Land Protection Plan

Dakota Grassland Conservation Area

North Dakota, South Dakota

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Prepared by

U.S. Fish and Wildlife Service

North Dakota Wetland Management Districts
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The uniqueness of the Dakota Grassland Conservation Area lies in the millions of depressional wetlands that constitute one of the richest wetland systems on Earth—the Prairie Pothole Region. The prairie potholes and surrounding grasslands in this area of North Dakota and South Dakota are highly productive and support a myriad of wetland and grassland birds along with large numbers of spring and fall migrants.

The "Land Protection Plan—Dakota Grassland Conservation Area" describes the management approach that the U.S. Fish and Wildlife Service will take in carrying out this easement program to protect prairie habitats. The plan is based on an environmental assessment, developed with public involvement, that documents the purpose, issues, alternatives, and analysis for the project. Now finalized, the plan contains goals, objectives, and operational considerations for the following management aspects: wildlife and associated habitats, easement priorities, public uses, interagency coordination, public outreach, and other operations.

The Prairie Pothole Region

Once vast grassland, the Prairie Pothole Region is now largely an agricultural system dominated by cropland and is one of the most threatened landscapes in North America. Recent changes in agricultural economics and advances in crop genetics are increasing the rate of habitat transformation—from an expansive mosaic of native prairie and wetland used for livestock ranching—to a landscape dominated by tillage agriculture.

Although one of the most altered, the Prairie Pothole Region is one of the most important, migratory bird habitats in the Western Hemisphere with its ability to produce and sustain tremendous numbers of waterfowl. The large-scale change in land use is rapidly expanding into the remaining quality habitat for breeding birds. At the current rate of grassland conversion, an estimated one-half of the remaining native prairie in the Prairie Pothole Region will be converted to other uses in only 34 years.

Dakota Grassland Conservation Area

The U.S. Fish and Wildlife Service is establishing the Dakota Grassland Conservation Area in the eastern parts of North Dakota and South Dakota, which cover all counties north and east of the Missouri River except those in the existing Dakota Tallgrass Prairie Wildlife Management Area. The Service will conserve wetland and grassland resources in the project area primarily through the purchase of perpetual easements from willing sell-

Fowler Photography / USFWS

The prairie potholes and surrounding grasslands are highly productive and support wetland and grassland birds along with many other animals.

ers. These wetland and grassland easements will connect and expand existing lands under conservation protection.

The area's strong and vibrant rural lifestyle, of which agriculture is the dominant land use, is one of the key components to ensuring habitat integrity and wildlife resource protection. Based on anticipated levels of landowner participation, objectives for the conservation area are to protect 240,000 acres of wetland and 1.7 million acres of critical grassland habitat, within an overall boundary area of 29.6 million acres.

Priorities

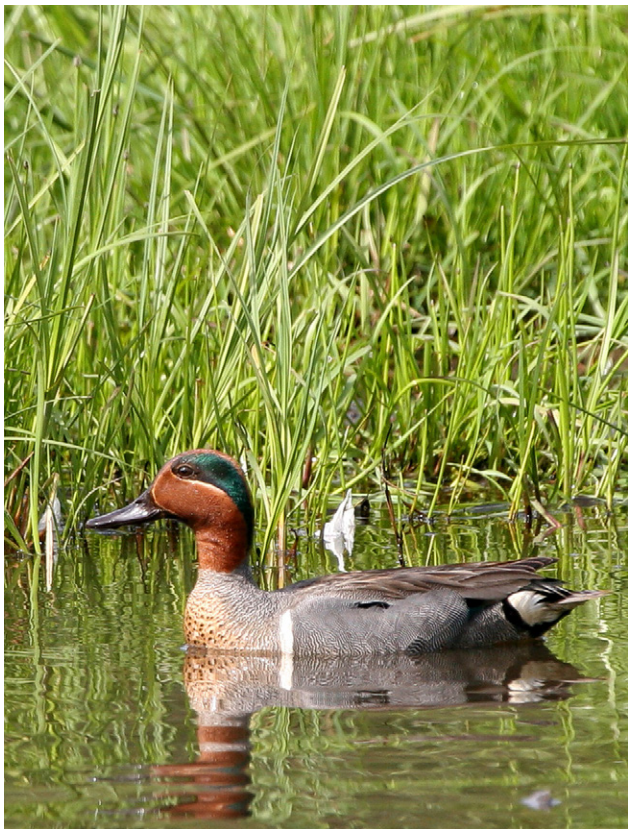
The Prairie Pothole Joint Venture, Partners in Flight, and the Service have identified priority species for the Prairie Pothole Region: 8 species of waterfowl, 22 species of shorebirds, 10 species of other waterbirds, and 20 species of grassland birds.

The Service will set priorities for potential easements based on landscape evaluation models that identify the extent and location of grassland and wetland along with nesting areas of concentration for priority species. With this strategic determination of conservation priorities, the Service will be able to protect the most productive, remaining wetland and grassland habitats to help to conserve populations of priority species. Concurrently, the Service will engage the Plains and Prairie Potholes Landscape Conservation Cooperative (a recent initiative that reaches across broad landscapes and involves many partners).

Acquisition

To better protect wetland and grassland resources, the Service needs authority additional to the Small Wetlands Acquisition Program, which is authorized by the Migratory Bird Hunting and Conservation Stamp Act (Federal Duck Stamps) to acquire perpetual easements in the project area.

With well over 800 landowners interested in selling wetland and grassland easements, the only thing restricting the Service from protecting more than 300,000 acres on the waiting list is limited money. This project allows the purchase of critical wetland and grassland easements using Land and Water Conservation Fund money as an alternate funding source. In addition, the Service will use the authority of the Migratory Bird Conservation Act of 1929 to purchase easements, as appropriate and available. The estimated cost for acquisition of the easements is about $588 million.



Donna Dewhurst / USFWS

Green-winged teal is a migratory species that depends on wetlands in the Dakotas.

Easement Terms

All land under wetland or grassland easement remains in private ownership. Property tax and land management, including control of noxious weeds and other invasive plants and trees, remain the responsibility of the landowner.

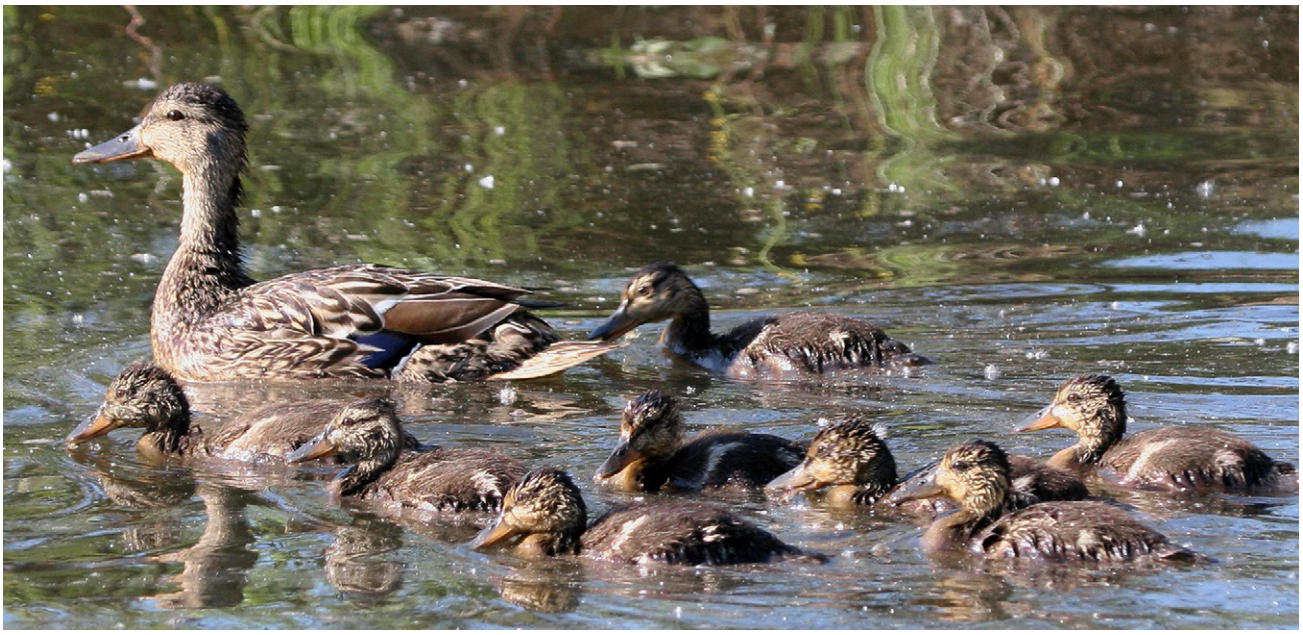
The easement contract will specify perpetual protection of habitat by restricting the conversion of wetland and grassland to other uses. Alteration of the natural topography, conversion of grassland to cropland or other uses, and draining, burning, filling, and leveling of protected wetlands will be prohibited. However, perpetual protection will not prohibit all activities. Protected wetland basins may be hayed or grazed without restriction and farmed when dry from natural conditions. Grassland easements will not restrict grazing in any way, and haying will be permitted after July 15 each year.

The Service will administer wetland and grassland easements according to Region 6 policy in the manual of "Administrative and Enforcement Procedures of Easements within the Prairie Pothole States."

Abbreviations

AFWA	Association of Fish and Wildlife Agencies
CFR	Code of Federal Regulations
DGCA	Dakota Grassland Conservation Area
EA	Environmental assessment
Easement Manual	"Administrative and Enforcement Procedures of Easements within the Prairie Pothole States"
EPA	U.S. Environmental Protection Agency
GAO	Government Accountability Office
HAPET	Habitat and Population Evaluation Team
IPCC	Intergovernmental Panel on Climate Change
LCC	Landscape conservation cooperative
LPP	Land protection plan
LWCF	Land and Water Conservation Fund
MBCC	Migratory Bird Conservation Commission
MBCF	Migratory Bird Conservation Fund
NASS	National Agricultural Statistics Service
NAWCA	North American Wetland Conservation Act
NDGF	North Dakota Game and Fish Department
NDGS	North Dakota Geological Survey
NDOGC	North Dakota Oil and Gas Commission
NDSHPO	North Dakota State Historic Preservation Office
NEPA	National Environmental Policy Act
NFHB	National Fish Habitat Board
NRCS	Natural Resources Conservation Service
NREL	National Renewable Energy Laboratory
PPJV	Prairie Pothole Joint Venture
PPR	Prairie Pothole Region
Refuge System	National Wildlife Refuge System
SDARC	South Dakota State Historical Society Archeological Research Center
Service	U.S. Fish and Wildlife Service
SHC	Strategic habitat conservation
SWAP	Small Wetlands Acquisition Program
U.S.	United States
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

Chapter 1–Introduction and Project Description



Donna Dewhurst / USFWS

Prairie pothole habitat supports migratory birds like these mallards by providing the food and cover necessary to raise successful broods.

A U.S. Fish and Wildlife Service (Service) team (appendix A) conducted a planning process to establish an easement program for protecting prairie habitats in North Dakota and South Dakota. The team started with an analysis of the area's habitats, species (appendix B), and issues. The analysis, including the sociocultural aspects, are documented in an environmental assessment (EA) (appendix C).

Public involvement has been an integral part of the planning process (appendix D). After preparation and public review of the EA, the Service's Region 6 Director selected alternative B of the EA to establish the Dakota Grassland Conservation Area (DGCA).

Appendix E contains the finding of no significant impact for the project. Other environmental compliance and approval documentation is included in this volume (appendixes F, G, H, and I).

The purpose of the resulting "Land Protection Plan—Dakota Grassland Conservation Area" is to describe the management approach that the Service will take in carrying out this easement program to protect prairie habitats. The land protection plan (LPP) contains goals, objectives, and operational considerations for the following management aspects: wildlife and associated habitats, easement priorities, public uses, interagency coordination, public outreach, and other operations.

Introduction

The Prairie Pothole Region (PPR) is an extraordinary biome (a defined geographical area and its living organisms that interact with the environment) for its ability to produce and sustain tremendous numbers of waterfowl (figure 1). The region is part of one of the largest wetland–grassland ecosystems on Earth. In the late 1700s, between 7 and 8 million acres of wetland existed in the Dakotas alone within the United States part of the PPR. By the 1980s, North Dakota had lost nearly 50 percent of its original wetland acreage and South Dakota had lost an estimated 35 percent (Dahl 1990). Drainage of wetland in the PPR imposes a condition of permanent drought for wildlife. Consequently, the abundance of most species of wetland wildlife has declined drastically (Johnson et al. 2008), and the "North American Waterfowl Management Plan" identified the PPR as the continent's top priority for waterfowl conservation (USFWS 1986).

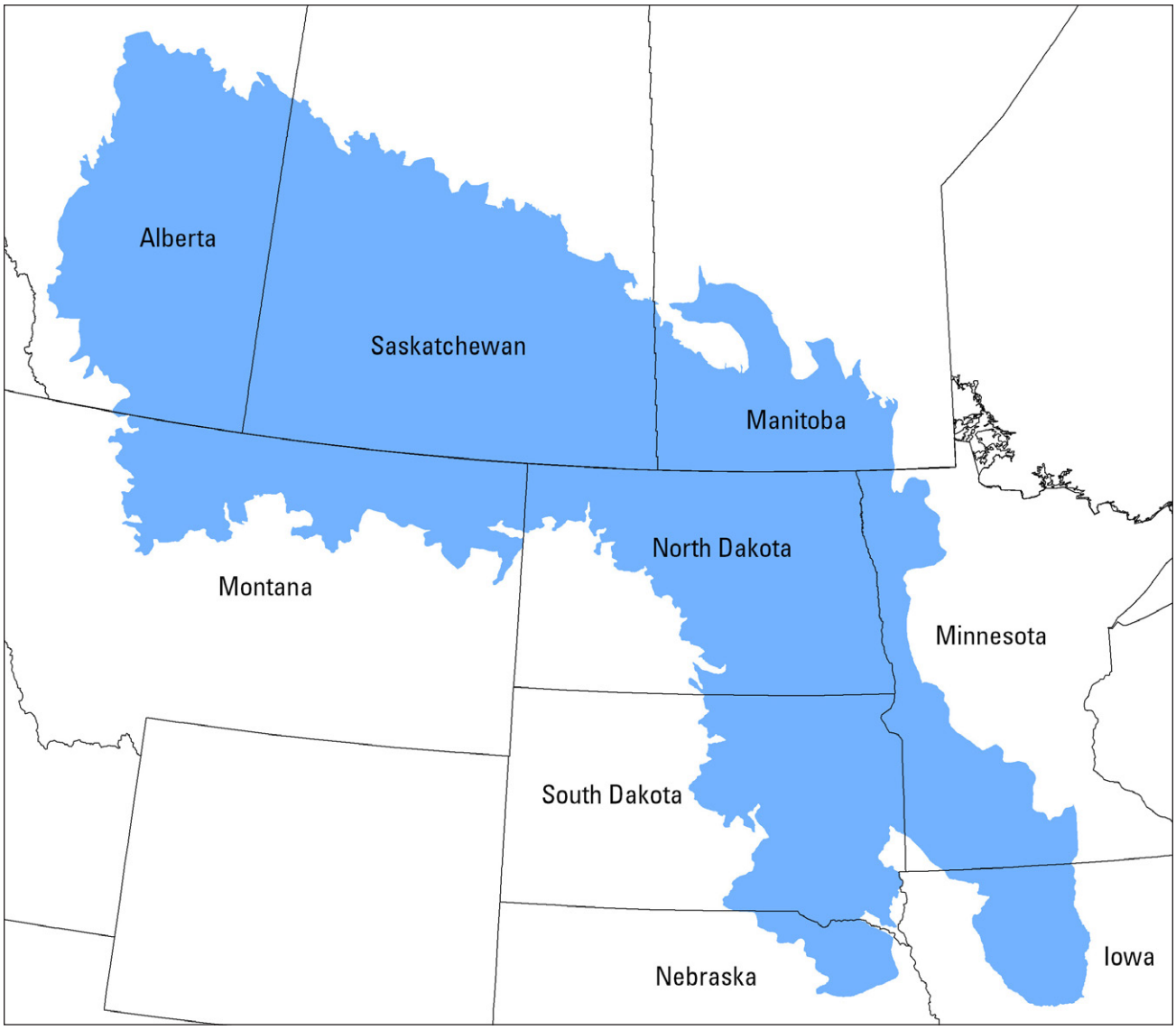


Figure 1. Map of the Prairie Pothole Region of North America.

Across the Nation, grassland declined by an estimated 25 million acres from 1978 to 2002, according to a recent audit by the Government Accountability Office (GAO 2007a). More specifically, in 2006, the States of North Dakota and South Dakota reported the conversion of approximately 68,000 acres of native prairie to cropland (GAO 2007a). Despite these reductions in wetland and grassland resources, millions of wetlands and large tracts of native prairie remain within the region.

The PPR is one of the most altered, yet one of the most important, migratory bird habitats in the Western Hemisphere. It is the backbone of North America's "Duck Factory." In addition, the PPR has high species richness (number of species), and it harbors large proportions of the continental populations of many species of breeding waterbirds (Beyersbergen et al. 2004), shorebirds (Brown et al. 2001), and grassland birds (Peterjohn and Sauer 1999). The PPR was recognized as an important area in 1987 with the establishment of the Prairie Pothole Joint Venture (PPJV) to protect wetlands, waterfowl, and other wildlife. The PPJV committed to efforts to revive declining North American waterfowl populations through the protection of crucial wetland and grassland habitats. The 2005 PPJV implementation plan shows a need to protect more habitat—an additional 1.4 million acres of wetland and 10.4 million acres of grassland—to meet the goals for waterfowl population size (Ringelman 2005).

The Service protects these resources under the authority of the Migratory Bird Hunting and Conservation Stamp Act (Small Wetlands Acquisition Program), using monies from the sale of Federal Duck Stamps, through the North American Wetland Conservation Act (NAWCA), and from donations

from conservation groups. Over the past 48 years, the Service has purchased 95 percent of easements using Federal Duck Stamp dollars. At current budget levels, it would take the Service 150 years to protect the nearly 12 million acres identified in the "2005 Prairie Pothole Joint Venture Implementation Plan" as critical for sustaining migratory bird populations (GAO 2007b). However, at the current rate of grassland conversion, an estimated one-half of the remaining native prairie in the PPR will be converted to other uses in only 34 years.

Project Description

The Service created the DGCA to accelerate the conservation of wetland and grassland habitat in the area (figure 2). The project area was selected using models developed by the Service's Habitat and Population Evaluation Team (HAPET), located in Bismarck, North Dakota. The models identify the extent and location of wetlands and grasslands required to help meet the PPJV goals for migratory bird populations and the Small Wetland Acquisition Program (SWAP) objectives for habitat protection. HAPET developed the Service's "Conservation Strategy" using models combined with decades of biological information from scientific studies of the spatial and temporal needs of nesting ducks in the PPR. The analysis was the basis for the resulting Conservation Strategy goal to protect an additional 1.4 million acres of wetlands and 10 million acres of grassland in the PPJV boundary to support the current levels of breeding ducks. Specifically, these models show that protection of all wetland and grassland in areas that support more than 25 duck pairs per square mile plus a 1-mile buffer, referred to as the "priority zone," meets the PPJV conservation goal of protecting adequate habitat to support more than 90 percent of the PPR's duck productivity. The DGCA project represents an element of the Conservation Strategy.

The project area for the DGCA includes parts of North Dakota and South Dakota lying north and east of the Missouri River, except those parts of southeastern North Dakota and eastern South Dakota encompassed by the Dakota Tallgrass Prairie Wildlife Management Area, a grassland easement program approved in 2000 (figure 2). The total area within the DGCA boundary is 29.6 million acres or 46,267 square miles; the priority zone in this area covers 8.5 million acres.

The objectives for the DGCA are to conserve 240,000 acres of wetland and 1.7 million acres of grassland. The wetland and grassland resources in the DGCA will be conserved primarily through the purchase of perpetual wetland and grassland conservation easements from willing sellers. All land under easement will remain in private ownership. Protected wetland basins may be hayed or grazed without restriction and farmed when dry from natural causes. However, wetland easements will prohibit the draining, burning, filling, or leveling of protected wetland. Grassland easements will not restrict grazing in any way, and haying will be permitted after July 15 each year. Conversion of these grasslands to crop production or other uses that destroy vegetation will be prohibited.

The cost for acquisition of easements in the DGCA is approximately $588 million. This project allows the purchase of critical wetland and grassland easements using money from the Land and Water Conservation Fund (LWCF) as an alternate funding source and the purchase authority of the Migratory Bird Conservation Act. In addition, the Service will continue to use Federal Duck Stamp and NAWCA monies as appropriate and available. At current acquisition rates, the goal for the project will be achieved within 30 years.

The Service has an established review process for evaluating requested uses on all current and future wetland and grassland easements in the prairie pothole States of Region 6 of the Service. This review process applies not only to easements bought under the DGCA project but also to those easements the Service had acquired earlier. The Service will fully describe and analyze easement evaluations and procedures for requested uses at a later date.

Purpose

The DGCA is part of a landscape-scale, strategic habitat conservation effort to protect a unique, highly diverse, and endangered ecosystem. This project will accelerate the protection of wetland and grassland habitats through the acquisition of wetland and grassland conservation easements on private land. It is widely recognized that the most effective technique for conserving the remaining wetland and grassland character of the project area is to work with private landowners on conservation matters of mutual concern (Higgins et al. 2002).

Historically, virtually no ecosystem in North America offered a landscape more conducive to rapid and widespread agricultural settlement than the PPR. Large-scale, land use changes continue to expand rapidly into formerly secure grassland–wetland complexes and grassland tracts, which represent much of the remaining high-priority wetland and grassland habitat for breeding birds. To better protect these resources, the Service needs money in addition to those sources currently available for acquiring perpetual wetland and grassland easements

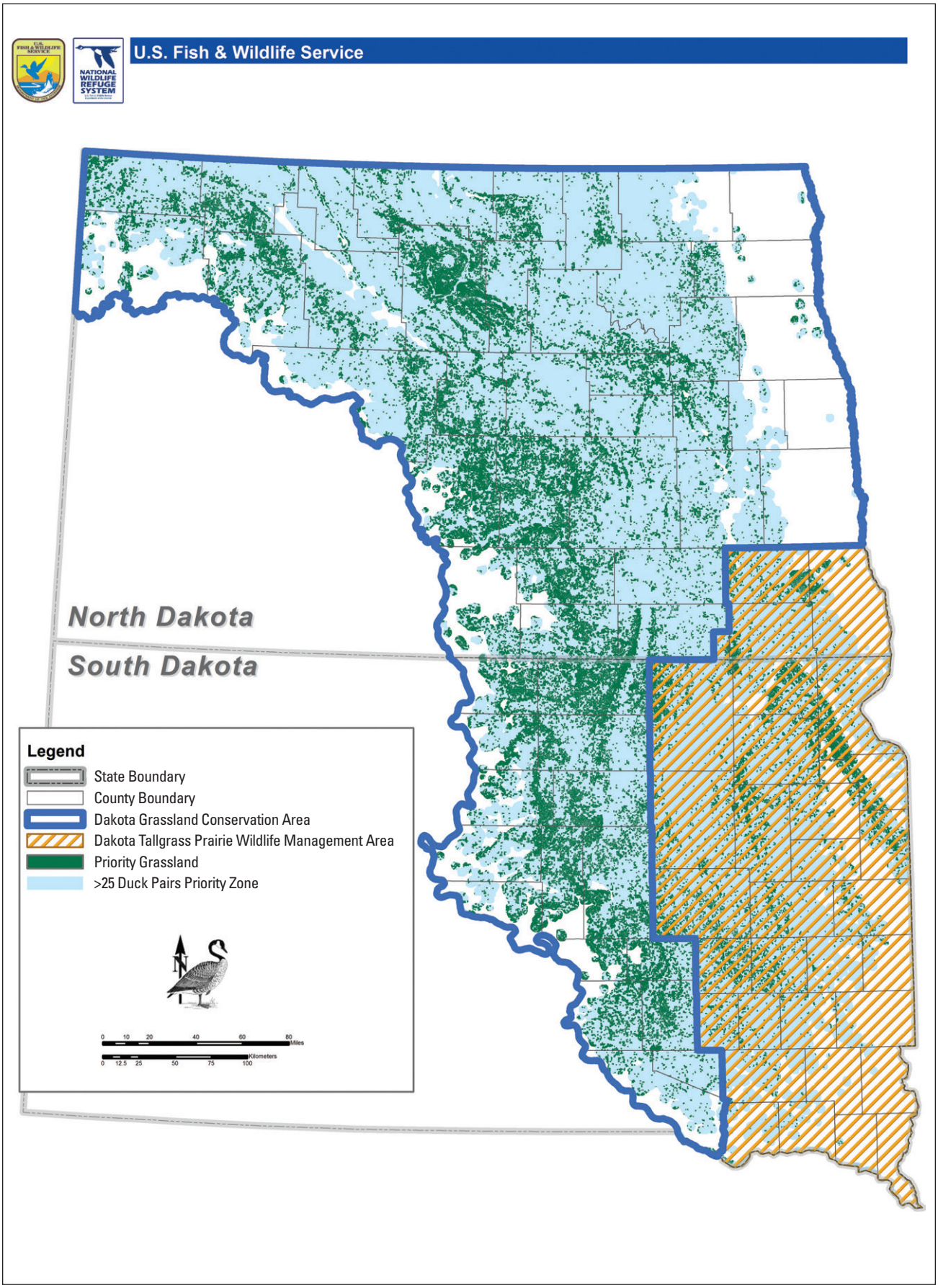


Figure 2. Map of the Dakota Grassland Conservation Area.

in North Dakota and South Dakota. Given the diversity of plants and animals that rely on these habitat types, the ability of the project to protect wetland and grassland habitats in perpetuity is critical.

The purpose of the DGCA project is to provide for the long-term viability of the breeding waterfowl populations through the conservation of existing habitats while considering the needs of other migratory birds, threatened and endangered species, and other wildlife. To accomplish this purpose, the goals for the DGCA follow:

- Conserve the landscape-scale ecological integrity of wetlands and grasslands in the DGCA by maintaining and enhancing the historical native plant, migratory bird, and other wildlife species.
- Protect the integrity of native prairie and associated wetlands by preventing further habitat fragmentation.
- Conserve working landscapes based on ranching and livestock operations that support a viable livestock industry.
- Support the recovery and protection of threatened and endangered species, and reduce the likelihood of future listings under the Endangered Species Act.
- Provide a buffer against climate change by providing resiliency for the grassland ecosystems and associated prairie pothole wetlands through landscape-scale conservation.
- Conserve, restore, enhance, and protect in perpetuity wetland and grassland habitats for migratory bird productivity.
- Preserve the ecological function of these habitats by providing for floodwater retention, ground water recharge, carbon sequestration, improved water quality, and reduced soil and water erosion.

The DGCA project will follow the "road map"—goals and objectives—in the PPJV for integrating the conservation of all migratory birds. The process involves "stepping down" the objectives of four international bird plans for waterfowl, shorebirds, waterbirds, and landbirds as they apply to the PPJV.

Monies from the Migratory Bird Hunting and Conservation Stamp Act (Federal Duck Stamp) and the North American Wetlands Conservation Act have funded habitat protection under SWAP. The use of Federal Duck Stamp dollars requires approval by the State Governor, and the Service will continue to use this money for wetland and grassland easements in the State of South Dakota. In North Dakota, the State has established limits on the number of wetland acres in each county that can be protected with perpetual Service easements. Federal Duck Stamp dollars are not currently available in North Dakota to buy easements in several counties, because the acreage limits have been reached.

Issues Identified and Selected for Analysis

The Service solicited comments about the DGCA from the public through direct mailings, news releases, public meetings, and direct contacts:

- On December 1, 2010, the Service issued a scoping notice to all media outlets in Montana, North Dakota, and South Dakota and several major, daily newspapers in Minnesota and Iowa (refer to "Appendix D—Public Involvement"). This information was also posted to www.fws.gov/audubon/dakotagrasslands.html, as well as the Service's Facebook and Twitter profiles. Due to the holiday season, the Service extended the public scoping period by 2 weeks, until January 14, 2011 (appendix D); with this extension, there was a total of 45 days for the public comment period.
- The Service mailed a four-page fact sheet to 32 Native American tribes and 1,275 individuals and organizations. In addition, 1,737 postcards were mailed out to individuals informing them of the project. Names on the mailing list came from prior Service projects where groups or individuals had expressed interest in the general area or in easement programs.
- The Service conducted three scoping meetings on December 14, 15, and 16, 2010—at Minot, North Dakota; Jamestown, North Dakota; and Huron, South Dakota; respectively. Public attendees at the three scoping meetings totaled 93 individuals.
- A project Web site provided interested parties with updates and information about the project.

The Service received 1,469 emails, 24 written letters, and 60 phone calls. Most of the comments reflected concern about the loss of wetland and grassland and stated general support for the project, while comments against the project emphasized the need for easements of shorter duration, that is, not perpetual.

The Service's planning team (appendix A) reviewed all comments collected from the public and identified several key issues in three general categories. During formulation and evaluation of project alternatives (appendix C, section 2), the planning team considered the following issues.

Biological Issues

- Why is grassland protection an important issue?
- Why is wetland protection an important issue?
- How does the Service determine the goals for habitat protection?

Socioeconomic Issues

- How will these easements affect the local tax base?
- How will these easements affect other property rights?
- How will the family ranching heritage be maintained on the landscape?
- Has the Service considered short-term easements—20, 30, or 40 years versus perpetual?

Administrative and Enforcement Issues

- How do these easements affect local governments and adjoining landowners?
- How does the Service address requested uses on easement lands?

Public Review of and Comments on the Draft EA and LPP

The Service released the draft EA and LPP on June 20, 2011, for a 30-day public review period. The draft documents were made available to Federal elected officials and agencies, State elected officials and agencies, 32 Native American tribes with aboriginal or tribal interests, and other members of the public that had been identified during the scoping process. In addition, two public meetings were held in Bismarck, North Dakota, and in Miller, South Dakota, on June 28 and 29, 2011, respectively. Approximately 50 landowners, citizens, and elected representatives attended the meetings.

The Service received 10 letters from agencies, organizations, and other entities and received 347 other comments from the public. After all comments were received, each was reviewed and incorporated into the administrative record; the Service responded to substantive comments and those comments requiring clarification (refer to appendix D).

Most comments received during the release of the draft EA and LPP were supportive in nature (more than 92 percent) and highlighted the following:

- The importance of the PPR to a diverse wildlife population of primarily migratory waterfowl and grassland birds.
- The need to protect important habitats in perpetuity for future generations.
- The immediate threat of losing grassland and wetlands, both native and restored.
- The fact that hundreds of landowners are currently waiting to sign easements in the Dakotas.
- The secondary benefits of grasslands and wetlands such as clean water, flood control, carbon sequestration, and reduced impacts from climate change.
- The strong support and matching funds (up to $50 million) from nongovernmental agencies.
- The voluntary nature of conservation easements, and the benefits to the maintenance of working farms and ranches.

Comments of opposition (less than 7 percent) focused primarily on the following:

- The perpetual nature of conservation easements and that future generations should not have decisions made for them.
- The estimated project cost of $588 million during times of economic hardship.
- The impacts to energy development and associated projects such as power lines.
- That easements devalue the land and the surrounding properties.

USFWS

The marbled godwit is a priority shorebird that depends on grassland habitat.

National Wildlife Refuge System and Authorities

> *The mission of the National Wildlife Refuge System is to preserve a national network of lands and waters for the conservation, management, and where appropriate, the restoration of fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.*

The DGCA project will be monitored as part of the National Wildlife Refuge System (Refuge System) in accordance with the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, as well as other relevant legislation, Executive orders, regulations, and policies. Conservation of more wildlife habitat within the PPR of North Dakota and South Dakota will continue to be consistent with the following:

- Land and Water Conservation Fund Act (1956)
- Migratory Bird Conservation Act (1929)
- Migratory Bird Hunting and Conservation Stamp Act (1934)
- Migratory Bird Treaty Act (1918)
- North American Wetlands Conservation Act (1968)
- Endangered Species Act (1973)
- Bald and Golden Eagle Protection Act (1940)
- Fish and Wildlife Act (1956)
- "North American Waterfowl Management Plan" (2004)
- "Prairie Pothole Joint Venture Implementation Plan" (2005)

The basic considerations in acquiring an easement interest in private lands are the biological significance of the area, biological requirements of the wildlife species of management concern, existing and anticipated threats to wildlife resources, and landowner interest in the program. It is the long-established policy of the Service to acquire minimum interest in land from willing sellers to achieve habitat protection goals.

The acquisition authority for the DGCA project is the Fish and Wildlife Act of 1956 (16 U.S.C. 742a–j). In response to comments received during the public review of the draft EA and LPP (appendix C), the Service has included the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. 715–715d, 715e, 715f–r). The Federal money used to acquire conservation easements is from the LWCF (derived primarily from oil and gas leases on the Outer Continental Shelf, motorboat fuel taxes, and the sale of surplus Federal property) and Federal Duck Stamps. There could be more money to acquire lands, water, or interests for fish and wildlife conservation purposes as identified by Congress or donations from nonprofit organizations. The purchase of conservation easements from willing sellers will be subject to available money.

Related Actions and Activities

Several existing Federal and State programs promote the conservation of wetland and grassland habitats in the general area of the DGCA.

Dakota Tallgrass Prairie Wildlife Management Area

The goal for this project area is to conserve 185,000 acres of the remaining, native, tallgrass prairie within 32 counties in eastern South Dakota and southeastern North Dakota through the acquisition

of perpetual grassland easements. This project absorbed an earlier phase 1 project in Brown County, South Dakota. To date, this project has protected 59,098 acres. The Dakota Tallgrass Prairie Wildlife Management Area is entirely within the PPJV boundary and is also an element of the Conservation Strategy.

North Dakota Wildlife Management Area

The Service developed this easement project to conserve up to 300,000 acres of grassland in the Missouri Coteau region of North Dakota through the acquisition of perpetual grassland easements. This management area has goals similar to those for the DGCA; however, the project area of the North Dakota Wildlife Management Area is limited in size and does not afford conservation for critical wetlands and grasslands in North Dakota and South Dakota. The DGCA will absorb the North Dakota Wildlife Management Area.

North American Waterfowl Management Plan

Enacted in 1986, this international plan addresses declining waterfowl populations. The plan created the PPJV to coordinate conservation efforts in North Dakota, South Dakota, Minnesota, Iowa, and Montana. Many PPJV projects are active within the DGCA project area and use funding partnerships with many entities including the following: private landowners; the Service; Ducks Unlimited; The Nature Conservancy; Pheasants Forever; North Dakota Game and Fish Department; South Dakota Game, Fish and Parks; and several others.

Donna Dewhurst / USFWS

A gadwall hen rests in a wetland.

Migratory Bird Conservation Act

This act approved in 1929 established the Migratory Bird Conservation Commission (MBCC), which oversees the purchase of properties benefitting migratory birds. These land acquisitions are funded primarily through money generated by the purchase of stamps—commonly known as "Federal Duck Stamps"—as authorized by the Migratory Bird Hunting and Conservation Stamp Act (see below). The lands acquired under this act are used primarily for national wildlife refuges and other easements or limited-interest lands.

Migratory Bird Hunting and Conservation Stamp Act (Federal Duck Stamps)

The act was approved in 1934 to fund the acquisition of migratory bird habitat provided for in the Migratory Bird Conservation Act of 1929. The act provides that anyone over age 16 who hunts migratory birds is required to purchase a hunting stamp. The revenue generated from the sale of these stamps is placed in a special fund known as the Migratory Bird Conservation Fund (MBCF), which is used to acquire migratory bird habitat.

The act was amended in 1958 to increase the acquisition of suitable habitat for waterfowl. This amendment authorized the Secretary of the Interior to expend money from the MBCF for small wetland and pothole areas in fee title (waterfowl production areas) or as easements—a program known as SWAP. With this money, the Service has acquired wetland and grassland easements within the PPR in South Dakota and wetland easements in North Dakota through SWAP. To date, the Service has protected approximately 1,386,279 acres of wetland and 1,128,513 acres of grassland.

USDA (U.S. Department of Agriculture)–Farm Service Agency

The Farm Service Agency offers several programs throughout the PPR in the United States, which aim to preserve and restore the native, mixed-grass, prairie ecosystem in the project area. The Conservation Reserve Program is a voluntary program available to agricultural producers to help them safeguard environmentally sensitive land. Producers that enroll their property in the program will

plant perennial vegetation to improve the quality of water, control soil erosion, and enhance wildlife habitat. The Conservation Reserve Enhancement Program is a version of the Conservation Reserve Program that has been tailored to meet the needs of the State. The Conservation Reserve Enhancement Program is a Federal–State conservation partnership that targets significant environmental effects related to agriculture.

USDA–NRCS (Natural Resources Conservation Service)

Working jointly with the Farm Service Agency, the NRCS provides technical aid and financial incentives through voluntary programs, based on sound science, to promote conservation. Some of the programs that benefit land in the project area are the Grassland Reserve Program, Wildlife Habitat Incentive Program, Wetland Reserve Program, Environmental Quality Incentives Program, and the Conservation Stewardship Program.

- The Grassland Reserve Program emphasizes support for working, livestock-grazing operations, enhancement of plant and animal biodiversity, and protection of grassland under threat of conversion to other uses. Participants voluntarily limit future development and cropping uses of the land. At the same time, participants retain the right to conduct common livestock-grazing practices and operations related to the production of forage and seeding, subject to certain restrictions during nesting seasons of bird species that are in significant decline or are protected under Federal or State law.

- The Wildlife Habitat Incentive Program helps develop or improve quality habitat that supports fish and wildlife populations of national, State, tribal, and local significance. Through this incentive program, the NRCS provides technical and financial help to private and tribal landowners for the development of upland, wetland, aquatic, and other types of wildlife habitat.

- The Wetland Reserve Program offers landowners the opportunity to protect, restore, and enhance wetlands on their property by establishing long-term conservation and wildlife practices and protection.

