

Environmental Assessment

Waterfowl Hunting at Boyer Chute National Wildlife Refuge

March 2007

Proposed Action: Allow waterfowl hunting on Boyer Chute National Wildlife Refuge

Type of Statement: Environmental Assessment

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Acronyms used in this document:

CFR - Code of Federal Regulations

EA - Environmental Assessment

EMU - MFWP Elk Management Unit

ESA - Endangered Species Act

COE - U.S. Army Corp of Engineers

FWS - U.S. Fish and Wildlife Service

NGPC - Nebraska Game and Parks Commission

NEPA - National Environmental Policy Act

NRCS - U.S. Department of Agriculture, Natural Resources Conservation Service

NRD - Papio-Missouri Valley Natural Resource District

NWR - National Wildlife Refuge

Refuge - Boyer Chute National Wildlife Refuge

Project Summary

Boyer Chute National Wildlife Refuge is located approximately 3 miles east of Fort Calhoun, NE. The primary purposes of the refuge are to preserve, restore, enhance and maintain Missouri River floodplain terrestrial and aquatic habitats as well as provide public use opportunities for environmental education, interpretation, photography, wildlife observation, fishing, and hunting.

In response to a 2003 lawsuit filed by the Fund for Animals, the U. S. Fish and Wildlife Service will amend or re-write environmental assessments that describe hunting programs at twenty-three national wildlife refuges. The new environmental assessments will address the cumulative impacts of hunting at all refuges which were named in or otherwise affected by the lawsuit. This document addresses the waterfowl hunting program at Boyer Chute National Wildlife Refuge in Nebraska.

The alternatives being considered in detail are:

(A) Waterfowl hunting allowed

(B) No waterfowl hunting at the refuge (no-action alternative)

The impacts of each alternative are examined in detail per NEPA guidelines. A decision will be made regarding which alternative is to be implemented.

Alternative (A) is the preferred alternative. Alternative (A) is the alternative proposal that would allow waterfowl hunting opportunities at Boyer Chute. This alternative will continue to provide quality hunting in a time when traditional hunting is declining. This alternative will allow waterfowl hunting in management specified locations of the refuge. This will aid in minimizing conflicts with other visitors to the refuge as well as minimize any impacts to the flora and fauna by hunters.

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1. Purpose and Need for Action

1.1 Introduction and Background

This document describes a proposal by the U.S. Fish and Wildlife Service (USFWS) to allow waterfowl hunting at Boyer Chute National Wildlife Refuge. In response to a 2003 lawsuit filed by the Fund for Animals, the U. S. Fish and Wildlife Service will amend or re-write environmental assessments that describe hunting programs at many national wildlife refuges. The new environmental assessments will address the cumulative impacts of hunting at all refuges which were named in or otherwise affected by the lawsuit. This document addresses the hunting programs at Boyer Chute National Wildlife Refuge in Nebraska.

Boyer Chute National Wildlife Refuge is located three miles east of the farming community of Fort Calhoun, Nebraska (Figure 1). The current refuge boundary is situated west and alongside the Missouri River in Washington County, 10 miles north of Omaha, Nebraska. The authorized acquisition boundary is astride the Missouri River in Pottawattamie County, Iowa and Washington County, Nebraska.

Figure 1. Refuge Location



The U.S. Fish and Wildlife Service established the refuge in 1992 to preserve and restore Missouri River habitats commonly found before the river was channeled and diked in 1958. The Fish and Wildlife Act of 1956 and Emergency Wetland Resource Act of 1986 authorized acquisition. It serves as a seasonal resting area for waterfowl, nesting area for a variety of migratory grassland, wet meadow, and wetland dependent birds, and is year round home for many resident wildlife species. There are approximately 25,000 visitors to the refuge each year participating in such activities as biking, hiking, fishing, wildlife observation, and limited deer and waterfowl hunting.

1.2 Purpose

Waterfowl hunting will assist the refuge in realizing the fulfillment of its obligations to the public. On the same note, by encouraging hunting, it is hoped that strong ties to the environment and Boyer Chute would be forged. Heightened public awareness and concern about the refuge will facilitate increased public input and re-establish the general public as a stakeholder in environmental restoration and wildlife conservation projects at Boyer Chute and elsewhere.

1.3 Need for Action

In the National Wildlife Refuge System Improvement Act of 1997, Congress outlined six primary public uses of national wildlife refuges: fishing, hunting, wildlife observation, wildlife photography, environmental education and interpretation. Policy of the U.S. Fish and Wildlife Service (FWS) Refuge Manual (605 FW2-Hunting) stipulates that hunting is considered a priority general public use of the Refuge System and should receive enhanced consideration over non-priority uses. Refuges are encouraged to set aside areas or times to promote an appreciation for wildlife and the environment, while providing quality recreation and teaching proper hunting methods in a safe environment. A hunting program must be compatible, and should instill positive values and high ethical standards, such as fair chase and sportsmanship, while providing a quality hunt.

1.4 Decisions Needed

The Regional Director, Region 3, Minneapolis, Minnesota, will use this document to make a decision determining which alternative is to be implemented.

