

**U.S. Fish and Wildlife Service**

**Final Environmental Assessment**

**For the**

**Proposed Hunting Plan**

**Northern Tallgrass Prairie National Wildlife Refuge  
Minnesota and Iowa**

**Regional Director**

**Region 3, U. S. Fish and Wildlife Service**

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**Abstract:** The United States Fish and Wildlife Service (Service) proposes to provide compatible hunting opportunities for migratory game bird, upland game, and big game species on the Northern Tallgrass Prairie National Wildlife Refuge located within 85 counties in western Minnesota and northwestern Iowa. This environmental assessment evaluates two possible alternatives for the hunting opportunities. The proposed action alternative will establish compatible hunting opportunities while providing non-hunting visitors with other priority public use opportunities i.e. wildlife observation, wildlife photography, environmental education and interpretation. The approved acquisition boundary includes habitat easements that will stay in private ownership and lands purchased in fee title. The proposed hunting opportunities will only involve those lands owned in fee title by the Service. The general broad objectives of the hunting program are:

- Provide the public with safe and enjoyable hunts that are compatible with the Refuge purpose.
- Provide quality hunting opportunities that minimize conflict with other public use activities.
- Provide the public with opportunities to hunt migratory game birds, upland game and big game species that are consistent with the states of Minnesota and Iowa, that don't adversely affect localized wildlife populations, and are consistent with the 1997 National Wildlife Refuge Improvement Act.
- Promote a better understanding and appreciation of tallgrass prairie habitats and their associated fish and wildlife resources.

*Note: A Hunt Plan was approved in 2003, along with accompanying paperwork, to open the Northern Tallgrass Prairie NWR to hunting on fee title tracts in Minnesota and Iowa. The "Final Environmental Impact Statement (EIS) for the establishment of the Northern Tallgrass Prairie Habitat Preservation Area" was used to fulfill the National Environmental Policy Act (NEPA) requirements. The EIS considered the biological, environmental, and socioeconomic effects that implementing the preferred alternative and two other alternatives would have on the issues and concerns identified during the planning process. The preferred alternative included opening the fee title lands to new hunting opportunities. The other two alternative did not include the Service acquiring new fee title lands, and therefore did not include opening lands to hunting opportunities.*

*The Fish and Wildlife Service (Service) was sued by The Fund for Animals on March 14, 2003, alleging noncompliance with the National Environmental Policy Act (NEPA) in opening 37 refuges to hunting during the 1997-98 through 2002-03 seasons. On August 31, 2006, U.S. District Court Judge Ricardo M. Urbina, granted plaintiff's motion for summary judgment agreeing that the Service did not adequately consider the cumulative impacts of opening these refuges to hunting. The 2003 Hunt Plan for Northern Tallgrass Prairie NWR and other refuges were included in this decision. In total, 74 refuge hunting packages need to correct NEPA deficiencies by May 1, 2007.*

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# TABLE OF CONTENTS

Chapter 1	PURPOSE AND NEED FOR ACTION .....	3
Chapter 2	PROPOSED ACTION AND THE ALTERNATIVES .....	6
Chapter 3	AFFECTED ENVIRONMENT .....	8
Chapter 4	ENVIRONMENTAL CONSEQUENCES .....	14
Chapter 5	REGULATORY COMPLIANCE .....	42
Chapter 6	LIST OF PREPARERS.....	43
Chapter 7	CONSULTATION AND COORDINATION WITH OTHERS .....	44
Chapter 8	PUBLIC COMMENT ON DRAFT DOCUMENTS.....	45
Chapter 9	REFERENCES CITED .....	46

# **CHAPTER 1. PURPOSE AND NEED FOR ACTION**

## **SECTION 1.1 Purpose**

This Environmental Assessment is a step down plan of the “Final Environmental Impact Statement for the establishment of the Northern Tallgrass Prairie Habitat Preservation Area” which was used to fulfill NEPA compliance to open the Northern Tallgrass Prairie National Wildlife Refuge to hunting during the 2003-2004 season.

The Purpose of this Environmental Assessment is to evaluate alternatives for opening and administering a hunting program on the fee title lands in the Northern Tallgrass Prairie National Wildlife Refuge (Refuge).

## **SECTION 1.2 Need**

Providing compatible wildlife-dependent recreation and education activities on units of the National Wildlife Refuge System is a Service priority. The National Wildlife Refuge System Administration Act of 1966 as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd et seq.) provides authority for the Service to manage the Refuge and its wildlife populations. In addition it declares that compatible wildlife-dependent public uses are legitimate and appropriate uses of the Refuge System that are to receive priority consideration in planning and management. There are six wildlife-dependent public uses: hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation. The Act directs managers to increase recreational opportunities, including hunting, on National Wildlife Refuges when compatible with the purposes for which the Refuge was established and the mission of the National Wildlife Refuge System.

Hunting on Northern Tallgrass Prairie NWR will allow refuge staff to manage wildlife populations at acceptable levels, provide wildlife-dependent recreational opportunities for the public, and promote a better understanding and appreciation of tallgrass prairie habitats and their associated fish and wildlife resources. Implementation of the proposed actions will be consistent and compatible with the Refuge Recreation Act, Refuge Administration Act, and the Environmental Impact Statement for the proposed Northern Tallgrass Prairie Habitat Preservation Area.

## **SECTION 1.3 Decisions That Need To Be Made**

This Environmental Assessment is prepared to evaluate the environmental consequences of opening Northern Tallgrass Prairie NWR to hunting, and the types of hunting allowed. Two alternatives are presented in this document:

- Keeping the Refuge closed to all hunting (No Action)
- Allow the hunting of migratory game birds, upland game, and big game species on fee title lands in accordance with federal and Minnesota and Iowa regulations (Preferred Actions).

The Regional Director, U. S. Fish and Wildlife Service, Twin Cities, Minnesota, is the official responsible for determining the action to be taken in the proposal by choosing an alternative. She will also determine whether this Environmental Assessment (EA) is adequate to support a Finding of No Significant Impact (FONSI) decision, or whether there is a significant impact on the quality of the human environment, thus requiring the preparation of an Environmental Impact Statement (EIS).

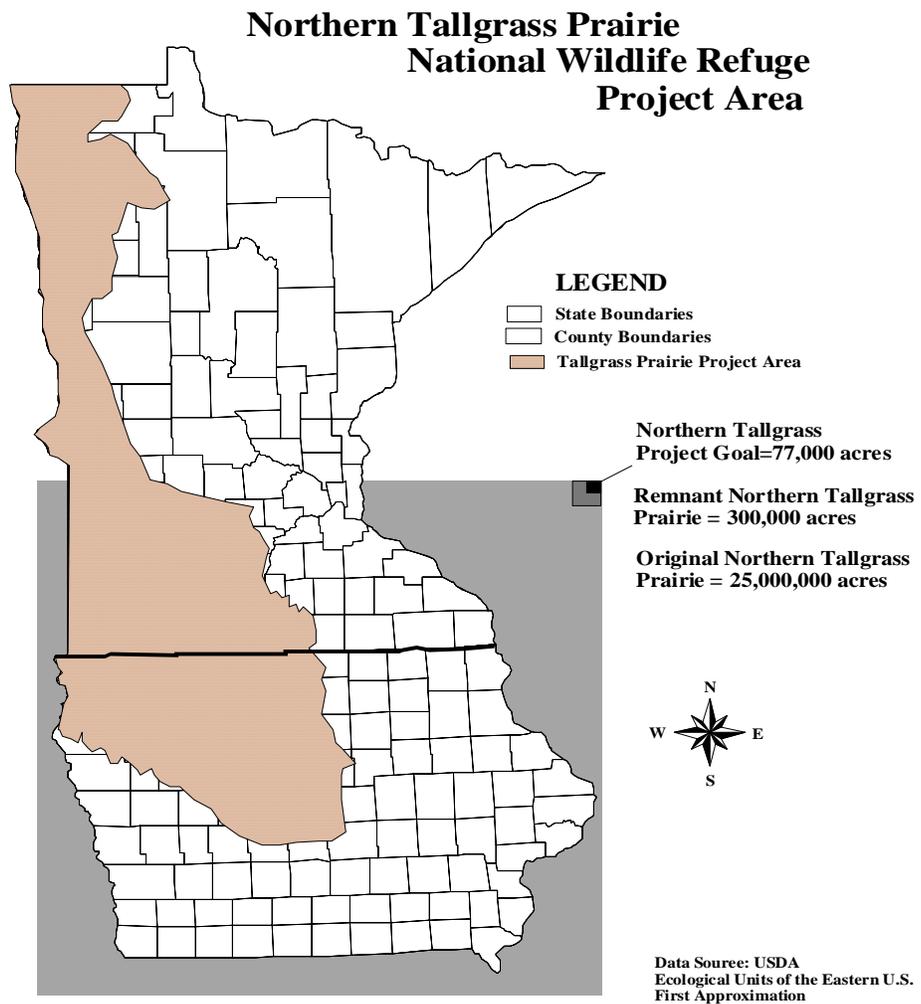
## **SECTION 1.4 Background**

The U.S. Fish and Wildlife Service (Service) issued a Final Environmental Impact Statement (March 20, 1998) and a Record of Decision (May 16, 1998) for the establishment of the Northern Tallgrass Prairie Habitat Preservation Area (HPA). This HPA encompasses all or portions of 85 counties in western Minnesota and northwestern Iowa (see Figure 1). Lands purchased as conservation easements or in fee title become units of the Northern Tallgrass Prairie NWR under the authority of the Fish and Wildlife Act of 1956 "... for the development, advancement, management, conservation, and protection of fish and wildlife resources..." [16 U.S.C. 742f(a)(4)] "...for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude..." [16 U.S.C. 742f(b)(1).]

The Refuge was developed to address the loss of America's grasslands and mounting evidence indicating that many grassland species populations had precipitously declined as the prairies had vanished. Estimates place the original northern tallgrass prairie in Minnesota and Iowa at approximately 25 million acres. Today, there are only an estimated 300,000 acres remaining in the two states, representing a greater than 99 percent reduction in the amount of tallgrass prairie habitat (Samson and Knopf 1994). Currently, only a small percentage of these habitats have been permanently protected, making tallgrass prairie one of the most rare and most fragmented ecosystems. The refuge was established to provide a means of working with individuals, groups, and government entities to permanently preserve and restore a portion of the northern tallgrass prairie. Conservation easements and fee title lands are managed or overseen by the staffs at existing units of the National Wildlife Refuge System throughout the project area. Oversight and coordination of the entire project is the responsibility of the Project Leader of Big Stone National Wildlife Refuge.

The 1998 Final EIS developed for the establishment of the Refuge identified providing compatible wildlife-dependent recreational public uses, such as hunting, fishing, wildlife observation and photography, environmental education and interpretation as being a primary goal for the Refuge. In the Record of Decision, the Service selected the preferred alternative which stated that hunting will be permitted on most Units of the Refuge in accordance with state seasons. Additionally, hunting was identified in the 1998 Interim Comprehensive Conservation Plan (CCP) as being a priority public use that would be authorized on most Units of the Refuge. The Service has determined (i.e., Compatibility Determination included with the 1998 CCP) that this use is compatible with the purpose of the Refuge and the mission statement of the NWR System.

The first property to become a part of the Northern Tallgrass Prairie NWR is a conservation easement purchased on September 18, 2000 in Renville County, MN. The first fee title property was purchased in Rock County, MN on November 30, 2001. The refuge presently consists of 43 tracts of land totaling 4,391.59 acres. Thirty-six tracts are protected through conservation easements for a total of 1,938.47 acres. The seven fee title tracts total 2,293.12 acres, 160 acres in Iowa and 2,133.12 acres in Minnesota. The Refuge is intended to permanently preserve a total of 77,000 acres of native prairie and wetlands within the historic range of the northern tallgrass prairie area of western Minnesota and northwestern Iowa. The refuge will contribute to goals for ecosystem conservation and restoration, threatened and endangered species recovery, neotropical migrant bird conservation, biological diversity, and wildlife oriented public recreation.



**Figure 1. Northern Tallgrass Prairie Habitat Preservation Area, Minnesota and Iowa**

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

### **SECTION 2.1 Alternatives Eliminated From Detailed Study**

No alternate was eliminated from detailed study.

### **SECTION 2.2 Alternatives Carried Forward for Detailed Analysis**

This Environmental Assessment is prepared to evaluate the environmental consequences of opening the refuge to hunting and the methods of hunting on the refuge. Two alternatives are presented in this document:

Alternative A: Leaving the refuge closed to hunting – the No Action Alternative;

Alternative B: Open most fee title units within the refuge to migratory game bird, upland game and big game hunting seasons in accordance with Federal regulations and laws and those of the States of Minnesota and Iowa – the Proposed Alternative.

#### **2.2.1 Alternative A: No hunting (No Action Alternative)**

Under provisions of the National Wildlife Refuge Administration Act of 1966, refuges are “closed until open.” Thus, if the Service takes no action in regards to hunting management, refuge lands would remain closed to hunting.

Under this alternative, the refuge would continue to serve as habitat for wildlife and provide for four of the compatible wildlife dependent public uses – wildlife observation, photography, environmental education, and interpretation. Some populations, such as white-tailed deer and Canada geese, would continue to grow and possibly increase to levels that result in damage to agricultural croplands as well as to native vegetation without the population control provided by hunting. The potential for depredation complaints from local landowners and farmers would increase.

Under the No Action alternative, the Service would continue to purchase conservation easements and fee title properties. Planning for and implementing habitat restoration activities would continue to enhance these areas. It would also manage existing habitats for tallgrass prairie, wetlands and wildlife. These actions would be carried out in cooperation with volunteers and partners.

#### **2.2.2 Alternative B: Open hunting on fee title lands within the Northern Tallgrass Prairie NWR as allowed by Minnesota and Iowa State Regulations (Preferred Alternative.)**

This alternative would allow hunting of migratory game birds, upland game, and big game species on most fee title lands within the Northern Tallgrass Prairie NWR in accordance with the hunting seasons and regulations set by the States of Minnesota and Iowa, after the following determinations are made for each unit:

- 1) The unit is large enough to support the anticipated quantity, frequency, and duration of hunter use without adversely affecting game populations or habitat conditions within the area;
- 2) Public access to the unit does not require travel across private lands or closed government lands;
- 3) Sites are available for hunters to park their vehicles legally and in a manner that will not adversely affect the habitat in the unit or existing public travel routes;
- 4) Public hunting will not have adverse effects on any federally listed or proposed species of concern; and
- 5) Hunting can be conducted without jeopardizing public safety.

The onsite manager, after consulting with the Project Leader, may establish specific regulations for an individual unit to ensure the above requirements are met. Certain units or portions of units may remain closed or be periodically closed to hunting if the onsite manager determines that there are specific habitat, wildlife protection,

and/or public safety needs that require establishing sanctuary areas.

Hunting would be conducted in accordance with all applicable state and federal regulations. Coordination with Minnesota and Iowa DNR biologists will promote continuity and understanding of Service and state resource goals and objectives, and will help assure that the decision-making process takes into account all interests.

## SECTION 2.3 Alternatives Action Table

Table 1 below summarizes the actions that are anticipated under each alternative. Detailed discussion of the environmental impacts of each alternative can be found in Section 4. Some of the issues are carried into the impact assessment are described in more detail in Section 4.

**Table 1: Alternatives Action Table**

Action	ALTERNATIVE 1 (No Action) Continue No Hunting on Refuge	ALTERNATIVE 2 (Proposed Action) Open Fee Title Refuge Tracts to Hunting
Species that will be hunted	None	Ducks, geese, rails, moorhen, snipe, woodcock, mourning dove, white-tailed deer, wild turkey, ring-necked pheasant, gray partridge, ruffed grouse, sharp-tailed grouse, prairie chicken, bobwhite quail, rabbit, squirrel, groundhog, raccoon, opossum, fox, badger, coyote, skunk, crow as allowed by Minnesota and Iowa law.
Compatible with Refuge Goals and Purpose	Yes. Provides for priority non-consumptive public uses.	Yes. Provide for priority public uses and maintain healthy wildlife populations to benefit the northern tallgrass prairie ecosystem.
Provides for Priority Public Uses	No. Does not provide for hunting opportunities.	Yes. Provides for hunting opportunities.
Hunting and non-hunting activities segregated	Yes. Does not allow hunting and therefore no conflict exists with non-hunting activities.	No. Doesn't separate uses, conflicts possible, but deemed minimal.
Meets needs identified by public and partners	No. Does not maximize hunting opportunities as identified by most public and partners.	Yes. Maximizes hunting opportunities as identified by most public and partners.