- The Environmental Quality Incentives Program provides financial and technical help to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land. Through the incentives program, the NRCS develops contracts with agricultural producers to conduct conservation practices that address environmental natural resource problems.

- Financial incentives offered by the Conservation Stewardship Program encourage agricultural producers to address resource concerns by undertaking more conservation activities and improving and maintaining existing conservation systems.

South Dakota Grassland Coalition

This nonprofit organization has more than 100 members—individuals; private organizations; and local, State, and Federal entities—that are represented by a seven-member board of directors and two coordinators. The vision of the South Dakota Grassland Coalition is to build a partnership of people working to voluntarily improve grasslands for the long-term needs of the resource. The coalition's goal is to provide local leadership and guidance in a cooperative effort and to provide information and technical help to grassland managers.

Habitat Protection and the Easement Acquisition Process

Habitat protection will occur through the purchase of conservation easements. It is the Service's long-established policy to acquire minimum interest in land from willing sellers to achieve habitat acquisition goals.

The acquisition authority for the DGCA is the U.S. Fish and Wildlife Act of 1956 (16 U.S.C. 742a–j). In response to comments received during the public review of the draft EA and LPP (appendix C), the Service has included the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. 715–715d, 715e, 715f–r). The Federal money used to acquire conservation easements is received from the LWCF, which is derived primarily from oil and gas leases on the Outer Continental Shelf, motorboat fuel tax revenues, and the sale of surplus Federal property. There could be additional funds to acquire lands, waters, or interests through possible sources such as congressional appropriations and donations from nonprofit organizations.

Conservation Easements

The easement program is a conservation tool that will complement other efforts in North Dakota and

South Dakota. Conservation easements are the most cost-effective and socially acceptable means to ensure protection of important habitats in the project area.

Fee-title acquisition is not required for, nor is it preferable to, conservation easements to achieve habitat protection. Fee-title acquisition would triple or quadruple the cost of land acquisition, would add significant increases in management costs, and would not be accepted by landowners.

A strong and vibrant rural lifestyle—with ranching as the dominant land use—is one of the key components for ensuring habitat integrity and wildlife resource protection. Conservation easements are the only viable means to protect wildlife values on a landscape scale.

Chapter 2–Area Description and Resources

This chapter describes the physical, biological, and socioeconomic environments and cultural resources of the project area.

Physical Environment

The physical features of the DGCA project area are the landforms, soils, and climate of the area including climate change.

Physiographic Features

A physiographic region is an area with a pattern of relief features or landforms that are significantly different from that of adjacent regions. There are many descriptions, some more detailed than others, of the physiographic regions in the prairie pothole landscape. However, in the simplest terms, North Dakota has at least four physiographic regions in the DGCA: the Red River Valley, the Drift Prairie, the Missouri Coteau, and the Missouri Slope. Within the South Dakota part of the DGCA project area, there are three physiographic regions: the Drift Prairie, the Dissected-till Plains, and the Great Plains.

An ecoregion is a major ecosystem (a biological community of interacting organisms and their physical environment) that is defined by distinctive geography. Figure 3 shows the location of 24 ecoregions in the project area for the DGCA (Bryce et al. 1998).

Landscape variability patterns in the ecoregions are more numerous and distinctive east to west, even though some variability exists from north to south, primarily due to the advancement and receding, stall, and melt of glaciers that occurred in a more north-to-south pattern. As glaciers advanced, they encountered topographic obstacles, which resulted in sediment being picked up and mixed with ice. When the glaciers melted between 10,000 and 12,000 years ago, the ice on top melted more quickly than ice that was trapped beneath the sediment. The uneven melting resulted in the hilly to gently rolling

Fowler Photography / USFWS

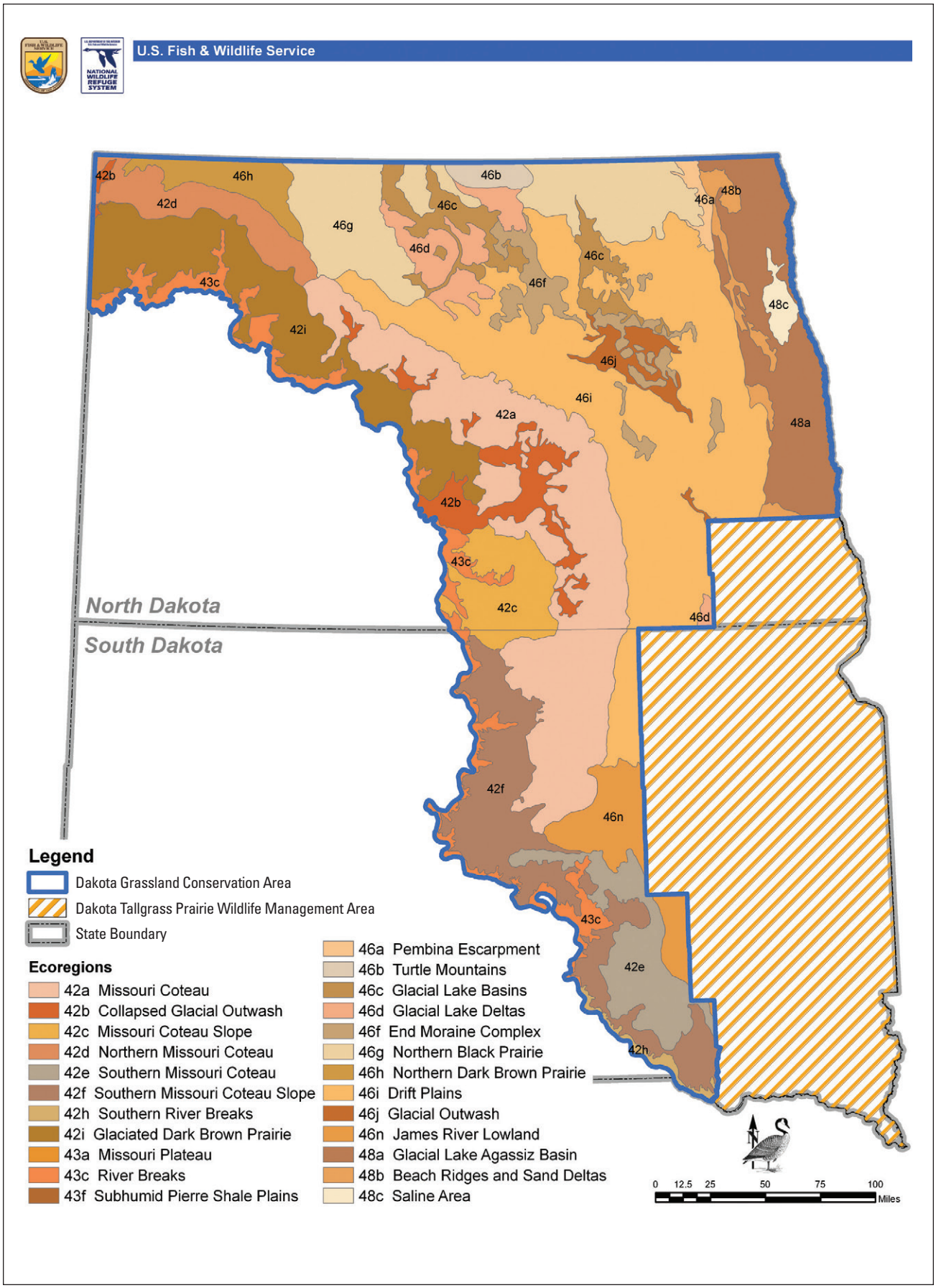


Figure 3. Map of ecoregions in the Dakota Grassland Conservation Area.

topography characteristic of large parts of the project area. Similarly, other ecoregions resulted from the advance of parts of the glaciers with differing levels of resistance, ranging from low to extreme, and melting or running off the landscape in differing sequences. The subsequent landforms resulted from movement and melt-timing differentials. The sedimentary deposition is up to 600 feet thick and is characterized as an unsorted mixture of clay, silt, sand, cobbles, and boulders, or "till."

The depressions between hills in the glaciated landscape are described as "potholes," which fill seasonally with water to form wetlands. The project area is punctuated with areas created by runoff from melting glaciers, resulting in gravel and sand depositions (Bluemle 1977). The grinding of rock by the glaciers created a nutrient-rich soil on which grasslands were established.

In general, soils in the project area are described as Mollisoils, which are dark in color due to high content of organic matter. The soil suborder is Borolls, which are moist–wet and cool (Barker and Whitman 1989, Bryce et al. 1998). Flat fertile soils of the Red River Valley in the eastern and northeastern parts of North Dakota developed under long-term inundation in the glacial bed of historic Lake Agassiz. Also within the project area, there are other similar fertile soils, primarily the result of lacustrine (lake-associated) deposits characteristic to lakebed and river valley areas.

Climate

The climate of the DGCA project area is continental, with very hot summers coupled with very cold winters. Due to the span of the project area from north to south and east to west, it is difficult to capture meaningful temperature and precipitation averages, because ranges are highly variable. However, temperatures can range from –60 to 121 degrees Fahrenheit, and precipitation averages generally range from 13 to 22 inches. Temperatures can vary as much as 70 degrees within a 24-hour period. Precipitation as well as temperatures within a specific locale are highly variable and can range from less than 10 inches in one year to more than 30 inches in another. The western edge on average receives the lowest average annual precipitation and eastern parts receive the highest average annual precipitation.

Climate in the project area often changes from extreme drought to flood in relatively short periods. Similarly, abrupt changes in temperature occur seasonally as well as daily. This climate variability is responsible for the productivity and diversity of wetland and grassland habitats found in the DGCA.

Climate Change

The Service identified climate change resulting from human activity as a potential factor that could substantially affect fish and wildlife populations in the PPR. Effects could be direct, such as changes in temperature and precipitation influencing species and their habitats, or indirect, such as habitat loss caused by conversion of habitat for biofuels. While planning needs to consider both direct and indirect effects, there are considerable uncertainties about climate change and future land use that greatly complicates any analysis.

Many species in the PPR are adapted to highly variable conditions (Niemuth et al. 2008, Wiens 1974, Woodhouse and Overpeck 1998). These species respond behaviorally and physiologically (for example, nest site selection and reproductive output) and, therefore, should respond well to habitat conservation efforts.

Due to the uncertainties associated with climate change and the dynamic wet–dry hydrologic cycles of the project area, the Service sees that landscape-scale protection of existing habitats as a sound approach to increase resiliency of the PPR and to buffer against unpredictable climate variables.

The Service is working with U.S. Geological Survey scientists to model climatic changes in the PPR and to develop adaptive management strategies that accommodate these changes. Protection of grassland in the project area is estimated to bank 44,000–93,000 pounds (20–42 metric tons) per acre of carbon dioxide equivalent. These estimates—based on the difference between the organic carbon in soil of native prairie and that of traditional cropland—were derived using methods described by the Intergovernmental Panel on Climate Change (IPCC) (Eggleston et al. 2006).

Adaptation, Mitigation, and Engagement

The Service's strategic response to climate change involves three core strategies: adaptation, mitigation, and engagement (USFWS 2010).

- Through adaptation, the negative effects of climate change on wildlife can be reduced by conserving habitats that are expected to be resilient.

- Carbon sequestration forms one of the key elements of mitigation. Prairie vegetation stores carbon in its deep fibrous roots, with approximately 80 percent of the plant biomass located belowground. It is equally as important to protect existing carbon stores, as it is to sequester atmospheric carbon.

- Engagement involves cooperation, communication, and partnerships to address the conservation challenges presented by climate change (USFWS 2010).

Biological Environment

The biological environment described in this section comprises habitat and associated wildlife in the project area. Appendix B contains a list of plant and animal species that occur over the project area.

The uniqueness of the DGCA lies in the millions of depressional wetlands that constitute one of the richest wetland systems in the world. These wetlands—or prairie potholes—and surrounding grasslands support an entire suite of plants and animals. In addition, the grasslands support yet another suite of plants and animals. In many cases, the biodiversity of this highly productive area relies on a combination of resources from the potholes and the native prairie grasslands. The PPR is breeding habitat for a myriad of wetland and grassland birds and supports high numbers of spring and fall migrants.

Once vast grassland, the PPR is now largely an agricultural system dominated by cropland. Despite these changes, millions of wetlands and large tracts of native prairie remain. The PPR is one of the most altered—yet also one of the most important—migratory bird habitats in the Western Hemisphere.

Uplands

The project area lies in the native mixed-grass prairie of the northern plains and includes small elements of native tallgrass prairie to the east and native shortgrass prairie to the west (Whitman and Wali 1975). The vegetation is largely a wheatgrass–needlegrass type (Bryce et al. 1998, Martin et al. 1998). The area has six primary species of grass: prairie Junegrass, green needlegrass, needle and thread, blue grama, little bluestem, and yellow sedge. There are 11 secondary grass species: western wheatgrass, Canada wildrye, spike oats, big sandgrass, ticklegrass, porcupinegrass, mat muhly, sideoats grama, Leiberg's panicum, needleleaf sedge, and threadleaf sedge. In areas of glacial outwash, plains muhly and saltgrass may be found (Bryce et al. 1998).

Many wildflowers and other forbs make up 5–15 percent of the vegetative cover. The native prairie has 65 species of common forbs including the following: pasqueflower, western wallflower, prairie smoke, Missouri milkvetch, lead plant, Indian breadroot, purple prairie clover, gaura, harebell, narrowleaf blazing star, purple coneflower, and western yarrow.

John and Karen Hollingsworth / USFWS

Tallgrass Prairie

Other common forbs are sunflowers, goldenrods, asters, sageworts, and wild mint (USDA 1975).

Wooded and shrubby areas cover less than 1 percent of the land in the project area and primarily occur on slopes and in ravines (Niemuth et al. 2008, Whitman and Wali 1975). Wooded areas often comprise aspen and green ash, especially in the northwestern section of the Missouri Coteau. Pockets of western snowberry shrubs can be found throughout the project area (Barker and Whitman 1989, Martin et al. 1998).

In addition to the tremendous diversity of common plants in the upland grasslands, several plant species are considered rare, threatened, or endangered at the State level in North Dakota and South Dakota (Hagen et al. 2005, USFWS 2011b). The Dakota buckwheat found in dry, upland, native prairie is endangered in North Dakota, and another seven grassland species are threatened. Rare plants in the project area are prairie mimosa, Rocky Mountain iris, bottle gentian, small-flowered penstemon, and western prairie fringed-orchid.

Wetlands

About 10 percent of the project area is primarily palustrine (marsh) emergent wetland (Cowardin et al. 1979). These wetland habitats have temporary, seasonal, semipermanent, and permanent water regimes; the variation in the length of time water persists in these wetlands results in different types of vegetation.

- Ephemeral, temporary, and seasonal wetlands that have water for several weeks support vegetation that comprises wetland–low native prairie, wet meadow, and shallow marsh zones. Common plants include bluegrass, sedges, western snowberry, prairie cordgrass, and wild lily. Other plants in temporary and seasonal wetlands include smartweed, rushes, and reed canarygrass.

- Semipermanent or permanent wetlands have water present through most or all of the year. These wetlands may have any of the vegetation zones already mentioned, as well as deep marsh zones with pondweed and milfoil, shallow marsh zones with bulrush and cattail, and open-water areas with no vegetation.

Two other types of wetland are found on the Missouri Coteau: alkali ponds and fens. Alkali ponds generally have reduced diversity, although widgeongrasses are common (Stewart and Kantrud 1971). Fens are alkali bogs that support a diversity of flora including some of the rarest plants in North Dakota (Duxbury 1986).

The wetlands in the project area also support several species of plants that have small or declining populations in North Dakota. Fifteen species of wetland plants are considered threatened, and pullup muhly and elk sedge are endangered at the State level in North Dakota. In wetter native prairie areas within the project area, rare or imperiled species occur such as the joint-spike sedge, fringed gentian, and sedge mousetail (Hagen et al. 2005, USFWS 2011b).

Federally Listed Species

Under classification of the Endangered Species Act, there are eight endangered and threatened species (scaleshell mussel, Topeka shiner, pallid sturgeon, least tern, whooping crane, gray wolf, western prairie fringed-orchid, and piping plover) and two candidate species (Dakota skipper and Sprague's pipit) that occur in the project area or nearby.

Endangered Species

SCALESHELL MUSSEL. The scaleshell is a relatively small freshwater mussel with a thin, fragile shell and faint green rays. It grows to about 1–4 inches in length. The inside of the shell is pinkish white or light purple and highly iridescent. The scaleshell gets its name from the scaly appearance of the shell, which is only seen in females.

Scaleshell historically occurred across most of the eastern United States. Scaleshell mussels live in medium-sized and large rivers with stable channels and good water quality. They bury themselves in sand and gravel on the river bottom with only the edge of their partially opened shells exposed. As river currents flow over them, they siphon particles out of the water for food such as plant debris, plankton, and other microorganisms.

The life cycle of the scaleshell, like most freshwater mussels, is unusual and complex. Their eggs develop into microscopic larvae (glochidia) within the gills of the female. The female discharges its glochidia into the river, where they must attach to gills or fins of a fish to continue developing. Each mussel species has specific fish species (host fish) that the glochidia need to develop. Glochidia continue growing on the fish and transform into juveniles. After a few weeks, they drop off, land on the river bottom, and continue maturing into adults.

The roles of scaleshell mussels in river ecosystems are as food for wildlife like muskrats, otters, and raccoons and as filters that improve water quality. During the last 50 years, this species became increasingly rare within its reduced range. Of the 55 historical populations, 14 remain scattered within the Mississippi River basin in Arkansas, Missouri, and Oklahoma. Toxins and declines in water quality from pollution easily harm adult mussels because they are sedentary (stay in one place). Pollution may come from specific, identifiable sources such as factories, sewage treatment plants, and solid waste disposal sites or from diffuse sources like runoff from cultivated fields, pastures, cattle feedlots, poultry farms, mines, construction sites, private wastewater discharges, and road drainage. Contaminants reduce water quality and may directly kill mussels, reduce the ability of surviving mussels to have young, or result in poor health or disappearance of host fish.

Sedimentation is material suspended in water that usually moves as the result of erosion. Although sedimentation is a natural process, poor land use practices, dredging, impoundments, intensive timber harvesting, heavy recreational use, and other activities may accelerate erosion and increase sedimentation. A sudden or slow blanketing of the river bottom with sediment can suffocate freshwater mussels, because it is difficult for them to move away from the threat. Increased sediment levels may also make it difficult for scaleshell to feed, which can lead to decreased growth, reproduction, and survival.

Dams affect both upstream and downstream mussel populations by disrupting natural flow patterns, scouring river bottoms, changing water temperatures, and eliminating habitat. The scaleshell and many other river mussels and fish cannot survive in the still water impounded behind dams. Scaleshell and other mussels depend on their host fish for dispersal. Because dams are barriers to fish movement and migration, this, in turn, prevents the dispersal of mussels upstream. Upstream mussel

populations then become isolated from downstream populations, leading to small unstable populations that are more likely to die out.

The recent invasion of the exotic zebra mussel into the United States poses a substantial threat to the scaleshell mussel, because it starves and suffocates native mussels by attaching to their shells in large numbers.

TOPEKA SHINER. Topeka shiners are small (less than 3 inches in length) minnows that have dark lateral and back stripes. Scales above the lateral stripe are edged in pigment, while below the stripe the scales appear silvery-white. During the breeding season, the shiner has a dark chevron at the base of the caudal fin; breeding males have orange fins.

Topeka shiner habitat is small streams and creeks that exhibit perennial or nearly perennial flow. Substrate usually is clean gravel, cobble, or sand although these shiners have been found in areas with bedrock and clay hardpan overlain by silt. The Topeka shiner may require open pools with cool, clean water.

Historically, Topeka shiners were abundant throughout the native prairie of South Dakota, Minnesota, Kansas, Iowa, and Missouri; these shiners still occur but exist in fragmented and isolated populations. The number of known occurrences has declined by 80 percent, and Topeka shiners have been eliminated from many watersheds. Topeka shiners have been adversely affected by degradation of stream quality, habitat destruction, siltation, channelization, dewatering of streams, and water impoundment.

Activities that increase sedimentation and reduce water quality, such as agriculture and grazing, contribute to the decline of the Topeka shiner. Although impoundments provide a refuge during droughts, impoundments prevent upstream movement, and shiners that use these impoundments are subject to predation by larger fish. Streams with watering ponds and other impoundments have eliminated this endangered shiner from the associated stream reaches. Spawning behavior is poorly understood for this species; it is thought that Topeka shiners spawn on silt-free substrates found in the quieter waters of stream pools. As a native prairie species, the Topeka shiner is adapted to taking refuge in pools during periods of drought. However, human activities that use and reduce ground and stream water create artificial drought conditions that result in death of Topeka shiners from anoxia or exposure. Population declines also are attributed to introduced predaceous fishes.

PALLID STURGEON. The pallid sturgeon was placed on the Endangered Species List in 1990. This endangered fish, which can weigh up to 80 pounds, has rows of bony plates that stretch from head to tail. It prefers the bottoms of large, shallow rivers with sand and gravel bars, but construction of dams and bank stabilization has damaged or destroyed much of that habitat.

The pallid sturgeon was fairly common in the Missouri and Yellowstone Rivers in North Dakota as late as the 1950s, but biologists believe fewer than 250 wild fish remain in this reach of the rivers. Since 1997, the Service, in cooperation with State fish and wildlife agencies in Montana and North Dakota, has stocked pallid sturgeon in compliance with the "1993 Pallid Sturgeon Recovery Plan." About 28,000 juvenile pallid sturgeon have been released in recovery priority area 2 (the Missouri River from Fort Peck Dam to the headwaters of Lake Sakakawea, including the Yellowstone River upstream to the mouth of the Tongue River). Releases into recovery priority area 2 occurred in 1997, 2000, 2002, 2003, and 2004.

The Service estimates that an isolated remnant population of less than 50 individuals remains in the Garrison Reach of the Missouri River (North Dakota part of the project area); there are no recent records (within the last 20 years) of successful pallid sturgeon reproduction in this reach. The Garrison Reach is outside of the recovery priority areas identified in the recovery plan. Although not excluded from implementation of recovery actions, river reaches outside the recovery priority areas are lower priority, because these areas have been altered to the extent that major modifications would be needed to restore their natural physical and hydrologic characteristics.

LEAST TERN. This 9-inch long bird is the smallest member of the gull and tern family. About 100 of the remaining 2,500 pairs of the interior population of least tern come to North Dakota each year. The least tern uses sparsely vegetated sandbars including those in the Missouri and Yellowstone River systems in North Dakota and South Dakota. This tern was listed as an endangered species in 1985. Its decline is due to the loss of habitat from dam construction and subsequent operation of the river system.

WHOOPING CRANE. At a height of 5 feet, the whooping crane is the tallest bird in North America. Equally impressive is its 7-foot wingspan. Most whooping cranes migrate through North Dakota each spring and fall, frequently in the company of sandhill cranes. Whooping cranes pass through North Dakota and South Dakota when migrating between their breeding territory in northern Canada and wintering grounds on the Gulf of México. Declared an endangered species in 1970, the decline of the whooping crane is blamed on loss of habitat and excessive shooting. This crane is making a slow, but steady, comeback. From a low of 21 birds in the 1940s, the current wild and captive whooping crane population is about 468.

GRAY WOLF. An infrequent visitor to North Dakota, the gray wolf occasionally comes across the border from neighboring Minnesota or the province of Manitoba, Canada. Once abundant in the State, the gray wolf was killed to near extinction by 1940 at the urging of western settlers who believed wolves caused widespread livestock losses. In 1978, the Service published a rule listing the gray wolf as an endangered species throughout the lower 48 States except Minnesota, where the gray wolf was reclassified as a threatened species. In April 2003, the gray wolf's listing status was downgraded to threatened. On February 1, 2005, a United States district court in Oregon overturned the April 2003 decision and ordered the Service to rescind the rule downgrading the listing status for the gray wolf. At this time, the gray wolf is listed as a threatened species in Minnesota and as an endangered species throughout the rest of its range including North Dakota.

Threatened Species

WESTERN PRAIRIE FRINGED-ORCHID. The plant, which may reach 3 feet in height, can be recognized by its large, white flowers on a single stem. The western prairie fringed-orchid is a perennial orchid of the native, North American, tallgrass prairie and is found most often on unplowed, calcareous native prairies and sedge meadows. In North Dakota, the orchid most frequently occurs in the sedge meadow community on the glacial Sheyenne Delta and in the moist, native, tallgrass prairie.

The western prairie fringed-orchid is restricted to west of the Mississippi River and is known from about 75 sites in Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and Oklahoma and in Manitoba, Canada. The Sheyenne National Grasslands and adjacent native prairie in southeastern North Dakota contain one of three large populations of the orchid, two in the United States—Sheyenne Delta in North Dakota and Pembina Trail prairie complex in Minnesota—and one in Vita Prairies, Manitoba, Canada. On the Sheyenne Delta, about 95 percent of the orchids occur on the Sheyenne National Grasslands administered by the USDA Forest Service and 5 percent occur on private land.

The only North Dakota plant on the Endangered Species List, the western prairie fringed-orchid is classified as a threatened species, which means it is likely to become endangered. The major cause of the species' decline is the conversion of native prairie to cropland.

PIPING PLOVER. The piping plover is a small shorebird that inhabits barren sand and gravel shores of rivers and lakes; the plovers are attracted to the rare combination of windswept islands or peninsulas with a lack of adjacent tree cover. North Dakota is the most important State in the Great Plains for nesting piping plovers, with more than three-fourths of the plovers nesting on alkali lakes in native prairie and the remainder using the Missouri River. Lake Sakakawea and Lake Audubon are significant areas for piping plovers on the Missouri River system. The average adult census for piping plovers from 1998 through 2000 was 79 birds or 16.2 percent of the river system's total, the third highest of the Missouri River segments supporting plovers. While piping plovers are widely distributed over much of the Lake Sakakawea reservoir, important nesting areas include Steinke Bay, Douglas Creek Bay, the Van Hook Arm, Little Egypt, and Tobacco Garden Bay. From 1998 to 2003, survey crews with the U.S. Army Corps of Engineers recorded an average of 56 piping plover nests within 10 miles of the Snake Creek Embankment between Lake Sakakawea and Lake Audubon; in 2004, there were 141 nests in this area (unpublished Corps data). Piping plover nest initiation is similar to that observed on wetlands in the adjacent native prairie coteau, with the birds initiating nests in early to mid-May.

Mike Morel / USFWS

The piping plover is federally listed as a threatened species.

The piping plover was listed as a threatened species in 1985. Habitat loss and poor breeding success are major reasons for its population decline. In North Dakota, critical habitat for piping plover has been designated on the Missouri River, Lake Sakakawea, Lake Oahe, and selected alkali lakes and wetlands. On the Missouri River, critical habitat includes sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and the interface with the river. Critical habitat on Lake Sakakawea and Lake Oahe includes sparsely vegetated shoreline beaches; peninsulas; and islands formed of sand, gravel, or shale; and their interface with the water bodies. For alkali lakes and wetlands, critical habitat includes the following: (1) shallow, seasonally to permanently flooded, mixosaline to hypersaline wetlands with sandy to gravelly, sparsely vegetated beaches, salt-encrusted mudflats, or gravelly salt flats; and (2) springs and fens along edges of alkali lakes and wetlands and the adjacent upland grasslands that are 200 feet above the high-water mark of the alkali lake or wetland.

Candidate Species

DAKOTA SKIPPER. The Dakota skipper is a small butterfly with a 1-inch wingspan. Dakota skippers live in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two native prairie types: (1) low (wet) native prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; and (2) upland (dry) native prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple coneflower, upright coneflowers, and blanketflower. The skipper's current distribution straddles the border between the native, tallgrass and mixed-grass prairie ecoregions. The most significant remaining populations of Dakota skippers occur in western Minnesota, northeastern South Dakota, north-central North Dakota, and southern Manitoba. Dakota skipper populations have declined historically due to widespread conversion of native prairie. In addition, the remnant native prairie occupied by Dakota skippers is subject to a variety of threats.

SPRAGUE'S PIPIT. Sprague's pipits require large patches of grassland habitat for breeding, with the preferred grass height between 4 and 12 inches. The pipit prefers to breed in well-drained, open grassland and avoids grassland with excessive shrubs. Sprague's pipits can be found in lightly to heavily grazed areas. Pipits avoid intrusive human features on the landscape, so the effect of a development can be much greater than the actual "footprint" of the feature. In 2010, the Sprague's pipit was added to the candidate species list. Migratory bird species that are candidate species, such as Sprague's pipit, are still protected under the Migratory Bird Treaty Act.

Invertebrates

The number of insect species and other invertebrate species in the project area is not currently known; however, the available information suggests a wide diversity. The Missouri Coteau is in an area that represents 15–19 percent of all insect species found in North America (Arenz and Joern 1996). A survey of just five wetlands found more than 50 species of insects. In addition, snails, shrimp, and amphipods are common invertebrates in prairie wetlands (Kantrud et al. 1989).

The regal fritillary and tawny crescent butterfly are two butterflies (other than the Dakota skipper described under candidate species) that occur in the project area and that are considered likely to become candidates under the Endangered Species Act without more conservation action (USFWS 2011b).

Mixed-vegetation stands such as native prairie are thought to be less prone to insect pest outbreaks than monocultures such as cropland (Curry 1994).

Amphibians and Reptiles

Turtles, snakes, toads, frogs, and salamanders all live in the project area (Hoburg and Gause 1992). The western hognose snake and the Great Plains toad are typical of grassland, whereas the northern leopard frog, western chorus frog, and tiger salamander are closely associated with prairie wetlands. Tiger salamander larva and adults are particularly important food items for some species of wetland birds (Kantrud et al. 1989).

Aquatic Species

Rivers and streams are some of the aquatic habitats of the Dakota Grasslands that are most affected by the conversion of native prairie to agricultural or urban purposes. There are literally thousands of miles of these riparian corridors throughout the grasslands that provide pathways for much more than just the fish that swim in the waters. Mussel species that rely on fish to distribute their larval stages upriver and migratory birds that use the riparian zones for nesting and feeding also use these systems. The effects of erosion on the watersheds can cause decreases in water quality and degraded habitat that affect the sustainability of many species found in this region.

Despite the best individual efforts of the management agencies involved with watershed decisions, aquatic habitat quality continues to decline across the Nation. Under the National Fish Habitat Action Plan, a strategy to focus and work with partners is beginning to develop across the nation (AFWA 2006). For the Dakota Grasslands region, several

fish habitat partnerships are involved with the conservation of aquatic habitats—from glacial lakes and reservoirs to rivers and streams. All of these aquatic habitats are affected by the land uses upstream, and aquatic habitat conservation can improve significantly through grassland easements (NFHB 2010).

Birds

The project area is in one of the areas of highest species richness for wetland and grassland birds in the United States and Canada, providing breeding habitat for at least 130 species of birds (Sauer et al. 1997, Stewart 1975). In addition to birds that breed in the project area, many species of birds migrate through or use the area as wintering ground (Ringelman 2005). Migrating geese, ducks, gulls, and shorebirds rest and feed on these wetlands. Warblers use the wooded and shrubby areas and raptors such as bald eagles and peregrine falcons use a variety of habitats.

The project area supports 27 of the Service's species of conservation concern (table 1) including ferruginous hawk, willet, short-eared owl, and loggerhead shrike (Berkey et al. 1993, USFWS 1995).

Table 1. Priority bird species of the Prairie Pothole Region.

	Species	*Prairie Pothole Joint Venture Priority Species*[1]	*Partners in Flight Priority Species*[2]	*U.S. Fish and Wildlife Service Birds of Conservation Concern*[3]
LANDBIRDS	Baird's sparrow	✓	✓	✓
	Sprague's pipit (candidate)	✓	✓	✓
	Chestnut-collared longspur	✓	—	✓
	Smith's longspur	—	—	✓
	Nelson's sharp-tailed sparrow	✓	✓	✓
	Bell's vireo	—	✓	—
	Le Conte's sparrow	—	✓	—
	Grasshopper sparrow	—	—	✓
	Sharp-tailed grouse	✓	—	—
	McCown's longspur	✓	✓	✓
	Swainson's hawk	✓	—	✓
	Greater prairie-chicken	✓	—	—
	Short-eared owl	✓	—	✓
	Red-headed woodpecker	✓	—	—
	Sedge wren	—	✓	✓
	Bobolink	—	✓	—
	Black-billed cuckoo	—	✓	✓
	Bald eagle	—	—	✓
	Peregrine falcon	—	—	✓
	Dickcissel	—	—	✓
WATERBIRDS	Horned grebe	✓	✓	✓
	Western grebe	✓	✓	—
	American bittern	✓	✓	✓
	Yellow rail	✓	✓	✓
	King rail	✓	✓	—
	Franklin's gull	✓	✓	—
	Black tern	✓	✓	✓
	Least tern (endangered)	✓	✓	—
	Whooping crane (endangered)	✓	✓	—
	Least bittern	—	✓	✓

Table 1. Priority bird species of the Prairie Pothole Region.

	Species	*Prairie Pothole Joint Venture Priority Species*[1]	*Partners in Flight Priority Species*[2]	*U.S. Fish and Wildlife Service Birds of Conservation Concern*[3]
SHOREBIRDS	Piping plover (threatened)	✓	✓	—
	Mountain plover	✓	✓	✓
	American golden-plover	✓	✓	—
	Semipalmated plover	✓	✓	—
	American avocet	✓	✓	—
	Upland sandpiper	✓	✓	✓
	White-rumped sandpiper	✓	✓	—
	Baird's sandpiper	✓	✓	—
	Pectoral sandpiper	✓	✓	—
	Buff-breasted sandpiper	—	—	✓
	Semipalmated sandpiper	✓	✓	—
	Solitary sandpiper	—	—	✓
	Stilt sandpiper	✓	✓	—
	Dunlin	✓	✓	—
	Marbled godwit	✓	✓	✓
	American woodcock	✓	✓	—
	Wilson's phalarope	✓	✓	—
	Hudsonian godwit	✓	✓	✓
	Long-billed curlew	—	✓	✓
	Lesser yellowlegs	✓	✓	—
	Long-billed dowitcher	✓	✓	—
	Short-billed dowitcher	—	—	✓
WATERFOWL	Mallard	✓	—	—
	Northern pintail	✓	—	—
	Gadwall	✓	—	—
	Northern shoveler	✓	—	—
	Blue-winged teal	✓	—	—
	Lesser scaup	✓	—	—
	Canvasback	✓	—	—
	Redhead	✓	—	—

[1] *Species designated a focal species, a species of concern, a species in an area important to migrants, or a species of high conservation assessment from the "Prairie Pothole Joint Venture Implementation Plan" (Ringleman et al. 2005).*

[2] *Species designated a criteria I species in the Partners in Flight physiographic areas (37 and 40) within the project area, a species of concern in the "Northern Plains/Prairie Potholes Regional Shorebird Conservation Plan," or a species of high concern in the "Northern Prairie and Parkland Waterbird Conservation Plan" (Beyersbergen et al. 2004, Fitzgerald et al. 1998, Fitzgerald et al. 1999, Skagen and Thompson 2011).*

[3] *Species designated a species of conservation concern by the Migratory Bird Division of the U.S. Fish and Wildlife Service (USFWS 2008).*

Waterfowl

The duck population boom that began in 1994 is evidence of the potential capacity of the project area to recruit ducks when habitat conditions are suitable. The PPR of the Dakotas accounts for only 7 percent of the traditional waterfowl survey area of North America, yet carried far more than 20 percent of breeding ducks during the period 1994–2009 (USFWS 2009). Accordingly, the foundation of the PPJV implementation plan is to "keep the table set" for periodic booms in duck populations by making sure that important wetland and grassland habitats are

intact. This would require conserving an additional 1.4 million acres of wetland and an additional 10.4 million acres of grassland in the United States part of the PPR.

At least 12 species of waterfowl breed in the project area and most depend on upland grasslands for nesting, as well as wetlands for feeding and brood rearing. (Stewart 1975). Mallard, northern pintail, northern shoveler, gadwall, and blue-winged teal are the priority species of waterfowl in this project (table 1). In fact, parts of the project area support, on average, more than 100 pairs of breeding ducks per square mile—some of the highest densities recorded in North Dakota and South Dakota (Reynolds et al. 2006). The "North American Waterfowl Management Plan" identified the PPR as the continent's top priority for waterfowl conservation and has a goal of restoring wetland to accommodate an additional 492,000 pairs of breeding ducks and 393,000 acres more of restored grassland associated with high-density wetland communities (USFWS 1986).

Other Waterbirds

Waterbirds constitute an important group of species in the project area. The PPR contains two-thirds of the continental breeding population of Franklin's gull; one-half of the continental population of pied-billed grebe, American bittern, sora, American coot, and black tern; and approximately one-third of the American white pelican and California gull populations (Beyersbergen et al. 2004).

The DGCA will benefit 13 species of breeding shorebirds, as well as many other shorebird species that use the area as stopover habitat during migration, such as 30 species that breed in the Arctic. As shown in table 1, priority waterbird species include marbled godwit, willet, Wilson's phalarope, American avocet, and piping plover (Ringelman 2005, Skagen and Thompson 2007).

USFWS

The gadwall is one of the priority waterfowl species.

Grassland Birds

Native prairie and untilled pastureland in the project area are habitat for many bird species including northern harrier, sharp-tailed grouse, willet, upland sandpiper, marbled godwit, common snipe, Wilson's phalarope, mourning dove, short-eared owl, burrowing owl, and common nighthawk.

Parts of the area provide habitat for a suite of grassland birds—the only group of bird species to experience consistent declines nationwide over the last 30 years (Sauer et al. 1995). Many species in this group have ranges limited to the grassland habitat represented in the project area, including Baird's sparrow, grasshopper sparrow, Sprague's pipit, lark bunting, and chestnut-collared longspur (Knopf 1996, Johnson et al. 1994, USFWS 1995). Destruction of habitat and mowing for hay production are two of the main reasons for the decline in grassland birds (Sauer et al. 1995).