1.5 Scoping

Scoping is the early process of identifying the range and impacts of the project proposal. It is a process that defines any issue related to the proposal so the appropriate people or organizations are consulted and the major issues are addressed. The Refuge Improvement Act designated six wildlife dependent recreational uses to be given priority on National Wildlife Refuges if they are determined to be compatible with Refuge purposes and the Refuge system mission. The wildlife dependent recreational uses are wildlife observation, wildlife photography, environmental education, interpretation,

hunting and fishing. During the acquisition process and in the Acquisition Environmental Assessment, the FWS stated that hunting would be evaluated and potentially allowed. Following a review and analysis of public comments on the waterfowl hunting EA, either a finding of no significant impact or the need for further in-depth analysis in the context of an Environmental Impact Statement will be determined. The approved preferred alternative will serve as the guideline for the refuge. After the issues were analyzed, the waterfowl hunting option was chosen as the most feasible and became the proposed project.

1.5.1 Proposed Project and Alternatives

Here is the proposed project and alternatives:

- (a) Allow waterfowl hunting
- (b) No waterfowl hunting on the Refuge (no-action alternative)

2. Alternatives

2.1 Introduction

This chapter describes the two alternatives: a waterfowl hunting alternative, and a "No Waterfowl Hunting", no-action alternative.

Description of Alternatives

2.2.1. Alternative A : Waterfowl Hunting

Under this alternative, the refuge would allow waterfowl hunting in specified areas of the refuge. This alternative will provide quality hunting in a time when traditional hunting is declining. This alternative is desirable because it provides the greatest benefits with little adverse environmental effects.

2.2.2. Alternative B (no-action alternative): No Waterfowl Hunting

In this situation, the Service would not open the Refuge to any type of waterfowl hunting. This action would not provide for additional wildlife dependant recreational activities, and the hunting public would be denied an opportunity to have quality hunting in a public area given the fact that the amount of available public hunting grounds is limited in the area. The action alternative would not have any direct adverse affects on species diversity and the environment. This alternative does not meet the stated purpose or fulfill the stated need.

3. Affected Environment

Boyer Chute NWR is located on the floodplain of the Missouri River between Omaha, NE, and Blair, NE. In this section, we give an overview of the environment of the area(s) to be affected by the proposed action or the alternatives.

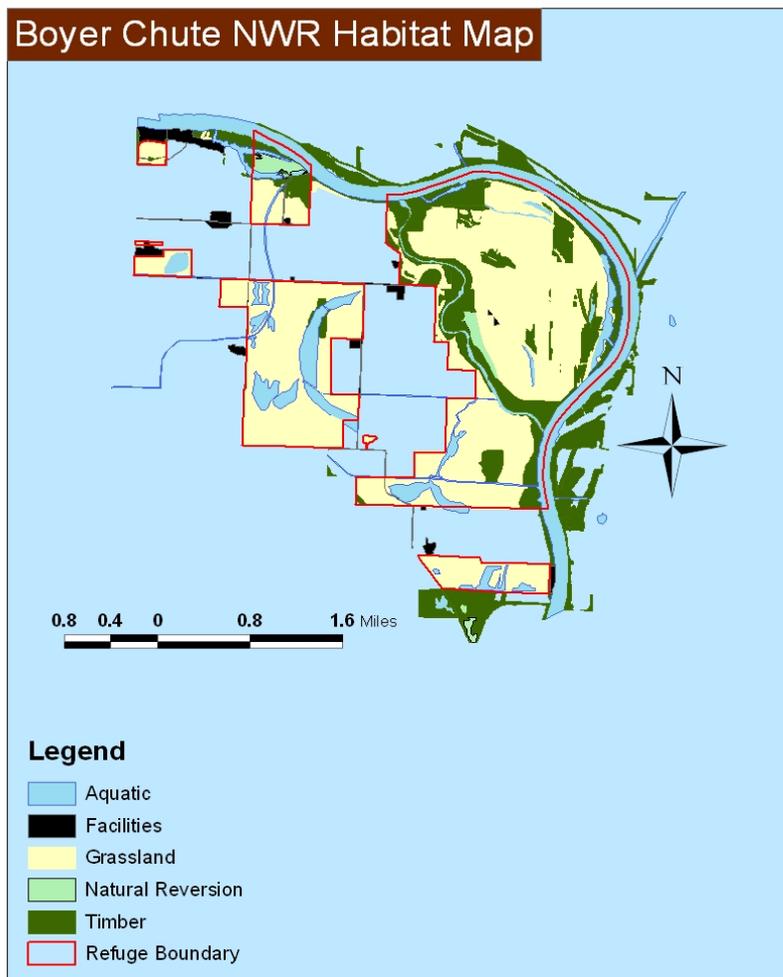
3.1 Ecology

Historically, the Missouri River was dynamic and meandering, providing diverse riverine and floodplain habitats, including chutes, oxbow lakes, sandbars, marshes, deep pools and wet prairies (Boyer Chute Expansion, 1997). Seasonal flooding was something usual and a vital part to the health of the ecosystem, providing rich nutrients and essential habitat conditions. Today, upstream reservoirs have changed the hydrology of the area and the quality of the river. Colder temperature and nutrient depleted water have resulted in severe losses in fish populations. Changes in the nature of the river have reduced habitat for all wildlife, including invertebrates, birds, and mammals.

Agricultural development has resulted in drainage of wetlands and decrease of riparian woodland, bottomland hardwoods, and floodplain prairies. Urban and industrial development has also contributed to the reduction of habitat. Based on the Environmental Assessment for the Boyer Chute Expansion prepared by the US Fish and Wildlife Service, agriculture, urban, and industrial development combined have resulted in a 95 percent loss of floodplain habitat (13).