## CHAPTER 3 AFFECTED ENVIRONMENT

### SECTION 3.1 Physical Characteristics

As described in the final EIS, the landscape descriptions for the HPA are divided into four distinct areas. From north to south these areas are Aspen Parkland, Lake Agassiz Beach Ridges (encompassing the Northern Tallgrass Prairie Subsection), Prairie Coteau of Minnesota (encompassing the Minnesota River Prairie and Prairie Coteau Subsections), and Prairie Coteau of Iowa (includes the Northwest Iowa Plains and Des Moines Lobe Landform areas).

**ASPEN PARKLANDS** - Northwest Minnesota contains the Aspen Parklands, a subsection which is a low level plain between extensive peatlands to the east and tallgrass prairie to the west (Hargrave 1993). The western region contains a level lacustrine lake plain with a series of small dunes and low beach ridges and swales. The eastern water-worked till plain is gently rolling, its relief reduced due to wave action of Glacial Lake Agassiz. The landform has elevations ranging from 900 to 1250 feet above mean sea level (MSL) and is drained by the Roseau River to the northwest and across the Canadian border.

**LAKE AGASSIZ BEACH RIDGES** - West-central Minnesota is predominantly a glacial lake plain with lacustrine deposits favoring grassland, thus the Northern Tallgrass Prairie Subsection designation (Hargrave 1993). The major landform is the extensive glacial Lake Agassiz lake plain which is level to gently rolling and includes till plain, beach ridges, sand dunes and water re-worked till. The Red River with its many tributaries provides drainage north from a region ranging in elevation from 825 to 1,150 feet MSL. Steeper elevations occur at the eastern edge of the transition to the forest and along streams and Lake Traverse (headwaters of the Red River).

**MINNESOTA RIVER PRAIRIE/PRAIRIE COTEAU** - Southwestern Minnesota contains two unique subsections presented as the Prairie Coteau – Minnesota (Hargrave's Minnesota River Prairie and Prairie Coteau). A 30-mile wide Des Moines lobe ground moraine occurs on either side of the Minnesota River draining southeast through what was the old Glacial River Warren, which drained Glacial Lake Agassiz. The relatively flat ground moraine (till plain) contained many small lakes and ponds (potholes) and also included end moraines, outwash deposits and lake plains. Lands occur at elevations 750 to 1,300 feet MSL, the steepest topography in the Big Stone Moraine and bluffs of the Minnesota River.

The unique area of high glacial landform with till to depths of 800 feet occupies southwestern Minnesota, overlapping into northwestern Iowa. Landforms include highly dissected loess-covered till plains with gently undulating, rolling moraine ridges, or steeply rolling and hilly moraines. Buffalo Ridge (1,995 feet MSL) of the Bemis Moraine is among the highest elevations in Minnesota. Much land of the Coteau Des Prairies, elevation 1,250 to 1,995 feet MSL, drains southwest into the Missouri River system. A small part flows northeast and into the Minnesota River.

**IOWA PRAIRIE COTEAU** - The Northwest Iowa Plains (Prior 1991) as an extension of Minnesota's landform area is a definite topographic step upward to the High Plains of the Dakotas. The moderate to thick loess over glacial drift in gently rolling terrain has an integrated drainage network which drains into the Missouri River. Long, low rolling swells are apparent, and the highest point in Iowa, 1,670 feet MSL, is a knobby ridge of glacial drift four miles northeast of Sibley.

The Des Moines Lobe (Prior 1991) is characterized by fresh glacial drift, bands of knob and kettle terrain and areas of level terrain, but unlike the Northwest Iowa Plains, the region has no loess cover. Nearly all of Iowa's natural lakes are in this region which includes smaller kettle lakes, prairie potholes, bogs and marshes, a factor of poor surface drainage within a system in which the Des Moines River carries water southeast and into the Mississippi River.

## SECTION 3.2 Biological Environment

### 3.2.1 Habitat

The northern tallgrass prairie is highly variable in composition, but is dominated by a relatively small number of widespread, sod-forming bunch grasses. Big bluestem, northern dropseed, porcupine needlegrass, yellow Indian-grass and soft-leaf muhly are the most abundant species (Weaver 1954, Watts 1960, Diamond and Smeins 1988, Albert 1995 in Ostlie et al., 1996). While the majority of the biomass is in grasses, forbs constitute the greatest number of species, in many cases accounting for 90 percent of the species in a given prairie. Most abundant members include wild indigos, prairie clovers and scurf peas of the pea family, and asters, gay-feathers, goldenrods, coneflowers and sunflowers of the sunflower family.

Wetland vegetation is variable and dependant upon water depth and period of inundation. Herbaceous wetlands are dominated by the non-woody grasses and graminoids such as sedges, rushes and cattails. Freshwater wet meadows include dominant species of cordgrass, reedgrass, spikerush, and sedges and rushes. In saline wet meadows, dominant species include saltgrass, foxtail barley, prairie bluegrass, alkali sacaton and saline plantain. Marshes contain bulrush, spikerush and cattail. Important vegetative species of fens and seeps include sedges, bulrush, spikerush and cattails.

Since vegetation of the tallgrass prairie area is strongly influenced by soils and climate it is summarized below using the same landscape designations used to describe the soils and climate of the HPA project area. It reflects the geographic differences of the landscapes over the 520 mile long distance of the project area, from north to south.

**ASPEN PARKLANDS** - The Aspen Parkland forms an ecotone between the prairie and coniferous forest of extreme northwest Minnesota and Canada. It covers vast acreage within the poorly drained flatland left by Glacial Lake Agassiz. Pre-settlement vegetation consisted of a combination of aspen savanna, tallgrass prairie, wet prairie and dry gravel prairie (on gravelly beach ridges). Floodplain forests of elm, cottonwood, and ash occurred along the rivers and streams. Sometimes referred to as brush prairie, the aspen parkland was a fire-maintained mosaic of wet prairie, sedge meadow, shrub thicket, and aspen groves (Wendt and Coffin 1988).

**NORTHERN GRASSLANDS** - Although generally included in the Northern Tallgrass Prairie Subsection (Hargrave 1993), vegetation is quite variable and coincides with different moisture regimes. Tallgrass prairie and wet prairie were the dominant vegetation communities during pre-settlement times (Marschner 1974 in Hargrave 1993). Upland prairie was dominated by bluestems, Indian grass, and several other grasses; prairie wetland was dominated by bluejoint grass, cordgrass, cattails, rushes and sedges. Narrow, forested floodplains were common along larger streams and rivers. Broader zones of woodland or brushland were common along "fire shadows" of streams; size and configuration depended on prevailing wind and stream alignment (Robert Dana, personal communication in Hargrave 1993).

Today, prairie cordgrass and bluejoint dominate the wetter areas, big bluestem and Indian grass are the major components of mesic prairie and the drier areas are dominated by porcupine grass, little bluestem and side-oats grama. Approximately 48,500 acres of prairie still exist in the northern grasslands area.

**MINNESOTA RIVER PRAIRIE** - The Minnesota River Prairie Subsection originally supported mostly plant communities typical of mesic tallgrass prairie, but areas near granite outcroppings supported dry and dry-mesic prairies (Hargrave 1993). The pre-settlement vegetation was primarily tallgrass prairie, with many islands of wet prairie (Kratz and Jensen 1983, Marschner 1974 in Hargrave 1993). Floodplain forest of silver maple, elm, cottonwood, and willow occurred along the Minnesota River and other streams. On portions of the Big Stone Moraine both steep kames and the broad slopes along the coulees support dry and dry-mesic prairie (Wheeler et al., 1992 in Hargrave 1993). There were also dry gravel prairies on kames (Albert 1993 in Hargrave 1993).

COTEAU DES PRAIRIES - The Prairie Coteau Subsection was generally dominated by vegetation typical of mesic to dry-mesic tallgrass prairie. Pre-settlement vegetation of this subsection was dominated by tall grasses that covered almost the entire landscape. Wet prairies covered a much smaller proportion of the landscape than in the Minnesota River Prairie and were restricted to narrow stream margins in much of the subsection. Forest was similarly restricted to ravines along a few streams, such as the Rock and Redwood Rivers. The prairies were drier in this subsection, accounting for the prevalence of prairie plants characteristic of midgrass prairies further to the west (Albert 1993 *in* Hargrave 1993). These were especially common in Pipestone and Rock Counties, where soils are shallow over bedrock (Denise Boudreau, personal communication *in* Hargrave 1993).

Most communities still intact are in areas of steeper topography or have shallow soil with underlying rock. These areas take on some of the characteristics of midgrass prairies that generally occur farther to the west. Grass species such as green needlegrass and western wheatgrass have become more common (Hargrave 1993). Most of the Iowa Prairie Coteau is generally an extension of Minnesota prairie coteau with dominants being similar. An estimated 15,000 acres of prairie exist in the Coteau landscapes.

Non-native vegetation species comprise a significant proportion of the flora overall in the Great Plains, ranging upward from a low of 15 percent in North Dakota (Stuckey and Barkley 1993 *in* Ostlie et al., 1996). Euro-American settlers initiated the arrival of non-native species. Homeland host crops and a wide array of inadvertent and intentional transplants have adversely affected natural systems and species of the prairie lands. Awnless brome, Russian Olive, and crested wheat are still widely planted despite their negative effect on natural vegetation. Unintentional introductions include leafy spurge thought to have been introduced in a shipment of oats from Eurasia to Minnesota (Batho 1932 *in* Ostlie et al., 1996), and purple loosestrife (from Eurasia) which was first reported along the northeastern coast in 1814 (Stuckey 1980 *in* Ostlie et al., 1996). Non-native trees have also been planted throughout much of the Great Plains to control wind erosion.

### **3.2.2 Wildlife**

The Refuge's assorted habitats support a diverse grouping of wildlife species native to western Minnesota and northwestern Iowa, described briefly as follows.

*Birds* – Approximately 243 species of birds use the native and restored prairie habitats within the boundaries of the HPA during each year, with 152 breeding here. Forty-eight species of concern occur in the HPA, including 43 that are known or likely to breed in the area. About 44% of the species of concern depend on native and restored grassland habitats. Some of the species of concern, including the greater prairie chicken, northern harrier, upland sandpiper, bobolink, Henslow's sparrow and savannah sparrow, are area sensitive and need large blocks of contiguous grasslands for their life requirements. The HPA is also an important area for migratory waterfowl, gray partridge and ring-necked pheasant.

*Mammals* – Approximately 25 species of mammals are found within the HPA. White-tailed deer, coyote, badger, eastern cottontail rabbit, deer mouse, eastern mole, fox squirrel, plains pocket gopher, prairie vole, and plains pocket mouse are some of the species specific to the tallgrass prairie. The HPA's large size and diversity of habitats meet the needs of these mammals for food, cover, and water.

*Amphibians and Reptiles* – Thirty-three species of amphibians and reptiles are found in the Minnesota and Iowa portions of the northern tallgrass prairie. Seven turtle species, eight frog and toad species, and three salamanders are found in the HPA. Tiger salamanders and northern leopard frogs are the most common amphibians. They provide food for herons, raccoons, snakes, owls, and northern pike.

*Insects* – The exact number of insect species found in the HPA is not known, however, it is estimated that several thousand live, breed in, or visit the tallgrass prairie. There are 50-60 butterflies in Iowa and one-third to one-fourth of these species are restricted to prairie habitat. Rare species found on northwest Iowa prairie sites include crossline skipper, Iowa skipper, Aphrodite fritillary, regal fritillary, orange-bordered blue and ottoe skipper

butterflies. Of the 130 species of butterflies which breed in Minnesota, three native prairie species are endangered, two are threatened and one is considered a species of concern. All six are endemic to the northern prairie.

### 3.2.3 Threatened, Endangered and Candidate Species

Federally listed Threatened and Endangered Species that occur within the boundaries of the HPA include the Indiana bat (*Myotis sodalists*), bald eagle (*Haliaeetus leucocephalus*), piping plover (*Chadarius melodus*), least tern (eastern population) (*Sterna antillarum*), the pallid sturgeon (*Scaphirynchus albus*), topeka shiner (*Notropis topeka*), prairie bush clover (*Lespedeza leptostachya*), and the western prairie fringed orchid (*Platanthera praeclara*).

Indiana bats occur in Iowa and may utilize prairie tracts in the HPA area. They hibernate in caves that consistently have winter temperatures between 40°F and 47°F, and caves such as these are rare. Female bats give birth in nursery colonies beneath the loose bark of trees like American elm and shagbark hickory. The bats feed over small to medium-sized streams, and over open upland areas, such as old fields and pastures.

Bald eagles have increased in abundance and distribution across the United States, including Iowa and Minnesota. Increasing numbers of nesting eagles, as well as migrating and wintering birds occur across Iowa and Minnesota, including the HPA area. Eagle nesting, migration, and winter use can be anticipated across the HPA area. Because of increasing populations across the United States, the U.S. Fish and Wildlife Service will de-list the bald eagle in 2007.

Piping plovers are tenuously present in Iowa and Minnesota. They nest in one site in Minnesota, Lake of the Woods, to the east of the HPA area, and on power company ash ponds at one or two sites in western Iowa. Piping plovers nest in coastal areas, but they are also prairie birds, nesting across the Great Plains of the U.S. and Canada, but in perilously low numbers. Loss of prairie wetland areas has contributed to their decline.

The least tern nests along large rivers of the Colorado, Red, Mississippi, and Missouri River systems. It is a potential nester in the Missouri River area of Iowa. It nests on sand and gravel bars and protected beach areas of large rivers and winters in coastal Central and South America. The species is endangered because human disturbance and alteration of river systems has rendered much of its nesting habitat unusable. Pesticides may reduce food available to the tern by reducing the numbers of small fish in their feeding areas.

Although technically found within the boundaries of the HPA, the pallid sturgeon occurs primarily in the Mississippi and Missouri Rivers downstream of their confluence. It is highly unlikely that this species would be found on fee title tracts of the Northern Tallgrass Prairie NWR.

Topeka shiners were historically found within the HPA in both Minnesota and Iowa. Populations have decrease dramatically due to habitat losses.

Prairie bush clover occurs in dry, gravelly hill prairies and in thin soil prairies over granite bedrock. Common on prairies with *Andropogon gerardi* (big bluestem) and *Sorghastrum nutans* (Indian grass). More sites are known for this species than were known when it was listed and it appears able to grow in disturbed areas. The species may be stable, or, if declining, declining slowly. The need for protection remains.

Western prairie fringed orchid historically occurred throughout the HPA. The species may be stable, but loss of tallgrass prairie habitat has markedly reduced its original range. Present sites are threatened by human activities and land use changes and by invasion by *Euphorbia esula* (leafy spurge).

## SECTION 3.3 Land Use

The Northern Tallgrass Prairie HPA includes approximately the western third of Minnesota and the northwestern quarter of Iowa (Figure 1). The boundary line carefully follows the historic range of the northern region of the tallgrass prairie ecosystem, as identified by Baileys ecoregion classification system. This area, about 150 miles wide and 520 miles long, includes portions of 85 counties, 48 in Minnesota and 37 in Iowa. Approximately 95 percent of the land is in private ownership

The regions current landscape contains several land use types. The three major land use types are cropland, grassland, and wetland.

**Croplands** - The majority of the land in the HPA project area is cropland. Corn, soybeans, wheat and oats are major crops in both states. Iowa led the nation in 1995 for corn and soybean production, and the top five counties in Minnesota for corn, wheat and soybean production in 1994 are all located within the proposed HPA. Over the past fifty years, both states have seen a steady reduction in the amount of land in farms and net income from farming, while farm size and crop yields have grown (MN Ag. Stats. Service 1995 and IA Ag. Stats. Service, 1996).

**Grasslands** - Where nearly 25 million acres of tallgrass prairie once existed in Iowa and Minnesota, only about 320,000 acres remain. In Iowa, less than .01% of the remaining prairie is permanently protected, while less than 1% is permanently protected in Minnesota. A 1997 estimate of prairie in Minnesota, including the aspen parklands, was 38,000 acres. This land is included in state parks and wildlife management areas, Nature Conservancy preserves, and Federal refuges and waterfowl production areas. Recreational access varies as does the degree of protection and management on native prairie tracts. Natural prairie diversity is dependent upon intermittent grazing and burning. Prescribed burns are often used by government and private conservation organizations, but some protected tracts, such as those in easements, may not currently receive as much attention.