Figure 4 shows the extent of the breeding range for 27 grassland birds throughout the United States, with the highest concentrations in the Midwest and the PPR. The 27 bird species represented follow:

- Upland sandpiper
- Long-billed curlew
- Mountain plover
- Greater prairie-chicken
- Sharp-tailed grouse
- Ring-necked pheasant
- Northern harrier
- Ferruginous hawk
- Common barn-owl
- Short-eared owl
- Horned lark
- Bobolink
- Eastern meadowlark
- Western meadowlark
- Chestnut-collared longspur
- McCown's longspur
- Vesper sparrow
- Savannah sparrow
- Baird's sparrow
- Grasshopper sparrow
- Henslow's sparrow
- Le Conte's sparrow
- Cassin's sparrow
- Dickcissel
- Lark bunting
- Sprague's pipit
- Sedge wren

In many cases, the project area represents a refuge for birds that are suffering population declines elsewhere. For example, over the last 30 years, 21 species of birds have experienced major declines nationwide, while populations in the DGCA have remained stable (Sauer et al. 1997). Included in this group are several grassland species such as Wilson's phalarope, bobolink, western meadowlark, and clay-colored sparrow. However, populations of the loggerhead shrike, vesper sparrow, and American goldfinch actually have increased over the last 30 years in the project area, while decreases occurred nationwide.

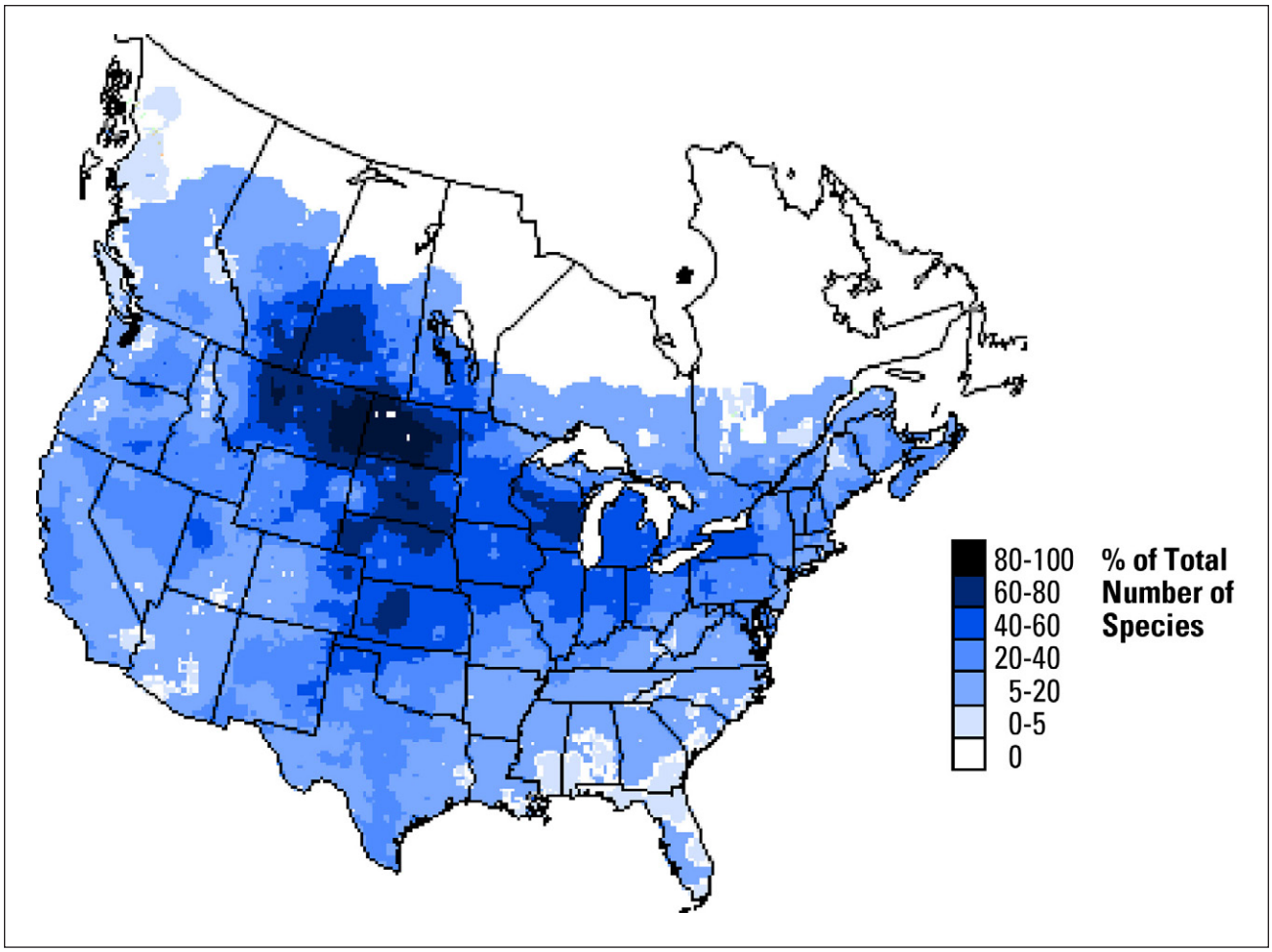


Figure 4. Map of the North American breeding ranges of 27 grassland birds. *Source: U.S. Geological Survey.*

Mammals

The project area includes the ranges of approximately 50 mammal species (Burt and Grossenheider 1964, Grondahl 2011).

Native prairie uplands are habitat for many small mammals including shrews, mice, and voles. In addition, three species of ground squirrels (Richardson's, Franklin's and thirteen-lined) rely on grassland habitat found in the project area. These ground squirrels provide critical food sources, and their burrows provide nesting habitat, for raptors such as ferruginous hawks and short-eared owls (Berkey et al. 1993). Big game animals including white-tailed deer and pronghorn also use the upland habitat.

Wetlands provide cover or food, or both, for at least 17 species of terrestrial or semiaquatic mammals such as muskrat, beaver, and mink (Kantrud et al. 1989).

Coyote, red fox, badger, skunk, and weasels are examples of furbearing animals that are widespread throughout the area.

Cultural Resources

Archeologically, all of the DGCA is within the Northeastern Plains subarea of the Northern Plains area (Wood 1998). There have been five cultural traditions or lifeways recognized by archeologists for the American Indians in the Northeastern Plains: from earliest to latest these are paleo-Indian, Plains Archaic, Plains Woodland, Plains Village, and Equestrian Nomadic. During any time in history, existing groups of peoples could be found living different lifeways in different parts of the project area (Gregg et al. 2008).

This section also describes the more recent history of the area. Modern historical records for the project area are contained in the 1790s' journals of explorers and traders.

Paleo-Indian Tradition

The paleo-Indian tradition (9500–5500 B.C.) was based on big game hunting during a time of a relatively warm and comfortable climate. As the ice

age ended, these peoples within the project area could be identified by the distinctive Clovis points attached to their lances or spears. Clovis peoples hunted now-extinct animals including mammoths, mastodons, horses, and American camels. By 11,000 years ago, these animals were gone, and then the paleo-Indian hunters relied on hunting giant bison (*Bison antiques*) with beautifully crafted Folsom points. For a thousand years, these peoples continued to hunt the giant bison using regional variations of spear or dart points with names such as the Agate Basin, Hell Gap, Eden, and Cody points (SDARC 2011).

As the paleo-Indian tradition ended, there was increased evidence of plant collection and food storage. Sites of the paleo-Indian tradition include camps, Knife River flint quarry sites, other stone procurement areas, stone workshops, and isolated artifact finds (NDSHPO 2009).

Plains Archaic Tradition

Plains Archaic tradition lifeways (5500–400 B.C.) were based around gathering plants and hunting bison during a drier climate period that had many long and frequent droughts. Reliance predominantly on the hunting of big game seems to have shifted to the opportunistic hunting of bison when available and small game, even rodents, when necessary. The Archaic peoples used the atlatl with dart points for hunting.

The dry climate slowly changed until about 1000 B.C., when conditions became much the same as today (SDARC 2011). Plant gathering was a very important component of the Archaic peoples' daily activities and diet. Sites include animal kill sites, camps, Knife River flint quarry sites, stone workshops, and burial sites (NDSHPO 2009).

G.R. Zahm / USFWS

Blending in with shortgrasses, a sharp-tailed grouse performs a mating display for a hen.

John and Karen Hollingsworth / USFWS

The western meadowlark is a common grassland bird.

Plains Woodland Tradition

The Plains Woodland tradition lifeway (400 B.C.–A.D. 1200) was primarily based on hunting and the gathering of modern plants and animals. During this tradition, the bow and arrow came into use (NDSHPO 2009). In addition, the Plains Woodland peoples began to garden and use ceramic pots as a result of contacts with eastern peoples. Trade goods from other regions of North America were common to these peoples. After A.D. 900, farming crops of corn, beans, squash, and sunflowers in gardens along river bottoms supplemented the hunting and gathering (SDARC 2011).

The farmers lived in earthlodge villages fortified by ditches and log palisades. Sites include burial mounds and other burial sites, occupations, camps, quarries, stone procurement areas, and bison kill sites (NDSHPO 2009). Great social and religious changes became part of these peoples' lifeways as observed in the archeological record—hundreds and maybe thousands of burial mounds were constructed as a new and more elaborate way of burying their dead (Gregg et al. 2008, SDARC 2011).

Plains Village Tradition

Plains Village tradition lifeways (A.D. 1200–1780) adapted to hunting and gathering with full-scale gardening and with ceramic pots common in everyday life. These peoples had a dependable supply of stored food, primarily dried corn, which made possible the large and more permanent village communities of earthlodges. The Plains Village peoples were living all along the Missouri River Valley and its uplands, and their seasonal hunting camps occur throughout the project area. After A.D. 1700, European contacts and trade items became part of the lifeway, as did the introduction of the horse from the Southwest.

The Mandan, Hidatsa, Arikara, and Cheyenne may be the most recognized of these Plains Village tradition peoples. Sites include occupations (fortified and unfortified earthlodge villages), winter villages, hunting camps, flint quarries, eagle-trap-

Jackie Jacobson / USFWS

Pasqueflower is a native prairie plant.

ping sites, conical timber lodges, burial sites, lithic (stone) workshops, bison kill sites, and rock art sites (NDSHPO 2009).

This tradition ended when the 1780 epidemics decimated the villages, after which the nomadic Sioux became the dominant cultural force in the Northern Plains (Gregg et al. 2008).

Equestrian Nomadic Tradition

The Equestrian Nomadic tradition (A.D. 1780–1880) was dependent on the horse to focus narrowly on bison hunting, with seasonal rounds of plant gathering. A diversified group of cultures such as the Cheyenne, Dakota, Nakota, Lakota, Assiniboine, and Plains Cree took up the Equestrian Nomadic lifeway (DeMallie 2001). This horse culture lifeway greatly increased the capacity to hunt bison and to transport it and family goods over vast areas (Gregg et al. 2008). Known sites include camps, battle sites, and animal kill sites (NDSHPO 2009). It could be said that this lifeway terminated with the surrender of Sitting Bull at Fort Buford, North Dakota.

Modern History

As they explored the Louisiana Purchase, the Lewis and Clark expedition traveled through or wintered in the project area in 1804, 1805, and 1806. The 1800s were a period of cultural turmoil. Based on the United States' Indian policy, the Government made acts and treaties with American Indian tribes in response to the immigration of Europeans into the Northwestern Plains subarea. In the late 1870s, these policies led to settlement of the American Indians on reservations. Today there are eight reservations in the project area (Schneider 2002).

The Dakota Boom began in the late 1870s. During this period, there was large growth in emigrant populations as new railroads opened eastern markets to the wheat from farms within the project area. The Territory of Dakota was an organized, incorporated territory of the United States from 1861 until 1889, when the territory was divided into the present States of North Dakota and South Dakota as they were admitted into the Union (Schell 1975).

Even after the effects of the Dust Bowl and Depression era of the 1930s, farms still covered the vast majority of land within the project area. The Service's Refuge System grew out of the attention given to conservation by President Franklin D. Roosevelt and his administration during this Depression Era. Today, the project area includes 62 national wildlife refuges and 16 wetland management districts.

Socioeconomic Environment

The project area includes parts of 52 counties within North Dakota and South Dakota:

North Dakota Counties

Barnes	Grand Forks	Ramsey
Benson	Griggs	Renville
Bottineau	Kidder	Rolette
Burke	LaMoure	Sheridan
Burleigh	Logan	Steele
Cass	McHenry	Stutsman
Cavalier	McIntosh	Towner
Dickey	McLean	Trail
Divide	Mountrail	Walsh
Eddy	Nelson	Ward
Emmons	Pembina	Wells
Foster	Pierce	Williams

South Dakota Counties

Aurora	Edmunds	McPherson
Brule	Faulk	Potter
Buffalo	Hand	Sully
Campbell	Hughes	Walworth
Charles Mix	Hyde	
Douglas	Jerauld	

The North Dakota cities of Bismarck, Fargo, Grand Forks, Jamestown, and Minot and the South Dakota cities of Aberdeen, Huron, Mitchell, and Pierre are some of the largest cities in or near the project area. These larger cities are considered travel designa-

tions from the surrounding rural communities for their shopping and entertainment. A limited amount of industrial activity is associated with the larger communities.

The project area is rural in nature. Many small, rural communities with a population of less than 10,000 people lie within the project area and are generally supported by the local agricultural and ranching industries. With the exception of the areas near cities and towns, the rural lands are mostly zoned for agriculture. Medium to large farming operations emphasize (1) high-value cropland mainly consisting of corn, wheat and beans, and (2) livestock beef agriculture. Because of the highly desirable soils, the high precipitation, and the topography, the project area has a higher percentage of cropland operations as compared with livestock operations. The USDA's National Agricultural Statistics Service reports that land values within the project area range from more than $3,000 per acre for cropland (eastern South Dakota) to a low of near $300 per acre for pastureland (north-central North Dakota) (USDA–NASS 2008). These mostly family-owned operations range from a few hundred acres to several thousand acres in size.

Oil development in the northwestern part of North Dakota has seen tremendous growth over the last 10 years. There are 5,199 active wells, with 174 active drilling rigs, in North Dakota, and most of them are within the project area. Oil production for September 2010 was more than 10 million barrels. The local media reported that 2010's revenue to the State from oil extraction taxes will exceed $530 million and will likely exceed $1 billion in 2011. The discovery of new oil reserves and the advancement of drilling technology have resulted in a significant interest in drilling new wells for oil. Furthermore, a recently released survey conducted by the North Dakota Geological Survey showed that 52 of the 53 counties in North Dakota have shallow natural gas reserves, which will likely result in added interest in natural gas exploration (NDGS 2010).

Landownership

Most land in the project area is in private ownership. An unpublished report entitled "Summary of Lands, North Dakota Counties," shows that approximately 88 percent of North Dakota landownership is in private agricultural ownership, with the balance in towns, cities, roads, and State and Federal ownership.

South Dakota personnel estimate that approximately 90 percent of the State is privately owned. The ratio of private ownership is assumed similar within the project area. Less than 7 percent of the land in the project area was purchased primarily for wildlife production.

Property Tax

Currently, landowners pay property tax on their private lands to the counties. Since the project is a conservation easement program, the land remains in private ownership. Easement properties remain on the tax rolls, and landowners will continue to pay property taxes to the counties. Since lands in both North Dakota and South Dakota are assessed based on soils, which the conservation easements will not affect, no changes to the tax base are anticipated.

Public Use and Wildlife-Dependent Recreational Activities

Opportunities for wildlife observation, nature photography, hunting, and fishing attract visitors to the project area. Because the project area encompasses part of the PPR, waterfowl hunting is a major attraction. Grassland species such as ring-necked pheasant and sharp-tailed grouse are abundant and are highly sought after by hunters.

The 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation found that $539 million were spent on equipment and various trip expenditures for hunting and fishing in North Dakota and South Dakota (U.S. Census Bureau 2008). In 2010, the sale of hunting and fishing licenses in North Dakota and South Dakota generated nearly $42 million in revenue. An additional $206 million were spent on wildlife observation activities in both States.

There is increasing interest in developing wildlife-related tourism opportunities in the project area. Several communities have developed self-guided, wildlife-viewing routes in conjunction with local landowners. Control of public access to easement lands remain under the control of the landowners.

Chapter 3–Threats to and Status of Resources

This chapter describes the threats to resources in the DGCA and expected effects of the easement program.

Threats to the Resources

The uniqueness of the DGCA lies in the millions of depressional wetlands that constitute one of the richest wetland systems in the world. These prairie potholes and their surrounding grasslands are highly productive and support an incredible diversity of birdlife—breeding habitat for a myriad of wetland and grassland birds along with large numbers of spring and fall migrants. However, the PPR is one of the most altered, yet also one of the most important, migratory bird habitats in the Western Hemisphere. It is the backbone of North America's "Duck Factory" and is critical habitat for many wetland- and grassland-dependent migratory birds (Beyersbergen et al. 2004, Peterjohn and Sauer 1999).

The project area is within one of the most threatened landscapes in North America. Once vast grassland, the PPR is now largely an agricultural system dominated by cropland. Recent changes in agricultural economics and advances in crop genetics are increasing the rate of habitat transformation—from an expansive mosaic of native prairie and wetland used for livestock ranching to a landscape dominated by tillage agriculture. According to Stephens et al. (2008), more than 280,000 acres of native prairie were converted to cropland in the project area during 2005–2007. Drainage history in the PPR, as well as many past efforts to change or remove the swampbuster provision of the Farm Bill, show that the risk of wetland drainage is highest and more immediate for the smaller, less permanent wetlands embedded in cropland.

Under the Food Security Act, conversion of native prairie to cropland is possible even if the soils are marginal for crop production. The producer simply must implement an approved conservation plan such as strip cropping or leaving strips of stubble. Furthermore, the technological advances in agricultural machinery and farming techniques increase the likelihood of conversion of native prairie to cropland each year. Another factor is the development of genetically modified crops that enables grassland conversion in areas farther north and west, which before would have been too cold to support crop growth. The detrimental effects on most wildlife species of converting native prairie to cropland, such as growing corn for ethanol production, are well known. Additionally, the PPR is being targeted for the production of biofuels and wind energy, which have unknown effects.

James C. Leupold / USFWS

This yellow-headed blackbird is on the lookout from his bulrush perch.

The conversion of native prairie, with interspersed areas of intensive agriculture and tame grassland, has resulted in altered plant communities as follows:

- Invasion of exotic grass species such as Kentucky bluegrass and smooth brome, along with noxious weeds such as leafy spurge.

- Contamination of wetlands and watersheds with pesticides and fertilizers.
- Siltation of wetlands and watersheds through wind and water erosion.
- Loss of the plant, animal, and insect biodiversity of native prairie habitats.

The suppression of native plants by invasive plants causes a ripple effect in the native prairie ecosystem by affecting insects, birds, and mammals that depend on the native community for survival. For growth and reproduction, many species of butterflies need the specific and essential food that only native prairie forbs can provide. As a result, species that rely on native prairie are pushed into smaller and smaller tracts of habitat.

The PPR is an extraordinary biome (a defined geographical area and its living organisms that interact with the environment) for its ability to produce and sustain tremendous numbers of waterfowl. However, virtually no other biome in North America historically has offered a landscape more conducive to rapid and widespread agricultural development. About 70 percent of the grassland in the PPR of the Dakotas has been converted to other uses, mostly to cropland (USFWS unpublished data). South Dakota has lost 35 percent of the wetland in the PPR, and North Dakota has lost 49 percent of its PPR wetland (Dahl 1990). Large-scale, land use changes continue to expand into the remaining grassland tracts and wetlands that represent the best remaining breeding bird habitat.

The DGCA project will conserve priority species' populations by protecting the most productive remaining wetland and grassland habitats. Given the importance of the PPR to continental populations of waterfowl and other migratory birds, the need to protect grassland and wetland in the project area is critical. At current budget levels, it would take the Service 150 years to acquire wetland and grassland easements that protect the remaining native prairie tracts in the DGCA. At current grassland conversion rates, one-half of the remaining native prairie would be destroyed in only 34 years.

Effects on the Physical Environment

The DGCA provides the Service with a strong strategy for conservation action in anticipation of changes in climate. Implementing the project will help secure the carbon already stored within native prairie soils. As preserving migratory bird corridors becomes increasingly important, the DGCA will provide a contiguous north–south stand of native mixed-grass and tallgrass prairie within the central flyway. Conservation actions will help maintain intact the character of this native prairie in the PPR.

In addition, the DGCA will serve as a model for engagement on the issue of climate change by working with producers, nongovernmental organizations (The Nature Conservancy, Ducks Unlimited, Delta Waterfowl, Pheasants Forever, and many local wildlife organizations scattered throughout the DGCA), State and local agencies (South Dakota Game, Fish and Parks; and North Dakota Game and Fish Department), and Federal agencies including the NRCS.

Effects on the Biological Environment

This section describes the estimated effects of the project on uplands, wetlands, and federally listed species.

USFWS

Emergent vegetation in this wetland easement is excellent cover for nesting waterbirds.

Upland and Wetland Effects

Establishing the DGCA project enables the Service to protect in perpetuity up to 240,000 acres of wetland and 1.7 million acres of grassland. In addition to the other funding sources available, the Service will also use money from the LWCF to buy wetland and grassland conservation easements. The increase in available money will result in increased acreage to complement the Service's current conservation easement program and the existing public grasslands (such as waterfowl production areas and State wildlife management areas)—allowing for the preservation of a network of grasslands throughout the project area. At current easement acquisition rates, the Service will achieve the acreage objectives for the project within 30 years. Importantly, these protected areas will exist regardless of changes in agricultural policy or economy, which are known to affect the rate of grassland conversion (Gerard 1995).

Protection of native prairie watersheds using conservation easements may be one of the best defenses to preclude further degradation of streams and prairie wetlands and the aquatic resources that depend on them. In addition, conservation easements in the DGCA will help maintain the uniqueness of the relatively intact grasslands that harbor a wide variety of wildlife species. Buying grassland easements within the project boundary will prevent the conversion of grassland, where nest success for waterfowl is higher, to cropland where nest success is lower (Klett et al. 1988). Other species of upland-nesting birds also have higher nest success rates in grassland than in cropland (Kantrud and Higgins 1992). Furthermore, nest success increases when the percentage of the landscape in grass increases (Ball et al. 1995, Greenwood et al. 1995, Reynolds et al. 2001). Thus, protecting the relatively intact grasslands in the project area represents a strategic opportunity for maintaining waterfowl populations throughout the PPR.

Protecting grasslands in the DGCA will help buffer the population declines grassland birds are experiencing in other parts of their ranges. Grassland bird populations are steady or increasing in the project area while decreasing throughout many other parts of their ranges (Sauer et al. 1997). Long-term prospects for grassland birds are considered poor (Sauer et al. 1995), and preserving grasslands in this part of the birds' ranges may prevent some of these species from needing protection under the Endangered Species Act. The agricultural economy, and in particular the livestock industry, is cyclical. In general, high prices of cereal crops generate accelerated conversion of grassland to cropland and lower the number of cattle due to high costs and small profit margins related to feeding and finishing beef cattle. Conversely, low crop prices generate gradual buildup of cattle herds to take advantage of low feed costs. This contributes to the cyclical nature of the beef production industry, which does not benefit from protections provided by farm policy and programs to agricultural crop producers. Grassland easement protection through the DGCA project has the potential to augment and moderate the cyclical nature of the livestock industry, helping keep viable cattle production and ranching industries.

Preventing the establishment of some new cropland will slow the increase in volume of pesticides into the environment. Pesticide use is almost entirely associated with cropland, and 90 percent of all cropland in North Dakota receives at least one application of herbicide each year (Zollinger et al. 1996). Protected grasslands will also act as buffers for wetlands near pesticide-treated cropland by filtering up to 70 percent of the water runoff (Hartwig and Hall 1980). This may reduce the negative effects on wildlife, such as nesting ducks, from ingesting contaminated invertebrates or from the loss of the invertebrate food base due to die-offs caused by pesticides (Grue 1988, Kantrud et al. 1989). In addition, an increase in the number of acres of upland buffers will provide an even greater benefit to aquatic resources.

Wetland and grassland easements are the most cost-effective, socially and politically acceptable means to ensure protection of critical habitats in the project area. Although habitat protection through fee title remains an option in some locations, the Service sees easements as the most viable way to conserve lands at the landscape scale necessary to protect wildlife values in the DGCA. The cost for acquisition of easements in the project area is approximately $588 million. Fee-title acquisition would triple or quadruple the cost of land conservation in addition to requiring increases in long-term management and operational costs for the Service.

The Service views a strong and vibrant rural lifestyle, of which ranching is the dominant land use, as one of the key components to ensuring habitat integrity and wildlife resource protection. The conservation easement program will augment the efforts of other conservation agencies and groups.

Federally Listed Species Effects

With an accelerated purchase of wetland and grassland easements, the Service anticipates that all endangered, threatened, and candidate species will benefit from the extensive habitat protection under the DGCA. Although management of lands with easements remains primarily with the private land-

owner, maintaining wetland and grassland habitats directly and indirectly benefits federally listed species. Direct improvement is expected in habitats for listed species such as western prairie fringed-orchid and indirect habitat improvement for other listed species such as pallid sturgeon.

The Service's Ecological Services Field Offices in North Dakota and South Dakota have concurred with the determination of a "May Affect, Not Likely to Adversely Affect" for federally listed species in the DGCA project area (appendix I).

Effects on Cultural Resources

There will be potential for more protection of cultural resources due to the accelerated purchase of wetland and grassland easements.

Effects on the Socioeconomic Environment

This section describes the estimated effects of the project on landownership, land use, subsurface resource (oil and gas) development, and wind energy development.

Landownership and Land Use Effects

Landownership will not be affected. The additional funding source for the acquisition of wetland and grassland easements from willing sellers improves the Service's ability to protect wetland and grassland resources. In addition, the economic incentive of easement purchases may provide opportunities for farming and ranching operations to remain viable.

In most instances, wetland and grassland easement requirements will be compatible with the current operations on the properties. Protected wetlands may be hayed and grazed without restriction and may be farmed when dry of natural causes. The wetland easements will prohibit the draining, burning, filling, or leveling of protected wetland basins. The grassland easements will not restrict grazing, will prohibit the conversion of the grasslands, and will restrict haying until after July 15.

A recent GAO report indicated that the conversion of grassland to agricultural production in South Dakota would result in a net increase in farm revenue 4 out of 5 years with farm program subsidies (GAO 2007a). However, without farm program subsidies, the farm revenue would only increase 1 out of 5 years. Therefore, maintaining the local ranching communities will provide a much more stable income and will not increase overall farm subsidy payments.

Conservation easements secure a limited interest in private lands, and landowners will continue to pay property taxes. While there is the potential that grassland that could be converted to cropland could generate higher tax revenue than grassland, this Service's conservation easement program will have no direct effect on the existing value of the land. Although the Service acquires a limited interest in an easement property, there is no transfer of ownership. The landowner keeps all access control; except the Service may enter the property to ensure compliance with the terms of the easement.

Subsurface Resource Effects

The Service will follow policies and procedures in the Easement Manual (USFWS 2011a), which are summarized below.

Wetland Easements

Following Region 6 policy for wetland conservation easements, the Service exercises jurisdiction over all subsurface resources such as sand, gravel, clay, scoria, black soil, other soils, fill, and rock-like materials. This jurisdiction does not include the traditional minerals—gas, oil, and coal—because the rights to these resources are not included in easements. It needs to be emphasized that this jurisdiction relates only to the wetland protected under easement. If any of the subsurface, resource-extraction activities can be accomplished on upland sites without affecting protected wetlands either directly or indirectly (watershed interference), there is no easement jurisdiction and the activities may occur.

Grassland Easements

Region 6 policy for grassland easements specifies the Service's jurisdiction over limited subsurface resources such as clay, fill, black soil, or other soils; however, under the policy, the Service will not exercise jurisdiction over sand and gravel. As with wetland easements, Service jurisdiction does not include gas, oil, and coal. This policy is consistent with existing grassland easement program administrative guidance, and that has been used by realty and management staffs, as well as portrayed by easement vendors to landowners in the past.

Surface Protection

When it is stated that Region 6 will not exercise jurisdiction over certain subsurface exploration or extraction practices—as described above for sand and gravel on grassland easements—the intent is that no jurisdiction is expressed nor implied. Manag-

A variety of reptiles, including the western painted turtle, use habitat in the project area.

ers may, however, suggest reclamation procedures or work with the extraction entity or the landowner to minimize surface disturbances; but managers cannot require specific conditions of people or entities exercising their subsurface resource rights. Recommendations can be sent by letter with a map that (1) shows the location of proposed facilities and (2) identifies the natural resource features where minimized disturbance is needed to protect resources and to avoid negative effects on easement interests. In most cases, disturbance to a tame grass site is less detrimental than on a native prairie site.

The mineral estate owner has a legal obligation to take reasonable measures to protect the surface estate under laws in most States. The Service's involvement is necessary to protect and reduce the negative effects on the wetland and grassland resources. The best situation is for the Service, the mineral company, and the landowner to discuss the alternatives and choices before any agreements between two of the three parties. Region 6's role is limited to those aspects that affect Service easement interests and are reasonable. The Service gives recommendations in writing to the energy or mineral company and the landowner; if agreed to, all three parties sign the recommendations. The approved recommendations are retained and passed on to various entities within the mineral company and will protect the surface interests of the Service and future landowners in case the land or the company is sold.

There are situations related to oil and gas production on easements where the Service has the authority to permit or deny the use and where the Service's compatibility policy will apply. For example, the Service has the authority to deny the crossing of easement lands with pipelines or roads to access oil and gas production on lands not within a Service easement.

Wind Energy Development Effects

The Service will address requested uses such as wind energy development under the policy of reasonable accommodation as described in the Easement Manual (USFWS 2011a). The Service will evaluate wind energy development that could affect an easement's provisions and will authorize the use only if appropriate. The policy includes an evaluation process that could allow wind energy development to occur on an easement by exchanging that easement for another easement property, with a reversionary clause to reinstate the original easement after development activities cease. The project will increase the number of reviews of easement modifications for wind-energy-related requests.

Unavoidable Adverse Impacts

Any adverse effects that may be unavoidable while carrying out the easement program described below.

The increased protection of wetland and grassland habitats will reduce fragmentation, increase water quality, maintain current levels of carbon sequestration, and maintain the area's rich biological diversity. Management of lands for wetlands and grasslands will benefit ranching operations but may reduce the potential production of agricultural crops in the area, although most areas to be protected are not well suited for crop production.

Irreversible and Irretrievable Commitments of Resources

There will not be any irreversible or irretrievable commitments of resources associated with the establishment of the DGCA project. If funded through the LWCF, easements will require an irretrievable and

irreversible commitment of resources for the long-term administration of the easement provisions. The administration costs are shared among the 16 wetland management districts that cover the project area; the costs represent only a minor increase in overall Service costs to the existing easement-monitoring program.

Short-Term Use versus Long-Term Productivity

The increased ability to acquire perpetual wetland and grassland easements provides an immediate economic benefit to participating landowners, allowing many operations to expand or simply stay in operation—having positive economic short- and long-term effects. The conservation of remaining wetland and grassland tracts will (1) reduce long-term fragmentation of these vital habitats of many dependent species, (2) maintain current carbon sequestration capabilities, (3) keep the area's rich biological diversity, and (4) protect endangered, threatened, and rare species currently using wetland and grassland habitats. Lands added to the Refuge System through the DGCA will increase the costs associated with monitoring and management of the Refuge System; however, staff at several existing management units will share this work, which will require no additional Federal resources.

Cumulative Impacts

As defined by policy for the National Environmental Policy Act (NEPA), cumulative impacts on the environment are those that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes the other actions (40 Code of Federal Regulations [CFR] § 1508.7).

This section describes the past, present, and reasonably foreseeable actions related to the DGCA. The following discussion documents the analysis of the cumulative impacts of these actions in combination with the actions of the easement program.

Past Actions

The Service's past, land protection efforts within the PPR have included establishment of the Dakota Tallgrass Prairie Wildlife Management Area and the North Dakota Wildlife Management Area, both in 2000. Since the 1960s, the Service has actively used Federal Duck Stamp money to buy wetland and grassland easements. In total, the Service has protected in perpetuity approximately 2,420,414 acres. The Service's Partners for Fish and Wildlife Program has worked with many private landowners on site-specific conservation efforts.

The USDA's Conservation Reserve Program has approximately 3,800,000 acres enrolled in the voluntary conservation program. In addition, the USDA administers approximately 45,000 in the Wetland Reserve Program. Nongovernmental organizations such as Ducks Unlimited have purchased approximately 39,000 acres of conservation easements.

Present Actions

The Service's establishment of the DGCA conservation easement program—up to 240,000 acres of wetland and 1.7 million acres of grassland—is one of the largest known actions for land protection in the PPR of North Dakota and South Dakota. If approved, the Service will use money from the LWCF in addition to money from the Migratory Bird Stamp and NAWCA. If money can be secured, there will likely be an increase in the number of wetland and grassland easements purchased.

Reasonable Foreseeable Future Actions

Reasonably foreseeable actions are activities independent of the DGCA and are anticipated to occur regardless; however, the foreseeable actions could result in cumulative or additive effects when combined with the project actions. The primary, reasonably foreseeable actions in the PPR are the development of energy (oil, gas, and wind), agriculture, and prairie conservation efforts by a variety of organizations.

Oil and Gas Development

Northwestern North Dakota has recently seen a dramatic increase in oil and gas activity in what is commonly known as the Bakken formation. Recent advances in rock fracturing techniques have made oil production more economically viable, and there is an estimated 3.65 billion barrels of recoverable oil in the Bakken formation within North Dakota and Montana (Pollastro et al 2008). North Dakota has 174 drilling rigs operating; this number of rigs is estimated to remain stable or increase (NDOGC 2011).

Wind Energy Development

North Dakota and South Dakota have remarkable wind energy potential. More than 127,000 square miles or about 85 percent of both States are suitable for commercial wind energy production, with an estimated energy capacity of 1.65 million megawatts (NREL 2011). The DGCA has less than 2.4 percent

of North Dakota and South Dakota's wind development area (some priority wetland and grassland resources are not in commercially viable areas).

In coordination with the Western Area Power Administration, the Service is developing a programmatic environmental impact statement to analyze the environmental and socioeconomic effects of wind energy development in two administrative areas: (1) the Upper Great Plains Region of the Western Area Power Administration, which covers all or parts of Iowa, Minnesota, Montana, Nebraska, North Dakota, and South Dakota; and (2) the Service's wetland and grassland easements in North Dakota, South Dakota, and Montana. The environmental impact statement will identify typical environmental effects of wind energy development; prescribe mitigation strategies, standard construction practices, and best management practices; and establish a comprehensive environmental program for evaluating future projects. The final analysis is expected to be completed in 2 years.

Agricultural Development

North Dakota and South Dakota predominantly comprise farming and ranching operations. Commodity prices and farm program subsidies are the main factors leading to the conversion of grassland to cropland. Although farm program subsidies are reviewed on a regular basis, few changes are expected. In contrast, commodity prices are difficult to estimate and change on a daily basis but tend to be cyclic over time.

Other Conservation

Governmental agencies, primarily NRCS, and nongovernmental organizations such as The Nature Conservancy and Ducks Unlimited are expected to continue offering multiple programs to landowners. The project augments these efforts by collaborating with landowners to provide benefits to wildlife and fisheries resources along with the farming and ranching communities. If the goals of the project are achieved, it is expected the Service will continue to implement the remaining elements of the Conservation Strategy. That process will be analyzed at such time.

Development Impacts

The project is a voluntary program where individual landowners determine if wetland or grassland easements are appropriate for their operations. Although the extent of energy development is dynamic, the Service will evaluate energy development on a case-by-case basis and authorize it if appropriate; the project could influence where energy development companies select production sites. In addition, the perpetual conservation program may reduce the potential production of agricultural crops in the area, although most areas to be protected are not well suited for crop production.

Other Conservation Impacts

The accelerated acquisition of conservation easements up to 240,000 acres of wetland and 1.7 million acres of grassland will conserve a large part of the remaining wetland and grassland resources within the PPR, with an emphasis on conserving native prairie. This conservation effort will do the following:

- Reduce the loss of vegetative species diversity
- Maintain key habitat blocks for a variety of wetland- and grassland-dependent birds
- Conserve carbon sequestration capabilities
- Protect the area's water resources

Conclusion

Development of lands for either agriculture or energy development is largely determined by the private landowner. Similarly, private landowners determine if protection of lands via wetland and grassland easements is in their best interest. This voluntary program is not expected to have an adverse impact.

Chapter 4—Project Implementation

Donna Dewhurst / USFWS

Canvasback drakes rest in a prairie wetland.

After a summary of the land protection options that the Service considered during the planning process, the remainder of the chapter outlines the implementation procedures for the DGCA and provides Service staff with guidance and direction for purchasing wetland and grassland easements in the project area.

Land Protection Options

During development of alternatives for this project, the Service considered the following options:

- Voluntary landowner zoning
- County zoning
- Acquisition or management by others
- Short-term easements
- Expansion of the project
- Fee-title acquisition

The Service determined that none of the above options met the purpose, need, or objectives for the DGCA, and these options were not analyzed in the EA. A full description of the options is in the EA (appendix C, section 2).

Two alternatives were chosen for analysis in the EA: (1) no action; and (2) establishment of an easement program. The Service selected the second alternative—establishing the DGCA easement program—after finding the consequences of inaction unacceptable, as summarized below.

No Action

Habitat protection will continue at current levels under SWAP, using the authorities of the Migratory Bird Hunting and Conservation Stamp Act (Federal Duck Stamps) and the North American Wetlands Conservation Act. Without more money, half of the remaining habitat within the designated project area may be converted to other uses over the next 34 years. At current budget levels and using only SWAP, it would take the Service 150 years to protect the remaining wetland and grassland habitat in the proposed DGCA.