Boyer Chute, historically, formed an island of sediments and sand deposited in the Missouri River by Iowa's Boyer River (US Fish and Wildlife Service, 2003). Until recently, its nature was changed by modern engineering and modifications along the Missouri River. Today, areas along the channel have been planted with trees and shrubs native to the area to recreate riverine habitat, and the remaining areas not already in native vegetation, have been seeded with a mix of native grasses and forbs (Figure 2).

Figure 2, Boyer Chute NWR Habitat Map



Approximately 612 acres are managed as timber, 2743 acres as tallgrass prairie, and 406 acres as restored wetlands and riverine habitats, 206 as administrative acres, and 73 acres set aside as natural revegetation/succession.

3.2 Wildlife

The area and adjacent Missouri River provides potential habitat for four Federally-listed threatened and endangered species: pallid sturgeon, bald eagle, interior least tern, and piping plover (Boyer Chute Expansion, 1997). Of these, only the bald eagle has been documented using the refuge. Two candidate fish species, the sicklefin chub and sturgeon chub could be present at times in the area. Wetlands and sandbars in the area provide habitat for waterfowl and other small birds.

The Missouri River valley provides habitat for many migratory birds, such as the snow goose and numerous duck species. It also provides habitat for many shorebirds, neotropical migrants, short distance migrants, resident songbirds, hawks and owls. Bald eagles, a federally-listed Threatened species, can be also found in the area, especially during winter.

Several game species, such as pheasant, quail, and wild turkey are present too. Many grassland species are present in the area. Examples of those include grasshopper sparrow, upland sandpipers, dickcissel, field sparrow, and western meadowlark (Effects, 2003).

More than 30 species of mammals can be found along the Missouri River, such as deer, beaver, muskrat, mink, coyotes, fox, and raccoons (Boyer Chute Expansion, 1997). In particular, beavers are present in Nathan's Lake and Boyer Chute. Several species of reptiles and amphibians are present in the area too; specifically, 26 species of reptiles and 15 species of amphibians can be found along the river. Common reptile species include soft-shell turtles, false map turtles, snapping turtles, water snakes and garter snakes. Some amphibian species found in the area are leopard frogs, spadefoot toads, and salamanders.

3.3 Fishery Resources

More than 80 species of fish can be found in the Missouri River, but in reduced numbers compared to the past and only in particular areas. This decrease in fish populations is the result of major changes in the nature of the Missouri River, including channelization and flood control.

Several game fish are present in the area, such as flathead and channel catfish, walleye, sauger, drum, and panfish. Forage fish, such as chubs, shiners, shad, and minnows, are also present.

3.4 Public Use

The refuge is open from ½ hour before sunrise to ½ hour after sunset each day. Specific parts of Boyer Chute are open to the public for wildlife dependant recreational uses, such as hiking, fishing, hunting, and wildlife observation. Environmental education and interpretation are also provided.

Most wildlife observations are conducted while people drive the access road, bike, or hike the trails. During weekdays, 50-200 people can visit the refuge each day, while this number can double in the weekends (Boyer Chute Expansion, 1997). Visitation, of course, depends on the season. Use is much lower during the winter.

Environmental education opportunities are primarily offered to students from the surrounding area schools. Students normally have specific activities, such as finding plankton, insect collection, and vegetation typing.

Additional trail facilities are expected. The Back to the River hike-bike trail will follow the alignment of the river road from Omaha to Fort Calhoun. The refuge has supplied right-of-way for this trail (Boyer Chute Expansion, 1997). Observation points along the river road could be constructed to help wildlife observation.

Recreational fishing is available on the Boyer Chute and the Missouri River banks. Two accessible piers have been installed on the chute.

3.5 Hydrology and Soils

The area has two streams that flow eastward from the bluffs to the Missouri River. Turkey Creek is the northern stream, and Deer Creek is the southern stream. Both streams have been modified with several water control structures along them. The Fort Calhoun Drainage District maintains water control structures and ditches.

Soils of the Missouri River floodplain vary from light sandy to dense clays. Land use classifications are based upon soil type and floodplain location range. For example, Class I soils have the highest productivity, while Class V soils have the least productivity (Boyer Chute Expansion, 1997). The most abundant soils are Class II wet and Class III wet, in other words hydric soils (Boyer Chute Expansion, 1997).

The area is subject to periodic flooding. Usually, flooding has two major effects. The first is caused by the river backing up into drainage ditches. This causes flooding and prevents rainfall from running off into ditches. The second is caused by the duration of high river flows. If the river is high for several weeks, hydraulic pressure of the river raises groundwater causing ground water seepage to occur into low areas.

3.6 Socio-economic Environment

Boyer Chute is in the southern portion of Washington County, Nebraska. It is located 3 miles east of the town of Fort Calhoun, Nebraska (pop.856), the closest city, and around 8 miles southeast of Blair, NE (pop. 7,512) (US Census, 2003). Crescent, Iowa (pop.537), is the closest town in Iowa. Omaha, NE (pop. 716,998), which is 10 miles away, is rapidly expanding northward toward the area.

The floodplain is primarily farmland. The area combines some rural, recreational, and urban characteristics. The Missouri River and its recreational activities is a major resource base for the area attracting numerous cabins and trailers. Specifically, trailers and homesteads cover less than two percent of the area within the Refuge expansion area (Boyer Chute Expansion, 1997). In addition, development is expanding to the north from Douglas County into Washington County.