Hay fields, pastures, and fields in CRP are also considered grasslands. More quantifiable and less diverse, these areas may be restorable to some extent, but these areas cannot be restored to virgin prairie. Monoculture stands of hay and alfalfa hay are obviously less diverse than the prairie they have displaced. Fenced pastures grazed by cattle are quite different from the prairie once grazed by wandering bison. Cattle are often permitted to overgraze, weakening native grasses, eliminating native flowers, and encouraging colonization by non-native weedy forbs and trees.

**Wetlands** - Wetlands and prairie streams are as important a part of the prairie ecosystem as the upland grasslands. They provide essential fish and wildlife habitat, permit ground water recharge, filter sediment and pollutants from ground water to improve water quality, and reduce flood peaks by storing and retaining runoff. Depth and duration of inundation during the growing season results in varied wetland categories and vegetative classifications. According to Cowardin et al. (1979) wetland categories include: temporarily flooded (wet meadows), semi-permanently flooded (marshes), saturated (fens and seeps), and permanently flooded (ponds and lakes). Wet meadows (freshwater and saline) are found in the floodplain of rivers and streams and around perimeters of wetlands. The northern prairie pothole region of more than 300,000 square miles includes the HPA of Iowa and Minnesota and is characterized by numerous small unconnected depressions known as potholes. Historically, the region included about 20 million acres of wetlands; today, only about 5.3 million acres remain in 2.7 million basins within the five area states. More than 78 percent of these wetland basins are smaller than one acre in size. Fens and seeps where soil is continually saturated by groundwater seepage occur infrequently.

The HPA project area contains about 1,371,490 acres of wetlands, or 4.8 percent of the total land area. This estimate is based on the percentage of each county within the HPA multiplied by the total wetland acreage in the county. County wetland estimates are from the U.S. Fish and Wildlife Service National Wetlands Inventory. They do not include farmed wetlands. In Minnesota, 58 percent of natural wetlands remain, and in Iowa, the situation is more severe, with 89 percent of wetlands gone (Dahl 1990). Nearly two out of three wetlands in western and southwestern Minnesota are privately owned, increasing their vulnerability to drainage, development and pollution (Miller and Goetzinger 1993).

**Other Land Uses** - Other land uses, although comprising a relatively small percent of the land area, are significant to the landscape and important to the life style of people within the project area. Urban areas to accommodate 1-1.5 million people residing in the HPA require manufacturing, retail services, government, education services, transportation and utilities, and other commercial services. Urban sprawl into rural areas is resulting in the conversion of additional agricultural lands and prairie and grassland areas.

Federal, state, county, and township road systems along with other transportation (e.g., railroads) occupy a substantial land area. Additionally, mining of vast mineral deposits for highway construction, road maintenance and larger urban construction needs has resulted in significant sand, gravel, and limestone pits and rock quarries.

Woodland is widely scattered as woodlots and wooded margins of streams and rivers throughout the project area. More of it occupies the northern portions of the HPA's tallgrass prairie landscape, gradually diminishing from north to south in Minnesota. The Aspen Parklands Ecosystem contains a greater acreage of trees and brush which are interspersed with native prairie grassland. The Great Lakes area of northwestern Iowa retains some of the most significant woodlands within the state outside the riverine areas.

### **SECTION 3.4 Historical Properties and Cultural Resources**

The body of federal historic preservation laws has grown dramatically since the enactment of the Antiquities Act of 1906. Several themes recur in these laws, their promulgating regulations, and more recent Executive Orders. They include: 1) each agency is to systematically inventory the historic properties on their holdings and to scientifically assess each property's eligibility for the National Register of Historic Places; 2) federal agencies are to consider the impacts to cultural resources during the agencies' management activities and seek to avoid or mitigate adverse impacts; 3) the protection of cultural resources from looting and vandalism are to be accomplished through a combination of informed management, law enforcement efforts, and public education; and 4) the increasing role of consultation with groups, such as Native American tribes, in addressing how a project or management activity may impact specific archaeological sites and landscapes deemed important to those groups. The U.S. Fish and Wildlife Service, like other federal agencies, is legally mandated to inventory, assess, and protect cultural resources located on those lands that the agency owns, manages, or controls. The Service's cultural resource policy is delineated in 614 FW 1-5 and 126 FW 1-3. In the FWS's Midwest Region, the cultural resource review and compliance process is initiated by contacting the Regional Historic Preservation Officer/Regional Archaeologist (RHPO/RA). The RHPO/RA will determine whether the proposed undertaking has the potential to impact cultural resources, identify the "area of potential effect," determine the appropriate level of scientific investigation necessary to ensure legal compliance, and initiates consultation with the pertinent State Historic Preservation Office (SHPO) and federally recognized Tribes.

There are no sites listed on the National Register of Historic Places located on the seven current fee title tracts. A review of the National Register of Historic Places showed that, as of August 1, 1996, the 37 Iowa counties contained 397 properties and the 48 Minnesota counties contained 523 properties listed on the National Register. The vast majority of these properties are buildings in towns and cities. However, a number of the properties are located in rural areas and are indicative of the kinds of historic properties that could be found on future fee title units of the Northern Tallgrass Prairie NWR. These include farmsteads and farm buildings, especially barns, bridges, segments of the Red River Oxcart trail, mill sites, battle sites, and prehistoric archeological sites such as mounds, villages, camps, and rock art.

### **SECTION 3.5 Local Socio-Economic Conditions**

The overall project area is 520 miles long by 150 miles wide stretching from northwest Minnesota to northwest Iowa. It includes parts of 48 counties in Minnesota and 37 in Iowa. About 77,000 acres of the approximately 300,000 acres of native prairie that remains in the project area is anticipated to be protected with the proposed HPA. Since land use and economic activity vary across the project area, four sub-units were identified in the EIS for

conducting the economic analysis in the development of the EIS. The sub-units include 30 of the 85 counties identified as the HPA. The four sub-units are:

TALLGRASS ASPEN PARKLAND - northwest Minnesota,  
AGASSIZ BEACH RIDGES - west central Minnesota,  
PRAIRIE COTEAU-MINNESOTA - southwest Minnesota, and  
PRAIRIE COTEAU-IOWA - northwest Iowa.

#### Tallgrass Aspen Parkland

This area includes the six Minnesota counties (Kittson, Roseau, Marshall, Pennington, and parts of Red Lake and Polk) most likely directly affected by the HPA. These counties are home to 82,834 people, 1.8 percent of Minnesota's population. It contains 7,460 square miles of land area and is 8.9 percent of Minnesota's land area. The principal crops grown include soybeans (13 percent of cropland), wheat (68 percent), sunflower (12 percent), and alfalfa (7 percent). Agriculture, manufacturing, tourism, and forestry are the principal industries. Cropland sells for about \$500 an acre, while pasture and hayland sells for about \$130 an acre.

#### Agassiz Beach Ridges

This area includes five Minnesota counties (Norman, Clay, Wilkin, and parts of Polk and Red Lake) most directly affected by the HPA. They are home to 104,416 people, 2.3 percent of Minnesota's population. The 5,079 square miles is 6 percent of Minnesota's land area. The principal crops grown include soybeans (44 percent), corn (31 percent), wheat (18 percent), and alfalfa (7 percent). Agriculture, tourism, and agricultural products processing are the principal industries. Cropland sells for about \$800 an acre and pasture and hayland sell for about \$150 per acre.

#### Prairie Coteau-Minnesota

The 13 Minnesota counties (Jackson, Nobles, Murray, Pipestone, Lincoln, Grant, Stevens, Pope, Big Stone, Swift, Lac Qui Parle, Chippewa, and Yellow Medicine) most directly affected by the HPA in this area are home to 188,913 people, 4.1 percent of Minnesota's population. The 8,238 square miles is 9.8 percent of Minnesota's land area. The principal crops grown are soybeans (27 percent), corn (67 percent), and alfalfa (6 percent). Agriculture, agricultural products processing, and tourism are the principal industries. Cropland sells for about \$1200 an acre, while pasture and hayland sell for about \$300 per acre.

#### Prairie Coteau-Iowa

The eight Iowa counties (Osceola, Dickinson, Emmet, O'Brien, Clay, Palo Alto, Buena Vista, and Pocahontas) most directly affected by the HPA in this area are home to 106,039 people, 3.7 percent of Iowa's population. The 4,078 square miles is 19 percent of Iowa's land area. The principal crops grown are corn (50 percent) and soybeans (50 percent). Agriculture, tourism, and agricultural products processing are the principal industries. Cropland sells for about \$1,600 an acre, while pasture and hayland sell for about \$500 per acre.

## **CHAPTER 4. ENVIRONMENTAL CONSEQUENCES**

This chapter describes the foreseeable environmental consequences of implementing the two management alternatives in Chapter 2. When detailed information is available, a scientific and analytic comparison between alternatives and their anticipated consequences is presented, which is described as "impacts" or "effects." When detailed information is not available, those comparisons are based on the professional judgment and experience of refuge staff and Service and State biologists.

### **SECTION 4.1 Alternative A: No Action**

#### **4.1.1 Habitat Impacts**

No additional public use impacts on vegetation are expected with this alternative. Non-consumptive users would still be accessing the areas for other wildlife dependent activities.

Presently the refuge contains seven fee title tracts for a total of 2,293.12 acres. The smallest tract is 16.13 acres in size, the largest is 1132.00 acres. Damage to agricultural croplands as well as to native prairie vegetation, particularly wildflowers can result from white-tailed deer and Canada geese, exceeding their carrying capacity due to the lack of population control provided by hunting. Although this extent of damage has not yet been observed, the potential increases as the Service's land acquisition continues in the HPA.

#### **4.1.2 Biological Impacts**

This alternative will result in few, if any, biological impacts given that there are currently only seven tracts of land in fee title ownership. As additional lands are purchased, potential damage to agricultural croplands, as well as to native prairie vegetation may occur without the population control provided by hunting. When population levels exceed carrying capacity, deer and waterfowl are highly susceptible to disease outbreaks (e.g. botulism, anthrax, hemorrhagic disease, chronic wasting disease) that result in high mortality. This can result in an abrupt decline in population, which can adversely affect the genetic structure of the herd or flock.

#### **4.1.3 Listed Species**

No effect is expected for any of the threatened and endangered species found within the boundaries of the HPA as a result of this alternative.

#### **4.1.4 Historic Properties and Cultural Resources**

This alternative will result in no additional ground disturbance or disturbance to standing structures, and it would have no effect on any historic properties.

#### **4.1.5 Cumulative Impact Analysis**

##### **4.1.5.A Anticipated Direct and Indirect Impact of No Action on Wildlife Species**

This alternative would have little to no effect on most wildlife populations. The possible exception would be white-tailed deer. Deer populations would increase on those tracts that are large enough to support a local population. It allows more deer the potential to grow older, increasing the percent of mature bucks, popular with non-hunting visitors. Disturbance to refuge wildlife would continue as is presently caused by non-consumptive users.

This alternative could allow deer populations to become too large for an individual unit which in turn would create a situation of the over browsing of vegetation. This can cause degradation of the plant community and reduction of food available for the population. This would have negative impacts on grassland nesting birds and on other resident and non-resident wildlife populations whose life requirements include diverse grassland communities.

##### **4.1.5.B Anticipated Direct and Indirect Impact of No Action on Refuge Programs, Facilities, and Cultural Resources**

**Other Refuge Wildlife-Dependent Recreation.** Approximately 1,500 visitors used the refuge units in 2006. The majority of these visits took place from April through October. The highest wildlife-dependent recreational uses fall under the wildlife observation category with the largest being bird watching.

Under this alternative, the public would not have the opportunity to participate in hunting, which is one of the

priority public uses and compatible with the purposes for which the refuge was established, have an increased awareness of Northern Tallgrass Prairie NWR and the National Wildlife Refuge System, nor would the Service be meeting public use demand. Public relations would not be enhanced with the local community.

**Refuge Facilities.** No additional impacts to refuge facilities (roads, parking lots, trails) will occur with this alternative. Under this alternative, refuge facilities would continue to be used by non-consumptive visitors. Maintenance or improvement of existing roads and parking areas will cause minimal short term impacts to localized soils and may cause some temporary wildlife disturbance.

**Cultural Resources.** This alternative will not have any additional impacts to cultural resources. No sites listed on the National Register of Historic Places are located on fee title tracts within the designated boundaries of the refuge.

#### **4.1.5.C Anticipated Direct and Indirect Impact of No Action on Refuge Environment and Community**

The No Action alternative will have little if any impact on soils, air quality, water quality or solitude. Vegetation, as stated above, could be affected if the deer population increases to a level to cause degradation of grassland communities.

This alternative may have impacts on hunting opportunities in the local area. Over the last 15 years it has become increasingly difficult for hunters to acquire access to hunt on private land throughout Minnesota and Iowa. More and more landowners are either leasing their land for an entire season, charging hunters a daily fee, or selling their land for recreation use. This change in land use has increased the importance of public land to hunters. Not opening these units to hunting will result in the continued decrease of lands open to hunting for many hunters. This will be exacerbated as additional lands are added to the System. However, this alternative could possibly make the private land adjacent to these units more valuable. The landowner will have a wildlife sanctuary adjacent to their land which could conceivably make their property more valuable for leasing or to sell.

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

Hunting was allowed on most of these lands before they became part of the Northern Tallgrass Prairie NWR. These hunts were all done within the state regulations and seasons. This alternative would not allow hunting and therefore there would be no anticipated impacts from this alternative.

#### **4.1.5.E Anticipated Impacts If Individual Hunts are Allowed to Accumulate**

This alternative would not allow hunting on fee title units of the Northern Tallgrass Prairie NWR and therefore there would be no anticipated impacts.

#### **4.1.6 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 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 for either alternative unique to minority or low-income populations in the affected area. Neither alternative

will disproportionately place any adverse environmental, economic, social, nor health impacts on minority or low-income populations.

Hunting opportunities proposed on Northern Tallgrass Prairie NWR already exist on state, federal and other public lands in the 85 county area where the refuge units are located.

Maintaining the “Closed to Hunting” status of the refuge does not provide for all the priority public uses identified as goals of the refuge or the National Wildlife Refuge System. The Refuge Recreation Act of 1962 (16 U. S. C. 460K) and the National Wildlife Refuge System Administration Act of 1966 (16 U. S. C. 668-ddee) provide authorization for hunting and fishing on National Wildlife Refuges. The effects of hunting on refuges have been examined in several environmental review documents, including the Final Environmental Impact Statement on the Operation of the National Wildlife Refuge System (1976), Recommendations on the Management of the National Wildlife Refuge System (1978), and the Draft Environmental Impact Statement on the Management of the National Wildlife Refuges (1988). Nothing in the establishing authority for the Northern Tallgrass Prairie National Wildlife Refuge [Fish and Wildlife Act of 1956 {16U.S.C. 742f}] precludes hunting on the refuge.

In the 1998 Northern Tallgrass Prairie Habitat Preservation Area Final Environmental Impact Statement developed for the establishment of the Northern Tallgrass Prairie NWR, the selected alternative (Alternative B) states that “...compatible wildlife-dependent recreational uses, such as fishing, hunting, wildlife observation and photography, environmental education, and interpretation would be permitted on most of the HPA lands that are owned by the Service.”

## SECTION 4.2 Alternative B: Proposed Action

Under this alternative, the fee title tracts of the Northern Tallgrass Prairie NWR would be opened to hunting. The states of Iowa and Minnesota differ slightly in species that are allowed to be hunted. Table 2 displays these differences. Tables 3 and 4 show the 2006-2007 season dates for Iowa and Minnesota.