The use of Federal Duck Stamp dollars requires approval by the State Governor, and the Service

will continue to use this money for conservation easements in the State of South Dakota. In North Dakota, the State has established limits on the number of wetland acres in each county that can be protected with perpetual Service easements. Federal Duck Stamp dollars are not currently available in North Dakota to buy easements in several counties, because the acreage limits have been reached. Therefore, the Service has limited means to acquire more wetland and grassland easements in North Dakota.

Easement Program

Wetland and grassland easements are the most cost-effective, socially and politically acceptable means to ensure protection of critical habitats in the project area. Although habitat protection through fee title remains an option in some locations, the Service sees easements as the most viable way to conserve lands at the landscape scale necessary to protect wildlife values in the DGCA. The Service views a strong and vibrant rural lifestyle, of which ranching is the dominant land use, as one of the key components to ensuring habitat integrity and wildlife resource protection.

This project allows the purchase of critical wetland and grassland easements using primarily LWCF as a funding source. North Dakota and South Dakota has a waiting list of well over 800 landowners interested in selling wetland and grassland easements. The only thing restricting the Service from protecting the more than 300,000 acres on the waiting list is limited money. The DGCA project objective to conserve up to 240,000 acres of wetlands and 1.7 million acres of grassland will augment the efforts of other conservation agencies and groups.

Duane C. Anderson / USFWS

Canada geese find food, cover, and nesting habitat in DGCA wetlands.

Project Objectives and Actions

The Service has established the DGCA in the eastern parts of North Dakota and South Dakota, which cover all counties north and east of the Missouri River except those within the existing Dakota Tallgrass Prairie Wildlife Management Area (refer to chapter 1, figure 2). Within the project boundary, the Service will strategically identify and acquire from willing sellers the identified wetland and grassland conservation easements on privately owned lands.

The Service bases identification of areas considered for wetland and grassland easements on models developed by the Bismarck HAPET office, which identify the extent and location of grasslands and wetlands required to help meet the PPJV goals for migratory bird populations and habitat protection objectives of the SWAP.

The Service plans to buy or receive donated wetland and grassland easements on these identified areas within the project boundaries. These wetland and grassland conservation easements will connect and expand existing lands under conservation protection.

DGCA Objectives

Based on anticipated levels of landowner participation, the objectives of the DGCA project are to protect 240,000 acres of wetland and 1.7 million acres of critical grassland habitat.

Easement Terms and Requirements

Easements bought under the authority of the DGCA, as well as those acquired to date, will be administered according to policy and procedures in the Easement Manual (USFWS 2011a). Following the policy and procedures in the manual, the Service evaluates and administers all requests for uses or activities restricted by an easement (for example, agricultural, utility, commercial, or industrial uses). This review process applies not only to easements bought under the DGCA project but also to those easements the Service had acquired earlier.

All land under easement remains in private ownership. Property tax and land management, including control of noxious weeds and other invasive plants and trees, remains the responsibility of the landowner. Control of public access to the land remains under the control of the landowner.

The easement contract will specify perpetual protection of habitat for trust species by restricting the conversion of wetland and grassland to other uses. Alteration of the natural topography, conversion of native prairie to cropland, and drainage of wetland will be prohibited. Wetland easements will prohibit the draining, burning, filling, or leveling of protected wetland. Furthermore, conversion of grassland to crop production or other uses that destroy vegetation will be prohibited.

While the easement contract specifies perpetual protection, it does not eliminate all activities. Protected wetland basins may be hayed or grazed without restriction and farmed when dry from natural causes. Grassland easements do not restrict grazing in any way, and haying is be permitted after July 15 each year.

Service staff at the following wetland management districts in the DGCA area administer and monitor the easement program:

- North Dakota wetland management districts—Arrowwood, Audubon, Chase Lake, Crosby, Devils Lake, J. Clark Salyer, Kulm, Long Lake, Lostwood, Tewaukon, and Valley City
- South Dakota wetland management districts—Huron, Lake Andes, Madison, Sand Lake, and Waubay

Monitoring will include a periodical review of land status through correspondence or meetings with the landowners or land managers to make sure provisions of wetland and grassland easements are being met. The Service will use photo documentation at the time of easement establishment to document baseline conditions.

Contaminants and Hazardous Materials

Level 1 pre-acquisition site assessments will be conducted on individual tracts before purchase of any land interests. The Service's environmental contaminants specialists from the Ecological Services offices in North Dakota and South Dakota will be contacted to make sure policies and guidelines are followed before acquisition of conservation easements.

Project Costs

The per-acre cost for the wetland and grassland easements in the DGCA will vary considerably according to geographic location. Wetland and grassland easements are valued using the adjusted assessed land value (Service policy 341 FW 6). To figure out the market value of land, a multiplier is calculated to adjust the land value assessed by the local tax authority. The multiplier is determined by analyzing and comparing land sales to assessed land values in a defined market area. Once the multiplier is established, the multiplier adjusts the assessed land value of the parcel; a percentage is applied to this "adjusted assessed land value" to calculate the per-acre value of the easement. The 2010 estimated values for wetland and grassland easements are as follows:

- Grassland easements in northwestern North Dakota—$250 per acre
- Wetland easements in northwestern North Dakota—$300 per acre
- Wetland and grassland easements in southeastern South Dakota—$900 per acre

The one-time, initial cost for the purchase of wetland and grassland conservation easements is about $588 million. The entire project area is within an active SWAP area already approved to use Federal Duck Stamp money. Costs for annual compliance flights, landowner contacts, and staff time will be divided among existing resources and will have very little effect on the amount of staff and overhead already needed for other easement management. In 2009, the annual cost for administration, enforcement, operations, and maintenance of existing easements was estimated to be $0.30 per acre; additional management costs for the project are expected to be minimal because enforcement procedures are similar and will be performed in concert with other administrative efforts.

Acquisition Funding

The Service will acquire wetland and grassland easements in the DGCA principally with LWCF money, although money from several sources and authorities could be used for the acquisition and management of wetland and grassland easements (table 2).

LWCF

These funds are is derived primarily from oil and gas leases on the Outer Continental Shelf, motorboat fuel taxes, and the sale of surplus Federal property. This money is not derived from general taxes. While LWCF money is intended for land and water conservation projects, funding is subject to annual appropriations by Congress for specific acquisition projects. When evaluating and acquiring wetland and grassland easements with LWCF money, the Service will use the process in place for acquiring easements under the SWAP.

Table 2. Acquisition authorities of the Dakota Grassland Conservation Area (DGCA) and approval components.

Acquisition authority (standard program[1])	*Alternative in the EA[2]*	*State approval component*	*MBCC[3] approval component*	*Acres counted in the DGCA acquisition goal*
Migratory Bird Hunting and Conservation Stamp Act of 1934 (SWAP)	No action	Yes	No	No
North American Wetlands Conservation Act of 1968	No action	No	Yes	No
Fish and Wildlife Act of 1956 (LWCF)	Proposed action	No	No	Yes
Migratory Bird Conservation Act of 1929 (NWRS)	Proposed action	Yes	Yes	Yes
Donation (multiple authorities[4])	Proposed action	Dependent on authority requirements	Dependent on authority requirements	Dependent on authority

[1]*SWAP=Small Wetland Acquisition Program; LWCF=Land and Water Conservation Fund; NWRS=National Wildlife Refuge System.*

[2]*EA=environmental assessment.*

[3]*MBCC=Migratory Bird Conservation Commission.*

[4]*Acquisition authority for each donation will be determined at the time of acceptance, but will primarily be one of the authorities listed above.*

SWAP

The Service will continue SWAP acquisitions and use Federal Duck Stamp and NAWCA monies as appropriate and available. However, interest in easements within the project area far exceeds the money available. There is an urgent need for the DGCA due to the imminent and ongoing threats to the habitat; therefore, the Service needs a substantial increase in funding to protect the remaining wetland and grassland.

Other Sources

Money from other sources may also be used in the project area. Management activities associated with easements may be funded through sources such as The Nature Conservancy, Partners for Fish and Wildlife, and other private and public partners. Additionally, the Service will consider accepting voluntary donations of easements.

Protection Priorities

In addition to identifying the habitat necessary to maintain current population levels of nesting ducks, the HAPET computer models generated maps of breeding pair concentrations ("thunderstorm" maps). As shown in figure 2 (chapter 1), the concentration of nesting ducks is an important factor in separating the highest priority tracts of land for protection from the lowest priority tracts. The priority zone in the DGCA is habitat accessible to more than 25 duck pairs per square mile plus a 1-mile buffer of grassland; the priority zone encompasses 8.5 million acres in the DGCA. Consequently, biologists and realtors use these models daily as tools for evaluating each tract offered for purchase to decide where it ranks in priority against other available tracts.

Information from the models also helps the Service to use valuable staff time most efficiently by targeting outreach materials for landowners who own lands with the greatest resource value and giving them information about the conservation easement program.

Priority Areas

The Service and its partners recognize a tremendous opportunity exists to expand current blocks of conservation lands in the project area. This includes landownership and other rights of State and Federal agencies (fee-title ownership and easements), other conservation agencies, and nongovernmental organizations: North Dakota Game and Fish Department; South Dakota Game, Fish and Parks; Ducks Unlimited; The Nature Conservancy; and the National Audubon Society. These existing conservation lands serve as good anchors for building and expanding the easement program to increase habitat connectivity and reduce fragmentation.

Less than 7 percent of the land in the DGCA has been bought primarily for wildlife purposes. There are three categories of wildlife land protection—Federal, State, and private landownership. The following approximate acreages are for areas already under protection within the project area:

Federal Landownership (2,420,414 acres)

The Service is the primary Federal wildlife landowner.

- Waterfowl production areas and national wildlife refuges—608,000 acres
- Grassland easements—713,000 acres
- Wetland easements—1,088,000 acres
- FHA easements managed by the Service—11,414 acres

State Landownership (238,706 acres)

The South Dakota Game, Fish and Parks and the North Dakota Game and Fish Department are the primary State landowners.

- South Dakota Game, Fish and Parks—81,873 acres
- North Dakota Game and Fish Department—156,833 acres

Private Landownership (38,550 acres)

- Ducks Unlimited—9,300 acres
- National Audubon Society—2,250 acres
- Nature Conservancy—17,000 acres

Evaluation of Easement Potential

Acquisition of wetland and grassland easements within the DGCA is not a new tool for effecting conservation. The Service has more than 50 years of experience acquiring wetland easements and 20 years of experience acquiring grassland easements within the project area.

Landscape modeling efforts completed by the Service's HAPET office have generated "thunderstorm" (nesting bird concentration) maps that show areas of greatest importance to nesting ducks, shorebirds, other waterbirds, and grassland birds. Biologists and realty specialists use these tools to accurately rank and identify an individual tract's importance and value for conserving the "best of the best" habitat to affect the widest array of trust resources. The model criteria have been incorporated into the tract evaluation form, which the Service completes as part of the evaluation of each tract of land offered by a private landowner for easement acquisition. Figures 5 and 6 display the evaluation criteria for wetland and grassland conservation easements. This detailed evaluation process makes sure that easement acquisitions target the highest priority habitat available.

The Service ranks tracts offered by private landowners for easement purchase using the evaluation forms for wetland and grassland easement acquisition that are contained in the Easement Manual (USFWS 2011a). Using the criteria and priorities in these forms to separate tracts that are "the best of the best" for land conservation, the Service's acquisition biologists and realty specialists are able to choose from among the tracts offered, when the costs for protecting those tracts exceed the money available.

In general, wetland evaluation values tracts that occur in areas with potential to attract more than 25 breeding duck pairs:

- *Threat Priority*—Priority 1 is wetland embedded in cropland. Priority 2 is wetland associated with a grassland easement.
- *Wetland Size Priority*—Priority 1 is temporary, seasonal, or semipermanent wetland larger than 1 acre. Priority 2 is other wetland larger than 25 acres.
- *Threatened and Endangered Species Priority*—Yes or No.
- *Wetland-dependent Migratory Bird Priority*—Yes or No.

Grassland evaluation values the following:

- An individual tract's attractiveness to duck breeding pairs—Priority 1 has more than 60 pairs of breeding ducks. Priority 2 has 40–60 pairs of breeding ducks. Priority 3 has 25–40 pairs of breeding ducks. Priority 4 has less than 25 pairs of breeding ducks.
- A tract's importance to threatened and endangered species—Yes or No.
- A tract's designation as a grassland bird conservation area—Yes or No.

Ecosystem Management and Landscape Conservation

To carry out the project, the Service will engage the Plains and Prairie Potholes LCC (landscape conservation cooperative)—a recent developing initiative that reaches across broad landscapes and involves many partners, functioning at a scale necessary to address wildlife adaptation in response to climate change. The Plains and Prairie Potholes LCC is dedicated to the conservation of a landscape unparalleled in importance to breeding waterfowl and many species of wetland and grassland birds. In addition, the area is habitat for resident and nongame

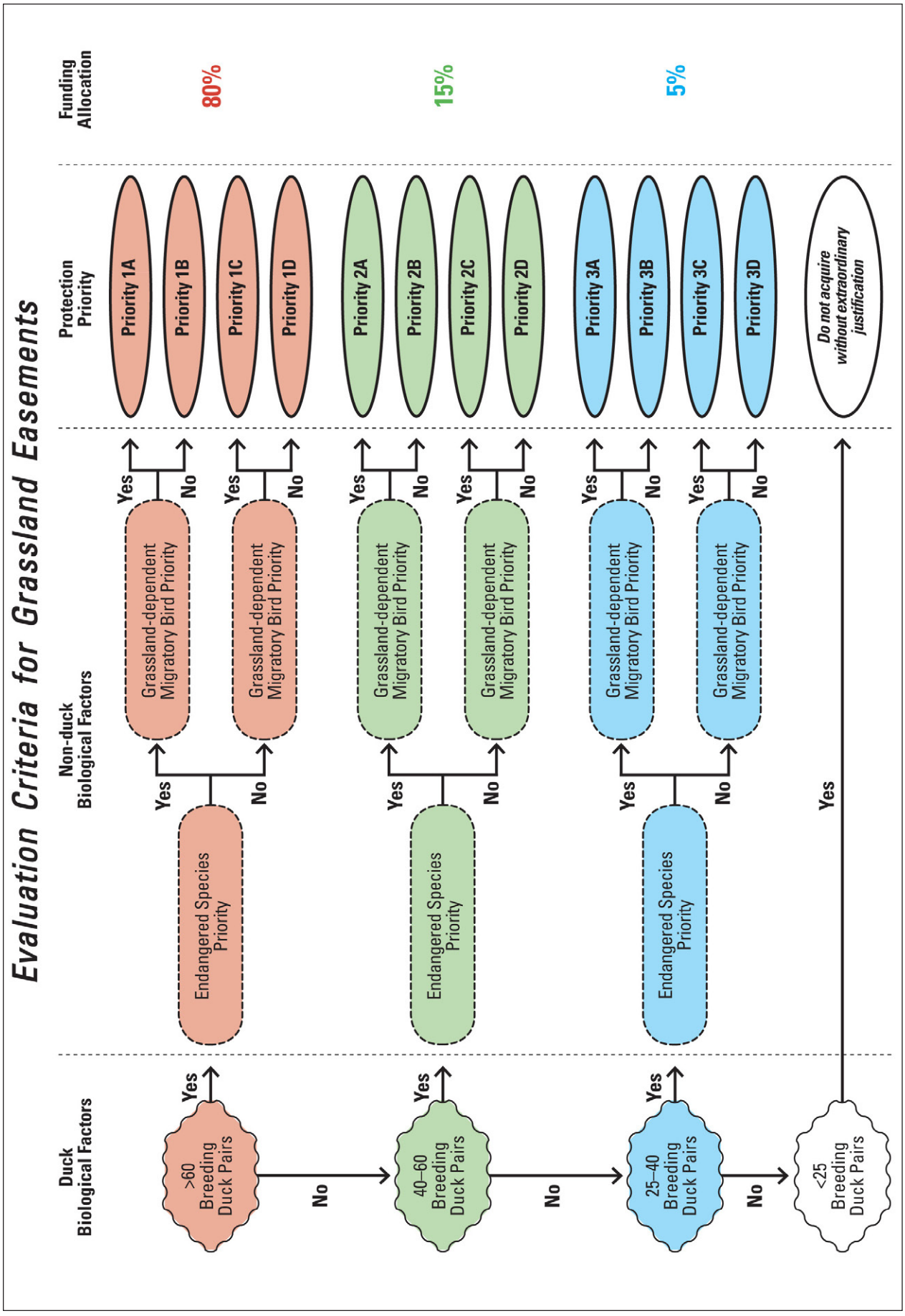


Figure 5. Chart of evaluation criteria for acquiring grassland conservation easements.

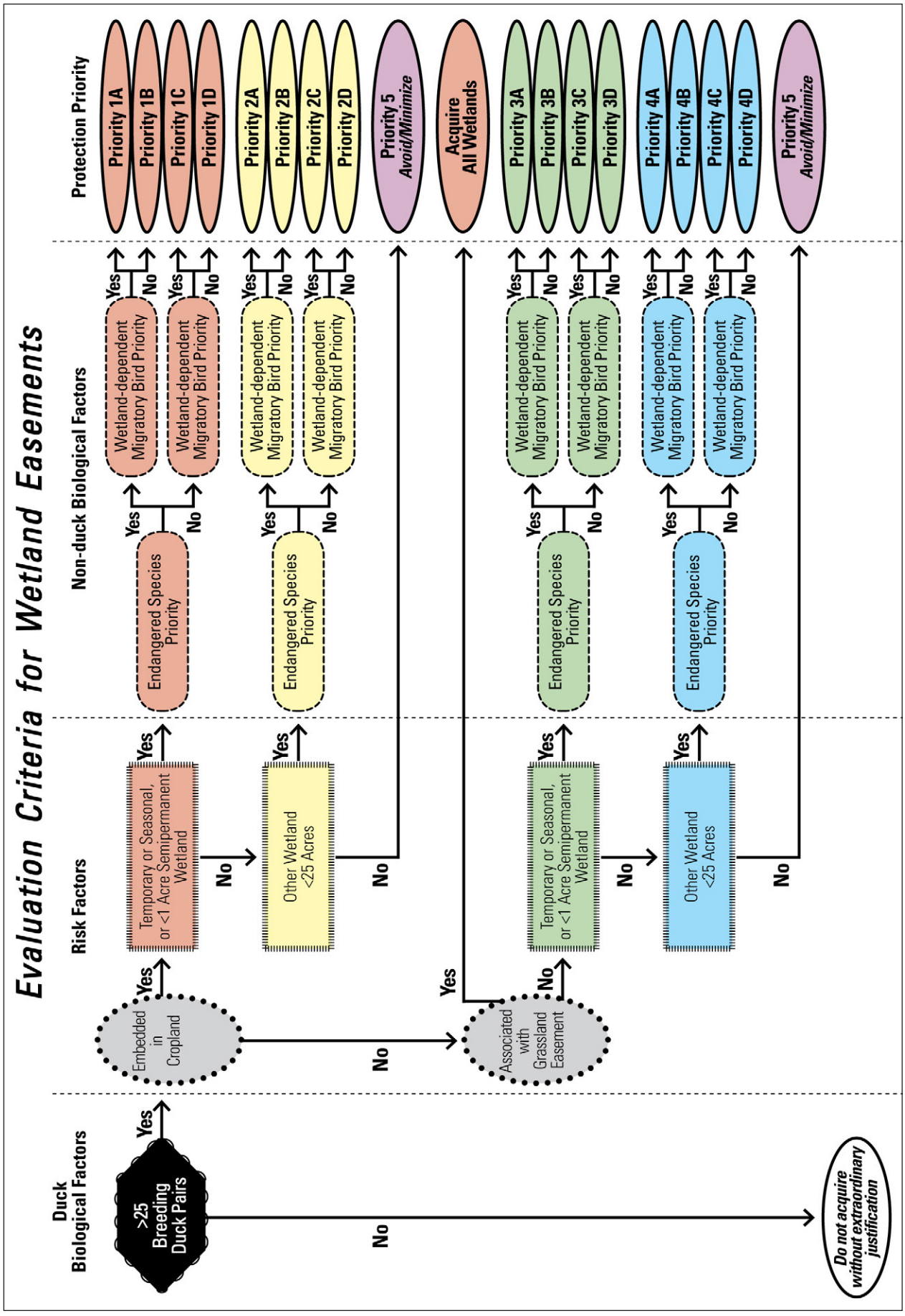


Figure 6. Chart of evaluation criteria for acquiring wetland conservation easements.

wildlife, and its waters are home to many unique aquatic species such as the Topeka shiner. Efforts by the LCC will be integral to the long-term success of landscape-scale conservation through the DGCA project.

The Service is working to involve a diverse array of partners in the LCC including the State fish and wildlife agencies as well as Native American tribes. The LCC may expand to include Canadian Federal and provincial organizations as partners. Ducks Unlimited, Pheasants Forever, The Nature Conservancy, Delta Waterfowl, and many other nongovernmental organizations are long-standing partners in this landscape, and the Service envisions these organizations taking part in the LCC. The Missouri River recovery efforts include partnerships with Federal agencies such as the U.S. Army Corps of Engineers, five States, many tribes, and many nongovernmental organizations. The Service's existing focus on wetland and grassland includes partnerships with The Nature Conservancy and the World Wildlife Fund.

The Service's capacity for science and strategic conservation planning includes the following:

- HAPET office in Bismarck, North Dakota
- U.S. Geological Survey, which runs the Northern Prairie Wildlife Research Center and the South Dakota State University Cooperative Research Unit and is planning to establish the Intermountain West Regional Climate Change Hub
- Other public and private partners with potentially important science resources

The Service will work with the LCC partners to develop the scientific tools necessary to figure out how climate change, coupled with existing stressors such as conversion of native prairie for agriculture, may affect the health and productivity of populations of Federal trust species in the landscape.

Strategic Habitat Conservation

The DGCA project is a landscape-scale effort to conserve populations of priority species in a highly diverse and endangered ecosystem over an area of approximately 29.6 million acres. Therefore, it is important to incorporate the elements of strategic habitat conservation (SHC) to ensure effective conservation. SHC entails strategic biological planning and conservation design, integrated conservation delivery, monitoring, and research at ecoregional scales (figure 7). Some elements of SHC have been addressed in migratory bird management plans in the PPR.

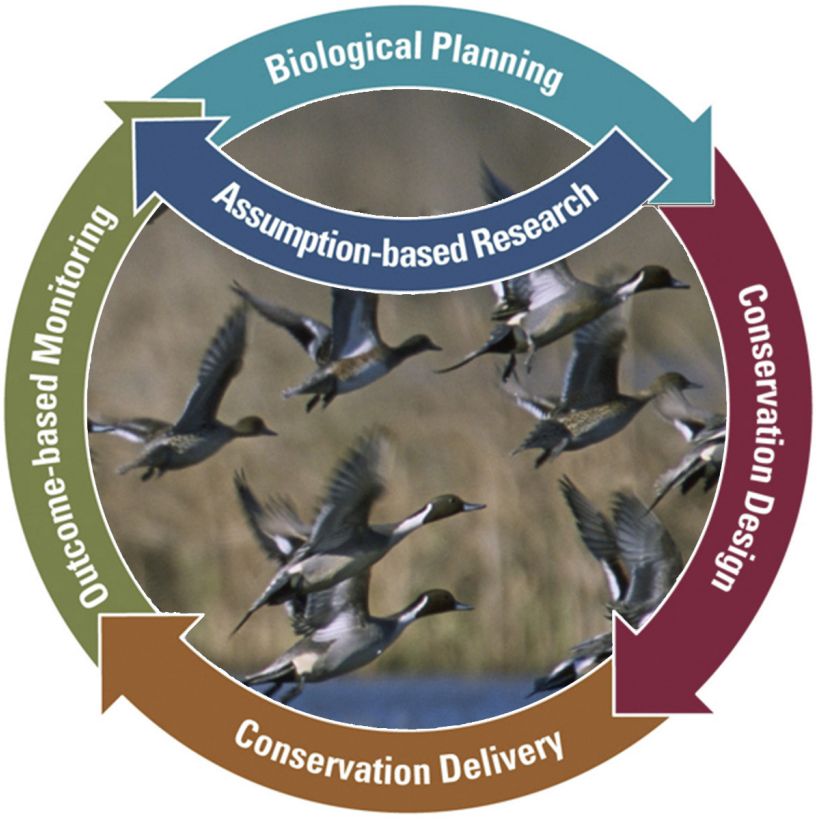


Figure 7. Graphic of the elements of strategic habitat conservation.

Strategic Biological Planning

The PPJV, Partners in Flight, and The Nature Conservancy have identified priority species for the PPR (table 1 in chapter 2): 8 species of waterfowl, 22 species of shorebirds, 10 species of other waterbirds, and 20 species of grassland birds (landbirds). Five of the priority waterfowl species are upland-nesting duck species—mallard, northern pintail, gadwall, northern shoveler, and blue-winged teal.

Habitat loss due to conversion of wetland and grassland to cropland is the primary limiting factor for all priority species in the DGCA. Loss of these habitats reduces carrying capacity and nest success (Herkert et al. 2003, Reynolds et al. 2001).

Conservation Design

Grassland accessible to the greatest number of pairs of breeding ducks is the primary determinant for acquiring grassland conservation easements. Long-term protection objectives include all grasslands accessible to more than 25 duck pairs, plus a 1-mile buffer of grassland that affects nest success. These objectives were set to rank grasslands accessible to moderate to high numbers of breeding ducks. The Service identified three grassland categories:

- Grassland accessible to more than 60 duck pairs
- Grassland accessible to 40–60 duck pairs
- Grassland accessible to 25–40 duck pairs

The Service will use the grassland flowchart (figure 6), along with the wetland flowchart (figure 7) from the Easement Manual (USFWS 2011a). The criteria in these flowcharts helps Service staff prioritize areas for protection based on spatial models for waterfowl, threatened and endangered species, grassland birds, shorebirds, and other waterbirds (USFWS 2011a).

Integrated Conservation Delivery

Wetland and grassland easements represent a means to conserve habitat. The habitat conservation strategies for grassland wildlife including migratory birds (many of which are addressed by other bird initiatives) will not differ substantially from those strategies carried out to meet the needs of waterfowl (Ringleman 2005). As understanding of the functional relationships between priority species and habitats increases, the Service will adapt the strategies to target the most influential parcels for meeting the population objectives of the priority species listed in table 1 (chapter 2).

Over time, SWAP has used different criteria to guide the acquisition process; however, habitat quality has always been the major criterion. The best waterfowl-breeding habitat in the PPR is intermixed wetland complexes and quality grassland-nesting habitat. Generally, landscapes with high numbers of wetlands attract high numbers of waterfowl breeding pairs, and landscapes with a large percentage of perennial grassland cover exhibit higher nest success. This combination of wetland and grassland is important for many other nonwaterfowl species including shorebirds, other waterbirds, and grassland birds (Beyersbergen et al. 2004, Johnson et al. 1994, Niemuth et al. 2008). These two elements—large numbers of wetlands in association with priority grassland habitat—are the cornerstones of the habitat conservation program.

This LPP provides the information necessary to carry out the conservation action of acquiring the "best of the best" habitat for priority species. The Service's Division of Realty will continue to refer to the LPP in assessing opportunities to acquire the highest priority habitat.

Monitoring and Research

Conservation efforts in the PPR focus on the protection and restoration of grassland and wetland, and there is great potential for providing benefits for multiple species. HAPET has developed standalone, single-species models to provide the ability to target different priority species, a combination of species, the treatment types, various locations, or specific funding requirements. Furthermore, this approach gives the Service a rapid response tool for specific decision support and for adaptive changes in models as new information became available.

The Service annually monitors waterfowl, breeding shorebirds, other waterbirds, grassland birds, and raptors in the project area. In addition, the Service is working with partners to develop a more comprehensive marshbird-monitoring program.

HAPET has provided valuable information through current monitoring programs that has been used to develop models of population–habitat relationships for priority waterfowl, shorebirds, grassland birds, and some raptors (Niemuth et al. 2005, Niemuth et al. 2008a, Reynolds et al. 2001, Reynolds et al. 2006). These efforts will be expanded to include other species as resources and methods are developed.

Sociocultural Considerations

The human population is generally sparse and towns are widely scattered in the project area. The farm and ranch ownerships vary widely in size, ranging from 160- to 30,000-acre blocks that help maintain an intact landscape. The ranchers' livelihoods depend on natural resources—grass, water, and open space—and the key to protecting the DGCA lies primarily in sustaining the current pattern of ranching and low-density use.

Residents and county governments have expressed concerns about the amount of taxes paid to the counties when land is acquired in fee title. Because the project is an easement program, the land remains in private ownership; therefore, taxes paid to a county by the landowner are not affected. Over the short-term, money paid by the Service for the wetland or grassland easement becomes another source of income for the landowner and, logically, a part of those dollars likely will be spent locally in the local area. Proximity to protected easement lands may enhance the property value of adjoining lands.

The easement program is not expected to cause any adverse changes to the sociocultural climate in the project area but, rather, will help sustain the current condition. Unlike many other areas in the country, the key to protecting native prairie lies primarily in sustaining the current land use of livestock ranching.

Public Involvement and Coordination

The Service has involved the public, agencies, partners, and legislators throughout the planning process for the easement program.

Scoping

At the beginning of the planning process, the Service initiated public involvement for the DGCA proposal to protect habitats primarily through acquisition of wetland and grassland conservation easements for management as part of the Refuge System. The Service spent time discussing the proposed DGCA project with landowners; conservation organizations; Federal, State and county governments; tribes and other interested groups and individuals.

The Service held three open-house meetings on December 14, 15, and 16, 2010—at Minot, North Dakota; Jamestown, North Dakota; and Huron, South Dakota; respectively. The objective of this scoping process was to gather the full range of comments, questions, and concerns that the public has about the proposed action. This information helped the Service identify issues to analyze for the proposed project. There were 93 landowners, citizens, and elected representatives that attended the meetings and most expressed positive support for the project.

Additionally, individuals and groups submitted by mail or through the project Web page 24 letters and 1,469 emails about the proposed project. The Service field staff contacted local government officials, other public agencies, sportsmen and women's groups, and conservation groups. The public scoping report is in appendix D.

Public Review of the Draft EA and LPP

The Service released the draft EA and LPP on June 20, 2011, for a 30-day public review period. The draft documents were made available to Federal elected officials and agencies, State elected officials and agencies, 32 Native American tribes with aboriginal or tribal interests, and other members of the public that were identified during the scoping process.

In addition, two public meetings were held in Bismarck, North Dakota, and in Miller, South Dakota, on June 28 and 29, 2011, respectively. Approximately 50 landowners, citizens, and elected representatives attended the meetings. The Service received 10 letters from agencies, organizations, and other entities, and 347 general public comments. After all comments were received, each was reviewed and incorporated into the administrative record. Detailed comments and the Service's responses are in appendix D.

LPP Distribution and Availability

The Service sent copies of the LPP to sent to Federal and State delegations, tribes, agencies, landowners, private groups, and other interested individuals.

Additional copies of the document are available from the following Web site and office:

- Project Web site: www.fws.gov/mountain-prairie/planning/lpp/nd/dkg/dkg.html

- U.S. Fish and Wildlife Service
  Region 6, Division of Refuge Planning
  134 Union Boulevard, Suite 300
  Lakewood, Colorado 80228
  fw6_planning@fws.gov
  303/236 8145

Glossary

AFWA—Association of Fish and Wildlife Agencies.

candidate species—A plant or animal species that has been identified as possibly warranting future protection under the Endangered Species Act.

CFR—Code of Federal Regulations.

Conservation Strategy—An adaptive approach for integrating biological priorities with current socioeconomic threats to habitat to target the acquisition of wetland and grassland easements in the Prairie Pothole Region States of Region 6. The strategy focuses on the five, primary, upland-nesting duck species, which also provide for other trust species' benefits. To meet the goal of this strategy, there is an estimated need of an additional 1.4 million acres of high-priority wetland and 10.4 million acres of high-priority grassland.

DGCA—Dakota Grassland Conservation Area.

EA—See environmental assessment.

Easement Manual—Abbreviated name for the "Administrative and Enforcement Procedures of Easements within the Prairie Pothole States" (USFWS 2011a).

endangered species—A species of plant or animal that is in danger of extinction throughout all or a significant part of its range.

Endangered Species Act—A law passed by Congress in 1973 with the purpose of protecting and recovering imperiled species and the ecosystems on which they depend.

environmental assessment (EA)—A public document for which a Federal agency is responsible. An EA provides evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact, aids an agency's compliance with NEPA (National Environmental Policy Act) when no environmental impact statement is necessary, and facilitates preparation of a statement when one is necessary.

EPA—U.S. Environmental Protction Agency.

GAO—Government Accountability Office.

grassland—A vegetative community in which grasses are the most conspicuous members. Grass species may be native or introduced.

grassland easement—A perpetual, legal agreement between a landowner and the Service (U.S. Fish and Wildlife Service) that pays the landowner to permanently keep the land in grass. Land covered by a grassland easement may not be cultivated. Mowing, haying, and grass seed harvesting must be delayed until after July 15 each year. Grazing is not restricted in any way.

grassland, tame—Grassland that was farmed at one point and has reverted to grass, such as Conservation Reserve Program (CRP) lands.

HAPET—Habitat and Population Evaluation Team.

"interseed"—Mechanical seeding of one or several plant species into existing stands of established vegetation.

IPCC—Intergovernmental Panel on Climate Change.

LCC—Landscape conservation cooperative.

LPP—Land protection plan.

LWCF—Land and Water Conservation Fund.

MBCC—Migratory Bird Conservation Commission.

MBCF—Migratory Bird Conservation Fund.

NASS—National Agricultural Statistics Service.

native prairie—a grassland community that is in its original state—it has never been plowed or cultivated.

NAWCA—North American Water Conservation Act.

NDGF—North Dakota Game and Fish Department.

NDGS—North Dakota Geological Survey.

NDOGC—North Dakota Oil and Gas Commission.

NDSHPO—North Dakota State Historic Preservation Office.

NEPA—National Environmental Policy Act.

NFHB—National Fish Habitat Board.

NRCS—Natural Resources Conservation Service.

NREL—National Renewable Energy Laboratory.

PPJV—Prairie Pothole Joint Venture.

PPR—See Prairie Pothole Region.

prairie pothole—a wetland located in the Prairie Pothole Region.

Prairie Pothole Joint Venture Implementation Plan—A plan that provides direction for integrating the conservation of all migratory birds under one framework. The process involves stepping down the objectives of the four plans for the international species groups of waterfowl, shorebirds, other waterbirds, and landbirds. Population and habitat trends, coupled with knowledge of how species respond to landscape change, will be used to build a biological foundation and set quantifiable goals.

Prairie Pothole Region—An area of the northern Great Plains that contains thousands of shallow

wetlands known as potholes. These potholes are the result of glacier activity in the Wisconsin glaciation, which ended approximately 10,000 years ago. The decaying ice sheet left behind depressions formed by the uneven deposition of till in ground moraines and melting ice blocks, which created kettle lakes. These depressions fill with water, creating the seasonal wetlands known as potholes.

priority zone—Grasslands accessible to more than 25 duck pairs per square mile, plus a 1-mile buffer of grassland, that affect nest success.

Refuge System—National Wildlife Refuge System.

Region 6—An administrative unit of the Service known as the Mountain–Prairie Region, which covers eight States: Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming.

requested use—An activity that has been requested to occur on lands with easement agreements. These activities—such as pipelines, road construction, and wind development, which could affect easement wetlands or grasslands—need to be applied to a review process before they could be authorized.

SDARC—South Dakota State Historical Society Archeological Research Center.

Service—U.S. Fish and Wildlife Service.

SHC—Strategic habitat conservation.

SWAP—Small Wetlands Acquisition Program.

threatened species—A species of plant or animal that is likely to become endangered in the foreseeable future.

trust species—Federal trust species, which include threatened and endangered species, as well as migratory birds such as waterfowl, wading birds, shorebirds, and neotropical migratory songbirds.

U.S.—United States.

USDA—U.S. Department of Agriculture.

USEPA—U.S. Environmental Protection Agency.

USFWS—U.S. Fish and Wildlife Service.

wetland easement—A perpetual, legal agreement between a landowner and the Service that pays the landowner to permanently protect wetlands. Wetlands covered by an easement cannot be drained, filled, leveled, or burned. When these wetlands dry up naturally, they can be farmed, grazed, or hayed.

