public hunting opportunity to an area dominated by private lands. This is especially important as nation-wide statistics show a decrease in hunter retention and recruitment (especially youth hunters); in part due to a lack of quality public hunting areas.

As public use levels expand across time, the potential for unanticipated conflicts among and with user groups may be present. In the event such unanticipated conflicts may occur as a result of implementing this hunt program, the Refuge's visitor use programs would be adjusted as needed to eliminate or minimize each problem so that it could continue to provide quality wildlife-dependent recreational opportunities. The Refuge would have the flexibility to modify the hunt program in order to meet the needs of most wildlife-dependent recreational user groups.

4.5.2.2 Refuge Facilities

The Service defines facilities as: “Real property that serves a particular function(s) such as buildings, roads, utilities, water control structures, raceways, etc.” Under the proposed action those facilities most utilized by hunters would be: public roads, parking lots, and trails. These facilities are currently used to accommodate Refuge management operations and general public use. The addition of these limited hunts will slightly increase vehicular traffic; however, impacts on these facilities would be minor in the short term and over time. Any negative impacts realized to these facilities would be reduced by appropriate regulation(s).

Minor additional use of roads, trails and parking areas to accommodate the hunt program would occur. Periodic maintenance or improvement of the existing small parking areas, roads, and trails would cause minimal negative impacts as the volume of hunters and the amount of hunter use will be light. With no new roads or parking areas required for the proposed hunts, costs should be minimal relative to total Refuge operations and maintenance costs and will not significantly diminish resources dedicated to other Refuge management programs. The proposed expansion of hunting on the Refuge will serve an important role in carrying out the mission of the Service and the Refuge System.

4.5.2.3 Cultural Resources

Hunting, regardless of method or species targeted, is a consumptive activity that does not pose any threat to historic properties on and/or near the Refuge. In fact, hunting meets only one of the two criteria used to identify an “undertaking” that triggers a federal agency’s need to comply with Section 106 of the National Historic Preservation Act. These criteria, which are delineated in 36 CFR Part 800, state:

1. An undertaking is any project, activity, or program that can alter the character or use of an archaeological or historic site located within the “area of potential effect;” and
2. The project, activity, or program must also be either funded, sponsored, performed, licenses, or have received assistance from the agency.

Consultation with the pertinent State Historic Preservation Office and federally recognized Tribes is, therefore, not required.

4.5.3 Anticipated Impacts of Proposed Hunt on Refuge Environment and Community

4.5.3.1 Refuge Environment

Negative impacts to the Refuge environment associated with the proposed hunting activities will be minor. It is expected that some minor disturbance to soils and vegetation will occur as a result of people engaging in the proposed hunting activities. Air quality will experience minor

impacts due to increased fossil fuel emissions as people travel to and from hunting areas. The Refuge is not known for its ability to provide solitude due to the proximity of highway traffic, freight trains, farming equipment, and other such disturbance so the temporary increase in use during the proposed hunts would not affect this character of the Refuge.

Lands adjacent to the Refuge are predominantly agricultural and sparsely populated, and hunting is a common past time in the area, so the brief increase in activity on the Refuge would have little effect on the public, visitors, and nearby residents.

Any negative cumulative impacts realized in the future action to the Refuge environment would be further reduced by appropriate regulation(s). Collectively, these actions are anticipated to result in minor cumulative effects to the Refuge environment.

4.5.3.2 Refuge Community

The economic impact of the proposed hunt program would be a relatively minor increase in sales of hunting licenses and ammunition to the limited number of people participating in these hunts. Local hotels may experience a slight increase in business as drawn hunters might utilize them.

The new hunt would result in a net gain of public hunting opportunities in a region dominated by private land, which would have a beneficial impact on the general public and hunter retention/recruitment. The community would also benefit from a slight increase tourism and revenue.

4.5.4 Other Past, Present, Proposed and Reasonably Foreseeable Hunts (and Other Activities) and Anticipated Impacts

Past

Virtually all the lands currently included within the Washita NWR boundary were hunted as private lands before being added to the refuge system. Past land use practices primarily included farming and ranching. Other land uses included operation of cattle drives, homesteads, a railroad with stop point at the abandoned town of McClure, and more recently oil and gas production.