**Table 2: Hunted Species by State**

Species Hunted	Iowa	Minnesota
White-tailed deer	X	X
Wild Turkey	X	X
Ring-necked pheasant	X	X
Gray (Hungarian) partridge	X	X
Ruffed grouse		X
Sharp-tailed grouse		X
Prairie chicken		X
Bobwhite quail	X	
Rabbit (cottontail and white-tailed jack)	X	X
Squirrel (fox and gray)	X	X
Groundhog	X	
Raccoon	X	X
Opossum	X	X
Fox (red and gray)	X	X
Badger		X
Coyote	X	X
Striped skunk		X
Crow	X	X
Ducks and geese	X	X
Common Moorhen (Gallinule)		X

Coots	X	X
Rails (Virginia and sora)	X	X
Common snipe	X	X
Mourning Dove		X

**Table 3: IOWA HUNTING INFORMATION 2006-2007**

<b>Deer Hunting</b>				
<b>Season</b>		<b>Season Dates</b>		
Youth Season		Sept. 16 – Oct. 1		
Disable Hunter Season		Sept. 16 – Oct. 1		
Archery Season-Early Split		Oct. 1 – Dec. 1		
Archery Season-Late Split		Dec. 18 – Jan. 10, 2007		
Early Muzzleloader		Oct. 14 – 22		
Late Muzzleloader		Dec. 18 – Jan. 10, 2007		
Shotgun-Season 1		Dec. 2 – 6		
Shotgun-Season 2		Dec. 9 – 17		
November Antlerless Season		Nov. 24-26		
January Antlerless Season		Jan. 11 – Jan. 21, 2007		
Nonresident Holiday Season		Dec. 24 – Jan. 2, 2007		
<b>Turkey Hunting</b>				
<b>Season</b>		<b>Type of License</b>		<b>Season Dates</b>
Youth Season (Residents Only)		Resident Combination Gun/Bow		April 13 – 15
Season 1		Resident Combination Gun/Bow		April 16 – 19
Season 2 (Residents Only)		Resident Combination Gun/Bow		April 20 – 24
Season 3		Resident Combination Gun/Bow		April 25 – May 1
Season 4		Resident Combination Gun/Bow		May 2 – 20
Season 1 – 4		Resident Archery-Only		April 16 – May 20
<b>Upland Game Hunting</b>			<b>Furbearer Hunting</b>	
<b>Species</b>	<b>Season</b>		<b>Species</b>	<b>Season</b>
Youth Rooster Pheasant	Oct. 21 – 22		Coyote	Continuous Open Season
Rooster Pheasant	Oct. 28 – Jan. 10, 2007		Raccoon and Opossum	Nov. 4 – Jan. 31, 2007
Bobwhite Quail	Oct. 28 – Jan. 31, 2007		Fox (Red and Gray)	Nov. 4 – Jan. 31, 2007
Gray Partridge	Oct. 14 – Jan. 31, 2007			
Rabbit (Cottontail)	Sept. 1 – Feb. 28, 2007			
Rabbit (Jack)	Oct. 28 – Dec. 1			
Squirrel (Fox and Gray)	Sept. 1 – Jan. 31, 2007			
Groundhog	June 15 – Oct. 31			
Crow	Oct. 15 – Nov. 30 and Jan. 14 – March 31, 2007			
<b>Migratory Game Bird Hunting</b>				
<b>Species</b>	<b>Season (North Duck Zone)</b>		<b>Season (South Duck Zone)</b>	
Ducks, Mergansers, Coots	Sept. 23 – 27 and Oct. 14 – Dec. 7		Sept. 23 – 27 and Oct. 21 – Dec. 14	
Youth Waterfowl Hunting Days	Oct. 7 – 8		Oct. 7 – 8	
<b>Species</b>	<b>Season (North Goose Zone)</b>		<b>Season (South Goose Zone)</b>	
Canada geese and brant	Sept. 30 – Dec. 10 and Dec. 16 – Jan. 2, 2007		Sept. 30 – Oct. 8 and Oct. 21 – Jan. 9, 2007	
<b>Special September Canada Goose Seasons</b>				
Canada geese	Sept. 1 – 15 (Only in designated zones around Des Moines and Cedar Rapids/Iowa City. Special regulations apply. See Special September Canada Goose Season flyer at select license agents in hunt zones).			
Canada geese	Sept. 9 – 10 (Statewide)			
<b>Statewide</b>				

Species	Season		
White-fronted geese	Sept. 30 – Dec. 10		
Light geese (white and blue phase snow geese and Ross' geese)	Sept. 30 – Jan. 14, 2007		
Light geese Conservation Order (white and blue phase snow geese and Ross' geese)	Jan. 15 – April 15, 2007 (Additional Regulations May Apply)		
Woodcock	Oct. 7 – Nov. 20		
Snipe	Sept. 2 – Nov. 26		
Rail (Sora and Virginia)	Sept. 2 – Nov. 10		
<b>Table 4 : MINNESOTA HUNTING INFORMATION 2006-2007</b>			
<b>Deer Hunting</b>			
Season	Zone	Season Dates	
Shotgun	2A	Nov. 4 – 12	
Shotgun	4A	Nov. 4 – 5	
Shotgun	4B	Nov. 11 – 14	
Muzzleloader	Statewide (except closed areas)	Nov. 25 – Dec. 10	
Early Antlerless Season		Oct. 14 – 15	
Archery	Statewide (except closed areas)	Sept. 16 – Dec. 31	
<b>Turkey Hunting</b>			
Season	Season Dates		
Fall Season 1	Oct. 18 – 22		
Fall Season 2	Oct. 25 – 29		
Spring Season 1	April 18 - May 31, 2007		
<b>Upland Game Hunting</b>		<b>Furbearer Hunting</b>	
Species	Season	Species	Season
Pheasant	Oct. 14 – Jan. 1, 2007	Raccoon and Red Fox	Oct. 21 – Mar. 15, 2007
Ruffed Grouse	Sept. 16 – Jan. 1, 2007	Badger, Opossum	Oct. 21 – Mar. 15, 2007
Sharp-tailed Grouse (in open zone)	Sept. 16 – Nov. 30	Gray Fox	Oct. 21 – Mar. 15, 2007
Hungarian Partridge	Sept. 16 – Jan. 1, 2007	Coyote, striped skunk, and other unprotected species	Continuous
Prairie Chicken (by special permit only)	Oct. 21 – 25		
Rabbit (Cottontail, Jack, Snowshoe Hare)	Sept. 16 – Feb. 28, 2007		
Squirrel (Fox and Gray)	Sept. 16 – Feb. 28, 2007		
Non-Migratory Small Game by Falconry	Sept. 1 – Feb. 28, 2007		
<b>Migratory Game Bird Hunting</b>			
Ducks, Coots, Mergansers, Moorhens (Gallinules)	Sept. 30 – Nov. 28		
Mourning Doves	Sept. 1 – Oct. 30		
Woodcock	Sept. 23 – Nov. 6		
Sora and Virginia Rail	Sept. 1 – Nov. 4		
Common Snipe (Wilson's or Jacksnipe)	Sept. 1 – Nov. 4		
Crow	March 1-31 and July 15-Oct. 15		
Geese (Snow, Blue, and Ross')	Sept. 30 – Dec. 24		
White-fronted and Brant geese	Sept. 30 – Dec. 24		
Canada geese	West-Central zone Oct. 19 – Nov. 27 West zone Sept. 30 – Nov. 28 Remainder of state Sept. 30 – Dec. 8		
<b>Special Canada Goose Seasons</b> (1/2 hour before Sunrise to Sunset)			
September (early) Canada Goose Season	Northwest zone Sept. 2 – 15 Remainder of state (except southeast zone) Sept 2 – 22	5 5	10 10
<b>**The controlled hunting zone at Lac Qui Parle is closed to goose hunting during the September goose season.</b>			
December (late) Canada Goose	West-Central zone No late		

Season	season Remainder of state (except southeast zone) Dec. 9 – 18	5	10
<b>**Youth Waterfowl Hunt is Sept. 16, 2006. Bag limits are the same and hours are from ½ hour before sunrise until 4 p.m.</b>			

### 4.2.1 Habitat Impacts

Hunting access will be by foot access only. Parking will be restricted to designated parking lots. Impacts on vegetation should be temporary and similar to that occurring from non-consumptive users. Hunters with disabilities will utilize existing gravel roads and trails and be accommodated on a case by case situation.

### 4.2.2 Biological Impacts

Given the nature of these lands, disturbance of migratory birds, upland and small and big game, and resident wildlife will be the same as occurs on the surrounding state Wildlife Management Areas (WMAs) and federal Waterfowl Production Areas (WPAs). The harvest of refuge animals will be in accordance with Federal regulations and Minnesota and Iowa state limits. Other wildlife not being harvested will be disturbed by hunters approaching an animal's site, and flushing or moving the wildlife as the animals avoid human contact. This disturbance will be similar to the disturbance non hunted animals experience on Wildlife Management Areas and federal Waterfowl Production Areas.

### 4.2.3 Listed Species

No effect is expected for any federally listed threatened or endangered species or their critical habitat. A consultation pursuant to Section 7 of the Endangered Species Act was conducted as part of the Hunt Plan in 2003. No impacts are anticipated for state listed species.

### 4.2.4 Historic Properties and Cultural Resources

There are no historical properties documented on current refuge lands. Hunting is not expected to cause ground disturbance or disturbance to standing structures and will have no effect on any historic properties located on lands acquired in the future.

### 4.2.5 Cumulative Impact Analysis

#### 4.2.5.A Anticipated Direct and Indirect Impact of Proposed Hunt on Wildlife Species

The Service has allowed public hunting and administered a hunting program on adjacent and nearby Waterfowl Production Areas (WPAs) since the early 1960's. Recent estimates show that more than 125,000 people visit Minnesota WPAs and 43,190 visit Iowa WPAs annually for the purpose of hunting. During its history, the Service has not noted any significant adverse effects of this program on the administration of WPAs, and has determined that this use is compatible with the purposes of the WPAs and the NWR System's mission statement. The hunting program for Northern Tallgrass Prairie NWR will be similar and consistent with the program administered by the Service for WPAs.

Hunting accounts for more than half of the visits to WPAs. It is anticipated that visitation at Northern Tallgrass Prairie NWR will follow a similar pattern. The allowance of hunting on the Refuge will expose the Refuge's largest user group to the prairie habitats and facilitate a better appreciation and understanding of this ecosystem. This will increase the success of prairie preservation and restoration efforts. Also the allowance of public hunting will nurture a cooperative relationship with adjacent landowners by minimizing crop depredation. The majority of lands that will

become Service owned tracts of Northern Tallgrass Prairie NWR will be in private ownership when purchased by the Service. In Iowa and Minnesota, the majority of private rural lands are hunted during at least some of the state seasons. Any impacts that hunting is having on this land and its wildlife populations is already occurring and the change in ownership to the Service, and the subsequent hunting, will have little to no impact on wildlife populations. In some cases, once owned by the Service, the hunting on these lands will be more restrictive than the current situation due to the refuge's regulations being more restrictive than the state seasons. The selected alternative in the final EIS estimates that approximately one-half of the 77,000 HPA acres will be acquired in fee title. This assumption will be used to determine long term cumulative effects of this alternative on wildlife species.

## Resident Wildlife

The resident wildlife populations in the HPA are expected to decrease slightly as a result of this alternative. The number of hunters per square mile should stay about the same in the areas of each state where refuge units are located. The wildlife populations on refuge units should continue to reflect densities in the surrounding area.

- **White-tailed Deer:** Deer densities in both states have remained fairly stable in the last ten years. In some areas densities have declined while in others, densities have increased (See figures 2-4). Both states use these densities figures when determining each year's harvest needs to keep populations healthy. In the 2005-2006 Iowa deer season, a total of 326,639 hunters harvested 211,451 deer. The average number of hunters per square mile was 5.78, with an average of 3.77 deer harvested per square mile. The one tract in Iowa is located in Kossuth County and is 160 acres in size. For the 2005-2006 hunting season, IA DNR estimated the number of deer hunters in Kossuth County to be 1.66 hunters per square mile. The estimate for deer harvested in the county was 1.01 per square mile. Over the entire HPA in Iowa the average deer hunter per square mile is 1-2, while the average number of deer harvested is less than 2 per square mile. Using these numbers, it is estimated that this alternative will result in the harvest of less than one deer on the current tract in Iowa and less than 2 deer per square mile throughout the HPA.

There are six tracts in Minnesota which are located in Otter Tail, Rock, and Lincoln counties. For the 2005-2006 deer season, MN DNR estimated a statewide total of 474,044 hunters harvesting 255,736 deer. Average number of hunters per square mile was 5.45, with an average of 2.94 deer harvested per square mile. Figure 5 shows the deer hunting zones in MN. Northern Tallgrass Prairie HPA is located within portions of zones 2 and 4.

There are two fee title tracts in Otter Tail County, one 242.45 acres in size and one that, at 16.13 acres, is likely too small to support the objectives of the hunting program as described in Section 2.2.2. The larger tract is located in deer hunting zone 239 (formerly #410). MN DNR estimated the number of firearm deer hunters in this zone at 8.7 per square mile. The estimated deer harvest in this zone was 5173 deer for an average of 4.66 deer per square mile. Using these numbers, and the size of the refuge unit, it is estimated that this alternative will result in the harvest of less than two deer on this tract.

The three fee title tracts in Rock County are all adjacent to each other and total 742.54 acres. These tracts fall into deer hunting zone 452. MN DNR estimated the number of firearm deer hunters in this zone at 1.9 per square mile in the 2005-2006 season. The estimated deer harvest was 754 deer for an average of 1.18 deer per square mile. Using these numbers, and the size of the refuge unit, it is estimated that less than two deer would be harvested on this tract as a result of this alternative.

The tract in Lincoln County is 1132.0 acres in size and is located in deer hunting zone 448. MN DNR estimated the number of firearm deer hunters in this zone at 3.5 per square mile during the 2005-2006 season. The estimated deer harvest was 725 deer for an average harvest of 1.5 deer per square mile. Using these numbers and the size of the refuge unit, it is estimated that less than three deer would be harvested on this tract as a result of this alternative.

If half of all the 77,000 acres in the HPA are purchased entirely in Iowa or Minnesota, the acreage, divided

by 640 acres per square mile, converts to approximately 60.16 square miles of fee title lands. Using the overall average of 3.77 deer harvested per square mile for both states, it would equate to 226 deer harvested in Iowa under this alternative and 177 deer harvest in Minnesota. These would not have a negligible effect on the state population.

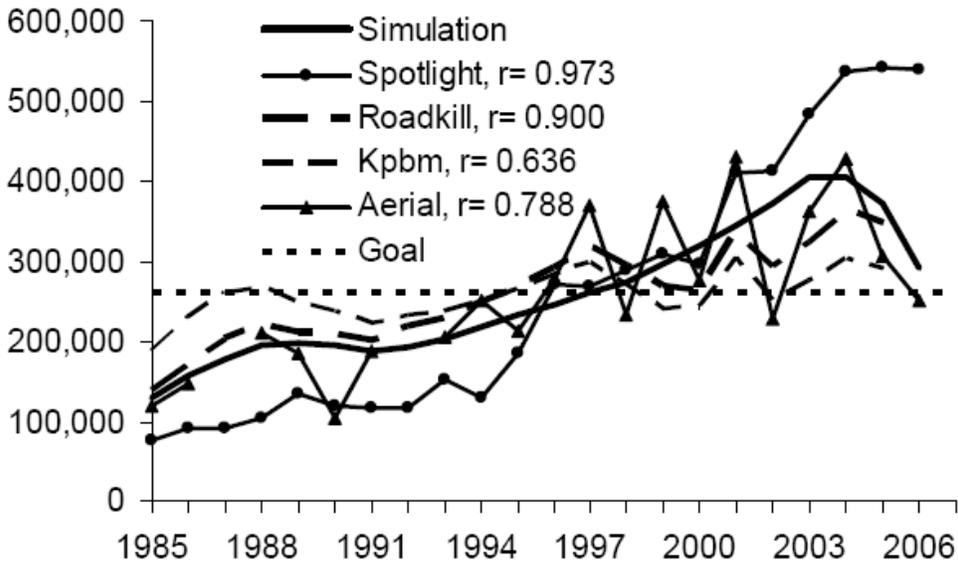


Figure 2 Iowa Deer Population Indices and correlation with simulation.