Appendix A

List of Preparers and Reviewers

Preparer	*Position*	*Work Unit*
Dave Azure	Easement coordinator	USFWS, Region 6, law enforcement, Jamestown, North Dakota
Chuck Bosch	Realty specialist	USFWS, North Dakota Wetlands Acquisition Office, Bismarck, North Dakota
Clarke Dirks	Project leader	USFWS, Huron Wetland Management District, Huron, South Dakota
Jackie Jacobson	Visitor services manager	USFWS, Audubon National Wildlife Refuge, Coleharbor, North Dakota
Lloyd Jones	Project leader	USFWS, Audubon National Wildlife Refuge, Coleharbor, North Dakota
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Chuck Loesch	Wildlife biologist	USFWS, HAPET, Bismarck, North Dakota
David C. Lucas	Division chief	USFWS, Region 6, Division of Refuge Planning, Lakewood, Colorado
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Paul Van Ningen	Project leader	USFWS, Long Lake Wetland Management District, Moffit, North Dakota
Barry Williams	Archeologist	USFWS, Region 6, National Wildlife Refuge System, Bismarck, North Dakota

Reviewer	*Position*	*Work Unit*
Paul Cornes	Refuge supervisor for North Dakota and South Dakota	USFWS, Region 6, Lakewood, Colorado
Bud Oliveira	Deputy assistant regional director	USFWS, Region 6, National Wildlife Refuge System, Lakewood, Colorado
Sue Oliveira	Division chief	USFWS, Region 6, Division of Realty, Lakewood, Colorado
Noreen Walsh	Deputy regional director	USFWS, Region 6, Lakewood, Colorado

Appendix B

Species Lists

Plants

COMMON NAME	SCIENTIFIC NAME
Boxelder shrub	*Acer negundo*
Yarrow	*Achillea lanulosa*
Indian ricegrass	*Achnatherum hymenoides*
Russian knapweed	*Acroptilon repens*
Baneberry	*Actaea rubra*
Rough gerardia	*Agalinis aspera*
Slender gerardia	*Agalinis tenuifolia*
Lavender hyssop	*Agastache foeniculum*
False dandelion	*Agoseris glauca*
Agrimony	*Agrimonia striata*
Crested wheatgrass	*Agropyron desertorum*
Ticklegrass	*Agrostis hyemalis*
Autumn bent	*Agrostis perennans*
Redtop	*Agrostis stolonifera*
Nodding onion	*Allium cernuum*
Pink wild onion	*Allium stellatum*
White wild onion	*Allium textile*
Few-flowered aster	*Almutaster pauciflorus*
Shortawn foxtail	*Alopecurus aequalis*
Carolina foxtail	*Alopecurus carolinianus*
Marsh foxtail	*Alopecurus geniculatus*
Tumbleweed	*Amaranthus albus*
Tumbleweed	*Amaranthus graecizans*
Rough pigweed	*Amaranthus retroflexus*
Common ragweed	*Ambrosia artemisiifolia*
Western ragweed	*Ambrosia psilostachya*
Giant ragweed	*Ambrosia trifida*
Juneberry	*Amelanchier alnifolia*
Leadplant	*Amorpha canescens*
Dwarf wild indigo	*Amorpha nana*
Big bluestem	*Andropogon gerardi*
Western rock jasmine	*Androsace occidentalis*
Pygmy flower	*Androsace septentrionalis*
Meadow anemone	*Anemone canadensis*
Candle anemone	*Anemone cylindrica*
Anemone multi	*Anemone multifida*
Pasqueflower	*Anemone patens*
Wood anemone	*Anemone quinquefolia*
Tall anemone	*Anemone virginiana*
Dill	*Anethum graveolens*
Field pussytoes	*Antennaria neglecta*
Pussytoes	*Antennaria parvifolia*
Plainleaf pussytoes	*Antennaria plantaginifolia*
Rose pussytoes	*Antennaria rosea*
Spreading dogbane	*Apocynum androsaemifolium*
Hemp dogbane	*Apocynum cannabinum*
Prairie dogbane	*Apocynum sibiricum*
Rockcress	*Arabis divaricarpa*
Tower mustard	*Arabis glabra*
Rockcress	*Arabis hirsuta*
Rockcress	*Arabis holboellii*
Wild sarsaparilla	*Aralia nudicaulis*
Common burdock	*Arctium minus*
Bearberry	*Arctostaphylos uva-ursi*
Silverweed	*Argentina anserina*
Red threeawn	*Aristida purpurea*
Arnica	*Arnica fulgens*
Wormwood	*Artemisia absinthium*
Biennial wormwood	*Artemisia biennis*
Dwarf sagebrush	*Artemisia cana*
Western sagebrush	*Artemisia caudata*
Silky wormwood	*Artemisia dracunculus*
Silver wormwood	*Artemisia filifolia*
Fringed sagewort	*Artemisia frigida*
Longleaf wormwood	*Artemisia longifolia*
White sage	*Artemisia ludoviciana*
Green milkweed	*Asclepias hirtella*
Oval-leaf milkweed	*Asclepias ovalifolia*
Showy milkweed	*Asclepias speciosa*
Common milkweed	*Asclepias syriaca*
Whorled milkweed	*Asclepias verticillata*
Asparagus	*Asparagus officinalis*

COMMON NAME	SCIENTIFIC NAME
White aster	*Aster ericoides*
Smallflower aster	*Aster falcatus*
Smooth blue aster	*Aster laevis*
Aromatic aster	*Aster oblongifolius*
Simple aster	*Aster simplex*
Purple milkvetch	*Astragalus agrestis*
Two-grooved milkvetch	*Astragalus bisulcatus*
Canada milkvetch	*Astragalus canadensis*
Ground plum milkvetch	*Astragalus crassicarpus*
Slender milkvetch	*Astragalus flexuosus*
Tufted milkvetch	*Astragalus gilviflorus*
Vetch adsug	*Astragalus laxmannii*
Lotus milkvetch	*Astragalus lotiflorus*
Missouri milkvetch	*Astragalus missouriensis*
Narrowleaf poisonvetch	*Astragalus pectinatus*
Creamy poisonvetch	*Astragalus racemosus*
Looseflower milkvetch	*Astragalus tenellus*
Silverscale saltbush	*Atriplex argentea*
Rillscale	*Atriplex dioica*
Garden orach	*Atriplex hortensis*
Salt sage	*Atriplex nuttallii*
Spearscale	*Atriplex patula*
Redscale	*Atriplex rosea*
Russian pigweed	*Axyris amaranthoides*
Kochia	*Bassia scoparia*
American sloughgrass	*Beckmannia syzigachne*
Hoary false alyssum	*Berteroa incana*
Paper birch	*Betula papyrifera*
Nodding beggarticks	*Bidens cernua*
Beggarticks	*Bidens frondosa*
Beggarticks	*Bidens vulgata*
Violet boltonia	*Boltonia asteroides*
Sideoats grama	*Bouteloua curtipendula*
Blue grama	*Bouteloua gracilis*
False boneset	*Brickellia eupatorioides*
Fringed brome	*Bromus ciliatus*
Smooth brome	*Bromus inermis*
Japanese brome	*Bromus japonicus*
Brome lati	*Bromus latiglumis*
Nodding brome	*Bromus porteri*
Downy brome	*Bromus tectorum*
Buffalograss	*Buchloe dactyloides*
Blue joint	*Calamagrostis canadensis*
Plains reedgrass	*Calamagrostis montanensis*
Slimstem reedgrass	*Calamagrostis stricta*
Prairie sandreed	*Calamovilfa longifolia*
Yellow evening primrose	*Calylophus serrulatus*
Hedge bindweed	*Calystegia sepium*
Littlepod false flax	*Camelina microcarpa*
Gold-of-pleasure	*Camelina sativa*
Creeping bellflower	*Campanula rapunculoides*
Harebell	*Campanula rotundifolia*
Shepherd's purse	*Capsella bursa-pastoris*
Caragana	*Caragana arborescens*
Hoary cress	*Cardaria draba*
Musk thistle	*Carduus nutans*
Sedge	*Carex aenea*
Assiniboia sedge	*Carex assiniboinensis*
Wheat sedge	*Carex atherodes*
Golden sedge	*Carex aurea*
Bebb's sedge	*Carex bebbii*
Bicknell's sedge	*Carex bicknellii*
Shortbeak sedge	*Carex brevior*
Douglas' sedge	*Carex douglasii*
Needleleaf sedge	*Carex duriuscula*
Threadleaf sedge	*Carex filifolia*
Heavy sedge	*Carex gravida*
Deer sedge	*Carex hallii*
Sun sedge	*Carex inops*
Inland sedge	*Carex interior*
Smoothcone sedge	*Carex laeviconica*
Woolly sedge	*Carex lanuginosa*
Mead's sedge	*Carex meadii*
Troublesome sedge	*Carex molesta*
Peck's sedge	*Carex peckii*
Pennsylvania sedge	*Carex pensylvanica*
Clustered field sedge	*Carex praegracilis*
Knotsheath	*Carex retrorsa*
Beaked sedge	*Carex rostrata*
Rocky Mountain sedge	*Carex saximontana*
Sprengel's sedge	*Carex sprengelii*
Manyhead sedge	*Carex sychnocephala*
Rigid sedge	*Carex tetanica*
Fox sedge	*Carex vulpinoidea*
Caraway	*Carum carvi*
Downy paintbrush	*Castilleja sessiliflora*
Brookgrass	*Catabrosa aquatica*
Climbing bittersweet	*Celastrus scandens*

COMMON NAME	SCIENTIFIC NAME
Hackberry	*Celtis occidentalis*
Common pimpernel	*Centunculus minimus*
Prairie chickweed	*Cerastium arvense*
Nodding chickweed	*Cerastium brachypodum*
Powderhorn cerastium	*Cerastium nutans*
Winterfat	*Ceratoides lanata*
Hornwort	*Ceratophyllum demersum*
Little rose	*Chamaerhodos erecta*
Ridge-seeded spurge	*Chamaesyce glyptosperma*
Thyme-leaved spurge	*Chamaesyce serpyllifolia*
Lambsquarters	*Chenopodium album*
Pitseed goosefoot	*Chenopodium berlandieri*
Aridland goosefoot	*Chenopodium disiccatum*
Fremont's goosefoot	*Chenopodium fremontii*
Oakleaf goosefoot	*Chenopodium glaucum*
Narrowleaf goosefoot	*Chenopodium leptophyllum*
Akali blite	*Chenopodium rubrum*
Maple-leaved goosefoot	*Chenopodium simplex*
Chenopodium	*Chenopodium strictum*
Woodreed	*Cinna arundinacea*
Drooping woodreed	*Cinna latifolia*
Canada thistle	*Cirsium arvense*
Prairie thistle	*Cirsium canescens*
Wavyleaf thistle	*Cirsium undulatum*
Bull thistle	*Cirsium vulgare*
Rocky Mountain beeplant	*Cleome serrulata*
Collomia	*Collomia linearis*
Bastard toadflax	*Comandra umbellata*
Dayflower	*Commelina communis*
Hare's ear mustard	*Conringia orientalis*
Field bindweed	*Convolvulus arvensis*
Horseweed	*Conyza canadensis*
Redosier dogwood	*Cornus sericea*
Golden corydalis	*Corydalis aurea*
American hazelnut	*Corylus americana*
Roundleaf hawthorn	*Crataegus chrysocarpa*
Northern hawthorn	*Crataegus rotundifolia*
Fleshy hawthorn	*Crataegus succulenta*
Hawksbeard	*Crepis occidentalis*
Hawksbeard	*Crepis runcinata*
Buttecandle	*Cryptantha celosioides*
Buttonbush dodder	*Cuscuta cephalanthi*
Scaldweed	*Cuscuta gronovii*
Bigseed alfalfa dodder	*Cuscuta indecora*

COMMON NAME	SCIENTIFIC NAME
Wild parsley	*Cymopterus acaulis*
Brook flatsedge	*Cyperus bipartitus*
Redroot cyperus	*Cyperus erythrorhizos*
Slender flatsedge	*Cyperus odoratus*
Bearded flatsedge	*Cyperus squarrosus*
Common bladder fern	*Cystopteris fragilis*
Longbract frog orchid	*Dactylorhiza viridis*
Western prairie clover	*Dalea candida*
Purple prairie clover	*Dalea purpurea*
Poverty oatgrass	*Danthonia spicata*
Little larkspur	*Delphinium bicolor*
Tufted hairgrass	*Deschampsia caespitosa*
Tansy mustard	*Descurainia pinnata*
Flixweed	*Descurainia sophia*
Canada tickclover	*Desmodium canadense*
Leiberg's panicum	*Dichanthelium leibergii*
Wilcox's panicum	*Dichanthelium wilcoxianum*
Saltgrass	*Distichlis stricta*
Shooting star	*Dodecatheon pulchellum*
Woodland draba	*Draba nemorosa*
Dragonhead	*Dracocephalum parviflorum*
Purple coneflower	*Echinacea angustifolia*
Blacksamson echinacea	*Echinacea angustifolia*
Barnyard grass	*Echinochloa crusgalli*
Wild cucumber	*Echinocystis lobata*
Russian olive	*Elaeagnus angustifolia*
Silverberry	*Elaeagnus commutata*
Needle spikesedge	*Eleocharis acicularis*
Flatstem spikesedge	*Eleocharis compressa*
Spikerush	*Eleocharis erythropoda*
Spikerush	*Eleocharis macrostachya*
Blunt spikesedge	*Eleocharis obtusa*
Common spikerush	*Eleocharis palustris*
Waterpod	*Ellisia nyctelea*
Canada wildrye	*Elymus canadensis*
Thickspike wheatgrass	*Elymus lanceolatus*
Quackgrass	*Elymus repens*
Slender wheatgrass	*Elymus trachycaulus*
Virginia wildrye	*Elymus virginicus*
Fireweed	*Epilobium angustifolium*
Tall annual willowherb	*Epilobium brachycarpum*
Willowherb	*Epilobium ciliatum*
Bog willowherb	*Epilobium leptophyllum*
Field horsetail	*Equisetum arvense*

COMMON NAME	SCIENTIFIC NAME
Water horsetail	*Equisetum fluviatile*
Smooth horsetail	*Equisetum laevigatum*
Teal lovegrass	*Eragrostis hypnoides*
Rubber rabbitbrush	*Ericameria nauseosa*
Tufted fleabane	*Erigeron caespitosus*
Fernleaf fleabane	*Erigeron compositus*
Smooth fleabane	*Erigeron glabellus*
Spearleaf fleabane	*Erigeron lonchophyllus*
Philadelphia fleabane	*Erigeron philadelphicus*
Low fleabane	*Erigeron pumilus*
Daisy fleabane	*Erigeron strigosus*
Yellow buckwheat	*Eriogonum flavum*
Erigonum	*Eriogonum pauciflorum*
Cottongrass	*Eriophorum viridicarinatum*
Dog mustard	*Erucastrum gallicum*
Western wallflower	*Erysimum asperum*
Wormseed wallflower	*Erysimum cheiranthoides*
Smallflower wallflower	*Erysimum inconspicum*
Pincushion cactus	*Escobaria vivipara*
Spotted joepyeweed	*Eupatorium maculatum*
Leafy spurge	*Euphorbia esula*
Narrowleaf goldenrod	*Euthamia graminifolia*
Rough fescue	*Festuca campestris*
Bluebunch fescue	*Festuca idahoensis*
Sheep's fescue	*Festuca ovina*
Wild strawberry	*Fragaria virginiana*
Green ash	*Fraxinus pennsylvanica*
Spotted fritillary	*Fritillaria atropurpurea*
Blanketflower	*Gaillardia aristata*
Catchweed bedstraw	*Galium aparine*
Northern bedstraw	*Galium boreale*
Small bedstraw	*Galium trifidum*
Sweet-scented bedstraw	*Galium triflorum*
Scarlet gaura	*Gaura coccinea*
Northern gentian	*Gentiana affinis*
Annual gentian	*Gentianella amarella*
Gentian	*Gentianopsis crinita*
Yellow avens	*Geum aleppicum*
Purple avens	*Geum triflorum*
Sea milkwort	*Glaux maritima*
Northern mannagrass	*Glyceria borealis*
Tall mannagrass	*Glyceria grandis*
Fowl mannagrass	*Glyceria striata*
Wild licorice	*Glycyrrhiza lepidota*

COMMON NAME	SCIENTIFIC NAME
Everlasting	*Gnaphalium palustre*
Hedge hyssop	*Gratiola neglecta*
Curlycup gumweed	*Grindelia squarrosa*
Broom snakeweed	*Gutierrezia sarathrae*
Perennial baby's breath	*Gypsophila paniculata*
Wood stickseed	*Hackelia deflexa*
Stickseed	*Hackelia floribunda*
Lanceleaf goldenweed	*Haplopappus lanceolatus*
Spring ironplant	*Haplopappus spinulosus*
Rough pennyroyal	*Hedeoma hispida*
Sweet vetch	*Hedysarum boreale*
Sneezeweed	*Helenium autumnale*
Common sunflower	*Helianthus annuus*
Maximilian sunflower	*Helianthus maximiliani*
Nuttall's sunflower	*Helianthus nuttallii*
Plains sunflower	*Helianthus petiolaris*
Stiff sunflower	*Helianthus rigidus*
Jerusalem artichoke	*Helianthus tuberosus*
Spikeoat	*Helictotrichon hookeri*
Seaside heliotrope	*Heliotropium curassavicum*
Cowparsnip	*Heracleum sphondylium*
Dames rocket	*Hesperis matronalis*
Intermediate needle and thread	*Hesperostipa comata*
Shortbristle needle and thread	*Hesperostipa spartea*
Golden aster	*Heterotheca villosa*
Alum root	*Heuchera richardsonii*
Flower of an hour	*Hibiscus trionum*
Hawkweed	*Hieracium umbellatum*
Sweetgrass	*Hierochloe odorata*
Mare's-tail	*Hippuris vulgaris*
Foxtail barley	*Hordeum jubatum*
Barley	*Hordeum vulgare*
Common hop	*Humulus lupulus*
Fineleaf hymenopappus	*Hymenopappus filifolius*
Slimleaf hymenopappus	*Hymenopappus tenuifolius*
Henbane	*Hyoscyamus niger*
Yellow stargrass	*Hypoxis hirsuta*
Povertyweed	*Iva axillaris*
Marsh elder	*Iva xanthifolia*
Alpine rush	*Juncus alpinoarticulatus*
Baltic rush	*Juncus arcticus*
Toad rush	*Juncus bufonius*

COMMON NAME	SCIENTIFIC NAME
Dudley's rush	*Juncus dudleyi*
Inland rush	*Juncus interior*
Longstyle rush	*Juncus longistylis*
Knotted rush	*Juncus nodosus*
Torrey's rush	*Juncus torreyi*
Dwarf juniper	*Juniperus communis*
Creeping juniper	*Juniperus horizontalis*
Rocky Mountain red cedar	*Juniperus scopulorum*
Junegrass	*Koeleria macrantha*
Western wild lettuce	*Lactuca ludoviciana*
Prickly lettuce	*Lactuca serriola*
Blue lettuce	*Lactuca tatarica*
Low stickseed	*Lappula occidentalis*
Blue stickseed	*Lappula squarrosa*
Yellow vetchling	*Lathyrus ochroleucus*
Marsh vetchling	*Lathyrus palustris*
Duckweed	*Lemna* spp.
Common motherwort	*Leonurus cardiaca*
Peppergrass	*Lepidium densiflorum*
Bushy peppergrass	*Lepidium ramosissimum*
Bearded sprangletop	*Leptochloa fusca*
Alpine bladderpod	*Lesquerella alpina*
Silver bladderpod	*Lesquerella ludoviciana*
Rocky Mountain blazing star	*Liatris ligulistylis*
Dotted blazing star	*Liatris punctata*
Wood lily	*Lilium philadelphicum*
Mudwort	*Limosella aquatica*
Butter and eggs	*Linaria vulgaris*
Blue flax	*Linum perenne*
Stiffstem flax	*Linum rigidum*
Grooved flax	*Linum sulcatum*
Common flax	*Linum usitatissimum*
Drummond's halfchaff sedge	*Lipocarpha drummondii*
Hoary puccoon	*Lithospermum canescens*
Narrowleaf stoneseed	*Lithospermum incisum*
Kalm's lobelia	*Lobelia kalmii*
Palespike lobelia	*Lobelia spicata*
Perennial ryegrass	*Lolium perenne*
Persian ryegrass	*Lolium persicum*
Desert biscuitroot	*Lomatium foeniculaceum*
Bigseed biscuitroot	*Lomatium macrocarpum*
Northern Idaho biscuit-root	*Lomatium orientale*

COMMON NAME	SCIENTIFIC NAME
Wild honeysuckle	*Lonicera dioica*
Tatarian honeysuckle	*Lonicera tatarica*
Prairie bird's-foot trefoil	*Lotus unifoliolatus*
Matrimony vine	*Lycium barbarum*
Clubmoss	*Lycopodium* spp.
Lichens	*Lycopodium* spp.
American bugleweed	*Lycopus americanus*
Rough bugleweed	*Lycopus asper*
Rush skeletonplant	*Lygodesmia juncea*
Fringed loosestrife	*Lysimachia ciliata*
Loosestrife	*Lysimachia hybrida*
Tufted loosestrife	*Lysimachia thrysiflora*
Purple Loosestrife	*Lythrum salicaria*
Canescent aster	*Machaeranthera canascens*
Goldenweed	*Machaeranthera grindeliode*
Starry false lily of the valley	*Maianthemum stellatum*
Common mallow	*Malva neglecta*
Pepperwort	*Marsilea vestita*
Mayweed	*Matricaria discoides*
Wild chamomile	*Matricaria maritima*
Black medick	*Medicago lupulina*
Alfalfa	*Medicago sativa*
White sweetclover	*Melilotus alba*
White sweetclover	*Melilotus albus*
Yellow sweetclover	*Melilotus officinalis*
Field mint	*Mentha arvensis*
Tenpetal blazingstar	*Mentzelia decapetala*
Prairie bluebells	*Mertensia lanceolata*
Oblongleaf bluebells	*Mertensia oblongifolia*
Hairy four o'clock	*Mirabilis hirsuta*
Narrowleaf four o'clock	*Mirabilis linearis*
Heartleaf four o'clock	*Mirabilis nyctaginea*
Wild bergamot	*Monarda fistulosa*
Povertyweed	*Monolepis nuttalliana*
Scratchgrass	*Muhlenbergia asperfolia*
Plains muhly	*Muhlenbergia cuspidata*
Marsh muhly	*Muhlenbergia racemosa*
Mat muhly	*Muhlenbergia richardsonis*
Leafy musineon	*Musineon divaricatum*
Mousetail	*Myosurus minimus*
Eurasian watermilfoil	*Myriophyllum spicatum*
Green needlegrass	*Nassella viridula*
Woolly gilia	*Navarretia intertexta*

COMMON NAME	SCIENTIFIC NAME
Catnip	*Nepeta cataria*
False dandelion	*Nothocalais cuspidata*
Gumbo lily	*Oenothera caespitosa*
Yellow lavauxia	*Oenothera flava*
Nuttall's evening-primrose	*Oenothera nuttallii*
Common evening-primrose	*Oenothera villosa*
Sneezewort aster	*Oligoneuron album*
Stiff goldenrod	*Oligoneuron rigidum*
False gromwell	*Onosmodium molle*
Brittle pricklypear	*Opuntia fragilis*
Plains pricklypear	*Opuntia polyacantha*
Clustered broomrape	*Orobanche fasciculata*
Broomrape	*Orobanche ludoviciana*
Yellow owl's-clover	*Orthocarpus luteus*
Longstyle sweetroot	*Osmorhiza longistylis*
Common yellow oxalis	*Oxalis stricta*
Late yellow locoweed	*Oxytropis campestris*
Purple locoweed	*Oxytropis lambertii*
Showy locoweed	*Oxytropis splendens*
Gray ragwort	*Packera cana*
Witchgrass	*Panicum capillare*
Witchgrass	*Panicum virgatum*
Pennsylvania pellitory	*Parietaria pensylvanica*
Northern grass of Parnassus	*Parnassia palustris*
Whitlowwort	*Paronychia sessiliflora*
Western wheatgrass	*Pascopyrum smithiii*
Wild parsnip	*Pastinaca sativa*
Silver-leaf scurfpea	*Pediomelum argophyllum*
Breadroot	*Pediomelum esculentum*
White beardtongue	*Penstemon albidus*
Narrow beardtongue	*Penstemon angustifolius*
Crested beardtongue	*Penstemon eriantherus*
Slender beardtongue	*Penstemon gracilis*
Smooth blue beardtongue	*Penstemon nitidus*
Reed canarygrass	*Phalaris arundinacea*
Timothy	*Phleum pratense*
Hood's phlox	*Phlox hoodii*
Common reed	*Phragmites australis*
Clammy groundcherry	*Physalis heterophylla*
Virginia groundcherry	*Physalis virginiana*
Obedient plant	*Physostegia parviflora*

COMMON NAME	SCIENTIFIC NAME
Littleseed ricegrass	*Piptatherum micranthum*
Scouler's popcornflower	*Plagiobothrys scouleri*
Prairie plantain	*Plantago elongata*
Alkali plantain	*Plantago eriopoda*
Common plantain	*Plantago major*
Buckhorn	*Plantago patagonica*
Northern green orchid	*Plantanthera aquilonis*
Western prairie fringed-orchid (threatened)	*Plantanthera praeclara*
Plains bluegrass	*Poa arida*
Canada bluegrass	*Poa compressa*
Early bluegrass	*Poa cusickii*
Inland bluegrass	*Poa nemoralis*
Foul bluegrass	*Poa palustris*
Kentucky bluegrass	*Poa pratensis*
Canby's bluegrass	*Poa secunda*
Clammyweed	*Polanisia dodecandra*
White milkwort	*Polygala alba*
Seneca snakeroot	*Polygala senega*
Whorled milkwort	*Polygala verticillata*
Smooth Solomon's seal	*Polygonatum biflorum*
Erect knotweed	*Polygonum achoreum*
Swamp smartweed	*Polygonum amphibium*
Common knotweed	*Polygonum arenastrum*
Wild buckwheat	*Polygonum convolvulus*
Pale smartweed	*Polygonum lapathifolium*
Pennsylvania smartweed	*Polygonum pensylvanicum*
Lady's-thumb	*Polygonum persicaria*
Bushy knotweed	*Polygonum ramosissimum*
Balsam poplar	*Populus balsamifera*
Cottonwood	*Populus deltoides*
Quaking aspen	*Populus tremuloides*
Common purslane	*Portulaca oleracea*
Curlyleaf pondweed	*Potamogeton crispus*
Tall cinquefoil	*Potentilla arguta*
Early cinquefoil	*Potentilla concinna*
Graceful cinquefoil	*Potentilla gracilis*
Woolly cinquefoil	*Potentilla hippiana*
Norwegian cinquefoil	*Potentilla norvegica*
Bushy cinquefoil	*Potentilla paradoxa*
Prairie cinquefoil	*Potentilla pensylvanica*
Brook cinquefoil	*Potentilla rivalis*
Prairie rattlesnakeroot	*Prenanthes racemosa*
Fairybells	*Prosartes trachycarpa*

COMMON NAME	SCIENTIFIC NAME
Selfheal	*Prunella vulgaris*
American plum	*Prunus americana*
Pin cherry	*Prunus pensylvanica*
Sandcherry	*Prunus pumila*
Chokecherry	*Prunus virginiana*
Bluebunch wheatgrass	*Pseudoroegneria spicatum*
Silverleaf scurfpea	*Psoralea argophylla*
Breadroot scurfpea	*Psoralea esculenta*
Lemon scurfpea	*Psoralidium lanceolatum*
Alkaligrass	*Puccinellia nuttalliana*
Bur oak	*Quercus macrocarpa*
Early wood buttercup	*Ranunculus abortivis*
Shiny-leaved buttercup	*Ranunculus glaberrimus*
Macoun's buttercup	*Ranunculus macounii*
Labrador buttercup	*Ranunculus rhomboideus*
Prairie coneflower	*Ratibida columnifera*
Common buckthorn	*Rhamnus cathartica*
Aromatic sumac	*Rhus aromatica*
Wild black currant	*Ribes americanum*
Buffalo currant	*Ribes aureum*
Low wild gooseberry	*Ribes hirtellum*
Bristly gooseberry	*Ribes oxyacanthoides*
Bog yellow cress	*Rorippa palustris*
Prairie rose	*Rosa arkansana*
Smooth rose	*Rosa blanda*
Prairie wild rose	*Rosa setigera*
Woods' rose	*Rosa woodsii*
Red raspberry	*Rubus idaeus*
Black-eyed susan	*Rudbeckia hirta*
Western dock	*Rumex aquaticus*
Curly dock	*Rumex crispus*
Field dock	*Rumex longifolius*
Golden dock	*Rumex maritimus*
Mexican dock	*Rumex salicifolius*
Narrowleaf dock	*Rumex stenophyllus*
Ditchgrass	*Ruppia maritima*
Saltwort	*Salicornia rubra*
Peachleaf willow	*Salix amygdaloides*
Bebb willow	*Salix bebbiana*
Sageleaf willow	*Salix candida*
Pussy willow	*Salix discolor*
Diamond willow	*Salix eriocephala*
Narrowleaf willow	*Salix exigua*
Shining willow	*Salix lucida*
Laurel willow	*Salix pentandra*
Meadow willow	*Salix petiolaris*
Russian thistle	*Salsola tragus*
Black snakeroot	*Sanicula marilandica*
Bouncing bet	*Saponaria officinalis*
Tumblegrass	*Schedonnardus paniculatus*
False melic	*Schizachne purpurascens*
Little bluestem	*Schizachyrium scoparium*
Three-square bulrush	*Schoenoplectus americanus*
Tule bulrush	*Schoenoplectus lacustris*
Cosmopolitan bulrush	*Schoenoplectus maritimus*
Softstem bulrush	*Schoenoplectus tabernaemontani*
Sprangletop	*Scolochloa festucacea*
Figwort	*Scrophularia lanceolata*
Blue skullcap	*Scutellaria lateriflora*
Small clubmoss	*Selaginella densa*
Swamp ragwort	*Senecio congestus*
Lambstongue ragwort	*Senecio integerrimus*
Prairie ragwort	*Senecio plattensis*
Yellow foxtail	*Setaria glauca*
Green foxtail	*Setaria viridus*
Buffaloberry	*Shepherdia argentea*
Little bluestem	*Shizachyrium scoparius*
Sleepy catchfly	*Silene antirrhina*
Smooth catchfly	*Silene cserei*
Drummond's cockle	*Silene drummondii*
White cockle	*Silene latifolia*
Bladder campion	*Silene vulgaris*
Charlock	*Sinapis arvensis*
Tumbling mustard	*Sisymbrium altissimum*
Narrowleaf blue-eyed grass	*Sisyrinchium angustfolium*
Smooth carrionflower	*Smilax herbacea*
Bittersweet	*Solanum dulcamara*
Cutleaf nightshade	*Solanum triflorum*
Canada goldenrod	*Solidago canadensis*
Late goldenrod	*Solidago gigantea*
Prairie goldenrod	*Solidago missouriensis*
Soft goldenrod	*Solidago mollis*
Gray goldenrod	*Solidago nemoralis*
Showy goldenrod	*Solidago speciosa*
Field sowthistle	*Sonchus arvensis*
Spiny sowthistle	*Sonchus asper*

COMMON NAME	SCIENTIFIC NAME
Common sowthistle	*Sonchus oleraceus*
Indiangrass	*Sorghastrum nutans*
Burreed	*Sparganium* spp.
Alkali cordgrass	*Spartina gracilis*
Prairie cordgrass	*Spartina pectinata*
Scarlet globemallow	*Sphaeralcea coccinea*
Prairie wedgegrass	*Sphenopholis obtusata*
Meadowsweet	*Spiraea alba*
Nodding lady's tresses	*Spiranthes cernua*
Hooded lady's tresses	*Spiranthes romanzoffiana*
Rough dropseed	*Sporobolus compositus*
Sand dropseed	*Sporobolus cryptandrus*
Prairie dropseed	*Sporobolus heterolepis*
Hedge nettle	*Stachys palustris*
Longleaf starwort	*Stellaria longifolia*
Longstalk starwort	*Stellaria longipes*
Fleshy stitchwort	*Stellaria scarassifolia*
Needle and thread	*Stipa comata*
Porcupine grass	*Stipa spartea*
Sago pondweed	*Stuckenia pectinata*
Sea blite	*Suaeda calceoliformis*
Snowberry	*Symphoricarpos albus*
Western snowberry	*Symphoricarpos occidentalis*
Rush aster	*Symphyotrichum boreale*
Rayless aster	*Symphyotrichum ciliatum*
White aster	*Symphyotrichum ericoides*
Smallflower aster	*Symphyotrichum falcatum*
Smooth blue aster	*Symphyotrichum laeve*
Panicled aster	*Symphyotrichum lanceolatum*
Aromatic aster	*Symphyotrichum oblongifolium*
Salt cedar	*Tamarix ramosissima*
Common tansy	*Tanacetum vulgare*
Rock dandelion	*Taraxacum laevigatum*
Dandelion	*Taraxacum officinale*
American germander	*Teucrium canadense*
Purple meadowrue	*Thalictrum dasycarpum*
Early meadowrue	*Thalictrum venulosum*
Golden pea	*Thermopsis rhombifolia*

COMMON NAME	SCIENTIFIC NAME
Intermediate wheatgrass	*Thinopyrum intermedium*
Tall wheatgrass	*Thinopyrum ponticum*
Penny cress	*Thlaspi arvense*
Stemless Townsend daisy	*Townsendia exscapa*
Poison ivy	*Toxicodendron radicans*
Spiderwort	*Tradescantia bracteata*
Goatsbeard	*Tragopogon dubius*
Alsike clover	*Trifolium hybridum*
Red clover	*Trifolium pratense*
White clover	*Trifolium repens*
Seaside arrowgrass	*Triglochin maritima*
Durum wheat	*Triticum durum*
Cattails	*Typha* spp.
American elm	*Ulmus americana*
Siberian elm	*Ulmus pumila*
Stinging nettle	*Urtica dioica*
Common bladderwort	*Utricularia vulgaris*
Cowherb	*Vaccaria hispanica*
Bracted vervain	*Verbena bracteata*
Blue vervain	*Verbena hastata*
Hoary vervain	*Verbena stricta*
White vervain	*Verbena urticifolia*
Water speedwell	*Veronica anagallis-aquatic*
Ironweed	*Veronica fasciculata*
Purslane speedwell	*Veronica peregrina*
Marsh speedwell	*Veronica scutellata*
Nannyberry	*Viburnum lentago*
American vetch	*Vicia americana*
Hairy vetch	*Vicia villosa*
Small blue violet	*Viola adunca*
Canada violet	*Viola canadensis*
Meadow violet	*Viola nephrophylla*
Nuttall's violet	*Viola nuttallii*
Prairie violet	*Viola pedatifida*
Wild grape	*Vitis vulpina*
Sixweeks fescue	*Vulpia octoflora*
Cocklebur	*Xanthium strumarium*
Corn	*Zea mays*
White camas	*Zigadenus elegans*
Death camas	*Zigadenus venenosus*
Meadow parsnip	*Zizia aptera*

Insects

COMMON NAME	SCIENTIFIC NAME
HESPERIIDAE (PYRGINAE)	
Silver-spotted skipper	*Epargyreus clarus*
Common checkered skipper	*Pyrgus communis*
Common sooty wing	*Pholisora catullus*
HESPERIIDAE (HESPERIINAE)	
Roadside skipper	*Amblyscirtes vialis*
Delaware skipper	*Anatrytone logan*
Least skipper	*Ancyloxypha numitor*
Arogos skipper	*Atrytone arogos*
Dusted skipper	*Atrytonopsis hianna*
Dunn skipper	*Euphyes vestris*
Common branded skipper	*Hesperia comma*
Dakota skipper	*Hesperia dacotae*
Pawnee skipper	*Hesperia leonardus pawnee*
Ottoe skipper	*Hesperia ottoe*
Uncas skipper	*Hesperia uncas*
Garita skipperling	*Oarisma garita*
Hobomok skipper	*Poanes hobomok*
Long dash	*Polites mystic*
Peck's skipper	*Polites peckius*
Tawny-edge skipper	*Polites themistocles*
PAPILIONIDAE	
Black swallowtail	*Papilio polyxenes*
Canadian tiger swallowtail	*Papilio (Pterourus) canadensis*
Eastern tiger swallowtail	*Papilio (Pterourus) glaucus*
PIERIDAE	
European cabbage butterfly	*Artogeia rapae*
Alfalfa butterfly	*Colias eurytheme*
Clouded sulphur	*Colias philodice*
Olympia marble	*Euchloe olympia*
Checkered white	*Pontia protodice*
LYCAENIDAE (LYCAENINAE)	
Great copper	*Lycaena (Gaeides) xanthoides*
Bronze copper	*Lycaena (Hyllolycaena) hyllus*
Purplish copper	*Lycaena (Epidemia) helloides*
LYCAENIDAE (THECLINAE)	
Coral hairstreak	*Satyrium (Harkenclenus) titus*
Acadian hairstreak	*Satyrium acadicum*
Striped hairstreak	*Satyrium liparops*
Gray hairstreak	*Strymon melinus*

COMMON NAME	SCIENTIFIC NAME
LYCAENIDAE (POLYOMMATINAE)	
Spring azure	*Celastrina ladon*
Summer azure	*Celastrina neglecta*
Eastern tailed blue	*Everes comyntas*
Silvery blue	*Glaucopsyche lygdamus*
Melissa blue	*Lycaeides melissa*
NYMPHALIDAE (HELICONIINAE)	
Meadow fritillary	*Clossiana bellona*
Silver-bordered fritillary	*Clossiana selene*
Variegated fritillary	*Euptoieta claudia*
Aphrodite fritillary	*Speyeria aphrodite*
Callippe fritillary	*Speyeria callippe*
Great spangled fritillary	*Speyeria cybele*
Regal fritillary	*Speyeria idalia*
NYMPHALIDAE (NYMPHALINAE)	
Milbert's tortoise shell	*Aglais milberti*
Gorgone checkerspot	*Charidryas gorgone*
Silvery checkerspot	*Charidryas nycteis*
Mourning cloak	*Nymphalis antiopa*
Northern pearl crescent	*Phyciodes cocyta*
Pearl crescent	*Phyciodes tharos*
Hop merchant	*Polygonia comma*
Question mark	*Polygonia interrogationis*
Gray comma	*Polygonia progne*
Red admiral	*Vanessa atalanta*
Painted lady	*Vanessa cardui*
American painted lady	*Vanessa virginiensis*
NYMPHALIDAE (LIMENITIDINAE)	
White admiral	*Basilarchia a. arthemis*
Red-spotted purple	*Basilarchia a. astyanax*
Viceroy	*Basilarchia archippus*
NYMPHALIDAE (APATURINAE)	
Hackberry butterfly	*Asterocampa celtis*
NYMPHALIDAE (SATYRINAE)	
Common wood nymph	*Cercyonis pegala*
Inornate ringlet	*Coenonympha inornata*
Northern pearly eye	*Enodia anthedon*
Little wood satyr	*Megisto cymela*
Varuna Arctic	*Oeneis uhleri varuna*
Eyed brown	*Satyrodes eurydice*
DANAIDAE	
Monarch	*Danaus plexippus*