Land use patterns and lifestyles of those who visit Boyer Chute may be slightly affected by hunting on the refuge. The status quo pattern of non-consumptive refuge use may change as users shy away from hunting areas. No displacement of business can be foreseen with the introduction of hunting. Businesses may actually expand in surrounding areas with the increased visitation of hunters. A decrease in employment opportunities is unlikely, a small increase may occur.

Changes in aesthetics are probable. Many believe a wildlife refuge's goal is to provide sanctuary for wildlife. If individuals are hunting wildlife, a safe refuge does not exist for pursued animals; therefore, public perception of the Refuge may decline as more hunting opportunities are introduced. The general public, not associated with hunting, might fear

guns being fired in their vicinity, thus giving recreational users an excuse to not visit the refuge.

Public pedestrian access would only be affected if certain areas of the refuge were closed during days that hunting were allowed. Recreational use would remain the same except on days designated for hunting, which may facilitate a decline in non-consumptive users of the refuge.

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 communities access to public information and participation in matters relating to human health or the environment. This assessment has not identified any adverse or beneficial effects unique to minority or low-income populations in the affected area. The Proposed Action will not disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low-income populations.

3.7 Cultural Resources

To date, no Native American trust or other cultural resources have been located at Boyer Chute Wildlife Refuge. Based on information provided by the Nebraska State Historical Preservation Officer, there are two historic sites in adjacent areas. One site is Neal Woods, which has historic lime kilns. The other site was used by aboriginals in the Nebraska Period. The exact location is SW1/4, Section 20, T17N, S13E. Fort Atkinson Historical Park, the first fort west of the Missouri, and the sole accomplishment of the Yellowstone Expedition of 1819, is located in Fort Calhoun and it's directly adjacent to the planned future Refuge boundary (Fort Atkinson, 2003). Refuge waterfowl hunting would not impact these sites located off of the Refuge.

3.8 Radiological Environment

Fort Calhoun does have a nuclear power plant. It is located approximately 5 miles to the north of the refuge. No radiological contamination is known to exist on refuge property

3.9 Air Quality

The air quality in the area is relatively good. From the 14 EPA regulated facilities in the area, four report their air releases (EPA, 2003). The closest to Boyer Chute is the Fort

Calhoun Stone Company.

3.10 Water Quality

The water quality of the area complies with EPA regulations. From the 14 EPA regulated facilities in the area, eight are permitted to discharge water in the river (EPA, 2003). The closest to Boyer Chute are the Fort Calhoun Stone Company and the Fort Calhoun Wastewater Treatment Plant.

3.11 Noise

Noise pollution already exists on the wildlife refuge. A rock quarry is located adjacent to refuge property. Loud booms, associated with rock blasting, can be heard intermittently throughout the day. Eppley airfield is located just south of the refuge and the rumble of northbound jets can be heard from refuge property.

3.12 Important Transportation Corridors

Only one important transportation corridor surrounds Boyer Chute, US highway 75. US highway 75 is an important northbound road that leads out of Omaha and through Fort Calhoun and Blair.

3.13 Aesthetic Environment

Boyer Chute is a typical grassland restoration refuge. As farmland is acquired, restoration to original condition is initiated. The Missouri River borders the refuge on the north and east. Boyer Chute runs north to south through the refuge parallel to the Missouri.

3.14 Solid Wastes

Solid wastes contribute little to the affected environment. From the 14 EPA regulated facilities, five report hazardous wastes treatment (EPA, 2003), but none of them are close to Boyer Chute.

4. Cumulative Impacts Analysis

Cumulative effects are caused by the combination of past, present, and reasonably foreseeable future actions. This chapter evaluates the potential social, economic or environmental impacts as well as the project benefits. Positive and negative impacts are both presented here, along with proposed mitigation for the impacts.

Alternative A: Waterfowl Hunting

(the preferred alternative)

A. Anticipated Direct and Indirect Impacts of Proposed Action on Wildlife Species

1. Resident Wildlife

Some disturbance and noise are expected, and this could potentially impact other non-migratory wildlife species. Possible effects could include disruption of feeding activities, reduced use of preferred habitat, and disturbance of resting species. However, due to the limited areas in which waterfowl hunting would be taking place, all of the above disruptions would occur in a relative small scale, significantly limiting any impacts. Boating is already permitted on the Missouri River, as it is designated a navigable river, so there is already that disturbance factor. Under this alternative, there would not be any significant additional adverse effects on fish population and habitat.

2. Migratory Species

The U.S. Fish and Wildlife Service annually prescribes frameworks, or outer limits, for dates and times when hunting may occur and the number of birds that may be taken and possessed. These frameworks are necessary to allow State selections of season and limits for recreation and sustenance; aid Federal, State, and tribal governments in the management of migratory game birds; and permit harvests at levels compatible with population status and habitat conditions. 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 frameworks from which States may select season dates, bag limits, shooting hours, and other options for the each migratory bird hunting season. 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.