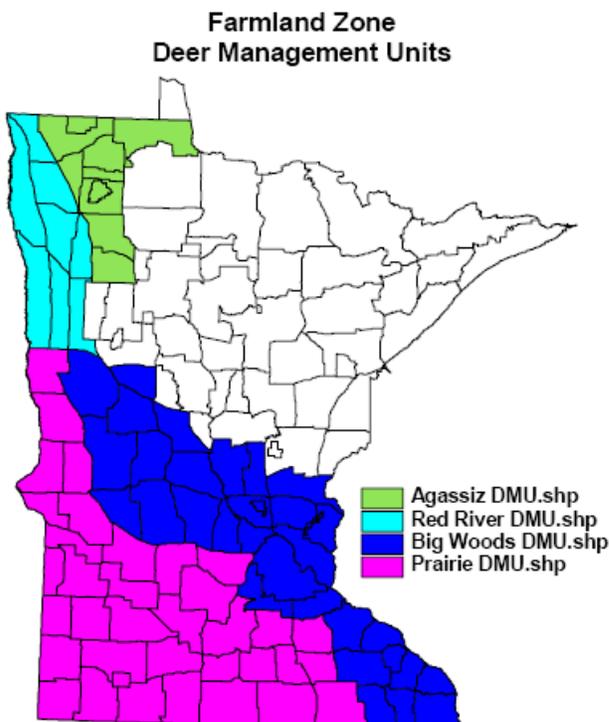
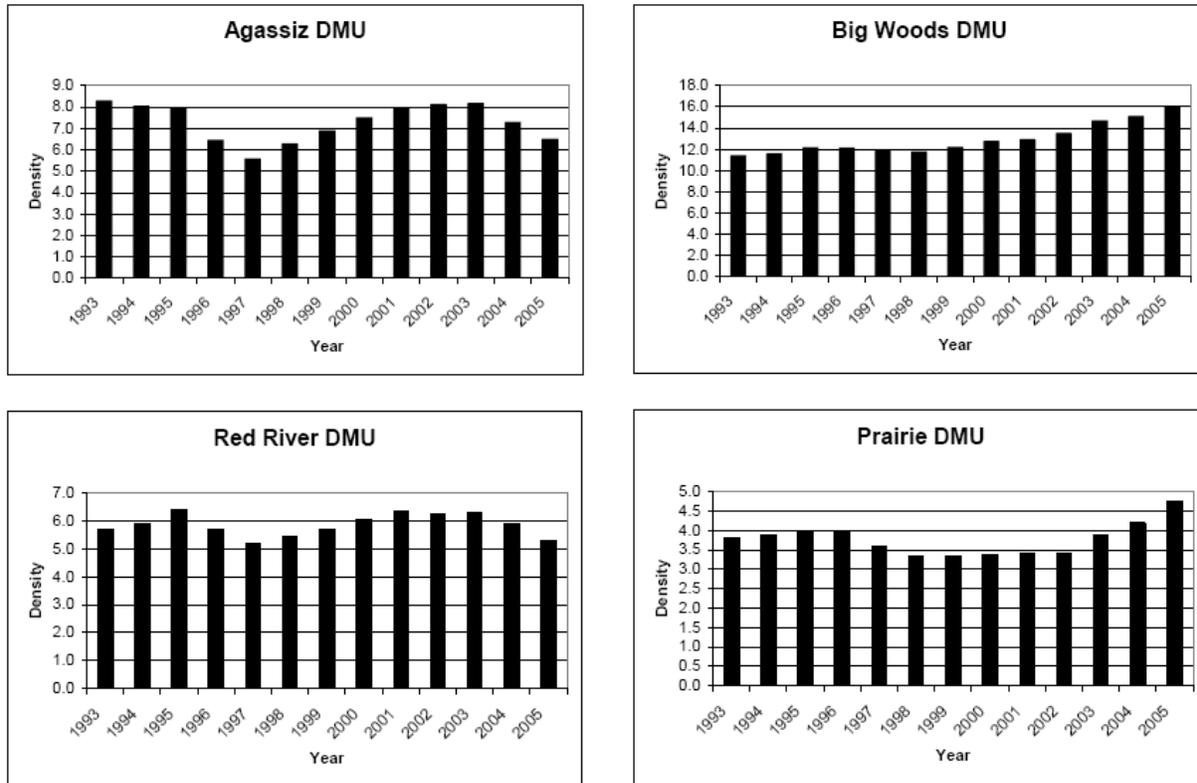


Figure 3 Deer management units in the farmland zone in Minnesota, 2004.

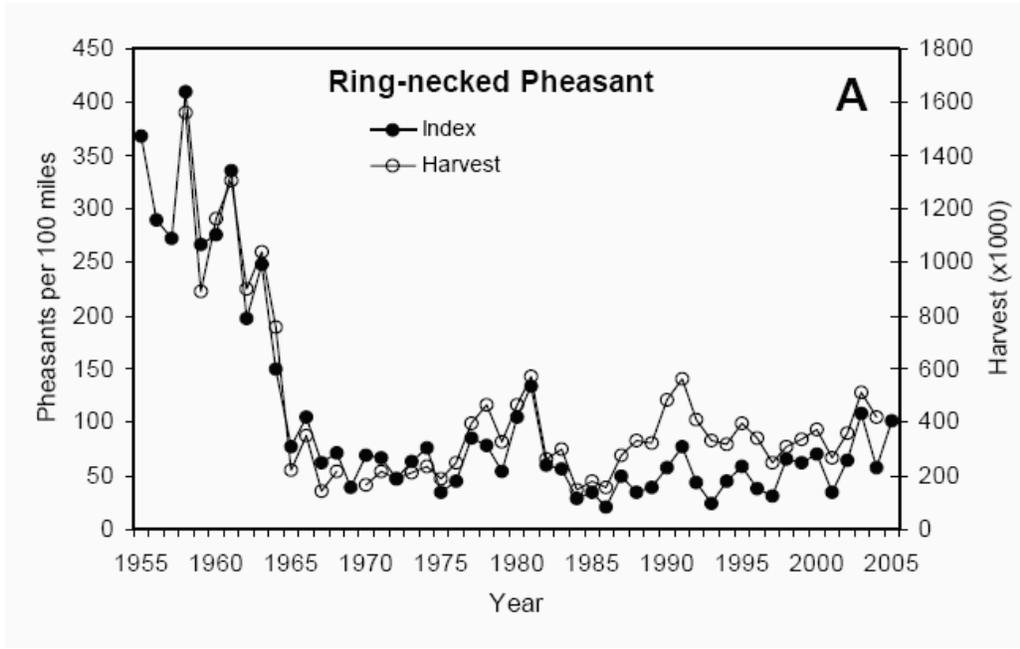


**Figure 4 Modeled deer densities for each zone in the farmland zone of Minnesota, 1993-2005.**

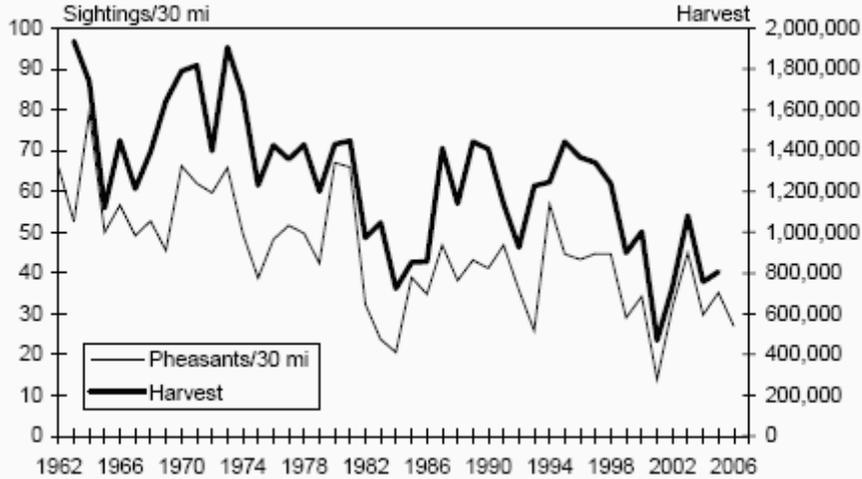
- Wild Turkey:** Brood surveys in both states report good turkey numbers throughout the HPA. IA DNR showed a decrease of numbers in the overall HPA in the 10 year average. MN DNR estimates show the population continuing to increase statewide. Turkeys rely on a combination of forested and open cover for food and roosting sites throughout the year. MN DNR has found that they can thrive in 20% forested areas. Most Northern Tallgrass Prairie NWR tracts will not provide quality habitat for wild turkeys due to the lack of forested areas. Most tracts will consist entirely of native or restored grasslands or a mosaic of grassland and wetlands. Turkeys may be found on these areas at times, but these lands will most likely not be able to support a viable population. Estimated harvest on currently owned refuge lands is one bird annually. Harvest on the total compliment of refuge lands when acquisition is complete (~38,500 acres) is 20-25 birds annually. These harvest estimates will have a minimal affect on state turkey populations.
- Ring-necked pheasant:** Both Minnesota and Iowa have thriving ring-necked pheasant populations. The 2005 MN pheasant index (birds/100 mi) increased 75% from 2004, 68% from the 10-year mean, and was similar to the long-term average. Pheasant hen indices and average brood size increased from 2004. IA DNR surveys (birds/30mi) show an increase of approximately 25% from 2004, an 11% increase from the 10-year average, and 8% above the long-term average. These numbers reflects improved over winter survival and reproductive success from 2004.

Iowa continues to be one of the top 5 states for pheasant harvest each year. The southern two-thirds of Minnesota has a well established population. Iowa DNR estimates that during the 2005-06 season 136,192

hunters harvested 806,601 birds. MN DNR estimates that from 1987-2000 an average of 94,701 hunters harvested 361,000 birds annually. Both states have managed pheasant hunting for approximately 75 years (Iowa since 1925, Minnesota since 1930), with few exceptions. Each state conducts annual population counts and deems this population huntable (see figures 5-6). Refuge staff estimates that under this alternative, hunting pheasant on the 2,293.12 refuge acres may result in approximately 50-75 birds annually. These estimates will slightly affect local populations, but have no effect on the overall population in the 85-county HPA. When the full compliment of fee title acres is acquired (~38,500 acres), approximately 900-1000 birds could be harvested annually. These numbers will affect local populations to some extent, but will not affect the HPA population of pheasants.



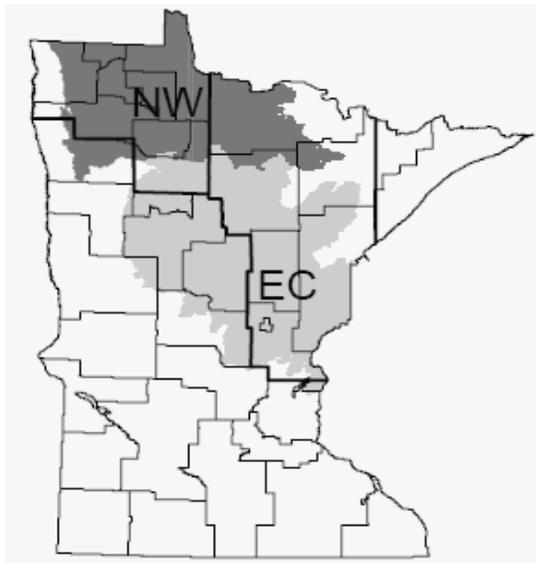
**Figure 5 Minnesota statewide index of ring-necked pheasants seen per 100 miles driven as it relates to annual harvest**



**Figure 6 Iowa statewide index of ring-necked pheasants seen per 30 miles driven as it related to annual harvest.**

- Ruffed Grouse and Sharp-tailed grouse:** Sharp-tailed grouse hunting is not permitted in Iowa and ruffed grouse hunting is not permitted in the HPA portion of Iowa. In Minnesota grouse hunting is limited to the extremely northern portion of the HPA. There are currently no fee title tracts in this area. Ruffed grouse is a forest dependent species. Since any future Northern Tallgrass Prairie NWR units are highly unlikely to contain forested areas, the taking of ruffed grouse off a refuge tract is also highly unlikely and any incidental take would result in a negligible affect on this population.

There is a greater chance that sharp-tailed grouse will inhabit future refuge tracts compared to ruffed grouse. However, the likelihood of the Service purchasing large amounts of fee title lands for the Northern Tallgrass Prairie NWR in those northern areas is slim. According to the MN DNR, sharp-tailed grouse numbers have remained relatively stable over the past 20 years in northwest Minnesota. Numbers are based on abundance of dancing ground leks with an average of 8 to 12 birds/lek. Sharp-tailed grouse habitat was more widely distributed in Minnesota during the early and mid-1900s, but is now limited to areas in the Northwest (NW) and East Central (EC) portions of the state, see Figure 7. Any HPA tracts would be found within the NW area of the sharp-tailed grouse survey area. A total of 1,463 sharp-tailed grouse were observed at 159 dancing grounds with  $\geq 2$  male grouse (or grouse of unknown sex) during spring 2006. The resulting index value was similar to the mean from the last 26 years.



**Figure 7 Northwest (NW) and East Central (EC) ranges of sharp-tailed grouse in Minnesota. The heavy lines, based largely on DNR Wildlife Work Area boundaries (light lines), represent the former range boundaries. The dark and light gray shading represent the new range boundaries, based on ECS section boundaries (see Figure 1 for ECS labels).**

MN DNR estimates that sharp-tailed grouse hunter numbers have been approximately 6,000-7,000 in the last three hunting seasons with an estimated harvest of 1.3-1.7 birds per hunter. The Service does not have any currently owned tracts within the sharp-tailed grouse hunting zone. Given the limited area of sharp-tailed grouse hunting in the HPA, and MN DNR's population estimates, refuge staff estimates that any take of sharp-tailed grouse on any future refuge tracts would be minimal (0-5 birds) and have little to no impact on the MN population of sharp-tailed grouse.

- **Prairie Chicken:** The hunting of prairie chicken is not allowed in Iowa. Minnesota allows the hunting of prairie chicken by special permit only. Prairie chickens, once found throughout most of Minnesota, are now found mostly along the beach ridges of glacial Lake Agassiz in the west. The population of prairie chickens has expanded southward to the upper Minnesota River valley due to a series of relocations during 1998-2005. From 1974-2003 annual counts were conducted at booming grounds. These surveys supported the initiation of a hunting season in 2003. In 2004 a new survey was adopted to monitor trends in the abundance of prairie chickens in selected but widely distributed areas and to provide conservation information for making decision about regulations for the fall hunting season .

Numbers are based on multiple counts on all prairie chicken leks within 17 designated survey blocks. Observers counted 1,319 male prairie-chickens on 98 booming grounds within the survey area. In the core survey blocks, 0.39 leks/mi<sup>2</sup> and 15.2 males/lek. Peripheral blocks showed 0.31 leks/mi<sup>2</sup> and 10.3 males/lek (see figure 8). Counts of males in survey blocks during 2005 were 16% less than in 2004 with declines of 18% and 11% in the core and periphery, respectively. The number of leks observed in survey blocks during 2005 was 3% greater than in 2004, with an increase of 13% and a decrease of 10% in the core and periphery, respectively.

Range <sup>a</sup>	Survey Block	Area (sq. mi.)	2005			Change from 2004 <sup>c</sup>	
			Leks	Males	Unk. <sup>b</sup>	Leks	Males
Core	Polk 2	16.2	9	119	0	2	14
	Norman 1	16.1	5	22	7	4	14
	Norman 3	16.0	5	66	2	-1	-2
	Clay 1	17.6	8	145	0	0	-14
	Clay 2	16.0	3	108	0	1	-16
	Clay 3	16.1	9	168	0	1	-59
	Clay 4	14.9	6	68	0	0	-26
	Wilkin 1	15.4	10	145	35	0	-70
	Wilkin 3	16.1	6	85	16	1	-29
	Otter Tail 1	15.9	2	31	0	-1	-16
	Core subtotal	160.2	63	957	60	7	-204
Periphery	Polk 1	15.9	10	89	0	3	-8
	Norman 2	16.3	8	88	11	-6	-20
	Mahnomen	16.1	5	67	0	2	44
	Becker 1	16.0	4	41	0	0	20
	Becker 2	16.1	4	43	0	-2	-20
	Wilkin 2	16.1	2	23	0	0	-5
	Otter Tail 2	15.7	2	11	17	-1	-54
	Periphery subtotal	112.2	35	362	28	-4	-43
Grand total		272.4	98	1,319	88	3	-247

<sup>a</sup> Survey blocks were classified as either mostly within the hunting permit areas (core) or mostly outside the permit areas (periphery).

<sup>b</sup> Unk. = prairie-chickens of unknown sex. It is likely that most were males.

<sup>c</sup> The 2004 count was subtracted from the 2005 count, so a negative value indicates a decline.

**Figure 8 2005 counts of prairie chickens in survey blocks in Minnesota.**

Minnesota began a 5-day, special permit only, prairie chicken season in 2003. Each hunter could harvest 2 birds for the season. From 2003-2005 seasons, 129, 55, and 89 birds were harvested respectively, with a total of 100-110 permits available each year. In 2006, the permit areas changed from 7 areas to 11 and 182 permits were made available. A total of 92 birds were harvested in 2006 (see figure 9).

There is currently no fee title tracts of the refuge located in any of the permit areas and therefore, no birds would be harvested at the current time. In the future, it is possible that a fee title tract could be purchased within one of the permit areas. These lands are most likely available to hunters already. Through proper management of refuge lands, it is possible that more prairie chickens will be attracted to this improved habitat and more birds may be harvested on refuge lands as compared to the private lands nearby. Hunter surveys by MN DNR for the last 4 seasons indicate that 30-45% of the hunters used either public land only or hunted on both public and private lands. Using these estimates, Refuge staff estimates that 5-10 birds could be harvested off of future fee title tracts. However, because MN DNR monitors this population closely and allots permits as indicated by the population trends, the harvest on refuge lands will not negatively impact the overall population.