Hunting for quail and rabbits has occurred on Washita NWR since 1965. Quail hunting was very popular until quail populations began a steady decline within the past decade. Rabbit hunting has never been a big draw for hunters, with most rabbits taken incidentally during quail hunts. Hunting for geese and sandhill cranes has taken place since 1982. Goose hunting remains relatively popular due to the quality of the hunt and lack of public lands available, and because of the affordability of the refuge hunts in comparison to blind leases on adjacent properties. In 2001, Washita NWR initiated controlled hunts for white-tailed deer, with feral hogs as an incidental take species. Since that time the deer hunt has become very popular due to the quality of hunt and lack of public lands open to hunting in this area.

Present

Farming to produce wildlife forage is conducted on approximately 2,000 acres. Cattle grazing ceased upon establishment of the refuge. Grasslands have been managed using prescribed burning in the absence of grazing since refuge establishment. Prescribed burns are conducted on all upland acres of the refuge on a rotational basis. There are currently 6 active oil and gas well sites on the refuge. At the present time, the Refuge is open to quail, rabbit, goose, sandhill crane, and deer hunting. None of the current hunts has a significant impact to farming, prescribed burning, or oil and gas activities.

Quail and rabbit hunting is allowed during the state open seasons in designated areas. There are 2,392 acres available for upland game hunting. The state season currently runs from mid-November to mid-February. Recent surveys show that less than 50 small game hunters participate in refuge hunts per year, harvesting an average of 46 quail per year. No rabbits have been reported harvested and no hunters reported specifically hunting rabbits in recent years, though cottontail numbers are usually good. Rabbit hunting is not a popular sport in this area of the country.

Ten to 14 hunts take place during the months of November and December for geese and sandhill cranes. Participants hunt from 11 permanent blinds on a 212 acre area, and each blind will accommodate up to 3 hunters. The number of hunting visits ranges from 275 to 400 per year. These half-day hunts are held on Wednesdays, Saturdays and Sundays. Permits for 5 to 7 weekend (2 day) hunts are selected annually by a random drawing. In addition, 5 to 7 Wednesday hunts are permitted.

The refuge deer hunts are conducted through the Oklahoma Controlled Hunts Program. ODWC accepts applications annually and selects participants for the refuge hunts (currently 1 youth hunt), which are scheduled outside the state season. Each of the hunts lasts for 1 ½ day (from 1:00 pm through the end of legal shooting hours the following day). Hunting may take place across the entire refuge. As a management tool, bag limits and the game allowed to be taken are subject to change annually.

Future

Farming to produce wildlife forage will continue on approximately 2,000 acres. Grasslands will continue to be managed using prescribed burning. The number of active oil and gas well sites on the refuge may increase or decrease depending on the interest of mineral rights owners to access these assets and on the oil and gas market. The Refuge will continue to be open to quail, rabbit, goose, sandhill crane, and deer hunting. None of the current or expected hunts will have a significant impact to farming, prescribed burning, or oil and gas activities.

Under the preferred alternative, combined closure of hunt areas annually for white-tailed deer hunting combined with the proposed turkey hunts, portions of the Refuge will be closed for up to 18 days per year between early October and late April. The remaining 347 days are open to all public use and recreation during daylight hours. The portion of the Refuge that contains the

Visitor Center will be closed to hunting and available to non-hunters. The Centennial Trail, Riverside Trail, and walking trail at Owl Cove would be closed for up to 12 days per year during the new hunts.

The implementation of limited wild turkey hunting on the Refuge is expected to be an effective management tool ensuring a healthy turkey population while providing the public with a quality hunt. Refuge staff will continue to promote native flora and fauna diversity through active habitat management activities that achieve Refuge wildlife habitat priorities and objectives.

4.5.5 Anticipated Impacts if Individual Hunts are Allowed to Accumulate

The Service has concluded that there will be minor cumulative impacts on the Refuge's wildlife populations, either hunted or non-hunted species. The Service has also concluded that the proposed action will not cumulatively impact the Refuge environment or Refuge programs. This determination was based upon a careful analysis of potential environmental impacts of hunting on the Refuge together with other projects and/or actions. Hunting is an appropriate wildlife management tool that can be used to manage wildlife populations. Some wildlife disturbance will occur during the limited hunting seasons. Proper zoning, regulations, and Refuge seasons will be designated to minimize any negative impacts to wildlife populations using the Refuge.

Field checks by Refuge law enforcement officers will be planned, conducted, and coordinated with staff and other agencies to maintain compliance with regulations and assess species populations and numbers harvested.

4.5.6 Summary of Cumulative Effects

These actions would have both direct and indirect effects (e.g., additional hunting of turkey would result in increased public use, thus increasing vehicular traffic, disturbance, etc); however, these would be minor cumulative effects from the proposed action. When this new hunt is opened, the expected increase in visitation would have beneficial economic impacts on the local community.