Amphibians

COMMON NAME	SCIENTIFIC NAME
Plains spadefoot toad	*Scaphiopus bombifrons*
Woodhouse's toad	*Bufo woodhousei woodhousei*
Great Plains toad	*Bufo cognatus*
American toad	*Bufo americanus*
Canadian toad	*Bufo hemiophrys*
Gray tree frog	*Hyla versicolor*
Northern leopard frog	*Rana pipiens*
Wood frog	*Rana sylvatica*
Boreal chorus frog	*Pseudacris triseriata maculata*
Tiger salamander	*Ambystoma tigrinum*
Mudpuppy	*Necturus maculosus*

Reptiles

COMMON NAME	SCIENTIFIC NAME
Northern prairie skink	*Eumeces septentrionalis*
Western painted turtle	*Chrysemys picata bellii* (Gray)
Common snapping turtle	*Chelydra serpentina serpentina*
Red-sided garter snake	*Thamnophis sirtailis parietalis*
Plains garter snake	*Thamnophis radix*
Common garter snake	*Thamnophis sirtalis*
Northern redbelly snake	*Storeria occipitomaculata occipitomaculata*
Smooth green snake	*Opheodrys vernalis*
Western hognose snake	*Heterodon nasicus*
Bull snake	*Pituophis catenifer*

Fishes (NDGF 1994)

COMMON NAME	SCIENTIFIC NAME
LAMPREYS	
Chestnut lamprey	*Ichthyomyzon castaneus*
Silver lamprey	*Ichthyomyron unicuspis*
STURGEONS	
Lake sturgeon	*Acipenser fulvescens*
Pallid sturgeon	*Scaphirhynchus albus*
Shovelnose sturgeon	*Scaphirhynchus platorynchus*
PADDLEFISHES	
Paddlefish	*Polyodon spathula*
GARS	
Longnose gar	*Lepisosteus osseus*
Shortnose gar	*Lepisosteus platostomus*
BOWFINS	
Bowfin	*Amia calva*
MOONEYES	
Goldeye	*Hiodon alosoides*
Mooneye	*Hiodon tergisus*
EELS	
American eel	*Anguilla rostrata*
HERRINGS	
Skipjack herring	*Alosa chrysochloris*
Gizzard shad	*Dorosoma cepedianum*
MINNOWS	
Central stoneroller	*Campostoma anomalum*
Largescale stoneroller	*Compostoma oligolepis*
Goldfish	*Carassius auratus*
Lake chub	*Couesius plumbeus*
Grass carp	*Ctenopharyngodon idella*
Red shiner	*Cyprinella lutrensis*
Spotfin shiner	*Cyprinella spiloptera*
Common carp	*Cyprinus carpio*
Western silvery minnow	*Hybognathus argyritis*
Brassy minnow	*Hybognathus hankinsoni*
Mississippi silvery minnow	*Hybognathus nuchalis*
Plains minnow	*Hybognathus placitus*
Common shiner	*Luxilus cornutus*
Sturgeon chub	*Macrhybopsis gelida*
Sicklefin chub	*Macrhybopsis meeki*
Silver chub	*Macrhybopsis storeriana*
Pearl dace	*Margariscus margarita*
Hornyhead chub	*Nocomis biguttatus*
Golden shiner	*Notemigonus crysoleucas*
Pugnose shiner	*Notropis anogenus*
Emerald shiner	*Notropis atherinoides*
River shiner	*Notropis blennius*
Bigmouth shiner	*Notropis doralis*
Blackchin shiner	*Notropis heterodon*
Blacknose shiner	*Notropis heterolepis*
Spottail shiner	*Notropis hudsonius*
Rosyface shiner	*Notropis rubellus*
Silverband shiner	*Notropis shumardi*
Sand shiner	*Notropis stramineus*

COMMON NAME	SCIENTIFIC NAME
Topeka shiner	*Notropis topeka*
Suckermouth minnow	*Phenacobius mirabilis*
Northern redbelly	*Phoxinus eos*
Finescale dace	*Phoxinus neogaeus*
Bluntnose minnow	*Pimephales notatus*
Fathead minnow	*Pimephales promelas*
Flathead chub	*Platygobio gracilis*
Blacknose dace	*Rhinichthys atratulus*
Longnose dace	*Rhinichthys cataractae*
Rudd	*Scardinius erythrophthalmus*
Creek chub	*Semotilus atromaculatus*
SUCKERS	
River carpsucker	*Carpiodes carpio*
Quillback	*Carpiodes cyprinus*
Longnose sucker	*Catostomus catostomus*
White sucker	*Catostomus commersoni*
Mountain sucker	*Catostomus platyrhynchus*
Blue sucker	*Cycleptus elongatus*
Lake chubsucker	*Erimyzon sucetta*
Northern hog sucker	*Hypentelium nigricans*
Smallmouth buffalo	*Ictiobus bubalus*
Bigmouth buffalo	*Ictiobus cyprinellus*
Black buffalo	*Ictiobus niger*
Silver redhorse	*Moxostoma anisurum*
Golden redhorse	*Moxostoma erythrurum*
Shorthead redhorse	*Morostoma macrolepidotum*
Greater redhorse	*Moxostoma valenciennesi*
CATFISH	
Black bullhead	*Ameiurus melas*
Yellow bullhead	*Ameiurus natalis*
Brown bullhead	*Ameiurus nebulosus*
Blue catfish	*Ictalurus furcatus*
Channel catfish	*Ictalurus punctatus*
Slender madtom	*Noturus exilis*
Stonecat	*Noturus flavus*
Tadpole madtom	*Noturus gyrinus*
Flathead catfish	*Pylodictis olivaris*
PIKE	
Northern pike	*Esox lucius*
Muskellunge	*Esox masquinongy*
Tiger muskie	*Esox lucius* × *Esox masquinongy*
MUDMINNOWS	
Central mudminnow	*Umbra limi*

COMMON NAME	SCIENTIFIC NAME
TROUT-PERCH	
Trout-perch	*Percopsis omiscomaycus*
COD	
Burbot	*Lota lota*
KILLFISH	
Banded killifish	*Fundulus diaphanus*
Plains topminnow	*Fundulus sciadicus*
Plains killifish	*Fundulus zebrinus*
STICKLEBACKS	
Brook stickleback	*Culaea inconstans*
TEMPERATE BASS	
White bass	*Morone chrysops*
Striped bass	*Morone saxatilis*
Wiper	*Morone chrysops* × *Morone saxatilis*
SUNFISHES	
Rock bass	*Ambloplites rupestris*
Sacramento perch	*Archoplites interruptus*
Green sunfish	*Lepomis cyanellus*
Pumpkinseed	*Lepomis gibbosus*
Orangespotted sunfish	*Lepomis humilis*
Orangespotted/ pumpkinseed hybrid	*Lepomis humilis* × *Lepomis gibbosus*
Bluegill	*Lepomis macrochirus*
Bluegill/green sunfish hybrid	*Lepomis macrochirus* × *Lepomis cyanellus*
Smallmouth bass	*Micropterus dolomieu*
Largemouth bass	*Micropterus salmoides*
White crappie	*Pomoxis annularis*
Black crappie	*Pomoxis nigromaculatus*
PERCH	
Iowa darter	*Etheostoma exile*
Johnny darter	*Etheostoma nigrum*
Yellow perch	*Perca flavescens*
Logperch	*Percina caprodes*
Blackside darter	*Percina maculata*
Slenderhead darter	*Percina phoxocephala*
River darter	*Percina shumardi*
Sauger	*Stizostedion canadense*
Zander	*Stizostedion lucioperca*
Walleye	*Stizostedion vitreum*
Saugeye	*Stizostedion canadense* × *Stizostedion vitreum*
DRUMS	
freshwater drum	*Aplodinotus grunniens*

Birds

COMMON NAME	SCIENTIFIC NAME
LOONS	
Common loon	*Gavia immer*
GREBES	
Pied-billed grebe	*Podilymbus podiceps*
Horned grebe	*Podiceps auritus*
Red-necked grebe	*Podiceps grisegena*
Eared grebe	*Podiceps nigricollis*
Western grebe	*Aechmophorus occidentalis*
Clark's grebe	*Aechmophorus clarkii*
PELICANS	
American white pelican	*Pelecanus erythrorhynchos*
CORMORANTS	
Double-crested cormorant	*Phalacrocorax auritus*
HERONS, EGRETS, and BITTERNS	
American bittern	*Botaurus lentiginosus*
Least bittern	*Ixobrychus exilis*
Great blue heron	*Ardea herodias*
Great egret	*Ardea alba*
Snowy egret	*Egretta thula*
Little blue heron	*Egretta caerulea*
Cattle egret	*Bubulcus ibis*
Green heron	*Butorides virescens*
Black-crowned night-heron	*Nycticorax nycticorax*
Yellow-crowned night-heron	*Nyctanassa violacea*
IBISES	
White-faced ibis	*Plegadis chihi*
VULTURES	
Turkey vulture	*Cathartes aura*
SWANS, GEESE, and DUCKS	
Tundra swan	*Cygnus columbianus*
Greater white-fronted goose	*Anser albifrons*
Snow goose	*Chen caerulescens*
Ross's goose	*Chen rossii*
Brant	*Branta bernicla*
Canada goose	*Branta canadensis*
Wood duck	*Aix sponsa*
Gadwall	*Anas strepera*
American wigeon	*Anas americana*
American black duck	*Anas rubripes*
Mallard	*Anas platyrhynchos*
Blue-winged teal	*Anas discors*
Cinnamon teal	*Anas cyanoptera*
Northern shoveler	*Anas clypeata*
Northern pintail	*Anas acuta*
Green-winged teal	*Anas crecca*
Canvasback	*Aythya valisineria*
Redhead	*Aythya americana*
Ring-necked duck	*Aythya collaris*
Greater scaup	*Aythya marila*
Lesser scaup	*Aythya affinis*
White-winged scoter	*Melanitta fusca*
Bufflehead	*Bucephala albeola*
Common goldeneye	*Bucephala clangula*
Hooded merganser	*Lophodytes cucullatus*
Common merganser	*Mergus merganser*
Red-breasted merganser	*Mergus serrator*
Ruddy duck	*Oxyura jamaicensis*
HAWKS and EAGLES	
Osprey	*Pandion haliaetus*
Bald eagle	*Haliaeetus leucocephalus*
Northern harrier	*Circus cyaneus*
Sharp-shinned hawk	*Accipiter striatus*
Cooper's hawk	*Accipiter cooperii*
Northern goshawk	*Accipiter gentilis*
Red-shouldered hawk	*Buteo lineatus*
Broad-winged hawk	*Buteo platypterus*
Swainson's hawk	*Buteo swainsoni*
Red-tailed hawk	*Buteo jamaicensis*
Ferruginous hawk	*Buteo regalis*
Rough-legged hawk	*Buteo lagopus*
Golden eagle	*Aquila chrysaetos*
FALCONS	
American kestrel	*Falco sparverius*
Merlin	*Falco columbarius*
Peregrine falcon	*Falco peregrinus*
Gyrfalcon	*Falco rusticolus*
Prairie falcon	*Falco mexicanus*
UPLAND GAME BIRDS	
Northern bobwhite	*Colinus virginianus*
Gray partridge	*Perdix perdix*
Ring-necked pheasant	*Phasianus colchicus*
Sharp-tailed grouse	*Tympanuchus phasianellus*
Greater prairie-chicken	*Tympanuchus cupido*

COMMON NAME	SCIENTIFIC NAME
Wild turkey	*Meleagris gallopavo*
RAILS and COOTS	
King rail	*Rallus elegans*
Virginia rail	*Rallus limicola*
Yellow rail	*Coturnicops noveboracensis*
Sora	*Porzana carolina*
American coot	*Fulica americana*
Common moorhen	*Gallinula chloropus*
CRANES	
Sandhill crane	*Grus canadensis*
Whooping crane (endangered)	*Grus americana*
SHOREBIRDS	
Black-bellied plover	*Pluvialis squatarola*
American golden-plover	*Pluvialis dominica*
Semipalmated plover	*Charadrius semipalmatus*
Piping plover (threatened)	*Charadrius melodus*
Mountain plover	*Charadrius montanus*
Killdeer	*Charadrius vociferus*
American avocet	*Recurvirostra americana*
Greater yellowlegs	*Tringa melanoleuca*
Lesser yellowlegs	*Tringa flavipes*
Solitary sandpiper	*Tringa solitaria*
Willet	*Tringa semipalmata*
Spotted sandpiper	*Actitis macularius*
Upland sandpiper	*Bartramia longicauda*
Hudsonian godwit	*Limosa haemastica*
Marbled godwit	*Limosa fedoa*
Sanderling	*Calidris alba*
Semipalmated sandpiper	*Calidris pusilla*
Western sandpiper	*Calidris mauri*
Least sandpiper	*Calidris minutilla*
White-rumped sandpiper	*Calidris fuscicollis*
Baird's sandpiper	*Calidris bairdii*
Pectoral sandpiper	*Calidris melanotos*
Dunlin	*Calidris alpina*
Stilt sandpiper	*Calidris himantopus*
Buff-breasted sandpiper	*Tryngites subruficollis*
Short-billed dowitcher	*Limnodromus griseus*
Long-billed dowitcher	*Limnodromus scolopaceus*
Common snipe	*Gallinago gallinago*
American woodcock	*Scolopax minor*
Wilson's phalarope	*Phalaropus tricolor*
Red-necked phalarope	*Phalaropus lobatus*

COMMON NAME	SCIENTIFIC NAME
GULLS and TERNS	
Franklin's gull	*Leucophaeus pipixcan*
Bonaparte's gull	*Chroicocephalus philadelphia*
Ring-billed gull	*Larus delawarensis*
California gull	*Larus californicus*
Herring gull	*Larus argentatus*
Caspian tern	*Hydroprogne caspia*
Least tern (endangered)	*Sterna antillarum*
Common tern	*Sterna hirundo*
Forster's tern	*Sterna forsteri*
Black tern	*Chlidonias niger*
DOVES	
Rock dove	*Columba livia*
Eurasian collared-dove	*Streptopelia decaocto*
Mourning dove	*Zenaida macroura*
CUCKOOS and ROADRUNNERS	
Black-billed cuckoo	*Coccyzus erythropthalmus*
Yellow-billed cuckoo	*Coccyzus americanus*
OWLS	
Barn owl	*Tyto alba*
Eastern screech-owl	*Megascops asio*
Great horned owl	*Bubo virginianus*
Snowy owl	*Bubo scandiacus*
Burrowing owl	*Athene cunicularia*
Barred owl	*Strix varia*
Long-eared owl	*Asio otus*
Short-eared owl	*Asio flammeus*
Boreal owl	*Aegolius funereus*
Northern saw-whet owl	*Aegolius acadicus*
NIGHTHAWKS and NIGHTJARS	
Common nighthawk	*Chordeiles minor*
Whip-poor-will	*Caprimulgus vociferus*
SWIFTS	
Chimney swift	*Chaetura pelagica*
HUMMINGBIRDS	
Ruby-throated hummingbird	*Archilochus colubris*
KINGFISHERS	
Belted kingfisher	*Megaceryle alcyon*
WOODPECKERS	
Red-headed woodpecker	*Melanerpes erythrocephalus*
Red-bellied woodpecker	*Melanerpes carolinus*
Yellow-bellied sapsucker	*Sphyrapicus varius*
Downy woodpecker	*Picoides pubescens*

COMMON NAME	SCIENTIFIC NAME
Hairy woodpecker	*Picoides villosus*
Northern flicker	*Colaptes auratus*
FLYCATCHERS	
Olive-sided flycatcher	*Contopus cooperi*
Western wood-pewee	*Contopus sordidulus*
Eastern wood-pewee	*Contopus virens*
Yellow-bellied flycatcher	*Empidonax flaviventris*
Alder flycatcher	*Empidonax alnorum*
Willow flycatcher	*Empidonax traillii*
Least flycatcher	*Empidonax minimus*
Eastern phoebe	*Sayornis phoebe*
Say's phoebe	*Sayornis saya*
Great crested flycatcher	*Myiarchus crinitus*
Western kingbird	*Tyrannus verticalis*
Eastern kingbird	*Tyrannus tyrannus*
SHRIKES	
Loggerhead shrike	*Lanius ludovicianus*
Northern shrike	*Lanius excubitor*
VIREOS	
Blue-headed vireo	*Vireo solitarius*
Yellow-throated vireo	*Vireo flavifrons*
Warbling vireo	*Vireo gilvus*
Philadelphia vireo	*Vireo philadelphicus*
Bell's vireo	*Vireo bellii*
Red-eyed vireo	*Vireo olivaceus*
JAYS, MAGPIES, and CROWS	
Gray jay	*Perisoreus canadensis*
Blue jay	*Cyanocitta cristata*
Black-billed magpie	*Pica hudsonia*
American crow	*Corvus brachyrhynchos*
LARKS	
Horned lark	*Eremophila alpestris*
SWALLOWS	
Purple martin	*Progne subis*
Tree swallow	*Tachycineta bicolor*
Northern rough-winged swallow	*Stelgidopteryx serripennis*
Bank swallow	*Riparia riparia*
Cliff swallow	*Petrochelidon pyrrhonota*
Barn swallow	*Hirundo rustica*
CHICKADEES and TITMICE	
Black-capped chickadee	*Poecile atricapillus*
NUTHATCHES	
Red-breasted nuthatch	*Sitta canadensis*
White-breasted nuthatch	*Sitta carolinensis*
CREEPERS	
Brown creeper	*Certhia americana*
WRENS	
House wren	*Troglodytes aedon*
Winter wren	*Troglodytes hiemalis*
Sedge wren	*Cistothorus platensis*
Marsh wren	*Cistothorus palustris*
Rock wren	*Salpinctes obsoletus*
KINGLETS, BLUEBIRDS, and THRUSHES	
Golden-crowned kinglet	*Regulus satrapa*
Ruby-crowned kinglet	*Regulus calendula*
Eastern bluebird	*Sialia sialis*
Mountain bluebird	*Sialia currucoides*
Wood thrush	*Hylocichla mustelina*
Veery	*Catharus fuscescens*
Gray-cheeked thrush	*Catharus minimus*
Swainson's thrush	*Catharus ustulatus*
Hermit thrush	*Catharus guttatus*
American robin	*Turdus migratorius*
MIMICS	
Gray catbird	*Dumetella carolinensis*
Brown thrasher	*Toxostoma rufum*
STARLINGS	
European starling	*Sturnus vulgaris*
PIPITS	
American (water) pipit	*Anthus rubescens*
Sprague's pipit (candidate)	*Anthus spragueii*
WAXWINGS	
Bohemian waxwing	*Bombycilla garrulus*
Cedar waxwing	*Bombycilla cedrorum*
WARBLERS	
Northern parula	*Parula americana*
Golden-winged warbler	*Vermivora chrysoptera*
Tennessee warbler	*Oreothlypis peregrina*
Orange-crowned warbler	*Oreothlypis celata*
Nashville warbler	*Oreothlypis ruficapilla*
Yellow warbler	*Dendroica petechia*
Chestnut-sided warbler	*Dendroica pensylvanica*
Magnolia warbler	*Dendroica magnolia*
Cape May warbler	*Dendroica tigrina*
Yellow-rumped warbler	*Dendroica coronata*
Black-throated green warbler	*Dendroica virens*

COMMON NAME	SCIENTIFIC NAME
Blackburnian warbler	*Dendroica fusca*
Pine warbler	*Dendroica pinus*
Palm warbler	*Dendroica palmarum*
Bay-breasted warbler	*Dendroica castanea*
Blackpoll warbler	*Dendroica striata*
Black-and-white warbler	*Mniotilta varia*
American redstart	*Setophaga ruticilla*
Ovenbird	*Seiurus aurocapilla*
Northern waterthrush	*Parkesia noveboracensis*
Connecticut warbler	*Oporornis agilis*
Mourning warbler	*Oporornis philadelphia*
Common yellowthroat	*Geothlypis trichas*
Wilson's warbler	*Wilsonia pusilla*
Canada warbler	*Wilsonia canadensis*
Yellow-breasted chat	*Icteria virens*
TANAGERS and CARDINALS	
Scarlet tanager	*Piranga olivacea*
Western tanager	*Piranga ludoviciana*
Northern cardinal	*Cardinalis cardinalis*
SPARROWS, BUNTINGS, and GROSBEAKS	
Eastern towhee	*Pipilo erythrophthalmus*
Spotted towhee	*Pipilo maculatus*
American tree sparrow	*Spizella arborea*
Chipping sparrow	*Spizella passerina*
Clay-colored sparrow	*Spizella pallida*
Field sparrow	*Spizella pusilla*
Vesper sparrow	*Pooecetes gramineus*
Lark sparrow	*Chondestes grammacus*
Lark bunting	*Calamospiza melanocorys*
Savannah sparrow	*Passerculus sandwichensis*
Grasshopper sparrow	*Ammodramus savannarum*
Baird's sparrow	*Ammodramus bairdii*
Le Conte's sparrow	*Ammodramus leconteii*
Nelson's sharp-tailed sparrow	*Ammodramus nelsoni*
Fox sparrow	*Passerella iliaca*
Song sparrow	*Melospiza melodia*
Swamp sparrow	*Melospiza georgiana*
Lincoln's sparrow	*Melospiza lincolnii*
White-throated sparrow	*Zonotrichia albicollis*
Harris' sparrow	*Zonotrichia querula*
White-crowned sparrow	*Zonotrichia leucophrys*
Dark-eyed junco	*Junco hyemalis*
Lapland longspur	*Calcarius lapponicus*
Smith's longspur	*Calcarius pictus*
Chestnut-collared longspur	*Calcarius ornatus*
McCown's longspur	*Rhynchophanes mccownii*
Snow bunting	*Plectrophenax nivalis*
Black-headed grosbeak	*Pheucticus melanocephalus*
Rose-breasted grosbeak	*Pheucticus ludovicianus*
Lazuli bunting	*Passerina amoena*
Indigo bunting	*Passerina cyanea*
Dickcissel	*Spiza americana*
BLACKBIRDS and ORIOLES	
Bobolink	*Dolichonyx oryzivorus*
Red-winged blackbird	*Agelaius phoeniceus*
Western meadowlark	*Sturnella neglecta*
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*
Rusty blackbird	*Euphagus carolinus*
Brewer's blackbird	*Euphagus cyanocephalus*
Common grackle	*Quiscalus quiscula*
Brown-headed cowbird	*Molothrus ater*
Orchard oriole	*Icterus spurius*
Baltimore oriole	*Icterus galbula*
FINCHES	
Pine grosbeak	*Pinicola enucleator*
Purple finch	*Carpodacus purpureus*
House finch	*Carpodacus mexicanus*
Red crossbill	*Loxia curvirostra*
White-winged crossbill	*Loxia leucoptera*
Common redpoll	*Acanthis flammea*
Hoary redpoll	*Acanthis hornemanni*
Pine siskin	*Spinus pinus*
American goldfinch	*Spinus tristis*
Evening grosbeak	*Coccothraustes vespertinus*
OLD WORLD SPARROWS	
House sparrow	*Passer domesticus*

Mammals

COMMON NAME	SCIENTIFIC NAME
Arctic shrew	*Sorex arcticus*
Pygmy shrew	*Microsorex hoyi*
Northern short-tailed shrew	*Blarina brevicauda*
Little brown bat	*Myotis lucifugus*
Big brown bat	*Eptesicus fuscus*
Eastern cottontail	*Sylvilagus floridanus*
Nuttall's cottontail	*Sylvilagus nuttallii*
Snowshoe hare	*Lepus americanus*
White-tailed jackrabbit	*Lepus townsendii*
Woodchuck	*Marmota monax*
Franklin's ground squirrel	*Spermophilus franklinii*
Richardson's ground squirrel	*Spermophilus richardsonii*
Thirteen-lined ground squirrel	*Spermophilus tridecemlineatus*
Eastern fox squirrel	*Sciurus niger*
Northern pocket gopher	*Thomomys talpoides*
Olive-backed pocket mouse	*Perognathus fasciatus*
Plains pocket mouse	*Perognathus flavescens*
American beaver	*Castor canadensis*
Northern grasshopper mouse	*Onychomys leucogaster*
Western harvest mouse	*Reithrodontomys megalotis*
White-footed mouse	*Peromyscus leucopus*
Deer mouse	*Peromyscus maniculatus*
Southern red-backed vole	*Clethrionomys gapperi*
Meadow vole	*Microtus pennsylvanicus*
Muskrat	*Ondatra zibethicus*
Norway rat	*Rattus norvegicus*
House mouse	*Mus musculus*
Meadow jumping mouse	*Zapus hudsonius*
Porcupine	*Erethizon dorsatum*
Red fox	*Vulpes vulpes*
Common gray fox	*Urocyon cineroargenteus*
Coyote	*Canis latrans*
Gray wolf (endangered)	*Canis lupus*
Raccoon	*Procyon lotor*
Ermine	*Mustela erminea*
Least weasel	*Mustela nivalis*
Long-tailed weasel	*Mustela frenata*
Mink	*Mustela vison*
American badger	*Taxidea taxus*
Striped skunk	*Mephitis mephitis*
Bobcat	*Felis rufus*
White-tailed deer	*Odocoileus virginianus*
Mule deer	*Odocoileus hemionus*
Moose	*Alces alces*
Pronghorn	*Antilocapra americana*

Appendix C

Environmental Assessment

1. PURPOSE and NEED for ACTION

USFWS

Large areas of native prairie remain within the Prairie Pothole Region.

This EA documents the purpose, issues, alternatives, and analysis for the proposed DGCA in North Dakota and South Dakota. Section 1 details the background information and conditions that led to the Service's proposal to create the DGCA project for protection of important wetland and grassland habitat through conservation easements with willing landowners.

Introduction

The PPR is an extraordinary biome (a defined geographical area and its living organisms that interact with the environment) for its ability to produce and sustain tremendous numbers of waterfowl (figure A). The region is part of one of the largest wetland–grassland ecosystems on Earth. In the late 1700s, between 7 and 8 million acres of wetland existed in the Dakotas alone within the United States part of the PPR. By the 1980s, North Dakota had lost nearly 50 percent of its original wetland acreage and South Dakota had lost an estimated 35 percent (Dahl 1990). Drainage of wetland in the PPR imposes a condition of permanent drought for wildlife. Consequently, the abundance of most species of wetland wildlife has declined drastically (Johnson et al. 2008), and the "North American Waterfowl Management Plan" identified the PPR as the continent's top priority for waterfowl conservation (USFWS 1986).

Across the Nation, grassland declined by an estimated 25 million acres from 1978 to 2002, according to a recent audit by the GAO (GAO 2007a). More specifically, in 2006, the States of North Dakota and South Dakota reported the conversion of approximately 68,000 acres of native prairie to cropland (GAO 2007a). Despite these reductions in wetland and grassland resources, millions of wetlands and large tracts of native prairie remain within the region.

The PPR is one of the most altered, yet one of the most important, migratory bird habitats in the Western Hemisphere. It is the backbone of North America's "Duck Factory." In addition, the PPR has high species richness (number of species), and it harbors large proportions of the continental populations of many species of breeding waterbirds (Beyersbergen et al. 2004), shorebirds (Brown et al. 2001), and grassland birds (Peterjohn and Sauer 1999). The PPR was recognized as an important area in 1987 with the establishment of the PPJV to protect wetlands, waterfowl, and other wildlife. The PPJV committed to efforts to revive declining North American waterfowl populations through the protection of

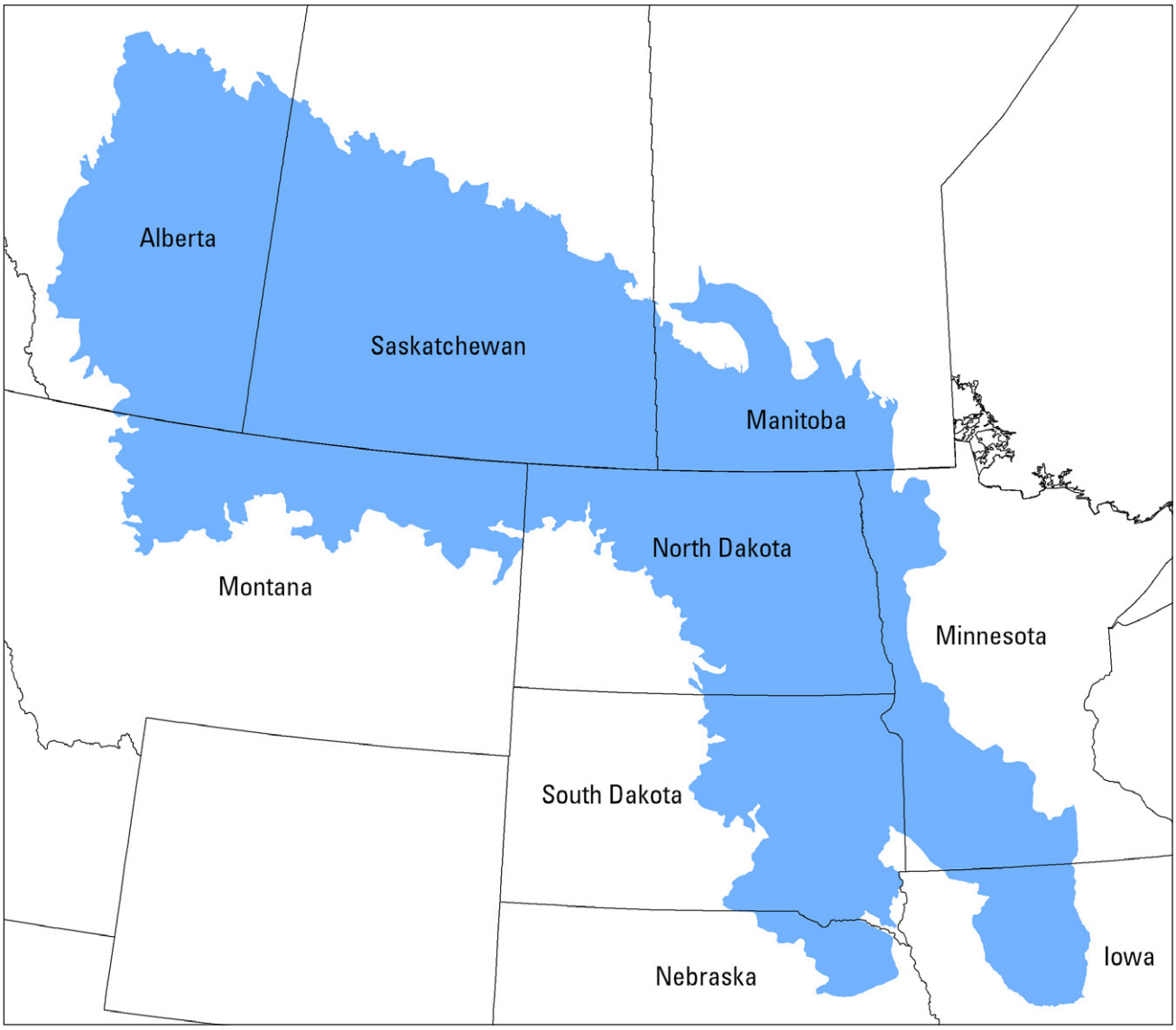

Figure A. Map of the Prairie Pothole Region of North America. *[Same as figure 1 in chapter 1.]*

crucial wetland and grassland habitats. The 2005 PPJV implementation plan shows a need to protect more habitat—an additional 1.4 million acres of wetland and 10.4 million acres of grassland—to meet the goals for waterfowl population size (Ringelman 2005).

The Service protects these resources under the authority of the Migratory Bird Hunting and Conservation Stamp Act (SWAP), using monies from the sale of Federal Duck Stamps, NAWCA, and donations from conservation groups. Over the past 48 years, the Service has purchased 95 percent of easements using Federal Duck Stamp dollars. At current budget levels, it would take the Service 150 years to protect the nearly 12 million acres identified in the "2005 Prairie Pothole Joint Venture Implementation Plan" as critical for sustaining migratory bird populations (GAO 2007b). However, at the current rate of grassland conversion, an estimated one-half of the remaining native prairie in the PPR would be converted to other uses in only 34 years.

Proposed Project Area

The Service proposes to create the DGCA to accelerate the conservation of wetland and grassland habitat in the area (figure B). The proposed project area was selected using models developed by the Service's HAPET, located in Bismarck, North Dakota. The models identify the extent and location of wetlands and grasslands required to help meet the PPJV goals for migratory bird populations and the SWAP objectives for habitat protection. HAPET developed the Service's "Conservation Strategy" using models combined with decades of biological information from scientific studies of the spatial and temporal needs of nesting ducks in the PPR. The

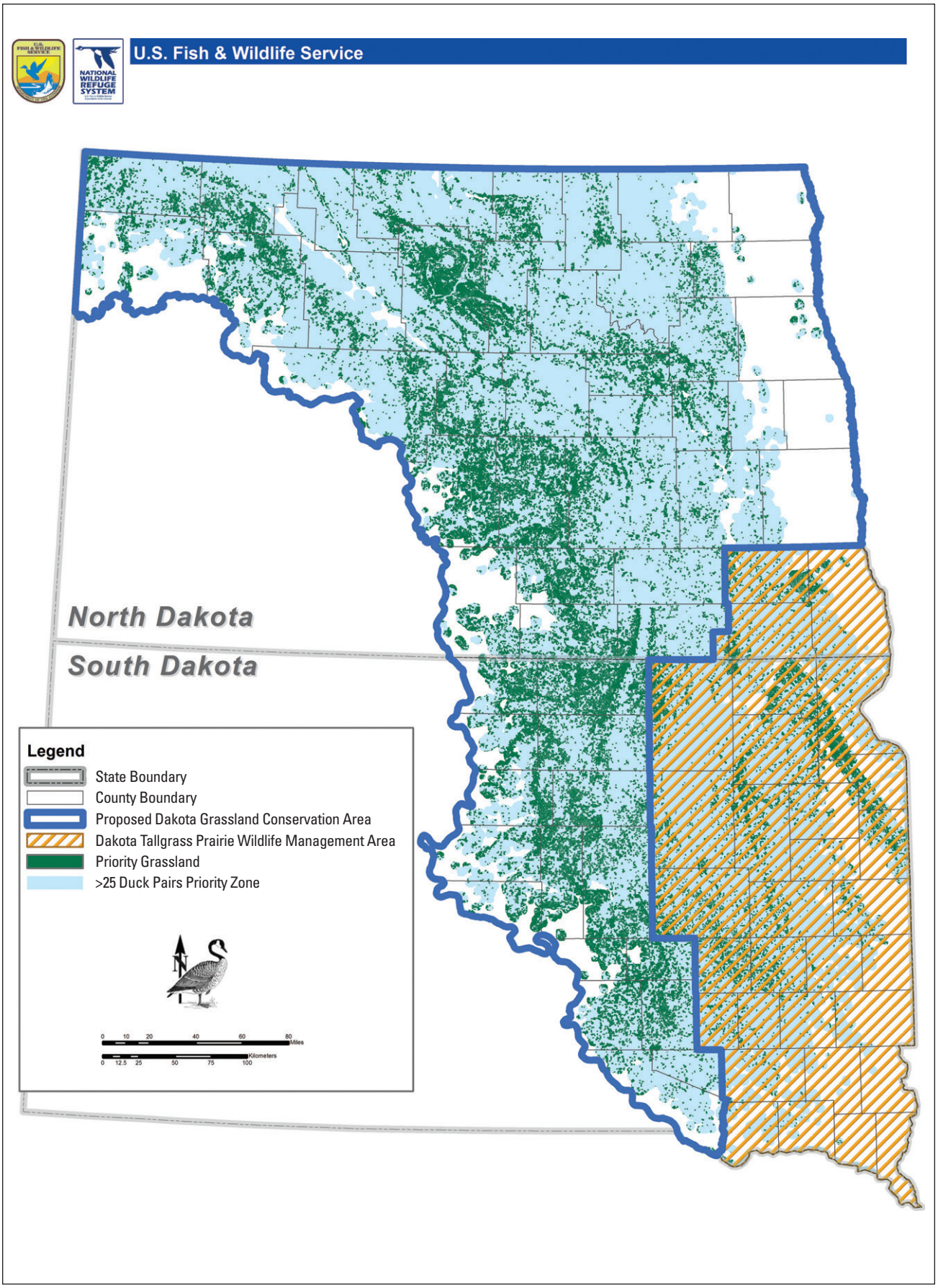

Figure B. Map of the proposed Dakota Grassland Conservation Area. *[Same as figure 2 in chapter 2.]*

analysis was the basis for the resulting Conservation Strategy goal to protect an additional 1.4 million acres of wetlands and 10 million acres of grassland in the PPJV boundary to support the current levels of breeding ducks. Specifically, these models show that protection of all wetland and grassland in areas that support more than 25 duck pairs per square mile plus a 1-mile buffer, referred to as the "priority zone," would meet the PPJV conservation goal of protecting adequate habitat to support more than 90 percent of the PPR's duck productivity. The proposed DGCA project represents an element of the Conservation Strategy.

The proposed project area for the DGCA includes parts of North Dakota and South Dakota lying north and east of the Missouri River, except those parts of southeastern North Dakota and eastern South Dakota encompassed by the Dakota Tallgrass Prairie Wildlife Management Area, a grassland easement program approved in 2000 (figure B). The total area within the proposed DGCA boundary is 29.6 million acres or 46,267 square miles; the priority zone in this area covers 8.5 million acres.

Proposed Action

The objectives for the proposed DGCA would be to conserve 240,000 acres of wetland and 1.7 million acres of grassland. The wetland and grassland resources in the proposed DGCA would be conserved primarily through the purchase of perpetual wetland and grassland conservation easements from willing sellers. All land under easement would remain in private ownership. Protected wetland basins may be hayed or grazed without restriction and farmed when dry from natural causes. However, wetland easements would prohibit the draining, burning, filling, or leveling of protected wetland. Grassland easements would not restrict grazing in any way, and haying would be permitted after July 15 each year. Conversion of these grasslands to crop production or other uses that destroy vegetation would be prohibited.

The cost for acquisition of easements in the proposed DGCA would be approximately $588 million. This proposal would allow the purchase of critical wetland and grassland easements using money from the LWCF as an alternate funding source and the purchase authority of the Migratory Bird Conservation Act. In addition, the Service would continue to use Federal Duck Stamp and NAWCA monies as appropriate and available. At current acquisition rates, the goal for the proposed project would be achieved within 30 years.