Migratory game birds are those bird species so designated in conventions between the United States and several foreign nations for the protection and management of

these birds. Under the Migratory Bird Treaty Act (16 U.S.C. 703-712), the Secretary of the Interior is authorized to determine when "hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export of any ... bird, or any part, nest, or egg" of migratory game birds can take place, and to adopt regulations for this purpose. These regulations are written after giving due regard to "the zones of temperature and to the distribution, abundance, economic value, breeding habits, and times and lines of migratory flight of such birds, and are updated annually (16 U.S.C. 704(a)). This responsibility has been delegated to the U.S. Fish and Wildlife Service as the lead federal agency for managing and conserving migratory birds in the United States. Regionally, there are four Flyways for the primary purpose of managing migratory game birds. Each Flyway (Atlantic, Mississippi, Central, and Pacific) has a Flyway Council, a formal organization generally composed of one member from each State and Province in that Flyway.

The process for adopting migratory game bird hunting regulations, located in 50 CFR part 20, is constrained by three primary factors. Legal and administrative considerations dictate how long the rule making process will last. Most importantly, however, the biological cycle of migratory game birds controls the timing of data-gathering activities and thus the dates on which these results are available for consideration and deliberation. The process of adopting migratory game bird hunting regulations includes two separate regulations-development schedules, based on "early" and "late" hunting season regulations. Early hunting seasons pertain to all migratory game bird species in Alaska, Hawaii, Puerto Rico, and the Virgin Islands; migratory game birds other than waterfowl (e.g. dove, woodcock, etc.); and special early waterfowl seasons, such as teal or resident Canada geese. Early hunting seasons generally begin prior to October 1. Late hunting seasons generally start on or after October 1 and include most waterfowl season not already established. There are basically no differences in the processes for establishing either early or late hunting seasons. For each cycle, Service biologists and others gather, analyze, and interpret biological survey data and provide this information to all those involved in the process through a series of published status reports and presentations to Flyway Councils and other interested parties [As an example of how migratory bird data are collected and summarized to inform the regulations setting process, reference the documents attached below: "waterfowl status 2006.pdf," "Mississippi Flyway Databook 2005.pdf," and "Atlantic Flyway Databook 2005.pdf." The first document summarizes the status of various species' populations. The second two documents summarize harvest by State in each of the relevant Flyways for the U.S. Fish and Wildlife Service's Southeast Region. Though not as detailed as that for waterfowl, relevant data are collected and summarized for migratory bird species such as dove, woodcock, etc. Bird monitoring data are available through the Service's Division of Migratory Bird Management Website (<http://www.fws.gov/migratorybirds/statsurv/mntrtbl.html>)].

The Service is required to take abundance of migratory birds and other factors into consideration, the Service undertakes a number of surveys throughout the year in conjunction with the Canadian Wildlife Service, State and Provincial wildlife-management agencies, and others. To determine the appropriate frameworks for each species, we consider factors such as population size and trend, geographical distribution, annual breeding effort, the condition of breeding and wintering habitat, the number of hunters, and the anticipated harvest. After frameworks are established for season lengths, bag limits, and areas for migratory game bird hunting, migratory game bird management becomes a cooperative effort of State and Federal Governments. After Service establishment of final frameworks for hunting seasons, the States may select season dates, bag limits, and other regulatory options for the hunting seasons. States may always be more conservative in their selections than the Federal frameworks but never more liberal. 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 National Wildlife Refuge opens a new hunting activity, season dates and bag limits may be more restrictive than the State allows.

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. We published Notice of Availability in the Federal Register on June 16, 1988 (53 FR 22582), and our Record of Decision on August 18, 1988 (53 FR 31341). Annual NEPA considerations for waterfowl hunting frameworks are covered under a separate Environmental Assessment, “Duck Hunting Regulations for 2006-07,” and an August 24, 2006, Finding of No Significant Impact. Further, in a notice published in the September 8, 2005, Federal Register (70 FR 53376), 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). More information may be obtained from: Chief, Division of Migratory Bird Management, U.S. Fish and Wildlife Service, Department of the Interior, MS MBSP-4107-ARLSQ, 1849 C Street, N.W., Washington, DC 20240.

At the Refuge level, this alternative would have both direct and indirect impacts upon migratory wildlife species. Waterfowl species will be directly impacted through harvest. Local harvest levels of waterfowl have been low. The only species which may be hunted are ducks, geese, and coots (Figure 3).

Figure 3. REFUGE WATERFOWL HUNTING REGULATIONS

- Waterfowl hunting is permitted in accordance with State and Federal hunting regulations.
- Hunters must possess all applicable State and Federal licenses and stamps.
- Refuge hunting area is open to the hunting of the following waterfowl species only: ducks, geese, and coots. **No other migratory species or any upland game hunting is permitted.**
- Hunters may access the refuge from 1 hour before legal sunrise to 1 hour after legal sunset.
- Hunting area is defined as the immediate shoreline of the Missouri River, up to and including the high bank. See map for area open to waterfowl hunting.
- Waterfowl hunting is prohibited on the Boyer Chute waterway.
- Hunting area may be accessed by land, but only within the North public use area and the south perimeter trail of the Island Unit, or from the Missouri River.
- Motorized vehicles are prohibited on the island.
- Weapons must be unloaded and cased while traveling through the closed area.
- It is illegal to retrieve game from areas closed to hunting.
- Dogs may be used for waterfowl hunting, but must be under the handlers's control at all times.
- Portable blinds and daily blinds made from natural vegetation are permitted, and must be removed at the conclusion of each day's hunt. The construction or use of permanent blinds and/or pits is prohibited.
- Decoys **cannot** be left unattended at any time.