Source <sup>a</sup>	Permit type <sup>b</sup>	Permit area	No. of hunters <sup>c</sup>	Birds retrieved	Birds per hunter	Success rate <sup>d</sup>
ELS	Both	801A	7	1	0.1	0.14
ELS	Both	802A	5	2	0.4	0.20
ELS	Both	803A <sup>e</sup>	7	5	0.7	0.43
ELS	Both	804A <sup>e</sup>	12	8	0.7	0.42
ELS	Both	805A	18	10	0.6	0.44
ELS	Both	806A	13	9	0.7	0.54
ELS	Both	807A	21	9	0.4	0.29
ELS	Both	808A	15	13	0.9	0.67
ELS	Both	809A	19	14	0.7	0.37
ELS	Both	810A <sup>e</sup>	25	15	0.6	0.40
ELS	Both	811A <sup>e</sup>	12	6	0.5	0.33
ELS	Regular	All	141	86	0.6	0.42
ELS	Landowner	All	13	6	0.5	0.23
ELS	Both	All	154	92	0.6	0.40
Survey	Both	All	116	85	0.7	0.49

<sup>a</sup> ELS = Electronic Licensing System; Survey = questionnaire sent by mail to hunters.

<sup>b</sup> Landowner, non-landowner (i.e., regular applicant), or both combined.

<sup>c</sup> For ELS data it is the number who purchased a permit to hunt prairie-chickens; for Survey data it is the number of hunters who responded to a mail survey and reported to have hunted.

<sup>d</sup> Proportion of hunters who killed and retrieved at least 1 prairie-chicken.

<sup>e</sup> Results for these Permit Areas may not be accurate because 2 hunters with permits for area 803A registered 2 birds in area 804A and 2 birds in area 811A, and a hunter with a permit for area 810A registered a bird in area 811A.

**Figure 9 Harvest and Hunter numbers by Permit Area in 2006 Minnesota Prairie Chicken season5**

- Gray (Hungarian) Partridge:** This species is hunted in both states. In their roadside surveys, IA DNR has shown a continued increase in numbers of gray partridge since 1990. Minnesota numbers in 2005 and 2006 show a 32% decrease over the 10-year average and a 47% decrease over the long-term average. Minnesota has averaged 5,000-8,000 hunters in the last three seasons, each harvesting an average of 1.7-2.8 birds per hunter. Iowa estimated 7,100 hunters in 2006 averaging 2 birds per hunter for the season. Hunter density and harvest is similar in both states. On currently owned tracts, it is estimated that 10-20 birds are harvest annually. Harvest estimates on refuge units acquired in the future would continue to mimic harvest on WPAs throughout the HPA, resulting in a minimal affect to the statewide population.
- Bobwhite Quail:** Bobwhite quail hunting is not allowed in Minnesota. In Iowa, DNR surveys show quail numbers fluctuate annually, but have dropped considerably since 1977. As bird numbers drop, so do hunter numbers and harvest figures. Approximately 18,500 hunters statewide harvested 40,675 birds in 2005. As with the gray partridge, harvest estimates on refuge units would be similar to those found for nearby WPAs throughout the HPA and would result in a minimal affect to the statewide population.
- Rabbit (cottontail and jack) and Squirrel Populations:** MN DNR 2006 August Roadside surveys indicate that the Eastern Cottontail population trend is above the long-term average in the HPA. On the other hand the white-tailed jack rabbit population trend is below the long-term average. Similar population data was found in Iowa for the HPA. No data on squirrel populations is available from either state.

Hunting pressure is estimated to be low on these species, mainly resulting from incidental take to other upland game hunting.

- Coyote, Raccoon, and Fox Populations:** Both states show stable, huntable populations of these species and have hunting and trapping programs. This alternative would only allow the hunting of these species. Both Iowa and Minnesota showed slight increases in the number of hunters and animals harvest in the last few years, although these numbers are still below the estimates in the 1980's and early 1990's. The hunting

of these species is dependent on the price of pelts in any given year. Weather also plays a part in harvest. Fox and coyote hunters are more successful during years with snow than in drier years. DNR estimates for harvest by hunters for the 2004-2005 seasons are shown on Table 5.

**Table 5: 2004-2005 State Harvest Estimate for Hunting**

Species	Iowa Harvest	Minnesota Harvest
<b>Raccoon</b>	<b>87,700</b>	<b>57,000</b>
<b>Fox (red/gray)</b>	<b>3294</b>	<b>8,000</b>
<b>Coyote</b>	<b>3,118</b>	<b>18,000</b>

Hunting regulations for these species on Northern Tallgrass Prairie NWR units will be more restrictive than the states in that dogs will not be allowed for hunting furbearers, and hunting will not be allowed during certain times of the year. Available habitat on refuge units will also limit harvest. Under this alternative, harvest estimates for these species on current refuge units will be 10 raccoons, 2 coyotes, and 5 fox. These numbers will have no impact on the local or statewide populations for these species.

- **Other Hunted Species:** Both states allow the hunting of species covered under their upland/small game regulations. These species include the hunting of opossum and crows in both states; badger and striped skunk in Minnesota; and groundhog in Iowa. Neither state publishes population surveys of these species and any take of these species would be incidental to the hunting of other wildlife, similar to harvest on state WMAs and federal WPAs.
- **Non-hunted Resident Wildlife:** Non-hunted wildlife would include non-hunted migratory birds such as songbirds, wading birds, raptors, and woodpeckers; small mammals such as voles, moles, mice, and shrews; reptiles and amphibians such as snakes, skinks, turtles, lizards, salamanders, frogs and toads; and invertebrates such as butterflies, moths, other insects and spiders. Except for migratory birds and some species of migratory butterflies and moths, these species have very limited home ranges and hunting would not affect their populations regionally; thus, only local effects will be discussed.

Some species of butterflies and moths are migratory. Cumulative effects to these species at the “flyway” level should be negligible. These species are in torpor or have completely passed through the HPA and by the hunting seasons in late September and late November - December. Any hunter interaction would be similar to that of non-consumptive users.

Disturbance to non-hunted migratory birds could have regional, local, and flyway effects. Regional and flyway effects would not be applicable to species that do not migrate such as most woodpeckers, and some songbirds including nuthatches, finches, and chickadees. Disturbance by hunting to non-hunted migratory birds should not have cumulative negative impacts since the hunting seasons would not coincide with the nesting season, and disturbance to the daily wintering activities, such as feeding and resting, of birds would probably be similar to that caused by non-consumptive users.

Disturbance to non-hunted wildlife would increase slightly. However, significant disturbance would be unlikely since small mammals are generally inactive during late November and early December and many of these species are nocturnal. Both of these qualities make hunter interactions with small mammals very rare. Hibernation or torpor by cold-blood reptiles and amphibians also limits their activity when temperatures are low. Hunters would rarely encounter reptiles and amphibians during most of the hunting season. Invertebrates are also not active during cold weather and would have few interactions with hunters during the hunting season. Refuge regulations further mitigate possible disturbance by hunters to non-hunted wildlife. Vehicles are restricted to roads and the harassment or taking of any wildlife other than the game species legal for the season is not permitted.

## **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. Acknowledging regional differences in hunting conditions, the Service has administratively divided the nation into 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. Northern Tallgrass Prairie NWR is in the Mississippi 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.

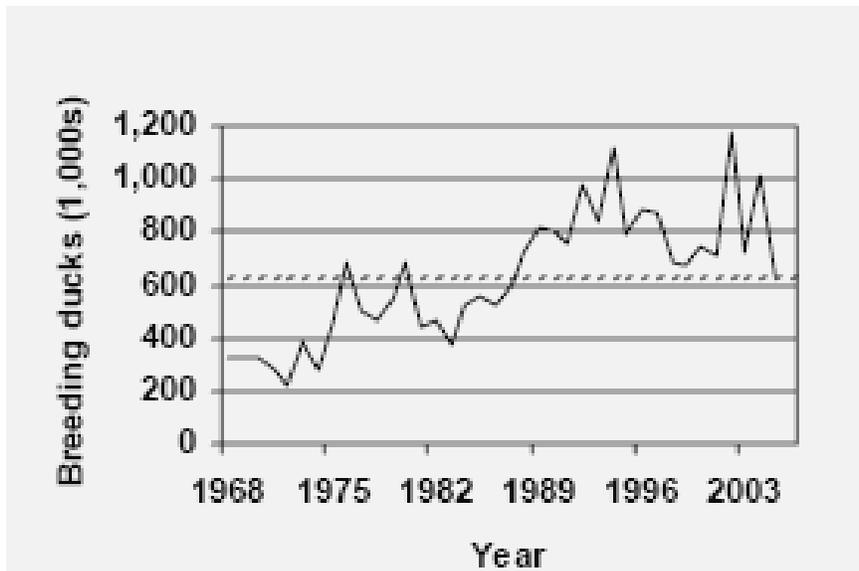
Because the Service is required to take an abundance of migratory birds and other factors in to consideration, the Service undertakes a number of surveys throughout the year in conjunction with the Canadian Wildlife Service, State and Provincial wildlife-management agencies, and others. To determine the appropriate framework 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. The waterfowl season on Northern Tallgrass Prairie NWR units will follow the frameworks set in place for Minnesota and Iowa.

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,

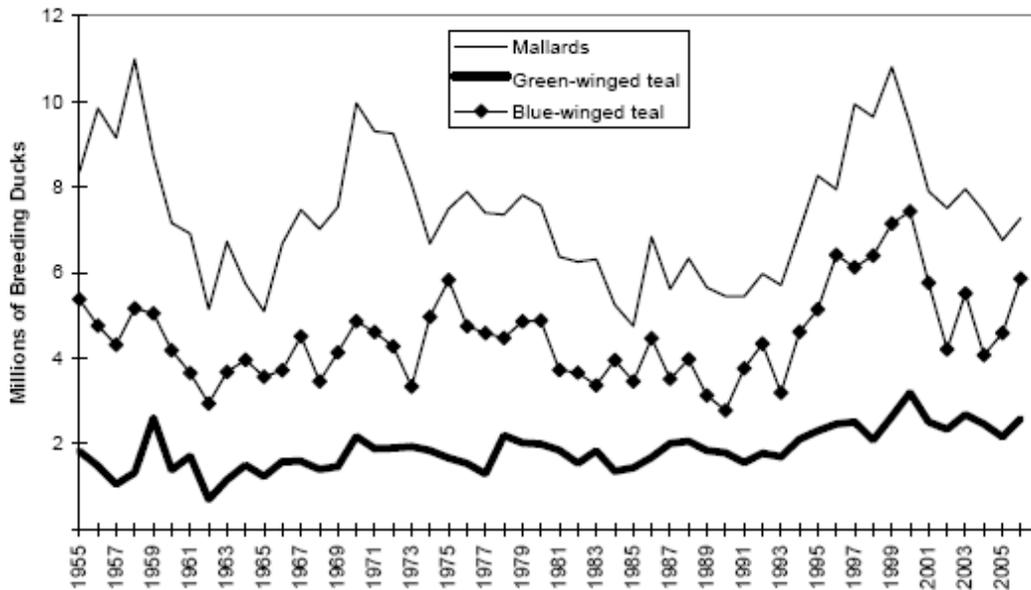
2006, Finding of No Significant Impact. Further, in a notice published in the September 8, 2005, Federal Register (70 FR 53376), the Service announced its intent to develop a new Supplemental Environmental Impact Statement for the migratory bird hunting program. Public scoping meetings were held in the 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, NWR., Washington, DC 20240.

- **Waterfowl:** Northern Tallgrass Prairie NWR units contribute to existing waterfowl production, although it is not a major influence. This is not a waterfowl production program, but refuge lands do complement existing programs that benefit waterfowl (i.e., Prairie Pothole Joint Venture). Refuge lands: 1) protect prairie remnants containing wetland/grassland complexes that are critical to waterfowl production, 2) enhance waterfowl recruitment by providing adequate and secure nesting cover, 3) improve degraded prairie remnant habitat, and 4) provide upland prairie restoration. With the protection of prairie remnants containing wetland/grassland complexes, a slight increase in the following waterfowl populations is anticipated as a result of our land acquisition efforts: pintail (*Anas acuta*), redhead (*A. americana*), northern shoveler (*A. clypeata*), blue-winged teal (*A. discors*), mallard (*A. platyrhynchos*), gadwall (*A. strepera*), wood duck (*Aix sponsa*), canvasback (*A. valisineria*), and Canada goose (*Branta canadensis*). Grassland management techniques also result in enhanced quality of nesting cover for waterfowl.

Breeding population estimates are made each year for 10 key species of ducks in the principal breeding areas of Alaska, Canada, and the north central United States. Surveys are conducted in May and early June by U.S. Fish and Wildlife Service (USFWS), Canadian Wildlife Service, and provincial and state conservation agency personnel. Ducks are counted from fixed-wing aircraft on the same transects each year. Estimates of ducks and ponds seen from the air are corrected for visibility bias by conducting ground counts on a sample of the transects. Although numbers of breeding ducks have fluctuated substantially from year to year, trend analysis suggests that total duck numbers are stable. This stable trend, however, is the result of increasing numbers of some species (e.g., gadwall, green-winged teal, shovelers and blue-winged teal) and decreasing numbers of others (e.g., pintails and scaup). There is also a slight decreasing trend in numbers of breeding mallards, but this trend is less pronounced due to the large numbers of breeding mallards seen in the late 1990's. Despite the improvements in duck numbers in the 1990's, there are still concerns about the long-term loss of both wetland and upland habitat in the prairie pothole region and the long-term outlook for duck populations in the future. Duck populations have fluctuated substantially over time. Duck populations will continue to fluctuate in the future as the numbers of wetlands on the landscape in north-central North America rise and fall with the varying weather. See figures 10 and 11 for breeding duck population trends in Minnesota and Iowa.



**Figure 10 Breeding Population of All Ducks (except scaup) in Minnesota**



Source: USFWS

**Figure 11 Breeding Populations of Mallard, Green-winged teal and Blue-winged Teal in Iowa.**

Due to their nature, Northern Tallgrass Prairie NWR tracts do not have the wetland complexes typically found on Waterfowl Production Areas. Because of this, they do not attract waterfowl in the fall and therefore, waterfowl hunting on these units is limited. Iowa and Minnesota residents have a long tradition of duck hunting. Minnesota is one of the top ten states nationwide for duck harvest. In the 2006 Refuge Annual Performance Planning Report, onsite managers estimated a total of 25 waterfowl hunting visits on current units in Minnesota and Iowa. In the July 2005 “Waterfowl Harvest and Population Survey Data” document, the Service estimates the daily duck bag per active hunter in Iowa and Minnesota to be .91 and 1.15, respectively. Using these estimates, the 25 visits reported by onsite manager correlates into 23-29 ducks being harvested on current refuge lands. The document estimates the daily goose bag to be 0.6 in Iowa and 0.5 in Minnesota. Again, using these numbers and the estimate of 25 visits, approximately 12-15 geese would be harvested. These numbers do not affect local, state, or flyway populations or harvest numbers. Future tracts will have the same limited waterfowl hunting opportunities as the current properties due to the lack of wetland complexes. Estimated harvest on the potential of 38,5000 acres of fee title is 500-1000 ducks and 250-500 geese. These estimates would have a negligible affect on local, state, and flyway populations.

Table 6 shows species composition of the Minnesota and Iowa waterfowl harvest, 2004 and 2005. (from: Padding, P.I., Richkus, K.D, Moore, M.T., Martin, E.M., Williams, S.S., and Spriggs, H.L. Migratory Bird Hunting activity and harvest during the 2004 and 2005 hunting seasons: preliminary estimates. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Branch of Harvest Surveys, Laurel, Maryland. July 2006. 63 pp).Note: All hunter activity and harvest estimates are preliminary, pending final counts of the number of migratory bird hunters in each state and complete audits of all survey response data.