The Service has an established review process for evaluating requested uses on all current and future wetland and grassland easements in the prairie pothole States of Region 6 of the Service. This review process applies not only to easements bought under the DGCA project but also to those easements the Service had acquired earlier. The Service will fully describe and analyze easement evaluations and procedures for requested uses at a later date.

Purpose and Need for Proposed Action

The proposed DGCA is part of a landscape-scale, strategic habitat conservation effort to protect a unique, highly diverse, and endangered ecosystem. This proposal would accelerate the protection of wetland and grassland habitats through the acquisi-

Donna Dewhurst / USFWS

A canvasback hen leads her young brood to cover in a prairie wetland.

tion of wetland and grassland conservation easements on private land. It is widely recognized that the most effective technique for conserving the remaining wetland and grassland character of the proposed project area is to work with private landowners on conservation matters of mutual concern (Higgins et al. 2002).

Historically, virtually no ecosystem in North America offered a landscape more conducive to rapid and widespread agricultural settlement than the PPR. Large-scale, land use changes continue to expand rapidly into formerly secure grassland–wetland complexes and grassland tracts, which represent much of the remaining high-priority wetland and grassland habitat for breeding birds. To better protect these resources, the Service needs money in addition to those sources currently available for acquiring perpetual wetland and grassland easements in North Dakota and South Dakota. Given the diversity of plants and animals that rely on these habitat types, the ability of the proposed project to protect wetland and grassland habitats in perpetuity is critical.

The purpose of the proposed DGCA project is to provide for the long-term viability of the breeding waterfowl populations through the conservation of existing habitats while considering the needs of other migratory birds, threatened and endangered species, and other wildlife. To accomplish this purpose, the goals for the proposed DGCA follow:

- Conserve the landscape-scale ecological integrity of wetlands and grasslands in the DGCA by maintaining and enhancing the historical native plant, migratory bird, and other wildlife species.
- Protect the integrity of native prairie and associated wetlands by preventing further habitat fragmentation.
- Conserve working landscapes based on ranching and livestock operations that support a viable livestock industry.
- Support the recovery and protection of threatened and endangered species, and reduce the likelihood of future listings under the Endangered Species Act.
- Provide a buffer against climate change by providing resiliency for the grassland ecosystems and associated prairie pothole wetlands through landscape-scale conservation.
- Conserve, restore, enhance, and protect in perpetuity wetland and grassland habitats for migratory bird productivity.
- Preserve the ecological function of these habitats by providing for floodwater retention, ground water recharge, carbon sequestration, improved water quality, and reduced soil and water erosion.

The proposed DGCA project would follow the "road map"—goals and objectives—in the PPJV for integrating the conservation of all migratory birds. The process involves "stepping down" the objectives of four international bird plans for waterfowl, shorebirds, waterbirds, and landbirds as they apply to the PPJV.

Monies from the Migratory Bird Hunting and Conservation Stamp Act (Federal Duck Stamp) and the North American Wetlands Conservation Act have funded habitat protection under SWAP. The use of Federal Duck Stamp dollars requires approval by the State Governor, and the Service would continue to use this money for wetland and grassland easements in the State of South Dakota. In North Dakota, the State has established limits on the number of wetland acres in each county that can be protected with perpetual Service easements. Federal Duck Stamp dollars are not available in North Dakota to buy easements in several counties, because the acreage limits have been reached. Therefore, the Service would have limited means to acquire more wetland and grassland easements in North Dakota.

Decisions to be Made

Based on the analysis provided in this EA, the Regional Director of the U.S. Fish and Wildlife Service, Region 6 (Mountain–Prairie Region), will make three decisions:

1. Determine whether the Service should establish the DGCA and approve the associated LPP.
2. If yes, select for approval the conservation area boundary that best fulfills the habitat protection purpose.
3. Determine whether the selected alternative will have a significant impact on the quality of the human environment. This decision is required by NEPA. If the quality of the human environment is not affected, a "finding of no significant impact" will be signed and will be made available to the public. If the preferred alternative would have a significant impact, an environmental impact statement will be prepared to further address those impacts.

Gary Eslinger / USFWS

Monarch butterfly clinging to switchgrass.

Issues Identified and Selected for Analysis

The Service solicited comments about the proposed DGCA from the public through direct mailings, news releases, public meetings, and direct contacts:

- On December 1, 2010, the Service issued a scoping notice to all media outlets in Montana, North Dakota, and South Dakota and several major, daily newspapers in Minnesota and Iowa (refer to "Appendix D—Public Involvement"). This information was also posted to www.fws.gov/audubon/dakotagrasslands.html, as well as the Service's Facebook and Twitter profiles. Due to the holiday season, the Service extended the public scoping period by 2 weeks, until January 14, 2011 (appendix D); with this extension, there was a total of 45 days for the public comment period.

- The Service mailed a four-page fact sheet to 32 Native American tribes and 1,275 individuals and organizations. In addition, 1,737 postcards were mailed out to individuals informing them of the project. Names on the mailing list came from prior Service projects where groups or individuals had expressed interest in the general area or in easement programs.

- The Service conducted three scoping meetings on December 14, 15, and 16, 2010—at Minot, North Dakota; Jamestown, North Dakota; and Huron, South Dakota; respectively. Public attendees at the three scoping meetings totaled 93 individuals.

- A project Web site provided interested parties with updates and information about the proposal.

The Service received 1,469 emails, 24 written letters, and 60 phone calls. Most of the comments reflected concern about the loss of wetland and grassland and stated general support for the proposed project, while comments against the proposal emphasized the need for easements of shorter duration, that is, not perpetual.

The Service's planning team (appendix A) reviewed all comments collected from the public and identified several key issues in three general categories. During formulation and evaluation of project alternatives, the planning team considered the following issues.

Biological Issues

- Why is grassland protection an important issue?
- Why is wetland protection an important issue?
- How does the Service determine the goals for habitat protection?

Socioeconomic Issues

- How will these easements affect the local tax base?
- How will these easements affect other property rights?
- How will the family ranching heritage be maintained on the landscape?
- Has the Service considered short-term easements—20, 30, or 40 years versus perpetual?

Administrative and Enforcement Issues

- How do these easements affect local governments and adjoining landowners?
- How does the Service address requested uses on easement lands?

Related Actions and Activities

Several existing Federal and State programs promote the conservation of wetland and grassland habitats in the general area of the proposed DGCA.

Dakota Tallgrass Prairie Wildlife Management Area

The goal for this project area is to conserve 185,000 acres of the remaining, native, tallgrass prairie within 32 counties in eastern South Dakota and southeastern North Dakota through the acquisition of perpetual grassland easements. This project absorbed an earlier phase 1 project in Brown County, South Dakota. To date, this project has protected 59,098 acres. The Dakota Tallgrass Prairie Wildlife Management Area is entirely within the PPJV boundary and is also an element of the Conservation Strategy.

North Dakota Wildlife Management Area

The Service developed this easement project to conserve up to 300,000 acres of grassland in the Missouri Coteau region of North Dakota through the acquisition of perpetual grassland easements. The project has goals similar to those for the proposed DGCA; however, the project area of the North Dakota Wildlife Management Area is limited in size and does not afford conservation for critical wetlands and grasslands in North Dakota and South Dakota. If the Service approves the proposed DGCA project, the DGCA would absorb the North Dakota Wildlife Management Area.

North American Waterfowl Management Plan

Enacted in 1986, this international plan addresses declining waterfowl populations. The plan created the PPJV to coordinate conservation efforts in North Dakota, South Dakota, Minnesota, Iowa, and Montana. Many PPJV projects are active within the proposed DGCA project area and use funding partnerships with many entities including the following: private landowners; the Service; Ducks Unlimited; The Nature Conservancy; Pheasants Forever; North Dakota Game and Fish Department; South Dakota Game, Fish and Parks; and several others.

Migratory Bird Conservation Act

This act approved in 1929 established the MBCC, which oversees the purchase of properties benefitting migratory birds. These land acquisitions are funded primarily through money generated by the purchase of stamps—commonly known as "Federal Duck Stamps"—as authorized by the Migratory Bird Hunting and Conservation Stamp Act (see below). The lands acquired under this act are used primarily for national wildlife refuges and other easements or limited-interest lands.

Migratory Bird Hunting and Conservation Stamp Act (Federal Duck Stamps)

The act was approved in 1934 to fund the acquisition of migratory bird habitat provided for in the Migratory Bird Conservation Act of 1929. The act provides that anyone over age 16 who hunts migratory birds is required to purchase a hunting stamp. The revenue generated from the sale of these stamps is placed in a special fund known as the MBCF, which is used to acquire migratory bird habitat.

The act was amended in 1958 to in–crease the acquisition of suitable habitat for waterfowl. This amendment authorized the Secretary of the Interior to expend money from the MBCF for small wetland and pothole areas in fee title (waterfowl production areas) or as easements—a program known as the Small Wetlands Acquisition Program (SWAP). With this money, the Service has acquired wetland and grassland easements within the PPR in South Dakota and wetland easements in North Dakota through SWAP. To date, the Service has protected approximately 1,386,279 acres of wetland and 1,128,513 acres of grassland.

USDA–Farm Service Agency

The Farm Service Agency offers several programs throughout the PPR in the United States, which aim to preserve and restore the native, mixed-grass, prairie ecosystem in the proposed project area. The Conservation Reserve Program is a voluntary program available to agricultural producers to help them safeguard environmentally sensitive land. Producers that enroll their property in the program will plant perennial vegetation to improve the quality of water, control soil erosion, and enhance wildlife habitat. The Conservation Reserve Enhancement Program is a version of the Conservation Reserve Program that has been tailored to meet the needs of the State. The Conservation Reserve Enhancement Program is a Federal–State conservation partnership that targets significant environmental effects related to agriculture.

USDA–NRCS

Working jointly with the Farm Service Agency, the NRCS provides technical aid and financial incen-

tives through voluntary programs, based on sound science, to promote conservation. Some of the programs that benefit land in the proposed project area are the Grassland Reserve Program, Wildlife Habitat Incentive Program, Wetland Reserve Program, Environmental Quality Incentives Program, and the Conservation Stewardship Program.

- The Grassland Reserve Program emphasizes support for working, livestock-grazing operations, enhancement of plant and animal biodiversity, and protection of grassland under threat of conversion to other uses. Participants voluntarily limit future development and cropping uses of the land. At the same time, participants retain the right to conduct common livestock-grazing practices and operations related to the production of forage and seeding, subject to certain restrictions during nesting seasons of bird species that are in significant decline or are protected under Federal or State law.

- The Wildlife Habitat Incentive Program helps develop or improve quality habitat that supports fish and wildlife populations of national, State, tribal, and local significance. Through this incentive program, the NRCS provides technical and financial help to private and tribal landowners for the development of upland, wetland, aquatic, and other types of wildlife habitat.

- The Wetland Reserve Program offers landowners the opportunity to protect, restore, and enhance wetlands on their property by establishing long-term conservation and wildlife practices and protection.

- The Environmental Quality Incentives Program provides financial and technical help to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land. Through the incentives program, the NRCS develops contracts with agricultural producers to conduct conservation practices that address environmental natural resource problems.

- Financial incentives offered by the Conservation Stewardship Program encourage agricultural producers to address resource concerns by undertaking more conservation activities and improving and maintaining existing conservation systems.

South Dakota Grassland Coalition

This nonprofit organization has more than 100 members—individuals; private organizations; and local, State, and Federal entities—that are represented by a seven-member board of directors and two coordinators. The vision of the South Dakota Grassland Coalition is to build a partnership of people working to voluntarily improve grasslands for the long-term needs of the resource. The coalition's goal is to provide local leadership and guidance in a cooperative effort and to provide information and technical help to grassland managers.

National Wildlife Refuge System and Authorities

> *The mission of the National Wildlife Refuge System is to preserve a national network of lands and waters for the conservation, management, and where appropriate, the restoration of fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.*

The proposed DGCA project would be monitored as part of the Refuge System in accordance with the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, as well as other relevant legislation, Executive orders, regulations, and policies. Conservation of more wildlife habitat within the PPR of North Dakota and South Dakota would continue to be consistent with the following:

- Land and Water Conservation Fund Act (1956)

- Migratory Bird Conservation Act (1929)

- Migratory Bird Hunting and Conservation Stamp Act (1934)

- Migratory Bird Treaty Act (1918)

- North American Wetlands Conservation Act (1968)

- Endangered Species Act (1973)

- Bald and Golden Eagle Protection Act (1940)
- Fish and Wildlife Act (1956)
- "North American Waterfowl Management Plan" (2004)
- "Prairie Pothole Joint Venture Implementation Plan" (2005)

The basic considerations in acquiring an easement interest in private lands are the biological significance of the area, biological requirements of the wildlife species of management concern, existing and anticipated threats to wildlife resources, and landowner interest in the program. On approval of a project boundary, habitat protection would occur through the purchase of conservation easements. It is the long-established policy of the Service to acquire minimum interest in land from willing sellers to achieve habitat protection goals.

The acquisition authority for the DGCA project is the Fish and Wildlife Act of 1956 (16 U.S.C. 742a–j) (table A). In response to comments received during the public review of the draft EA and LPP (appendix C), the Service has included the authority of the Migratory Bird Conservation Act of 1929 (16 U.S.C. 715–715d, 715e, 715f–r). The Federal money used to acquire conservation easements is from the LWCF (derived primarily from oil and gas leases on the Outer Continental Shelf, motorboat fuel taxes, and the sale of surplus Federal property) and Federal Duck Stamps. There could be more money to acquire lands, water, or interests for fish and wildlife conservation purposes as identified by Congress or donations from nonprofit organizations. The purchase of conservation easements from willing sellers will be subject to available money.

Table A. Acquisition authorities of the proposed Dakota Grassland Conservation Area (DGCA) and approval components.

Acquisition authority (standard program[1])	*Alternative in the EA[2]*	*State approval component*	*MBCC[3] approval component*	*Acres counted in the DGCA acquisition goal*
Migratory Bird Hunting and Conservation Stamp Act of 1934 (SWAP)	No action	Yes	No	No
North American Wetlands Conservation Act of 1968	No action	No	Yes	No
Fish and Wildlife Act of 1956 (LWCF)	Proposed action	No	No	Yes
Migratory Bird Conservation Act of 1929 (NWRS)	Proposed action	Yes	Yes	Yes
Donation (multiple authorities[4])	Proposed action	Dependent on authority requirements	Dependent on authority requirements	Dependent on authority

[1]*SWAP=Small Wetland Acquisition Program; LWCF=Land and Water Conservation Fund; NWRS=National Wildlife Refuge System.*
[2]*EA=environmental assessment.*
[3]*MBCC=Migratory Bird Conservation Commission.*
[4]*Acquisition authority for each donation will be determined at the time of acceptance, but will primarily be one of the authorities listed above.*

2. ALTERNATIVES

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Northern pintails, American wigeons, and northern shovelers fly off a wetland in the Prairie Pothole Region.

Section 2 describes the alternatives considered for the proposed project, including the two alternatives that were developed and evaluated:

- No-action alternative.
- Proposed action, giving the Service the authority to create the DGCA. This alternative considers the effects of a wetland and grassland easement program within the proposed project area boundary identified in this EA.

Alternative A (No Action)

Habitat protection under SWAP would continue at current levels, using the authorities of the Migratory Bird Hunting and Conservation Stamp Act (Federal Duck Stamps) and the North American Wetlands Conservation Act.

The use of Federal Duck Stamp dollars requires approval by the State Governor, and the Service would continue to use this money for conservation easements in the State of South Dakota. In North Dakota, the State has established limits on the number of wetland acres in each county that can be protected with perpetual Service easements. Federal Duck Stamp dollars are not currently available in North Dakota to buy easements in several counties, because the acreage limits have been reached. Therefore, the Service would have limited means to acquire more wetland and grassland easements in North Dakota.

Easement Terms and Requirements

Easements bought under the authorities listed above are administered according to policy and procedures in the Easement Manual (USFWS 2011a). Following the policy and procedures in the manual, the Service evaluates and administers all requests for uses or activities restricted by an easement (for example, agricultural, utility, commercial, or industrial uses). This review process applies not only to easements the Service has acquired earlier, but also to future easements bought under SWAP.

All land under easement would remain in private ownership. Property tax and land management, including control of noxious weeds and other invasive plants and trees, would remain the responsibility of the landowner. Control of public access to the land would remain under the control of the landowner.

The easement contract would specify perpetual protection of habitat for trust species by restricting the conversion of wetland and grassland to other uses. Wetland easements would prohibit the draining, burning, filling, or leveling of protected wetland. Furthermore, conversion of grassland to crop production or other uses that destroy vegetation would be prohibited. While the easement contract would specify perpetual protection, it would not eliminate all activities. Protected wetland basins may be hayed or grazed without restriction and farmed when dry from natural causes. Grassland easements would not restrict grazing or seed harvesting in any way, and haying would be permitted after July 15 each year.

Alternative B (Proposed Action)

The Service would establish the DGCA in the eastern parts of North Dakota and South Dakota (refer to figure B in section 1), with objectives to conserve 240,000 acres of wetland and 1.7 million acres of grassland.

The Service will acquire wetland and grassland easements in the DGCA principally with LWCF

money, although money from several sources and authorities (Migratory Bird Conservation Act) could be used for the acquisition and management of wetland and grassland easements. LWCF monies are derived primarily from oil and gas leases on the Outer Continental Shelf, motorboat fuel taxes, and the sale of surplus Federal property. In addition, the Service would continue to use Federal Duck Stamp and NAWCA monies as appropriate and available.

The Service would base prioritization of areas considered for wetland and grassland easements on models developed by the Bismarck HAPET office, which identify the extent and location of grasslands and wetlands required to help meet the PPJV goals for migratory bird populations and the SWAP objectives for habitat protection. The LPP in the second part of this volume describes these priorities in detail.

Service staff at the following wetland management districts in the proposed DGCA area would administer and monitor the easement program:

- North Dakota wetland management districts—Arrowwood, Audubon, Chase Lake, Crosby, Devils Lake, J. Clark Salyer, Kulm, Long Lake, Lostwood, Tewaukon, and Valley City
- South Dakota wetland management districts—Huron, Lake Andes, Madison, Sand Lake, and Waubay

Monitoring would include a periodical review of land status through correspondence or meetings with the landowners or land managers to make sure provisions of wetland and grassland easements are being met. The Service would use photo documentation at the time of easement establishment to document baseline conditions.

The terms, requirements, and review process for easements acquired under this alternative would be identical to those described under alternative A.

Alternatives Considered but Not Studied

The Service did no further analysis for the following alternatives.

Voluntary Landowner Zoning

Landowners would voluntarily petition their county commissioners to create a zoning district to direct the types of development that can occur in an area. An example of citizen-initiated zoning is where landowners would petition the county government to zone an area as agricultural, precluding certain types of nonagricultural development such as residential subdivision. Citizen initiatives are rarely used, and the Service did no further study of this alternative.

County Zoning

In a traditional approach used by counties and municipalities, the local government would use zoning to designate the type of development that could occur in an area. While laws in North Dakota and South Dakota grant cities and counties the authority to regulate land use, engaging in planning and zoning activities is optional. Many counties in these States have opted to have no planning or zoning requirements but, where used, zoning would be subject to frequent changes and would not ensure the long-term prevention of residential or commercial development in the proposed conservation area. Furthermore, comments received from county commissioners have expressed, instead, support for conservation easements (alternative B, the proposed action) as a means of maintaining rural area values and potentially reducing the need for future zoning.

Acquisition or Management by Others

Ranching practices characteristic to grassland in the proposed project area have focused primarily on season-long grazing and more recently on rotational grazing. Native prairie subject to long periods of season-long grazing has experienced decreased plant diversity; subsequently, a high percentage of the remaining native prairie comprises woody plants (predominantly snowberry), trees, and cool-season invasive grasses and forbs. Recent changes in grazing practices, including rotational grazing and attention to progressive range management practices, have restored the native plant composition and diversity to grassland where these practices have been used.

The ranching heritage and efforts by a variety of agencies and organizations have been essential to maintaining the diversity of grasslands. Economic pressures, including generous farm programs that target a cheap food supply, have accelerated the conversion rates of grassland into cereal production agriculture. Without a landscape-scale conservation effort such as the proposed DGCA, pressures such as the following make the future of the PPR wetland and grassland uncertain:

- Development pressures for roads, cities, utilities, energy, and development materials (sand, gravel, and clay)

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Wetlands under easement may be grazed without restriction.

- Planting of trees for windbreaks, erosion control, and wildlife that further fragment the native prairie landscape

While other conservation agencies and groups play a role in the protection of the PPR, the Service is mandated to manage migratory birds populations (in this case, those that thrive in the DGCA) and in the protection and conservation of the habitat on which these resources depend.

Short-Term Easements

Short-term easements have an important role to play in the conservation arena, since they provide a valuable tool in broadening conservation efforts to lands otherwise not available for permanent conservation protection. Moreover, several Federal and State programs are authorized to use only short-term easements.

By comparison, short-term easements could be considered conservation rental, whereas perpetual easement conservation would be considered conservation ownership. Both types of easements are necessary to effect and provide conservation of high-priority habitats that target the conservation of migratory birds. Consequently, easement purchases should be considered valuable investments. However, as land values increase and the cost of purchasing easements increases, the value of previously acquired easements that are already affecting priority conservation continues to increase over time. This makes long-term easements a more cost-effective means of accomplishing conservation on the landscape.

Since the inception of SWAP, the Service has periodically tested short-term wetland easement projects. During the infancy stage of the program from 1960 to 1963, the Service bought eighty-five 20-year easement contracts in North Dakota and thirty-five contracts in South Dakota; these easements have long since expired. Another study concluded that 20-year contracts only delayed drainage and that short-term easements have short-term benefits (Higgins and Woodward 1986).

From 1970 to 1972, the Service bought twenty 50-year easements in Ramsey County, North Dakota, during a period when the State legislation prohibited the Service from purchasing perpetual easements with Migratory Bird Hunting Stamp Act money. Conservation purchases (fee-title and easement purchases) from this fund require the Governor's approval, which came into question due to the newly imposed prohibition. A subsequent U.S. Supreme Court decision overturned the prohibition, referring to earlier Governor approval of stated acquisition goals, and allowed the program to continue until those goals are reached.

In 1987, in response to "Thirteen Agreements between the Governor of North Dakota and the Fish and Wildlife Service," the SWAP again looked at 50-year easements as a potential conservation option. However, neither landowner support nor statutory approval of this alternative was achieved due in large part to significant differences in the compensation offered.

The purpose and need for action described in section 1 is landscape-scale protection in perpetuity. Repeatedly paying for the same conservation through short-term easements would not allow the Service to achieve the habitat goals and objectives needed to sustain migratory bird populations in this area. Because several less-than-perpetual conservation options are available through other Federal and State programs and conservation partners, it is logical that the Service continue to pursue permanent conservation avenues such as the DGCA proposed project. Moreover, history reveals a successful record in accomplishing the goals set forth by SWAP. A backlog of 800 landowners interested in the program presently awaits money for prolonged periods, which supports the use of perpetual rather than short-term easements.

Expansion of the Project

Based on the assumption that the initial phases of the proposed DGCA project were well underway, the Region 6 planning team evaluated the possibility of expanding the project area into other parts of the PPR—in particular Minnesota, Iowa, and Montana.

Minnesota and Iowa are in another Service region (Midwest Region, Region 3), and Region 3 staffs administer conservation easements under a separate administrative and enforcement manual, which has policies different from Region 6 guidance

for enforcement and administration of easements. The Service determined that the needs of Minnesota and Iowa would be best served with a separate LPP designed and carried out by administrators and managers in Region 3. However, Region 6 staff will assist Region 3, as requested, with any future conservation planning and implementation efforts targeting the PPR in Minnesota and Iowa.

The Service decided that many opportunities exist to effect the needed conservation in the PPR of Montana using current allocations of migratory bird money for the State. If conservation needs in Montana exceeded the money available from Federal Duck Stamps, the Service would prepare a separate environmental analysis and LPP for the area.

Fee-Title Acquisition

Over the past 50 years, the Service, other Federal and State agencies, and conservation groups have acquired many fee-title tracts within the proposed project area. While fee-title acquisition offers the greatest security and protection for wetland and grassland tracts, the initial costs for acquisition and the recurring costs for annual management of these areas use more resources, compared with other available alternatives that are more cost effective and more socially and politically acceptable. The Service conducted no further analysis of this alternative.

3. AFFECTED ENVIRONMENT

Section 3 describes the physical, biological, and socioeconomic environments and cultural resources that alternatives A and B could affect.

Physical Environment

The following describes the physical features of the proposed DGCA project area, climate of the area, and climate change.

Physiographic Features

A physiographic region is an area with a pattern of relief features or landforms that are significantly different from that of adjacent regions. There are many descriptions, some more detailed than others, of the physiographic regions in the prairie pothole landscape. However, in the simplest terms, North Dakota has at least four physiographic regions in the proposed DGCA: the Red River Valley, the Drift Prairie, the Missouri Coteau, and the Missouri Slope. Within the South Dakota part of the proposed DGCA project area, there are three physiographic regions: the Drift Prairie, the Dissected-till Plains, and the Great Plains.

An ecoregion is a major ecosystem (a biological community of interacting organisms and their physical environment) that is defined by distinctive geography. Figure C shows the location of 24 ecoregions in the project area for the proposed DGCA (Bryce et al. 1998).

Landscape variability patterns in the ecoregions are more numerous and distinctive east to west, even though some variability exists from north to south, primarily due to the advancement and receding, stall, and melt of glaciers that occurred in a more north-to-south pattern. As glaciers advanced, they encountered topographic obstacles, which resulted in sediment being picked up and mixed with ice. When the glaciers melted between 10,000 and 12,000 years ago, the ice on top melted more quickly than ice that was trapped beneath the sediment. The uneven melting resulted in the hilly to gently rolling topography characteristic of large parts of the proposed project area. Similarly, other ecoregions resulted from the advance of parts of the glaciers with differing levels of resistance, ranging from low to extreme, and melting or running off the landscape in differing sequences. The subsequent landforms resulted from movement and melt-timing differentials. The sedimentary deposition is up to 600 feet thick and is characterized as an unsorted mixture of clay, silt, sand, cobbles, and boulders, or "till."

The depressions between hills in the glaciated landscape are described as "potholes," which fill sea-

Fowler Photography / USFWS

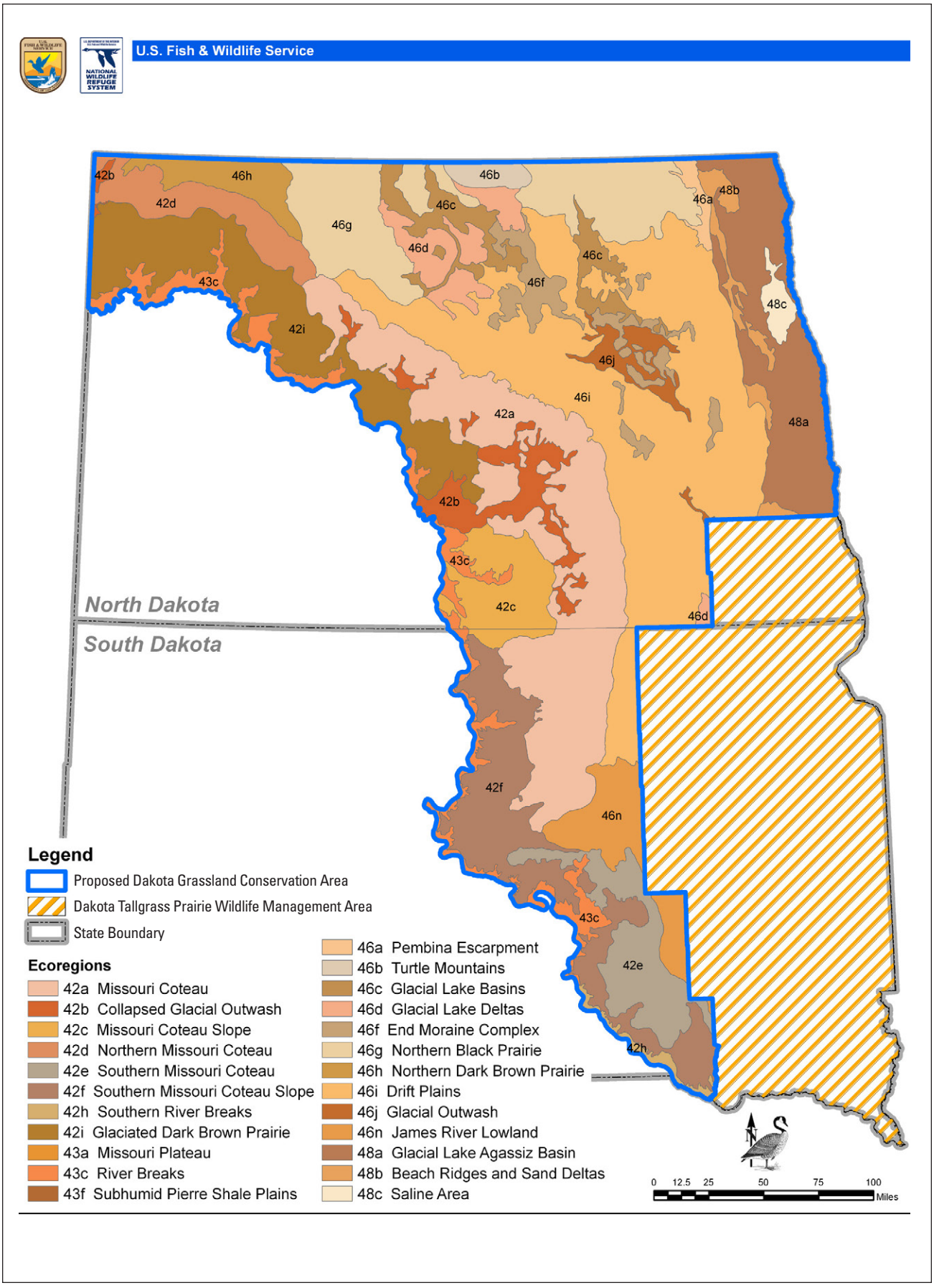

Figure C. Map of ecoregions in the proposed Dakota Grassland Conservation Area. *[Same as figure 3 in chapter 2.]*

sonally with water to form wetlands. The proposed project area is punctuated with areas created by runoff from melting glaciers, resulting in gravel and sand depositions (Bluemle 1977). The grinding of rock by the glaciers created a nutrient-rich soil on which grasslands were established.

In general, soils in the proposed project area are described as Mollisoils, which are dark in color due to high content of organic matter. The soil suborder is Borolls, which are moist–wet and cool (Barker and Whitman 1989, Bryce et al. 1998). Flat fertile soils of the Red River Valley in the eastern and northeastern parts of North Dakota developed under long-term inundation in the glacial bed of historic Lake Agassiz. Also within the proposed project area, there are other similar fertile soils, primarily the result of lacustrine (lake-associated) deposits characteristic to lakebed and river valley areas.

Climate

The climate of the proposed DGCA project area is continental, with very hot summers coupled with very cold winters. Due to the span of the proposed project area from north to south and east to west, it is difficult to capture meaningful temperature and precipitation averages, because ranges are highly variable. However, temperatures can range from –60 to 121 degrees Fahrenheit, and precipitation averages generally range from 13 to 22 inches. Temperatures can vary as much as 70 degrees within a 24-hour period. Precipitation as well as temperatures within a specific locale are highly variable and can range from less than 10 inches in one year to more than 30 inches in another. The western edge on average receives the lowest average annual precipitation and eastern parts receive the highest average annual precipitation.

Climate in the proposed project area often changes from extreme drought to flood in relatively short periods. Similarly, abrupt changes in temperature occur seasonally as well as daily. This climate variability is responsible for the productivity and diversity of wetland and grassland habitats found in the proposed DGCA.

Climate Change

The Service identified climate change resulting from human activity as a potential factor that could substantially affect fish and wildlife populations in the PPR. Effects could be direct, such as changes in temperature and precipitation influencing species and their habitats, or indirect, such as habitat loss caused by conversion of habitat for biofuels. While planning needs to consider both direct and indirect effects, there are considerable uncertainties related to climate change and future land use that would greatly complicate any analysis.

Many species in the PPR are adapted to highly variable conditions (Niemuth et al. 2008, Wiens 1974, Woodhouse and Overpeck 1998). These species respond behaviorally and physiologically (for example, nest site selection and reproductive output) and, therefore, should respond well to habitat conservation efforts.

Due to the uncertainties associated with climate change and the dynamic wet–dry hydrologic cycles of the proposed project area, the Service sees that landscape-scale protection of existing habitats as a sound approach to increase resiliency of the PPR and to buffer against unpredictable climate variables.

The Service is working with U.S. Geological Survey scientists to model climatic changes in the PPR and to develop adaptive management strategies that accommodate these changes. Protection of grassland in the proposed project area is estimated to bank 44,000–93,000 pounds (20–42 metric tons) per acre of carbon dioxide equivalent. These estimates—based on the difference between the organic carbon in soil of native prairie and that of traditional cropland—were derived using methods described by the IPCC (Eggleston et al. 2006).

Adaptation, Mitigation, and Engagement

The Service's strategic response to climate change involves three core strategies: adaptation, mitigation, and engagement (USFWS 2010).

- Through adaptation, the negative effects of climate change on wildlife can be reduced by conserving habitats that are expected to be resilient.
- Carbon sequestration forms one of the key elements of mitigation. Prairie vegetation stores carbon in its deep fibrous roots, with approximately 80 percent of the plant biomass located belowground. It is equally as important to protect existing carbon stores, as it is to sequester atmospheric carbon.
- Engagement involves cooperation, communication, and partnerships to address the conservation challenges presented by climate change (USFWS 2010).

Biological Environment

The biological environment comprises the habitat and associated wildlife in the proposed project area. Appendix B contains a list of plant and animal species that occur over the proposed project area.

The uniqueness of the proposed DGCA lies in the millions of depressional wetlands that constitute one of the richest wetland systems in the world. These wetlands—or prairie potholes—and surrounding grasslands support an entire suite of plants and animals. In addition, the grasslands support yet another suite of plants and animals. In many cases, the biodiversity of this highly productive area relies on a combination of resources from the potholes and the native prairie grasslands. The PPR is breeding habitat for a myriad of wetland and grassland birds and supports high numbers of spring and fall migrants.

Once vast grassland, the PPR is now largely an agricultural system dominated by cropland. Despite these changes, millions of wetlands and large tracts of native prairie remain. The PPR is one of the most altered—yet also one of the most important—migratory bird habitats in the Western Hemisphere.

Uplands

The proposed project area lies in the native mixed-grass prairie of the northern plains and includes small elements of native tallgrass prairie to the east and native shortgrass prairie to the west (Whitman and Wali 1975). The vegetation is largely a wheatgrass–needlegrass type (Bryce et al. 1998, Martin et al. 1998). The area has six primary species of grass: prairie Junegrass, green needlegrass, needle and thread, blue grama, little bluestem, and yellow sedge. There are 11 secondary grass species: western wheatgrass, Canada wildrye, spike oats, big sandgrass, ticklegrass, porcupinegrass, mat muhly, sideoats grama, Leiberg's panicum, needleleaf sedge, and threadleaf sedge. In areas of glacial outwash, plains muhly and saltgrass may be found (Bryce et al. 1998).

Many wildflowers and other forbs make up 5–15 percent of the vegetative cover. The native prairie has 65 species of common forbs including the following: pasqueflower, western wallflower, prairie smoke, Missouri milkvetch, lead plant, Indian breadroot, purple prairie clover, gaura, harebell, narrowleaf blazing star, purple coneflower, and western yarrow. Other common forbs are sunflowers, goldenrods, asters, sageworts, and wild mint (USDA 1975).

Wooded and shrubby areas cover less than 1 percent of the land in the proposed project area and primarily occur on slopes and in ravines (Niemuth et al. 2008, Whitman and Wali 1975). Wooded areas often comprise aspen and green ash, especially in the northwestern section of the Missouri Coteau. Pockets of western snowberry shrubs can be found throughout the proposed project area (Barker and Whitman 1989, Martin et al. 1998).

In addition to the tremendous diversity of common plants in the upland grasslands, several plant species are considered rare, threatened, or endangered at the State level in North Dakota and South Dakota (Hagen et al. 2005, USFWS 2011b). The Dakota buckwheat found in dry, upland, native prairie is endangered in North Dakota, and another seven grassland species are threatened. Rare plants in the proposed project area are prairie mimosa, Rocky Mountain iris, bottle gentian, small-flowered penstemon, and western prairie fringed-orchid.

John and Karen Hollingsworth / USFWS

Tallgrass Prairie

Wetlands

About 10 percent of the proposed project area is primarily palustrine (marsh) emergent wetland (Cowardin et al. 1979). These wetland habitats have temporary, seasonal, semipermanent, and permanent water regimes; the variation in the length of time water persists in these wetlands results in different types of vegetation.

- Ephemeral, temporary, and seasonal wetlands that have water for several weeks support vegetation that comprises wetland–low native prairie, wet meadow, and shallow marsh zones. Common plants include bluegrass, sedges, western snowberry, prairie cordgrass, and wild lily. Other plants in temporary and seasonal wetlands include smartweed, rushes, and reed canarygrass.

- Semipermanent or permanent wetlands have water present through most or all of the year. These wetlands may have any of the vegetation zones already mentioned, as well as deep marsh zones

with pondweed and milfoil, shallow marsh zones with bulrush and cattail, and open-water areas with no vegetation.

Two other types of wetland are found on the Missouri Coteau: alkali ponds and fens. Alkali ponds generally have reduced diversity, although widgeongrasses are common (Stewart and Kantrud 1971). Fens are alkali bogs that support a diversity of flora including some of the rarest plants in North Dakota (Duxbury 1986).