No other migratory species may be hunted or harvested. The Refuge staff have observed very few waterfowl hunters during the time frame the waterfowl hunts have occurred from fall 2004-present. Access is primarily by boat, although walk-in access is permitted. Presumably, this difficulty in accessing the hunting zone has resulted in the low waterfowl hunting levels. Estimated annual number of hunters, based on staff observation reported in the 2003-2006 Refuge narrative report, is 20. Using the Central Flyway Harvest and Population Survey Data Book of 2006, the average Nebraska hunter bagged an average of 1.5 ducks per day per hunter and 0.8 geese per day per hunter after averaging 2003-2005 harvest data. The estimated annual Boyer Chute Refuge Waterfowl harvest would be 30 ducks and 16 geese, resulting in little overall impact to the Refuge waterfowl population.

Hunting activity could temporarily disrupt feeding activities, resting activities, and use of preferred habitat for waterfowl and other migratory species. This is not a significant impact due to the small size of the waterfowl hunting zone on the Refuge (Figure 4). This will be further mitigated through maintaining adequate non-hunting sanctuary areas if waterfowl hunting zones are expanded in the future.

Small indirect impacts may occur such as minor disturbance to neo-tropical migrant habitat, such as trampling of low ground vegetation. This impact is expected to be minimal, since the waterfowl hunts will not occur during any nesting seasons. Any small impacts to vegetation are expected to recover with spring re-growth.

3. Endangered Species

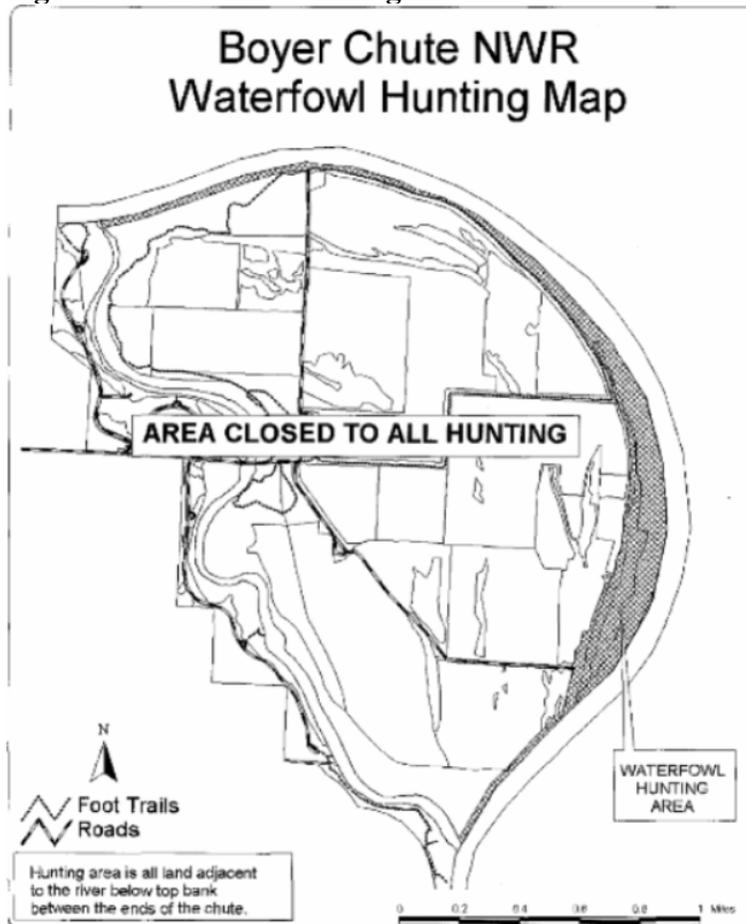
Some slight disturbance to endangered species may occur. Bald eagles use the area on a very sporadic migratory or winter visitor basis. No nesting is present. The disturbance caused during management hunts is not expected to be significant due to the limited time scope and small size of the hunting area.

B. *Anticipated Direct and Indirect Impacts of Proposed Action on Refuge Programs, Facilities, and Cultural Resources*

1. Other Refuge Wildlife Dependent Recreation

This alternative would provide wildlife dependant recreational opportunities for waterfowl hunters. Under this alternative, other recreational uses of the refuge, such as hiking, fishing, wildlife observation, wildlife photography may be slightly affected. It is preferable that the hunts would take place in areas of the Refuge with lower visitation to lessen interference with other users, such as hikers, fishermen, and wildlife observers. This is currently the case, as the only area opened to waterfowl hunting is the immediate Missouri River waterfront up to the high bank, along the east perimeter of the island (Figure 4).

Figure 4. Waterfowl Hunting Area



The disturbance caused by waterfowl hunters has not been significant. Refuge staff have observed very few waterfowl hunters during the time frame the waterfowl hunts have occurred. Access is primarily by boat, although walk-in access is permitted. This difficulty in accessing the hunting zone has maintained high quality waterfowl hunting for those willing to expend the effort. All or any part of the Refuge may be closed to hunting by the refuge manager whenever necessary to protect the resources of the area or for public safety.

2. Refuge Facilities

Refuge facilities are not expected to be impacted under this alternative

3. Cultural Resources

Cultural resources are not going to be affected under this alternative.

C. Anticipated Impacts of Proposed Waterfowl Hunting on Refuge Environment and Community.

1. Hydrology and Soils

Effects on soil and water quality would not be significant. Hydrology would remain unaltered.