**Table 6 : Minnesota, Iowa, and Flyway Waterfowl Harvest in 2004 and 2005**

Species	Minnesota Harvest			Iowa Harvest			Mississippi Flyway Harvest		
	2004	2005	% change in Harvest 04-05	2004	2005	% change in Harvest 04-05	2004	2005	% change in Harvest 04-05
Mallard	179,277	169,582	-5	54,700	77,900	+42	2,199,931	2,049,383	-7
Domestic mallard	838	240	-71	224	540	+41	5,015	4,539	-10
American black duck	279	719	+158	224	180	-20	35,692	36,365	2
Black x mallard	558	0	-100	224	180	-20	2,651	2,849	7
Gadwall	31,276	15,090	-52	10,761	9,891	-8	654,488	635,321	-3
American wigeon	24,574	13,174	-46	4,484	2,338	-50	149,793	121,240	-19
Green-winged teal	44,959	27,545	-39	16,814	21,221	+26	498,019	513,850	3
Blue-winged /cinnamon teal	106,114	50,539	-52	28,471	39,026	+37	365,488	314,079	-14
Northern shoveler	17,313	13,174	-24	3,811	4,496	+18	158,905	195,542	23
Northern pintail	14,242	9,820	-31	3,139	4,316	-37	90,542	107,276	18
Wood duck	127,616	98,204	-23	52,906	38,127	-28	729,608	673,507	-8
Redhead	9,494	16,767	+77	897	1,259	+40	35,334	62,051	76
Canvasback	4,747	8,623	+82	448	180	-60	10,824	32,786	203
Greater scaup	3,072	1,437	-53	448	180	-60	28,056	24,812	-12
Lesser scaup	12,008	12,934	+8	1,345	899	-33	108,534	111,357	3
Ring-necked duck	75,118	75,689	+1	5,380	3,237	-40	233,979	240,090	3
Goldeneye	9,494	7,186	-24	0	0	0	30,290	23,420	-23
Bufflehead	8,936	3,832	-57	224	360	+60	59,789	42,024	-30
Ruddy duck	1,955	479	-775	0	0	0	5,227	4,235	-19
Scoters	838	719	-14	0	0	0	4,286	4,921	15
Hooded merganser	9,215	4,790	-48	0	540	+540	47,469	30,454	-36
Other mergansers	1,117	958	-14	0	0	0	8,808	4,164	-53
Total Duck Harvest	683,600	531,500	-22	184,500	205,200	+11	5,505,500	5,270,000	-4
Canada Goose	234,062	207,266	-11	70,257	78,615	+12	952,120	928,457	-2
Snow/Blue Goose	1,439	324	-77	1,044	585	-44	192,256	248,951	+29
Ross' Goose	0	0	0	0	0	0	4,958	4,936	0
White-fronted Goose	0	0	0	0	0	0	86,266	92,956	+8
Total Goose Harvest	235,500	207,500	-12	71,300	79,200	+11	1,235,600	1,275,300	+3

- **Mourning Dove:** Iowa does not allow dove hunting. Minnesota held its first modern first dove season in

2004. The number of mourning doves observed per 100 miles in 2005 was similar to 2004 and the 10-year average, but remained 23% below the long-term average (see figure 12). The mourning dove index ranged from 57.7 doves/100 mi in the northwest to 322.9 doves/100 mi in the southwest. MN DNR reported significant decreases in dove counts only in the central portions of the state which are out of the HPA. The United States is divided into three units for mourning dove management. Iowa and Minnesota are in the Central Unit. Table 7 below shows the relationship between Minnesota dove harvest, the Central Unit, and the United States.

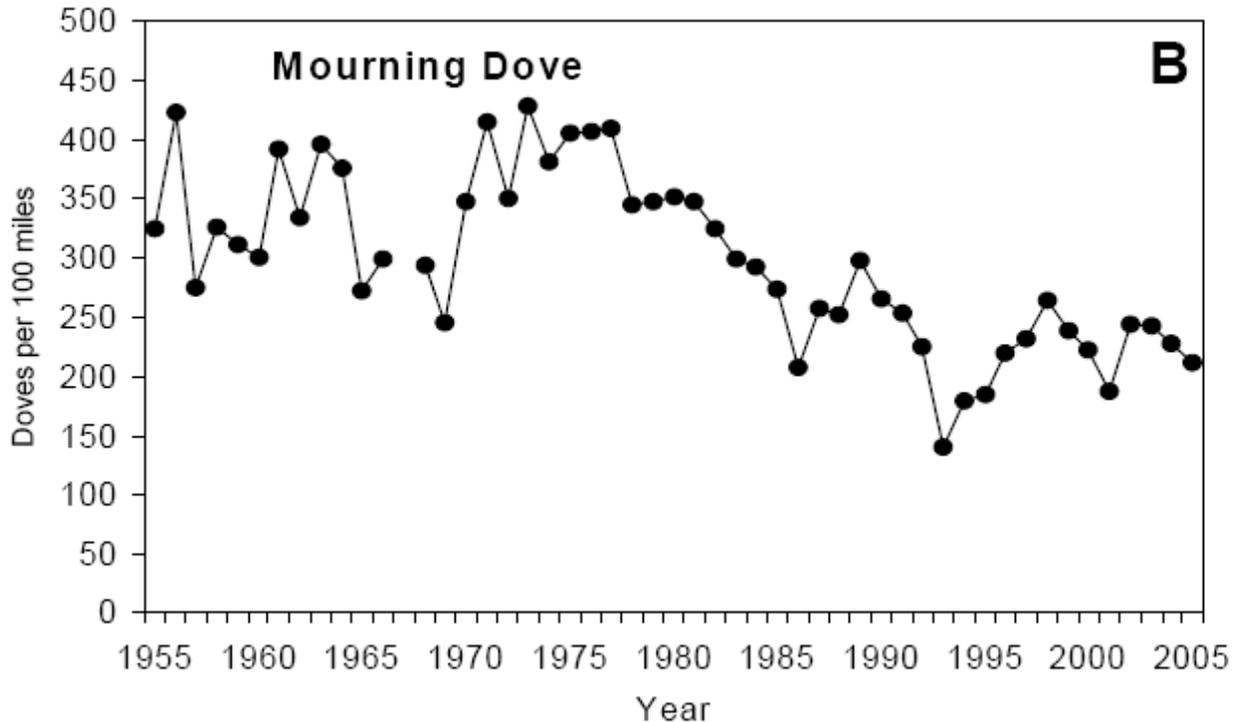


Figure 12 Minnesota statewide index of mourning doves seen per 100 miles driven.

Table 7: 2004-2005 Mourning Dove Harvest in Minnesota, Central Unit, and US

	2004 Harvest	2005 Harvest	2004 Active Hunters	2005 Active Hunters	2004 Seasonal Harvest per Hunter	2005 Seasonal Harvest per hunter
Minnesota	107,000	48,800	13,700	6,000	7.8	8.2
Central Unit	9,807,700	9,891,400	512,500	473,900	19.14	20.9
United States	19,990,200	22,149,900	1,096,700	1,114,900	18.23	19.87

In the 2006 Refuge Annual Performance Planning Report, onsite managers estimated a total of 75 migratory

bird hunter visits for species other than waterfowl on refuge tracts. It is estimated that the majority of these visits were for dove hunting. USFWS estimates that Minnesota dove hunters spent an average of 3.5 days in the field per season. Therefore, it is estimated that Minnesota dove hunters harvested approximately 2.3 birds per day of hunting. If all 75 reported visits were for dove hunting then approximately 175 doves were taken off of currently owned tracts in 2006. Estimates for harvest on future tracts are approximated at 500 birds annually. Since refuge tracts will be spread out over the 85-county HPA, neither of these estimates will have an affect on local, state, or national populations.

- **Other Hunted Migratory Birds:** Other migratory birds that, under this alternative, would be hunted are the woodcock, coot, snipe, and rails (Virginia and sora) in both states, with common moorhens in Minnesota.

Woodcock are most frequently found in forested and shrubland areas in the eastern portions of each state; therefore, would be found only incidentally on Northern Tallgrass Prairie tracts.

Coot, snipe, rails, and common moorhens (gallinules) are all found in wetlands and wet meadow areas. Northern Tallgrass Prairie NWR tracts do not generally have the wetland complexes typically used by these species during their fall migrations. Hunting of these species in Minnesota and Iowa is light compared to other migratory game birds (see Table 8). Because of this, hunting opportunity is limited to the incidental take while hunting other species. Any take on current or future Northern Tallgrass Prairie NWR units will have no affect on local, state, or flyway populations.

**Table 8 : 2005 Harvest Data for Coot, Snipe, Rail, and Common Moorhen**

	Minnesota			Iowa			Mississippi Flyway
	2005 Harvest	2005 Active Hunters	2005 Seasonal Harvest per Hunter	2005 Harvest	2005 Active Hunters	2005 Seasonal Harvest per hunter	2005 Total Harvest
Coot	11,700	2,200	5.3	2,000	900	2.2	110,600
Snipe	2,800	1,300	2.2	1,800	1,100	1.6	39,500
Rail	0	0	0	1,100	700	1.5	53,600
Common Moorhen	400	400	1.0				25,700

**4.2.5.B Anticipated Direct and Indirect Impact of Proposed Hunt on Refuge Programs, Facilities, and Cultural Resources**

**Other Refuge Wildlife-Dependent Recreation**

Approximately 1,500 visitors use the refuge lands in 2006. Most of these visitations are from April into October for bird and wildlife observation. Varied public uses have taken place on federal WPAs for 50 years and the Service has experienced few conflicts between hunters and non-hunters such as wildlife observation, environmental education and interpretation.

This alternative will give the public the opportunity to participate in another wildlife-oriented recreation that is compatible with the purposes for which the refuge was established and have an increased awareness of Northern Tallgrass Prairie NWR and the National Wildlife Refuge System. The Service will be meeting public use demand and public relations will be enhanced with the local communities.

## **Refuge Facilities**

Few, if any, additional impacts to refuge facilities (roads, parking lots, and trails) will occur with this alternative. Refuge facilities will receive an increase in use with the addition of consumptive visitors, but the impacts would be minimal. Any maintenance or improvement of existing roads and parking areas will cause minimal short term impacts to localized soils and may cause some temporary wildlife disturbance.

Physical developments to accommodate the public's use and enjoyment of these refuge lands will generally be limited to small parking areas, informational and educational signs, access roads. On some units, short hiking trails and wildlife observation areas may be developed.

Disturbance by vehicles will be limited to existing parking areas. Special access accommodations for persons with disabilities can be allowed, utilizing existing gravel trails on the refuge. These accommodations will be made on a case by case basis by the onsite manager.

## **Cultural Resources**

This alternative will not have any additional impacts to cultural resources. No sites listed on the National Register of Historic Places are located on fee title tracts within the designated boundaries of the refuge. Hunting activities will result in no ground disturbance or disturbance to standing structures and would have no effect on any histories properties.

### **4.2.5.C Anticipated Direct and Indirect Impact of Proposed Hunt on Refuge Environment and Community**

Refuge personnel expect no measurable adverse impacts by this proposed action on the refuge environment which includes soils, vegetation, air quality, water quality and solitude. Some disturbance to surface soils and vegetation would occur in some areas, however these disturbances would be minimal. Access would also be controlled to minimize habitat degradation.

The Service owns and administers numerous WPAs that are distributed through the acquisition boundary in both states. Their relative distribution, size, and habitat characteristics will be similar to the tracts of land incorporated into the HPA land base, except for the wetland component. All WPA lands are part of the NWR System and the Service's primary purpose for these lands is to provide for waterfowl production and ensure the preservation of migratory birds, threatened and endangered species, and resident wildlife. An additional primary purpose established by the Service for these lands is to provide opportunities for the public to hunt, fish, observe and photograph wildlife, and increase public understanding and appreciation of the tallgrass prairie ecosystem.

As a result of this alternative, expenditures by visitors for meals, lodging and transportation would increase in the communities where these refuge lands are located. According to the 1991 National Survey of Fishing, Hunting, and Wildlife Associated Recreation, hunters spent \$85 million in Minnesota and \$47 million in Iowa on hunting trip-related expenses. In addition, Minnesota residents spent \$364 million and Iowa residents spent \$124 million on non-consumptive recreational activities in 1991. Municipalities and community organizations could bring additional tourism revenues into their economies by establishing partnerships with the Service to develop and promote the recreational opportunities that are available on the HPA lands surrounding their communities.

The Service has allowed public hunting and administered a hunting program on WPAs since the early 1960's. Most recent estimates show that more than 125,000 people visit WPAs located in Minnesota and 43,190 in Iowa annually for the purpose of hunting. During its history, the Service has not observed any substantial adverse affects of this hunting program on the goals of the WPAs, and has determined that this use is compatible with the purposes of the WPAs and the NWR System's mission statement. The hunting program for Northern Tallgrass Prairie NWR will be

consistent with the program administered by the U.S. Fish & Wildlife Service for WPAs.

Impacts of the Proposed Action on the refuge physical environment would have similar minimal to negligible effects as those found on WPAs. Some disturbance to surface soils, topography, and vegetation would occur in areas selected for hunting, and is expected to be minimal. The additional acreage would be utilized more by the public (hunters) than has been previously and might cause increased trampling of vegetation, however the impacts should be minor. Refuge regulations do not permit the use of vehicles off of designated refuge roads. Vehicles for hunters with disabilities would be confined to existing roads and parking lots.

Hunting would benefit vegetation as it is used to keep resident deer populations in balance with the prairie habitat's carrying capacity. The biological integrity of the refuge would be protected under this alternative, and the refuge purpose of restoring prairie wetlands – grassland complexes for migratory birds and wildlife would be achieved.

Impacts to the natural hydrology would be negligible. The Refuge staff expects impacts to air and water quality to be minimal and only due to refuge visitor's use of automobiles on adjacent township and county public roads. The effect of these refuge-related activities on overall air and water quality in the region are anticipated to be negligible. Existing State water quality criteria and use classifications are adequate to achieve desired on-refuge conditions; thus, implementation of the proposed action would not impact adjacent landowners or users beyond the constraints already implemented under existing State standards and laws.

Impacts associated with solitude are expected to be minimal given the limited time, season, and space management techniques used to avoid conflicts among user groups.

Since the early 1960's, public hunting has not resulted in any significant adverse effects on the soils, vegetation, air and water quality, solitude, or Service management activities associated with the adjacent and nearby WPAs. Since the habitat characteristics, size, distribution, and management activities of tracts that are acquired for Northern Tallgrass Prairie NWR will be similar to existing WPA tracts; public hunting on the refuge should not adversely impact the soils, vegetation, air and water quality, solitude, or Service's management activities for the refuge lands. Based on the similarities between WPAs that are adjacent or surround the refuge, the establishment of a hunting program for the refuge should not impact the area's economy either positively or negatively. The Proposed Action would have similar minimal to negligible effects on human health and safety.

There is a potential to have some minimal disturbance on the general public, nearby residents, and refuge visitors. The disturbance factor is considered minimal, as the refuge already has hunting taking place on thousands of federal and state properties, and on 100,000's of acres of private property. It is possible that refuge hunting will increase hunting opportunities on surrounding lands, by increasing the wildlife moving beyond the boundary of the individual refuge units.

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

Hunting has been allowed on Northern Tallgrass Prairie NWR units since it the Hunt Plan was approved and registered in the Code of Federal Regulations for the 2003-2004 season.

If public use levels expand in the future, unanticipated conflicts between user groups may occur. Service experience has proven that time and space zoning can be an effective tool in eliminating conflicts between user groups. On a case by case basis, the onsite manager, in consultation with the Project Leader, will determine if such a tool is necessary to limit conflicts.

#### **4.2.5.E Anticipated Impacts If Individual Hunts Are Allowed To Accumulate**

National Wildlife Refuges, including Northern Tallgrass Prairie NWR, conduct or will conduct hunting programs within the framework of State and Federal regulations. Northern Tallgrass Prairie NWR proposed action is at least as restrictive as the States of Minnesota and Iowa and in some cases, the hunts will be more restrictive. By maintaining hunting regulations that are as, or more, restrictive than the States, individual refuges ensure that they are maintaining seasons which are supportive of management on a regional basis. The final EIS was reviewed by and the selected alternative supported by the Minnesota Department of Natural Resources (MN DNR) and the Iowa Department of Natural Resources (IA DNR). This alternative stated that hunting would be permitted on most fee title units of the Northern Tallgrass Prairie NWR. Additionally, refuges coordinate with the MN DNR and IA DNR annually to maintain regulations and programs that are consistent with the States' management program.

The hunting of big game, upland/small game, and migratory bird game species will have minimal impacts to local, regional, state, and flyway populations. The majority of these lands were open to hunting before being acquired by the Service. Refuge personnel expect approximately the same number animals will be harvested on refuge lands as were when these lands were in private ownership.

Refuge personnel expect and witness that most hunters respect spacing needs between hunters and blinds and will essentially regulate themselves. User conflicts might occur between non-consumptive users and hunters. This not expected, as hunting seasons take place when most non-consumptive uses (wildlife observation, photography) have become minimal, after early October.

#### **4.2.6. 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 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.