National Wildlife Refuges, including Washita National Wildlife Refuge, would conduct hunting programs within the framework of State and Federal regulations. By maintaining hunting regulations that are as, or more, restrictive than the State, individual refuges ensure that they are maintaining seasons which are supportive of management on a regional basis.

4.6 Unavoidable Adverse Effects

As proposed under the preferred alternative, implementation of hunting on the Refuge may result in some unavoidable adverse impacts. Some turkey would be killed; however, these species are a renewable resource and there would be no discernible effect on the populations.

There would also be some short-term disturbance to other resident wildlife, but these impacts are expected to be minimal.

4.7 Irreversible and Irretrievable Commitment of Resources

None of the alternatives would result in a large commitment of nonrenewable resources.

Project implementation would require a small commitment of fossil fuels (diesel and gasoline), oils, and lubricants used by heavy equipment and vehicles for road maintenance. Trails will be mowed and increased law enforcement activities may become necessary.

4.8 Summary of Impacts by Alternative

Table 4.8-1 Summary of Environmental Consequences by Alternative:

Environmental Resource	Alternative A: Current Management	Alternative B: Proposed Action	Alternative C: Unrestricted Hunting of Wild Turkey during State Open Seasons
Impacts to Air Quality	No change	Negligible short- and long- term negative impacts likely	Unknown, likely minor, short- and long-term negative impacts likely
Impacts to Soils	No change	Negligible short- and long- term negative impacts likely	Unknown, likely minor, short- and long-term negative impacts likely
Impacts on Habitat	No change	Negligible short- and long- term negative impacts likely	Unknown, likely minor, short- and long-term negative impacts likely
Impacts on Resident Wildlife	No change	Minor short-term negative impacts likely	Unknown, likely minor, short-term negative impacts likely
Impacts to Migratory Birds	No change	Minor short-term negative impacts likely	Minor to moderate short-term negative impacts likely
Impacts on Threatened and Endangered Species	No change	Impacts are unlikely	Impacts are unlikely
Impacts on Socioeconomic Resources	No change	Minor short- and long-term positive impacts likely	Minor to moderate short- and long-term positive impacts likely
Impacts to Visitor Services	No change	Minor positive and negative impacts likely	Minor positive and negative impacts likely
Impacts on Public Health and Safety	No change	Negligible short-term negative impacts likely	Negligible short-term negative impacts likely
Impacts on Refuge Facilities	No change	Negligible short-term negative impacts likely	Minor to moderate short-term negative impacts likely

5.0 CONSULTATION, COORDINATION AND DOCUMENT PREPARATION

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Appendix A DEFINITION OF TERMS

Carrying capacity is the maximum population of a particular organism that a given environment can support without detrimental effects.

Effects

Direct effects are the impacts that would be caused by the alternative at the same time and place as the action.

Indirect effects are impacts that occur later in time or distance from the triggering action.

Cumulative effects are incremental impacts resulting from other past, present, and reasonably foreseeable future actions, including those taken by federal and non-federal agencies, as well as undertaken by private individuals. Cumulative impacts may result from singularly minor but collectively significant actions taking place over a period of time.

Impact Type

Beneficial/positive impacts are those resulting from management actions that maintain or enhance the quality and/or quantity of identified Refuge resources or recreational opportunities.

Adverse/negative impacts are those resulting from management actions that degrade the quality and/or quantity of identified refuge resources or recreational opportunities.

Duration of Impacts

Short-term impacts affect identified refuge resources or recreational opportunities; they occur during implementation of the management action but last no longer.

Medium-term impacts affect identified refuge resources or recreational opportunities that occur during implementation of the management action; they are expected to persist for some time into the future though not throughout the life of the CCP.

Long-term impacts affect identified refuge resources or recreation opportunities; they occur during implementation of the management action and are expected to persist throughout the life of the Plan and possibly longer.

Intensity of Impact

Insignificant/negligible impacts result from management actions that cannot be reasonably expected to affect identified refuge resources or recreational opportunities at the identified scale.

Minor impacts result from a specified management action that can be reasonably expected to have detectable though limited effect on identified refuge resources or recreation opportunities at the identified scale.

Moderate impacts result from a specified management action that can be reasonably expected to have apparent and detectable effects on identified refuge resources or recreation opportunities at the identified scale.

Major impacts result from a specified management action that can be reasonably expected to have readily apparent and substantial effects on identified refuge resources and recreation opportunities at the identified scale.

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