2. Air Quality

This alternative would not affect the air quality of the area.

3. Water Quality

Water quality would not be significantly affected under this alternative.

4. Noise

With the introduction of hunting, firearms will be discharged, causing noise pollution. A slight impact will exist, but with a rock quarry blasting with dynamite located less than two miles away from the Refuge, and very few nearby residences, this impact would be minimal.

5. Important Transportation Corridor

US highway 75 is the only important road surrounding Boyer Chute. Under this alternative traffic levels might increase during the proposed time frame; however these increases would not be detrimental to the road or nearby cities.

6. Socio-economics

The refuge might have to hire or bring in additional staff for a short period of time due to increased number of hunters in order to supervise proper hunting behavior. This has not been necessary so far, with the small amount of waterfowl hunting taking place on the Refuge. The state would acquire some money from hunting licenses, tags, stamps, and taxes on hunting equipment and ammunition. The local economy could potentially see a small boost in sales due to the purchase of equipment and amenities. This would have a positive effect on Fort Calhoun. Recreational uses such as biking, hiking, and fishing may decline due to the small number of individuals uncomfortable with aspects that surround hunting. This impact would be localized as the proposed season would be short and cover small portions of the refuge.

7. Aesthetic Environment

The aesthetic environment would only be slightly impacted. Restoration efforts would not be altered. For non-consumptive users, hunting may take away from the peaceful experience they hoped to attain while visiting Boyer Chute. This impact would be localized as the proposed hunting will cover only small portions of the refuge.

8. Radiological Environment

Fort Calhoun does have a nuclear power plant. It is located approximately 5 miles to the north of the refuge. No radiological contamination is known to exist on refuge property.

9. Solid Waste

Although spent shot from shotshells will be discharged onto the Refuge, there would be a negligible impact as steel shot is required on National Wildlife Refuges and due to the low anticipated quantity. Litter and trash is not foreseen as a problem due to the limited scope of waterfowl hunting allowed at the Refuge. Increased law enforcement presence could be used to mitigate if litter starts to become a problem.

D. Other Past, Present, Proposed, and Reasonably Foreseeable Hunts and Anticipated Impacts

Managed deer hunting and limited waterfowl hunting have taken place on the Refuge since 2003. No additional hunting is anticipated or being considered in the foreseeable future.

If visitation expands in the unforeseen future, unanticipated conflicts between user groups may occur. Additional wetland restorations are planned within the waterfowl hunting area. Public use may increase, as well as waterfowl numbers. Service experience has proven that time and space zoning (e.g., establishment of separate use areas, use periods, and restrictions on the number of users) is an effective tool in eliminating conflicts between user groups. Additional buffers may need to be added between the new wetlands and the hiking trail. One management option may be to restrict waterfowl hunting to the immediate Missouri River waterfront, instead of the high bank. This will help to maintain a safe distance between hunting and other public use areas. If waterfowl hunting becomes incompatible with other public uses over the next few years, a potential future action could be to eliminate it or change the area(s) open to waterfowl hunting.

E. Anticipated Impacts if Individual Hunts are Allowed to Accumulate

The proposed project, Refuge waterfowl hunting, will have little impacts to the refuge. The effects from the proposed management action were described, in detail, in the previous sections of this chapter, "Cumulative Impacts Analysis." None of these effects are expected to be cumulative in nature if individual hunts are allowed to accumulate. The waterfowl population will be minimally affected, for a short period of time. National Wildlife Refuges, including Boyer Chute NWR, conduct or will 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 more regional basis. The cumulative effects of all Refuge hunting programs (ie., waterfowl and whitetail deer) will be insignificant. Disturbance to other wildlife species, Refuge programs, Refuge facilities, cultural resources, and environment will be minimal, and no cumulative effects are anticipated.

Alternative B (no-action alternative): No Waterfowl Hunting

A. Anticipated Direct and Indirect Impacts of Proposed Action on Wildlife Species

1. Resident Wildlife

Resident fish and wildlife populations would not be affected under this alternative.

2. Migratory Species

This alternative would not have a direct or indirect impact upon migratory wildlife species.

3. Endangered Species

This alternative would not have a direct or indirect impact upon endangered species.

B. Anticipated Direct and Indirect Impacts of Proposed Action on Refuge Programs, Facilities, and Cultural Resources

1. Other Refuge Wildlife Dependent Recreation

This action would not provide for additional wildlife dependant recreational activities. Under this alternative, other recreational uses of the refuge, such as hiking, fishing, cycling, wildlife observation, photography would not be affected.

2. Refuge Facilities

Refuge facilities, trails, and roads are not going to be affected under this alternative.

3. Cultural Resources

Cultural resources are not going to be affected under this alternative.

C. Anticipated Direct and Indirect Impacts of Proposed Action on Refuge Environment and Community

1. Hydrology and Soils

Streams and soil structure and composition would not be affected under this alternative.

2. Air Quality

This alternative would not affect air quality, as no form of pollution would be generated.

3. Water Quality

This alternative would not affect water quality, as no pollutants would be discharged in any water bodies.

4. Noise

Noise pollution would remain at the current level under this alternative including a rock quarry blasting with dynamite located less than two miles away from the Refuge.

5. Important Transportation Corridors

Only one important transportation corridor surrounds Boyer Chute, US highway 75. This road would be unaffected under this alternative.