The Refuge Recreation Act of 1962 (16 U. S. C. 460K) and the National Wildlife Refuge System Administration Act of 1966 (16 U. S. C. 668-ddee) provide authorization for hunting and fishing on National Wildlife Refuges. The effects of hunting and fishing on refuges have been examined in several environmental review documents, including the Final Environmental Impact Statement on the Operation of the National Wildlife Refuge System (1976), Recommendations on the Management of the National Wildlife Refuge System (1978), and the Draft Environmental Impact Statement on the Management of the National Wildlife Refuges (1988). Nothing in the establishing authority for the Northern Tallgrass Prairie National Wildlife Refuge [Fish and Wildlife Act of 1956{16U.S.C. 742f}] precludes hunting on the refuge.

In the 1998 Northern Tallgrass Prairie Habitat Preservation Area Final Environmental Impact Statement developed for the establishment of the Northern Tallgrass Prairie NWR, the selected alternative (Alternative B) states that "...compatible wildlife-dependent recreational uses, such as fishing, hunting, wildlife observation and photography, environmental education and interpretation would be permitted on most of the HPA lands that are owned by the Service."

Hunting accounts for more than half of the visits to WPAs in Minnesota and Iowa. It is anticipated that visitation at the individual units of the Northern Tallgrass Prairie NWR will follow a similar, but reduced pattern. The allowance of hunting on the refuge will expose public user groups to the prairie habitats and facilitate a better appreciation and

understanding of this ecosystem. This will increase the success of prairie preservation and restoration efforts. Also the allowance of public hunting will nurture a cooperative relationship with adjacent landowners by minimizing crop depredation.

The Service owns and administers numerous WPAs that are distributed within the 85-county acquisition area for the refuge. In addition, the Service administers perpetual easement agreements on private lands in this area. WPAs average less than 200 acres in size and are intermingled with private and other public lands. Their relative distribution, size, and habitat characteristics will be similar to the tracts of land incorporated into the Northern Tallgrass Prairie NWR land base. All WPA lands are part of the NWR System and the Service's primary purpose for these lands is to provide for waterfowl production and ensure the preservation of migratory birds, threatened and endangered species, and resident wildlife. An additional primary purpose established by the Service for these lands is to provide opportunities for the public to hunt, fish, observe and photograph wildlife, and increase public understanding and appreciation of the tallgrass prairie ecosystem.

As stated, public hunting has been allowed for many years by the Service on WPAs located around the acquisition area for the Refuge. During this period, public hunting has not resulted in any significant adverse effects on the Service's management activities associated with these WPAs. Since the habitat characteristics, size, distribution, and management activities of tracts that are acquired for Northern Tallgrass Prairie NWR will be similar to existing WPA tracts; public hunting on the refuge should not adversely impact the Service's management activities for the refuge lands.

Potential public use conflicts will be minimized by seeking a balance between the consumptive and non-consumptive uses.

## SECTION 4.4 Summary of Environmental Consequences by Alternative

<b>EFFECT</b>	<b>ALTERNATIVE A (NO ACTION)</b> Maintain “Closed to Hunting” Status of refuge.	<b>ALTERNATIVE B (PREFERRED ACTION)</b> Open most fee title refuge units to big game, small/upland game, and migratory game bird species.
Habitat	Possible depredation of native vegetation and cropland	Minimal Effect
Biological	Deer and Canada geese populations remain high and may cause some depredation. Migratory game birds and upland wildlife populations would benefit from not being hunted.	Some disturbance of migratory birds, upland/small game and big game species.
Listed Species	No effect.	No effect.
Historic and Cultural Resources	No effect.	No effect.
Cumulative Impacts	Public use conflicts minimized. Deer viewing opportunity increased	The same as hunting on the surrounding state WMAs and federal WPAs.
Environ. Justice	Does not provide for priority public uses listed in Acts or refuge establishment EIS. Hunting provided on surrounding state and federal public property	Hunt authorized by Migratory Bird Conservation Act, Refuge Recreation Act, NWR Admin. Act, and NWR Improvement Act. Listed in refuge establishment EIS as public use goals.

## **CHAPTER 5 REGULATORY COMPLIANCE**

The Refuge Recreation Act of 1962 (16 U.S.C 460k) authorizes the Secretary of the Interior to administer National Wildlife Refuges for public recreation as an appropriate incidental or secondary use (1) to the extent that is practicable and consistent with the primary objectives for which an area was established, and (2) provided that funds are available for the development, operation, and maintenance of permitted recreation.

The National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 688dd-ee) authorizes the Secretary of the Interior to permit the use of any area within the NWR System for any purpose, including but not limited to hunting, fishing, and public recreation whenever those uses are determined to be compatible with the purposes for which the area was established. The Improvement Act of 1997 is the latest amendment to the NWR System Administration Act. It supports the NWR System Administration Act's language concerning the authorization of hunting and other recreational uses on Refuge lands. The NWR Improvement Act substantiates the need for the NWR System to focus first and foremost on the conservation of fish, wildlife, and plant resources and their habitats and states that other uses will only be authorized if they are determined to be compatible with this mission statement and the purposes for which the Refuge was established.

Northern Tallgrass Prairie NWR was established under the authority of the Fish and Wildlife Act of 1956 and its purpose is to provide for the development, advancement, management, conservation, and protection of fish and wildlife resources [16 U.S.C. 742f(a)(4)]. The 1998 Final EIS developed for the establishment of the Refuge identified providing compatible wildlife-dependent recreational public uses, such as hunting, fishing, wildlife observation and photography, environmental education and interpretation as being a primary goal for the Refuge. This EIS states that hunting will be permitted on most Units of the Refuge in accordance with state seasons. Additionally, hunting was identified in the 1998 Interim Comprehensive Conservation Plan (CCP) that was developed for the Northern Tallgrass Prairie HPA as being a priority public use that would be authorized on most Units of the Refuge. The Service has determined (i.e., Compatibility Determination included with the 1998 CCP) that this use is compatible with the purpose of the Refuge and the mission statement of the NWR System.

## **CHAPTER 6 LIST OF PREPARERS**

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Date

**Concur:**

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Date

Nita M. Fuller  
Regional Chief  
National Wildlife Refuge System

Date

**Approve:**

Robyn Thorson  
Regional Director

Date

## **CHAPTER 7 CONSULTATION AND COORDINATION WITH THE PUBLIC**

The Service sought public involvement and more than 1,500 people were sent copies of the Draft EIS for the establishment of the Northern Tallgrass Prairie Habitat Preservation Area. The preferred alternative in the draft EIS permitted most fee title units of the refuge to be opened for hunting opportunities. The groups and individuals sent the draft EIS included elected officials, state and federal agencies, numerous NGOs, libraries and interested individuals. Approximately 118 meetings and 69 media contacts were made up to the time of the distribution of the final EIS.

The Service filed the final EIS for the Northern Tallgrass Prairie Habitat Preservation Area with the Environmental Protection Agency (EPA) on March 27, 1998. In compliance with agency decision-making requirements of the National Environmental Policy Act of 1969, as amended, the Service is required to circulate the final EIS for 30 days after filing with the EPA before issuing a Record of Decision on the project. The comment period ended April 1998.

This Environmental Assessment was released for public comment from March 14, 2007 to April 17, 2007. The EA was available to all interested parties through the Northern Tallgrass Prairie NWR website (<http://www.fws.gov/midwest/Northerntallgrassprairie>) and in hard copy or pdf form by contacting the Refuge Office in Odessa, MN. News releases were sent out to area newspapers in western Minnesota and northwestern Iowa announcing the public comment period for the EA.

## **CHAPTER 8 PUBLIC COMMENT ON DRAFT EA AND RESPONSE**

We received three comments on our draft EA titled Environmental Assessment for the Proposed Hunting Plan for the Northern Tallgrass Prairie National Wildlife Refuge, Minnesota and Iowa that was available for public comment from March 15, 2007 to April 17, 2007. Two of these comments were in support of the Service's preferred Alternative in the draft EA. One comment was in opposition to the preferred Alternative.

A letter of support was received from Mr. Mark Johnson, Executive Director of the Minnesota Deer Hunters Association. This letter of support references Big Stone National Wildlife Refuge as well as the Northern Tallgrass Prairie NWR. We tried to contact Mr. Johnson to get clarification regarding his comments. As of this date, we have not received a call back from him. It is believed that the confusion stems from the contact address for this EA being Big Stone NWR. The letter clearly states that they support "...Alternative B: Open hunting on fee title lands within the Northern Tallgrass Prairie NWR."

We received a letter from the Human Society of the United States that contained comments related to hunting on the National Wildlife Refuge System as a whole and containing element 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.

## CHAPTER 9 REFERENCES CITED

- Dolton, D.D. and R.D. Rau. 2006. Mourning dove population status, 2006. U.S. Fish and Wildlife Service, Laurel, Maryland, USA.
- Kelley, J.R., Jr., and R. D. Rau. 2006. American woodcock population status, 2006. U.S. Fish and Wildlife Service, Laurel, Maryland.
- Status of Wildlife Populations, Fall 2005. Division of Wildlife, Minnesota Department of Natural Resources. 2005. State of Minnesota.
- Trends in Iowa Wildlife Populations and Harvest 2005. Iowa Department of Natural Resources, Dec. 2006. State of Iowa.
- U. S. Fish and Wildlife Service 1998. Northern Tallgrass Prairie Habitat Preservation Area Interim Comprehensive Conservation Plan. U.S. Dept. of Interior, Fish and Wildlife Service, Region 3, Fort Snelling, MN.
- U. S. Fish and Wildlife Service July 2005. Waterfowl Harvest Population Survey Data – Estimates of US Harvest, Hunting Activity and Success Derived from State-Federal Cooperative Harvest Information Program. Compiled by David Fronczak, USFWS, Division of Migratory Bird Management, Columbia, MO.
- U.S. Fish and Wildlife Service. 2006. Migratory bird hunting activity and harvest during the 2004 and 2005 hunting seasons: Preliminary estimates. U.S. Department of the Interior, Washington, D.C. U.S.A.
- U.S. Fish and Wildlife Service. 1998. Final Environmental Impact Statement Northern Tallgrass Prairie Habitat Preservation Area. U.S. Dept. of Interior, Fish and Wildlife Service, Region 3, Fort Snelling, MN.
- The following documents are referenced in this EA from the Final EIS listed above:
- Aaseng, Norman E., John C. Almendinger, Robert P. Dana, Barbara C. Delaney, Hannah L. Dunevitz, Kurt A. Rusterholz, Nancy P. Sather, and Daniel S. Wovcha. 1993. Minnesota's native vegetation, a key to natural communities, version 1.5. Biological Report No. 20. Minnesota Dept. Natural Resources, Natural Heritage Program.
- Albert, D.A. 1993. Draft ecoregion map and classification of Michigan, Minnesota, and Wisconsin, in Hargrave, Bryan. 1993. The upper levels of an ecological classification system for Minnesota. Draft. State of Minnesota, Department of Natural Resources Forestry.
- Albert, D.A. 1995. Regional landscape ecosystems of Michigan, Minnesota and Wisconsin: a working map and classification. General Technical Report NC-178, U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station, St. Paul, MN, in W.R. Ostlie, R.E. Schneider, J.M. Aldrich, T.M. Faust, R.L.B. McKim, and H.M. Watson. 1996. The status of biodiversity in the Great Plains. The Nature Conservancy, Arlington, VA.
- Batho, G. 1932. Leafy spurge. Manitoba Department of Agriculture and Immigration Circular 106 (Second Edition), Winnipeg, in W.R. Ostlie, R.E. Schneider, J.M. Aldrich, T.M. Faust, R.L.B. McKim, and H.M. Watson. 1996. The status of biodiversity in the Great Plains. The Nature Conservancy, Arlington, VA.
- Cowardin, L.M., V. Carter, F.C. Goler, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. FWS/OBS 79/31. U.S. Department of the Interior, Fish and Wildlife Service,

Washington, D.C.

Dahl, T.E. 1990. Wetland losses in the United States: 1780s to 1980s. U.S. Department of the Interior, Fish and Wildlife Service. Washington, D.C.

Diamond, D.D. and F.K. Smeins. 1984. Remnant grassland vegetation and ecological affinities of the upper coastal prairie of Texas. *Southwestern Naturalist* 29(3): 321-334 in Ostlie, W.R., R.E. Schneider, J.M. Aldrich, T.M. Faust, R.L.B. McKim, and H.M. Watson. 1996. The status of biodiversity in the Great Plains. The Nature Conservancy, Arlington, VA.

Hargrave, Bryan. 1993. The upper levels of an ecological classification system for Minnesota. Draft. State of Minnesota, Department of Natural Resources Forestry.

Iowa Agricultural Statistics Service. 1996. 1996 Iowa Agricultural Statistics. U.S. Department of Agriculture, Washington D.C. and Iowa State University, Ames, IA.

Kratz, T.K., and G.L. Jensen. 1983. Minnesota's landscape regions. *Natural Areas Journal* 3(2):33-44 in Hargrave, Bryan. 1993. The upper levels of an ecological classification system for Minnesota. Draft. State of Minnesota, Department of Natural Resources Forestry.

Kuchler, A.W. 1964. Potential vegetation of the conterminous United States. *American Geographic Society Special Publication* 36, in W.R. Ostlie, R.E. Schneider, J.M. Aldrich, T.M. Faust, R.L.B. McKim, and H.M. Watson. 1996. The status of biodiversity in the Great Plains. The Nature Conservancy, Arlington, VA.

Marschner, F.J. 1974. The original vegetation of Minnesota, a map compiled in 1930 by F.J. Marshner from U.S. General Land Office Survey Notes and published in 1974 under the direction of M.L. Heinselman of the U.S. Forest Service. Cartography Lab. of the Dept. of Geography, U. of MN, St. Paul, in Hargrave, Bryan. 1993. The upper levels of an ecological classification system for Minnesota. Draft. State of Minnesota, Department of Natural Resources Forestry.

Miller, C., and N. Goetzinger, eds. 1993. Minnesota wetlands: a primer on their nature and function. Minnesota Audubon Council.

Minnesota Agricultural Statistics Service. 1995. Minnesota agricultural statistics 1995. U.S. Dept. of Agriculture, Washington, D.C. and MN Dept. of Agriculture, St. Paul, MN.

Moriarty, Marvin E. 1993. Letter with attachments dated February 4, 1993, to Regional Director, Fish and Wildlife Service, U.S. Department of the Interior, Ft. Snelling, MN.

Prior, Jean C. 1991. Landforms of Iowa. University of Iowa Press.

Samson, F.B., and F.L. Knopf. 1994. Prairie conservation in North America. *BioScience* 44: 418-421.

Stuckey, R.L. 1980. Distributional history of *Lythrum salicaria* (purple loosestrife) in North America. *Bartonia* 47:3-20, in W.R. Ostlie, R.E. Schneider, J.M. Aldrich, T.M. Faust, R.L.B. McKim, and H.M. Watson. 1996. The status of biodiversity in the Great Plains. The Nature Conservancy, Arlington, VA.

Stuckey, R.L., and T.M. Barkley. 1993. Weeds. Pp. 193-198, in Flora of North America Editorial Committee, eds., *Flora of North America I: Introduction*, in W.R. Ostlie, R.E. Schneider, J.M. Aldrich, T.M. Faust, R.L.B. McKim, and H.M. Watson. 1996. The status of biodiversity in the Great Plains. The Nature Conservancy, Arlington, VA.

Watts, F.B. 1960. The natural vegetation of the southern Great Plains of Canada. *Geographical Bulletin*

14: 25-43 in Ostlie, W.R., R.E. Schneider, J.M. Aldrich, T.M. Faust, R.L.B. McKim, and H.M. Watson. 1996. The status of biodiversity in the Great Plains. The Nature Conservancy, Arlington, VA.

Weaver, J.E. 1954. North American prairie. Johnsen Publishing Co., Lincoln, NE. in Ostlie, W.R., R.E. Schneider, J.M. Aldrich, T.M. Faust, R.L.B. McKim, and H.M. Watson. 1996. The status of biodiversity in the Great Plains. The Nature Conservancy, Arlington, VA.

Wendt, Keith M., and Barbara Coffin. 1988. Natural vegetation of Minnesota at the time of the public land survey, 1847-1907. Biological Report No. 1. Minnesota Dept. Natural Resources, Natural Heritage Program.

Wheeler, G.A., R.P. Dana, and C. Converse. 1992. Contribution to the vascular (and moss) flora of the Great Plains: a floristic survey of six counties in western Minnesota. *The Michigan Botanist* 30(3):75-129, in Hargrave, Bryan. 1993. The upper levels of an ecological classification system for Minnesota. Draft. State of Minnesota, Department of Natural Resources Forestry.