6. Socio-economics

Under this alternative, the State would not gain any additional income from hunting licenses, tags, stamps, and taxes on hunting equipment and ammunition. Local economy would be unaffected. Non-consumptive recreational visitors would remain at the same level.

7. Aesthetic Environment

Under this alternative the environment would remain the same as pre-Refuge hunting programs.

8. Radiological Environment

Under this alternative the environment would remain the same. There are no known sources of radiological contamination at Boyer Chute.

9. Solid Waste

Solid wastes contribute little to the environment of the area, and therefore, the “no hunting” alternative would not change this factor.

D. Other Past, Present, Proposed, and Reasonably Foreseeable Hunts and Anticipated Impacts

Not Applicable

E. Anticipated Impacts if Individual Hunts are Allowed to Accumulate

Not Applicable

5. Cumulative Impacts Geographic Matrix

A summary table providing the cumulative environmental consequences of the three alternatives is provided below. The preferred alternative combines the best benefits with the least amount of adverse environmental effects.

Environmental Consequences	Alternative A* (Refuge waterfowl hunting)	Alternative B (no-action, no waterfowl hunting)
Ecology	0	0
Wildlife	0	0
Cultural Resources	0	0
Public Use	+	0
Refuge Facilities	0	0
Hydrology and Soils	0	0
Socio-Economics	0	0
Radiology	0	0
Air Quality	0	0
Water Quality	0	0
Noise	0	0
Transportation	0	0
Aesthetic	0	0
Solid Waste	0	0

- * Preferred Alternative
- 0 No significant change
- + Increase in benefits
- Decrease in benefits

6. Conclusion

Alternative A, the alternative to allow Refuge waterfowl hunting, is the preferred alternative.

7. Prepared By

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Concur:

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Nita M. Fuller
Regional Chief
National Wildlife Refuge System

Date

Approve:

Robyn Thorson
Regional Director

Date

Appendix A. Regulatory Compliance

Archeological Resources Protection Act of 1979 - In compliance. No evidence of cultural resources has been discovered at Boyer Chute.

Bald Eagle Protection Act - In compliance. While bald eagles are occasionally sited, no significant threat will be introduced by expanding hunting activities.

Clean Air Act - In compliance. Air quality will not be impacted.

Clean Water Act - In compliance. While some level of water degradation is expected, particularly from the infiltration of lead from ammunition into the watershed, this impact will be marginal. No significant impact to water quality will occur.

National Environmental Policy Act - NEPA established a national policy for the environment. This document is part of the USFWS compliance.

Endangered Species Act of 1973, as amended - A consultation pursuant to Section 7 of the Endangered Species Act has been completed.

National Historic Preservation Act - In compliance. Boyer Chute has been previously surveyed by the Corps of Engineers and no artifacts or evidence of cultural resources has been found.

The Native American Graves Protection and Repatriation Act of 1990 - In compliance. All Native American human remains and associated burial items located on, or removed from, Boyer Chute will be protected.

The Federal Farmland Protection Policy Act of 1981, as amended. - In compliance. This proposal will not contribute to the conversion of existing farmland into non-agricultural uses.

The Refuge Revenue Sharing Act of 1935, as amended. - This Act established procedures for making payments to counties in which national wildlife refuges are located. Such payments come from revenues derived from the sale of products and privileges from national wildlife refuges, supplemented by Congress appropriations. The revenues are deposited in a special Treasury account, and net receipts there from are distributed to counties to help offset their loss of tax revenue that occurs when land for national wildlife refuges is acquired by the Federal Government and removed from tax rolls. The basic formula in use in Nebraska and Iowa is $\frac{3}{4}$ of 1 percent of the appraised value of the land multiplied by the percent entitlement annually appropriated by Congress.

Noise Control Act - In compliance. The proposed action would contribute to slightly increased noise levels due to the discharging of firearms during the controlled hunts. However, the noise contributed is not expected to be significant, especially compared to the high level of noise contributed by the rock quarry located nearby. Furthermore, the

noise from firearms would be present only during the scheduled hunt during regular hunting seasons.

Rivers and Harbors Act, 33 U.S.C 401, et seq. - Not applicable. This project does not involve any construction or placing of obstructions into navigable waters.

North American Wetlands Conservation Act, 16 U.S.C. Sec. 4401 et seq. - In compliance. Any of the selected alternatives under this proposal would not significantly impact any wetland conservation efforts in place or wetlands-based migratory birds.

Watershed Protection and Flood Prevention Act, 16 U.S.C 1101, et seq. - Not applicable.

Appendix B. Literature cited

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Appendix C Public Comment on Draft Environmental Assessment and Responses

We received two comments on our draft EA titled Waterfowl Hunting at Boyer Chute National Wildlife Refuge, that was available for public comment from March 17th to April 17th.

One comment was in support of the Service's preferred Alternative in the draft EA. One comment was in opposition to the preferred Alternative.

We received a letter from the Safari Club International that contained comments relative to this EA. Their comments provided additional information to be included in the cumulative analysis. While the Service is in agreement with their comments on the cumulative benefits of hunting, the Service feels that those cumulative impacts are addressed adequately in this document.

We received a letter from the Humane Society of the United States that contained comments related to hunting on the National Wildlife Refuge System as a whole and containing elements related to litigation filed in 2003 by the Fund for Animals against the Service. These comments were not specific to this draft EA and are noted but not responded to here.