The wetlands in the proposed project area also support several species of plants that have small or declining populations in North Dakota. Fifteen species of wetland plants are considered threatened, and pullup muhly and elk sedge are endangered at the State level in North Dakota. In wetter native prairie areas within the proposed project area, rare or imperiled species occur such as the joint-spike sedge, fringed gentian, and sedge mousetail (Hagen et al. 2005, USFWS 2011b).

Federally Listed Species

Under classification of the Endangered Species Act, there are eight endangered and threatened species (scaleshell mussel, Topeka shiner, pallid sturgeon, least tern, whooping crane, gray wolf, western prairie fringed-orchid, and piping plover) and two candidate species (Dakota skipper and Sprague's pipit) that occur in the proposed project area or nearby.

Endangered Species

Scaleshell Mussel. The scaleshell is a relatively small freshwater mussel with a thin, fragile shell and faint green rays. It grows to about 1–4 inches in length. The inside of the shell is pinkish white or light purple and highly iridescent. The scaleshell gets its name from the scaly appearance of the shell, which is only seen in females.

Scaleshell historically occurred across most of the eastern United States. Scaleshell mussels live in medium-sized and large rivers with stable channels and good water quality. They bury themselves in sand and gravel on the river bottom with only the edge of their partially opened shells exposed. As river currents flow over them, they siphon particles out of the water for food such as plant debris, plankton, and other microorganisms.

The life cycle of the scaleshell, like most freshwater mussels, is unusual and complex. Their eggs develop into microscopic larvae (glochidia) within the gills of the female. The female discharges its glochidia into the river, where they must attach to gills or fins of a fish to continue developing. Each mussel species has specific fish species (host fish) that the glochidia need to develop. Glochidia continue growing on the fish and transform into juveniles. After a few weeks, they drop off, land on the river bottom, and continue maturing into adults.

The roles of scaleshell mussels in river ecosystems are as food for wildlife like muskrats, otters, and raccoons and as filters that improve water quality. During the last 50 years, this species became increasingly rare within its reduced range. Of the 55 historical populations, 14 remain scattered within the Mississippi River basin in Arkansas, Missouri, and Oklahoma. Toxins and declines in water quality from pollution easily harm adult mussels because they are sedentary (stay in one place). Pollution may come from specific, identifiable sources such as factories, sewage treatment plants, and solid waste disposal sites or from diffuse sources like runoff from cultivated fields, pastures, cattle feedlots, poultry farms, mines, construction sites, private wastewater discharges, and road drainage. Contaminants reduce water quality and may directly kill mussels, reduce the ability of surviving mussels to have young, or result in poor health or disappearance of host fish.

Sedimentation is material suspended in water that usually moves as the result of erosion. Although sedimentation is a natural process, poor land use practices, dredging, impoundments, intensive timber harvesting, heavy recreational use, and other activities may accelerate erosion and increase sedimentation. A sudden or slow blanketing of the river bottom with sediment can suffocate freshwater mussels, because it is difficult for them to move away from the threat. Increased sediment levels may also make it difficult for scaleshell to feed, which can lead to decreased growth, reproduction, and survival.

Dams affect both upstream and downstream mussel populations by disrupting natural flow patterns, scouring river bottoms, changing water temperatures, and eliminating habitat. The scaleshell and many other river mussels and fish cannot survive in the still water impounded behind dams. Scaleshell and other mussels depend on their host fish for dispersal. Because dams are barriers to fish movement and migration, this, in turn, prevents the dispersal of mussels upstream. Upstream mussel populations then become isolated from downstream populations, leading to small unstable populations that are more likely to die out.

The recent invasion of the exotic zebra mussel into the United States poses a substantial threat to the scaleshell mussel, because it starves and suffocates native mussels by attaching to their shells in large numbers.

Topeka Shiner. Topeka shiners are small (less than 3 inches in length) minnows that have dark lateral and back stripes. Scales above the lateral stripe are edged in pigment, while below the stripe the scales appear silvery-white. During the breeding season,

the shiner has a dark chevron at the base of the caudal fin; breeding males have orange fins.

Topeka shiner habitat is small streams and creeks that exhibit perennial or nearly perennial flow. Substrate usually is clean gravel, cobble, or sand although these shiners have been found in areas with bedrock and clay hardpan overlain by silt. The Topeka shiner may require open pools with cool, clean water.

Historically, Topeka shiners were abundant throughout the native prairie of South Dakota, Minnesota, Kansas, Iowa, and Missouri; these shiners still occur but exist in fragmented and isolated populations. The number of known occurrences has declined by 80 percent, and Topeka shiners have been eliminated from many watersheds. Topeka shiners have been adversely affected by degradation of stream quality, habitat destruction, siltation, channelization, dewatering of streams, and water impoundment.

Activities that increase sedimentation and reduce water quality, such as agriculture and grazing, contribute to the decline of the Topeka shiner. Although impoundments provide a refuge during droughts, impoundments prevent upstream movement, and shiners that use these impoundments are subject to predation by larger fish. Streams with watering ponds and other impoundments have eliminated this endangered shiner from the associated stream reaches. Spawning behavior is poorly understood for this species; it is thought that Topeka shiners spawn on silt-free substrates found in the quieter waters of stream pools. As a native prairie species, the Topeka shiner is adapted to taking refuge in pools during periods of drought. However, human activities that use and reduce ground and stream water create artificial drought conditions that result in death of Topeka shiners from anoxia or exposure. Population declines also are attributed to introduced predaceous fishes.

Pallid Sturgeon. The pallid sturgeon was placed on the Endangered Species List in 1990. This endangered fish, which can weigh up to 80 pounds, has rows of bony plates that stretch from head to tail. It prefers the bottoms of large, shallow rivers with sand and gravel bars, but construction of dams and bank stabilization has damaged or destroyed much of that habitat.

The pallid sturgeon was fairly common in the Missouri and Yellowstone Rivers in North Dakota as late as the 1950s, but biologists believe fewer than 250 wild fish remain in this reach of the rivers. Since 1997, the Service, in cooperation with State fish and wildlife agencies in Montana and North Dakota, has stocked pallid sturgeon in compliance with the "1993 Pallid Sturgeon Recovery Plan." About 28,000 juvenile pallid sturgeon have been released in recovery priority area 2 (the Missouri River from Fort Peck Dam to the headwaters of Lake Sakakawea, including the Yellowstone River upstream to the mouth of the Tongue River). Releases into recovery priority area 2 occurred in 1997, 2000, 2002, 2003, and 2004.

The Service estimates that an isolated remnant population of less than 50 individuals remains in the Garrison Reach of the Missouri River (North Dakota part of the proposed project area); there are no recent records (within the last 20 years) of successful pallid sturgeon reproduction in this reach. The Garrison Reach is outside of the recovery priority areas identified in the recovery plan. Although not excluded from implementation of recovery actions, river reaches outside the recovery priority areas are lower priority, because these areas have been altered to the extent that major modifications would be needed to restore their natural physical and hydrologic characteristics.

Least Tern. This 9-inch long bird is the smallest member of the gull and tern family. About 100 of the remaining 2,500 pairs of the interior population of least tern come to North Dakota each year. The least tern uses sparsely vegetated sandbars including those in the Missouri and Yellowstone River systems in North Dakota and South Dakota. This tern was listed as an endangered species in 1985. Its decline is due to the loss of habitat from dam construction and subsequent operation of the river system.

Whooping Crane. At a height of 5 feet, the whooping crane is the tallest bird in North America. Equally impressive is its 7-foot wingspan. Most whooping cranes migrate through North Dakota each spring and fall, frequently in the company of sandhill cranes. Whooping cranes pass through North Dakota and South Dakota when migrating between their breeding territory in northern Canada and wintering grounds on the Gulf of México. Declared an endangered species in 1970, the decline of the whooping crane is blamed on loss of habitat and excessive shooting. This crane is making a slow, but steady, comeback. From a low of 21 birds in the 1940s, the current wild and captive whooping crane population is about 468.

Gray Wolf. An infrequent visitor to North Dakota, the gray wolf occasionally comes across the border from neighboring Minnesota or the province of Manitoba, Canada. Once abundant in the State, the gray wolf was killed to near extinction by 1940 at the urging of western settlers who believed wolves caused widespread livestock losses. In 1978, the Service published a rule listing the gray wolf as an endangered species throughout the lower 48 States except Minnesota, where the gray wolf was reclassified as a threatened species. In April 2003, the gray wolf's listing status was downgraded to threatened. On February 1, 2005, a United States district court

in Oregon overturned the April 2003 decision and ordered the Service to rescind the rule downgrading the listing status for the gray wolf. At this time, the gray wolf is listed as a threatened species in Minnesota and as an endangered species throughout the rest of its range including North Dakota.

Threatened Species

Western Prairie Fringed-Orchid. The plant, which may reach 3 feet in height, can be recognized by its large, white flowers on a single stem. The western prairie fringed-orchid is a perennial orchid of the native, North American, tallgrass prairie and is found most often on unplowed, calcareous native prairies and sedge meadows. In North Dakota, the orchid most frequently occurs in the sedge meadow community on the glacial Sheyenne Delta and in the moist, native, tallgrass prairie.

The western prairie fringed-orchid is restricted to west of the Mississippi River and is known from about 75 sites in Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and Oklahoma and in Manitoba, Canada. The Sheyenne National Grasslands and adjacent native prairie in southeastern North Dakota contain one of three large populations of the orchid, two in the United States—Sheyenne Delta in North Dakota and Pembina Trail prairie complex in Minnesota—and one in Vita Prairies, Manitoba, Canada. On the Sheyenne Delta, about 95 percent of the orchids occur on the Sheyenne National Grasslands administered by the USDA Forest Service and 5 percent occur on private land.

The only North Dakota plant on the Endangered Species List, the western prairie fringed-orchid is classified as a threatened species, which means it is likely to become endangered. The major cause of the species' decline is the conversion of native prairie to cropland.

Piping Plover. The piping plover is a small shorebird that inhabits barren sand and gravel shores of rivers and lakes; the plovers are attracted to the rare combination of windswept islands or peninsulas with a lack of adjacent tree cover. North Dakota is the most important State in the Great Plains for nesting piping plovers, with more than three-fourths of the plovers nesting on alkali lakes in native prairie and the remainder using the Missouri River. Lake Sakakawea and Lake Audubon are significant areas for piping plovers on the Missouri River system. The average adult census for piping plovers from 1998 through 2000 was 79 birds or 16.2 percent of the river system's total, the third highest of the Missouri River segments supporting plovers. While piping plovers are widely distributed over much of the Lake Sakakawea reservoir, important nesting areas include Steinke Bay, Douglas Creek Bay, the Van Hook Arm, Little Egypt, and Tobacco Garden Bay. From 1998 to 2003, survey crews with the U.S. Army Corps of Engineers recorded an average of 56 piping plover nests within 10 miles of the Snake Creek Embankment between Lake Sakakawea and Lake Audubon; in 2004, there were 141 nests in this area (unpublished Corps data). Piping plover nest initiation is similar to that observed on wetlands in the adjacent native prairie coteau, with the birds initiating nests in early to mid-May.

The piping plover was listed as a threatened species in 1985. Habitat loss and poor breeding success are major reasons for its population decline. In North Dakota, critical habitat for piping plover has been designated on the Missouri River, Lake Sakakawea, Lake Oahe, and selected alkali lakes and wetlands. On the Missouri River, critical habitat includes sparsely vegetated channel sandbars, sand and gravel beaches on islands, temporary pools on sandbars and islands, and the interface with the

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The piping plover is federally listed as a threatened species.

river. Critical habitat on Lake Sakakawea and Lake Oahe includes sparsely vegetated shoreline beaches; peninsulas; and islands formed of sand, gravel, or shale; and their interface with the water bodies. For alkali lakes and wetlands, critical habitat includes the following: (1) shallow, seasonally to permanently flooded, mixosaline to hypersaline wetlands with sandy to gravelly, sparsely vegetated beaches, salt-encrusted mudflats, or gravelly salt flats; and (2) springs and fens along edges of alkali lakes and wetlands and the adjacent upland grasslands that are 200 feet above the high-water mark of the alkali lake or wetland.

Candidate Species

Dakota Skipper. The Dakota skipper is a small butterfly with a 1-inch wingspan. Dakota skippers live in native prairie containing a high diversity of wildflowers and grasses. Habitat includes two native prairie types: (1) low (wet) native prairie dominated by bluestem grasses, wood lily, harebell, and smooth camas; and (2) upland (dry) native prairie on ridges and hillsides dominated by bluestem grasses, needlegrass, pale purple coneflower, upright coneflowers, and blanketflower. The skipper's current distribution straddles the border between the native, tallgrass and mixed-grass prairie ecoregions. The most significant remaining populations of Dakota skippers occur in western Minnesota, northeastern South Dakota, north-central North Dakota, and southern Manitoba. Dakota skipper populations have declined historically due to widespread conversion of native prairie. In addition, the remnant native prairie occupied by Dakota skippers is subject to a variety of threats.

Sprague's Pipit. Sprague's pipits require large patches of grassland habitat for breeding, with the preferred grass height between 4 and 12 inches. The pipit prefers to breed in well-drained, open grassland and avoids grassland with excessive shrubs. Sprague's pipits can be found in lightly to heavily grazed areas. Pipits avoid intrusive human features on the landscape, so the effect of a development can be much greater than the actual "footprint" of the feature. In 2010, the Sprague's pipit was added to the candidate species list. Migratory bird species that are candidate species, such as Sprague's pipit, are still protected under the Migratory Bird Treaty Act.

Invertebrates

The number of insect species and other invertebrate species in the proposed project area is not currently known; however, the available information suggests a wide diversity. The Missouri Coteau is in an area that represents 15–19 percent of all insect species found in North America (Arenz and Joern 1996). A survey of just five wetlands found more than 50 species of insects. In addition, snails, shrimp, and amphipods are common invertebrates in prairie wetlands (Kantrud et al. 1989).

The regal fritillary and tawny crescent butterfly are two butterflies (other than the Dakota skipper described under candidate species) that occur in the proposed project area and that are considered likely to become candidates under the Endangered Species Act without more conservation action (USFWS 2011b).

Mixed-vegetation stands such as native prairie are thought to be less prone to insect pest outbreaks than monocultures such as cropland (Curry 1994).

Amphibians and Reptiles

Turtles, snakes, toads, frogs, and salamanders all live in the project area (Hoburg and Gause 1992). The western hognose snake and the Great Plains toad are typical of grassland, whereas the northern leopard frog, western chorus frog, and tiger salamander are closely associated with prairie wetlands. Tiger salamander larva and adults are particularly important food items for some species of wetland birds (Kantrud et al. 1989).

Aquatic Species

Rivers and streams are some of the aquatic habitats of the Dakota Grasslands that are most affected by the conversion of native prairie to agricultural or urban purposes. There are literally thousands of miles of these riparian corridors throughout the grasslands that provide pathways for much more than just the fish that swim in the waters. Mussel species that rely on fish to distribute their larval stages upriver and migratory birds that use the riparian zones for nesting and feeding also use these systems. The effects of erosion on the watersheds can cause decreases in water quality and degraded habitat that affect the sustainability of many species found in this region.

Despite the best individual efforts of the management agencies involved with watershed decisions, aquatic habitat quality continues to decline across the Nation. Under the National Fish Habitat Action Plan, a strategy to focus and work with partners is beginning to develop across the nation (AFWA 2006). For the Dakota Grasslands region, several fish habitat partnerships are involved with the conservation of aquatic habitats—from glacial lakes and reservoirs to rivers and streams. All of these aquatic habitats are affected by the land uses upstream, and aquatic habitat conservation would significantly improve through grassland easements (NFHB 2010).

Birds

The proposed project area is in one of the areas of highest species richness for wetland and grassland birds in the United States and Canada, providing breeding habitat for at least 130 species of birds (Sauer et al. 1997, Stewart 1975). In addition to birds that breed in the proposed project area, many species of birds migrate through or use the area as wintering ground (Ringelman 2005). Migrating geese, ducks, gulls, and shorebirds rest and feed on these wetlands. Warblers use the wooded and shrubby areas and raptors such as bald eagles and peregrine falcons use a variety of habitats.

The proposed project area supports 27 of the Service's species of conservation concern (table B) including ferruginous hawk, willet, short-eared owl, and loggerhead shrike (Berkey et al. 1993, USFWS 1995).

Waterfowl

The duck population boom that began in 1994 is evidence of the potential capacity of the proposed project area to recruit ducks when habitat conditions are suitable. The PPR of the Dakotas accounts for only 7 percent of the traditional waterfowl survey area of North America, yet carried far more than 20 percent of breeding ducks during the period 1994–2009 (USFWS 2009). Accordingly, the foundation of the

Table B. Priority bird species of the Prairie Pothole Region. *[Same as table 1 in chapter 2.]*

	Species	*Prairie Pothole Joint Venture Priority Species*[1]	*Partners in Flight Priority Species*[2]	*U.S. Fish and Wildlife Service Birds of Conservation Concern*[3]
LANDBIRDS	Baird's sparrow	✓	✓	✓
	Sprague's pipit (candidate)	✓	✓	✓
	Chestnut-collared longspur	✓	—	✓
	Smith's longspur	—	—	✓
	Nelson's sharp-tailed sparrow	✓	✓	✓
	Bell's vireo	—	✓	—
	Le Conte's sparrow	—	✓	—
	Grasshopper sparrow	—	—	✓
	Sharp-tailed grouse	✓	—	—
	McCown's longspur	✓	✓	✓
	Swainson's hawk	✓	—	✓
	Greater prairie-chicken	✓	—	—
	Short-eared owl	✓	—	✓
	Red-headed woodpecker	✓	—	—
	Sedge wren	—	✓	✓
	Bobolink	—	✓	—
	Black-billed cuckoo	—	✓	✓
	Bald eagle	—	—	✓
	Peregrine falcon	—	—	✓
	Dickcissel	—	—	✓
WATERBIRDS	Horned grebe	✓	✓	✓
	Western grebe	✓	✓	—
	American bittern	✓	✓	✓
	Yellow rail	✓	✓	✓
	King rail	✓	✓	—
	Franklin's gull	✓	✓	—
	Black tern	✓	✓	✓
	Least tern (endangered)	✓	✓	—
	Whooping crane (endangered)	✓	✓	—
	Least bittern	—	✓	✓

Table B. Priority bird species of the Prairie Pothole Region.

	Species	*Prairie Pothole Joint Venture Priority Species*[1]	*Partners in Flight Priority Species*[2]	*U.S. Fish and Wildlife Service Birds of Conservation Concern*[3]
SHOREBIRDS	Piping plover (threatened)	✓	✓	—
	Mountain plover	✓	✓	✓
	American golden-plover	✓	✓	—
	Semipalmated plover	✓	✓	—
	American avocet	✓	✓	—
	Upland sandpiper	✓	✓	✓
	White-rumped sandpiper	✓	✓	—
	Baird's sandpiper	✓	✓	—
	Pectoral sandpiper	✓	✓	—
	Buff-breasted sandpiper	—	—	✓
	Semipalmated sandpiper	✓	✓	—
	Solitary sandpiper	—	—	✓
	Stilt sandpiper	✓	✓	—
	Dunlin	✓	✓	—
	Marbled godwit	✓	✓	✓
	American woodcock	✓	✓	—
	Wilson's phalarope	✓	✓	—
	Hudsonian godwit	✓	✓	✓
	Long-billed curlew	—	✓	✓
	Lesser yellowlegs	✓	✓	—
	Long-billed dowitcher	✓	✓	—
	Short-billed dowitcher	—	—	✓
WATERFOWL	Mallard	✓	—	—
	Northern pintail	✓	—	—
	Gadwall	✓	—	—
	Northern shoveler	✓	—	—
	Blue-winged teal	✓	—	—
	Lesser scaup	✓	—	—
	Canvasback	✓	—	—
	Redhead	✓	—	—

[1] *Species designated a focal species, a species of concern, a species in an area important to migrants, or a species of high conservation assessment from the "Prairie Pothole Joint Venture Implementation Plan" (Ringleman et al. 2005).*
[2] *Species designated a criteria I species in the Partners in Flight physiographic areas (37 and 40) within the proposed project area, a species of concern in the "Northern Plains/Prairie Potholes Regional Shorebird Conservation Plan," or a species of high concern in the "Northern Prairie and Parkland Waterbird Conservation Plan" (Beyersbergen et al. 2004, Fitzgerald et al. 1998, Fitzgerald et al. 1999, Skagen and Thompson 2011).*
[3] *Species designated a species of conservation concern by the Migratory Bird Division of the U.S. Fish and Wildlife Service (USFWS 2008).*

PPJV implementation plan is to "keep the table set" for periodic booms in duck populations by making sure that important wetland and grassland habitats are intact. This would require conserving an additional 1.4 million acres of wetland and an additional 10.4 million acres of grassland in the United States part of the PPR.

At least 12 species of waterfowl breed in the proposed project area and most depend on upland grasslands for nesting, as well as wetlands for feeding and brood rearing. (Stewart 1975). Mallard, northern pintail, northern shoveler, gadwall, and blue-winged teal are the priority species of waterfowl in this proposal (table B). In fact, parts of the

proposed project area support, on average, more than 100 pairs of breeding ducks per square mile—some of the highest densities recorded in North Dakota and South Dakota (Reynolds et al. 2006). The "North American Waterfowl Management Plan" identified the PPR as the continent's top priority for waterfowl conservation and has a goal of restoring wetland to accommodate an additional 492,000 pairs of breeding ducks and 393,000 acres more of restored grassland associated with high-density wetland communities (USFWS 1986).

Other Waterbirds

Waterbirds constitute an important group of species in the proposed project area. The PPR contains two-thirds of the continental breeding population of Franklin's gull; one-half of the continental population of pied-billed grebe, American bittern, sora, American coot, and black tern; and approximately one-third of the American white pelican and California gull populations (Beyersbergen et al. 2004).

The proposed DGCA would benefit 13 species of breeding shorebirds, as well as many other shorebird species that use the area as stopover habitat during migration, such as 30 species that breed in the Arctic. As shown in table B, priority waterbird species include marbled godwit, willet, Wilson's phalarope, American avocet, and piping plover (Ringelman 2005, Skagen and Thompson 2007).

Grassland Birds

Native prairie and untilled pastureland in the proposed project area are habitat for many bird species including northern harrier, sharp-tailed grouse, willet, upland sandpiper, marbled godwit, common snipe, Wilson's phalarope, mourning dove, short-eared owl, burrowing owl, and common nighthawk.

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The gadwall is one of the priority waterfowl species.

Parts of the area provide habitat for a suite of grassland birds—the only group of bird species to experience consistent declines nationwide over the last 30 years (Sauer et al. 1995). Many species in this group have ranges limited to the grassland habitat represented in the proposed project area, including Baird's sparrow, grasshopper sparrow, Sprague's pipit, lark bunting, and chestnut-collared longspur (Knopf 1996, Johnson et al. 1994, USFWS 1995). Destruction of habitat and mowing for hay production are two of the main reasons for the decline in grassland birds (Sauer et al. 1995).

Figure D shows the extent of the breeding range for 27 grassland birds throughout the United States, with the highest concentrations in the Midwest and the PPR. The 27 bird species represented follow:

- Upland sandpiper
- Long-billed curlew
- Mountain plover
- Greater prairie-chicken
- Sharp-tailed grouse
- Ring-necked pheasant
- Northern harrier
- Ferruginous hawk
- Common barn-owl
- Short-eared owl
- Horned lark
- Bobolink
- Eastern meadowlark
- Western meadowlark
- Chestnut-collared longspur
- McCown's longspur
- Vesper sparrow
- Savannah sparrow
- Baird's sparrow
- Grasshopper sparrow
- Henslow's sparrow
- Le Conte's sparrow
- Cassin's sparrow
- Dickcissel
- Lark bunting
- Sprague's pipit
- Sedge wren

In many cases, the proposed project area represents a refuge for birds that are suffering population declines elsewhere. For example, over the last 30 years, 21 species of birds have experienced major declines nationwide, while populations in the proposed DGCA have remained stable (Sauer et al. 1997). Included in this group are several grassland species such as Wilson's phalarope, bobolink, western meadowlark, and clay-colored sparrow. However, populations of the loggerhead shrike, vesper sparrow, and American goldfinch actually have increased over the last 30 years in the proposed project area, while decreases occurred nationwide.

Mammals

The proposed project area includes the ranges of approximately 50 mammal species (Burt and Grossenheider 1964, Grondahl 2011).

Native prairie uplands are habitat for many small mammals including shrews, mice, and voles. In addition, three species of ground squirrels (Richardson's, Franklin's and thirteen-lined) rely on grassland habitat found in the proposed project area. These ground

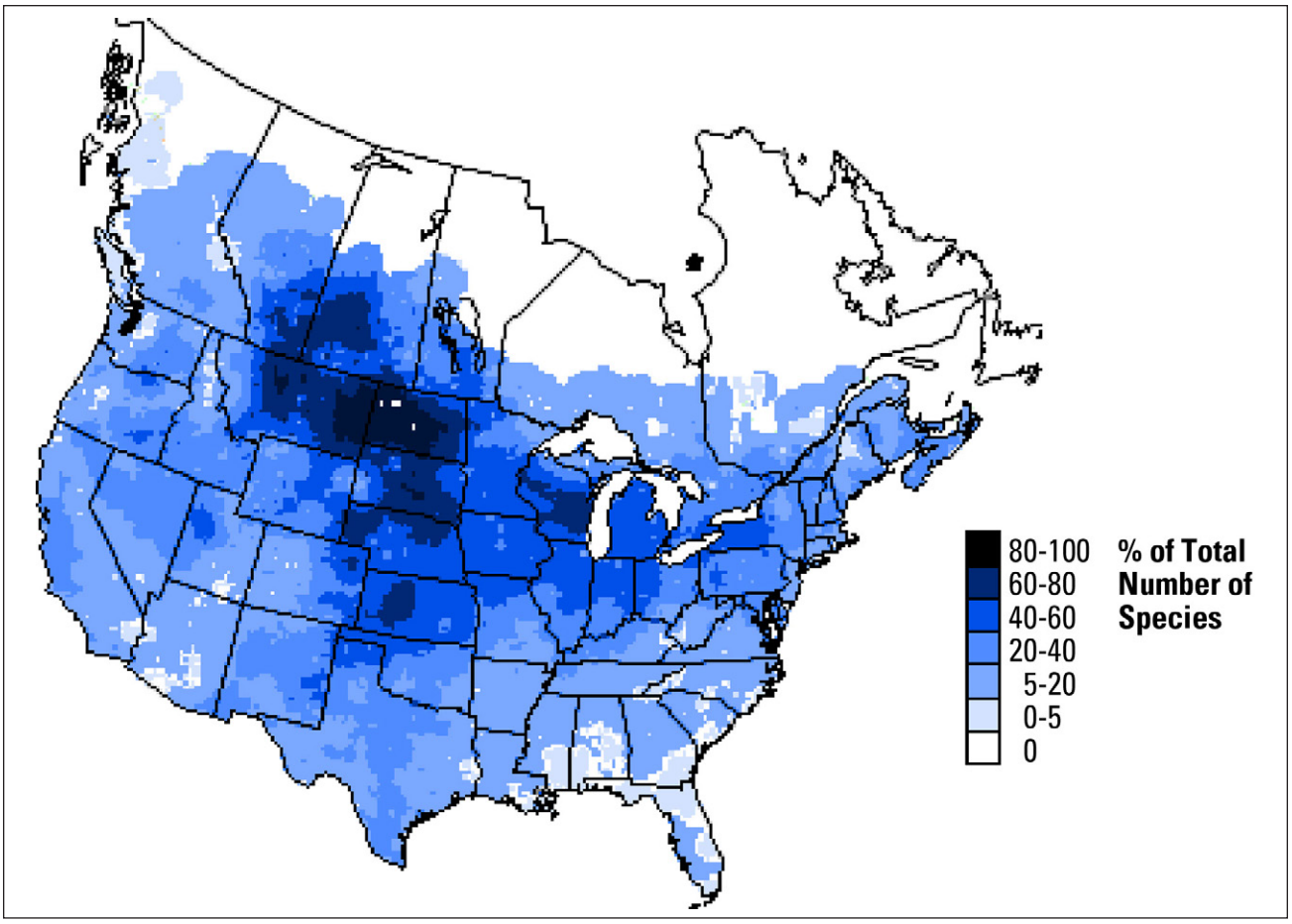

Figure D. Map of the North American breeding ranges of 27 grassland birds. *Source: U.S. Geological Survey.*
[Same as figure 4 in chapter 2.]

squirrels provide critical food sources, and their burrows provide nesting habitat, for raptors such as ferruginous hawks and short-eared owls (Berkey et al. 1993). Big game animals including white-tailed deer and pronghorn also use the upland habitat.

Wetlands provide cover or food, or both, for at least 17 species of terrestrial or semiaquatic mammals such as muskrat, beaver, and mink (Kantrud et al. 1989).

Coyote, red fox, badger, skunk, and weasels are examples of furbearing animals that are widespread throughout the area.

Cultural Resources

Archeologically, all of the proposed DGCA is within the Northeastern Plains subarea of the Northern Plains area (Wood 1998). There have been five cultural traditions or lifeways recognized by archeologists for the American Indians in the Northwestern Plains: from earliest to latest these are paleo-Indian, Plains Archaic, Plains Woodland, Plains Village, and Equestrian Nomadic. During any time in history, existing groups of peoples could be found living different lifeways in different parts of the proposed project area (Gregg et al. 2008).

The more recent history of the area is summarized based on modern historical records for the proposed project area that are contained in the 1790s' journals of explorers and traders.

Paleo-Indian Tradition

The paleo-Indian tradition (9500–5500 B.C.) was based on big game hunting during a time of a relatively warm and comfortable climate. As the ice age ended, these peoples within the proposed project area could be identified by the distinctive Clovis points attached to their lances or spears. Clovis peoples hunted now-extinct animals including mammoths, mastodons, horses, and American camels. By 11,000 years ago, these animals were gone, and then the paleo-Indian hunters relied on hunting giant bison (*Bison antiques*) with beautifully crafted Folsom points. For a thousand years, these peoples continued to hunt the giant bison using regional variations of spear or dart points with names such as the Agate Basin, Hell Gap, Eden, and Cody points (SDARC 2011).

G.R. Zahm / USFWS

Blending in with shortgrasses, a sharp-tailed grouse performs a mating display for a hen.

John and Karen Hollingsworth / USFWS

The western meadowlark is a common grassland bird.

As the paleo-Indian tradition ended, there was increased evidence of plant collection and food storage. Sites of the paleo-Indian tradition include camps, Knife River flint quarry sites, other stone procurement areas, stone workshops, and isolated artifact finds (NDSHPO 2009).

Plains Archaic Tradition

Plains Archaic tradition lifeways (5500–400 B.C.) were based around gathering plants and hunting bison during a drier climate period that had many long and frequent droughts. Reliance predominantly on the hunting of big game seems to have shifted to the opportunistic hunting of bison when available and small game, even rodents, when necessary. The Archaic peoples used the atlatl with dart points for hunting.

The dry climate slowly changed until about 1000 B.C., when conditions became much the same as today (SDARC 2011). Plant gathering was a very important component of the Archaic peoples' daily activities and diet. Sites include animal kill sites, camps, Knife River flint quarry sites, stone workshops, and burial sites (NDSHPO 2009).

Plains Woodland Tradition

The Plains Woodland tradition lifeway (400 B.C.–A.D. 1200) was primarily based on hunting and the gathering of modern plants and animals. During this tradition, the bow and arrow came into use (NDSHPO 2009). In addition, the Plains Woodland peoples began to garden and use ceramic pots as a result of contacts with eastern peoples. Trade goods from other regions of North America were common to these peoples. After A.D. 900, farming crops of corn, beans, squash, and sunflowers in gardens along river bottoms supplemented the hunting and gathering (SDARC 2011).

The farmers lived in earthlodge villages fortified by ditches and log palisades. Sites include burial mounds and other burial sites, occupations, camps, quarries, stone procurement areas, and bison kill sites (NDSHPO 2009). Great social and religious changes became part of these peoples' lifeways as observed in the archeological record—hundreds and maybe thousands of burial mounds were constructed as a new and more elaborate way of burying their dead (Gregg et al. 2008, SDARC 2011).

Plains Village Tradition

Plains Village tradition lifeways (A.D. 1200–1780) adapted to hunting and gathering with full-scale gardening and with ceramic pots common in everyday life. These peoples had a dependable supply of stored food, primarily dried corn, which made possible the large and more permanent village communities of earthlodges. The Plains Village peoples were living all along the Missouri River Valley and its uplands, and their seasonal hunting camps occur throughout the proposed project area. After A.D. 1700, European contacts and trade items became part of the lifeway, as did the introduction of the horse from the Southwest.

The Mandan, Hidatsa, Arikara, and Cheyenne may be the most recognized of these Plains Village tradition peoples. Sites include occupations (fortified and unfortified earthlodge villages), winter villages, hunting camps, flint quarries, eagle-trapping sites, conical timber lodges, burial sites, lithic (stone) workshops, bison kill sites, and rock art sites (NDSHPO 2009).

This tradition ended when the 1780 epidemics decimated the villages, after which the nomadic Sioux became the dominant cultural force in the Northern Plains (Gregg et al. 2008).

Equestrian Nomadic Tradition

The Equestrian Nomadic tradition (A.D. 1780–1880) was dependent on the horse to focus narrowly on

Jackie Jacobson / USFWS

Pasqueflower is a native prairie plant.

bison hunting, with seasonal rounds of plant gathering. A diversified group of cultures such as the Cheyenne, Dakota, Nakota, Lakota, Assiniboine, and Plains Cree took up the Equestrian Nomadic lifeway (DeMallie 2001). This horse culture lifeway greatly increased the capacity to hunt bison and to transport it and family goods over vast areas (Gregg et al. 2008). Known sites include camps, battle sites, and animal kill sites (NDSHPO 2009). It could be said that this lifeway terminated with the surrender of Sitting Bull at Fort Buford, North Dakota.

Modern History

As they explored the Louisiana Purchase, the Lewis and Clark expedition traveled through or wintered in the proposed project area in 1804, 1805, and 1806. The 1800s were a period of cultural turmoil. Based on the United States' Indian policy, the Government made acts and treaties with American Indian tribes in response to the immigration of Europeans into the Northwestern Plains subarea. In the late 1870s, these policies led to settlement of the American Indians on reservations. Today there are eight reservations in the proposed project area (Schneider 2002).

The Dakota Boom began in the late 1870s. During this period, there was large growth in emigrant populations as new railroads opened eastern markets to the wheat from farms within the proposed project area. The Territory of Dakota was an organized, incorporated territory of the United States from 1861 until 1889, when the territory was divided into the present States of North Dakota and South Dakota as they were admitted into the Union (Schell 1975).

Even after the effects of the Dust Bowl and Depression era of the 1930s, farms still covered the vast majority of land within the proposed project area. The Service's Refuge System grew out of the attention given to conservation by President Franklin D. Roosevelt and his administration during this Depression Era. Today, the proposed project area includes 62 national wildlife refuges and 16 wetland management districts.

Socioeconomic Environment

The proposed project area includes parts of 52 counties within North Dakota and South Dakota:

North Dakota Counties

Barnes	Grand Forks	Ramsey
Benson	Griggs	Renville
Bottineau	Kidder	Rolette
Burke	LaMoure	Sheridan
Burleigh	Logan	Steele
Cass	McHenry	Stutsman
Cavalier	McIntosh	Towner
Dickey	McLean	Trail
Divide	Mountrail	Walsh
Eddy	Nelson	Ward
Emmons	Pembina	Wells
Foster	Pierce	Williams

South Dakota Counties

Aurora	Edmunds	McPherson
Brule	Faulk	Potter
Buffalo	Hand	Sully
Campbell	Hughes	Walworth
Charles Mix	Hyde	
Douglas	Jerauld	

The North Dakota cities of Bismarck, Fargo, Grand Forks, Jamestown, and Minot and the South Dakota cities of Aberdeen, Huron, Mitchell, and Pierre are some of the largest cities in or near the project area. These larger cities are considered travel designations from the surrounding rural communities for their shopping and entertainment. A limited amount of industrial activity is associated with the larger communities.

The proposed project area is rural in nature. Many small, rural communities with a population of less than 10,000 people lie within the proposed

project area and are generally supported by the local agricultural and ranching industries. With the exception of the areas near cities and towns, the rural lands are mostly zoned for agriculture. Medium to large farming operations emphasize (1) high-value cropland mainly consisting of corn, wheat and beans, and (2) livestock beef agriculture. Because of the highly desirable soils, the high precipitation, and the topography, the proposed project area has a higher percentage of cropland operations as compared with livestock operations. The USDA's National Agricultural Statistics Service reports that land values within the proposed project area range from more than $3,000 per acre for cropland (eastern South Dakota) to a low of near $300 per acre for pastureland (north-central North Dakota) (USDA–NASS 2008). These mostly family-owned operations range from a few hundred acres to several thousand acres in size.

Oil development in the northwestern part of North Dakota has seen tremendous growth over the last 10 years. There are 5,199 active wells, with 174 active drilling rigs, in North Dakota, and most of them are within the proposed project area. Oil production for September 2010 was more than 10 million barrels. The local media reported that 2010's revenue to the State from oil extraction taxes will exceed $530 million and will likely exceed $1 billion in 2011. The discovery of new oil reserves and the advancement of drilling technology have resulted in a significant interest in drilling new wells for oil. Furthermore, a recently released survey conducted by the North Dakota Geological Survey showed that 52 of the 53 counties in North Dakota have shallow natural gas reserves, which will likely result in added interest in natural gas exploration (NDGS 2010).

Landownership

Most land in the project area is in private ownership. An unpublished report entitled "Summary of Lands, North Dakota Counties," shows that approximately 88 percent of North Dakota landownership is in private agricultural ownership, with the balance in towns, cities, roads, and State and Federal ownership.

South Dakota personnel estimate that approximately 90 percent of the State is privately owned. The ratio of private ownership is assumed similar within the proposed project area. Less than 7 percent of the land in the proposed project area was purchased primarily for wildlife production.

Property Tax

Currently, landowners pay property tax on their private lands to the counties. Since the proposed project is a conservation easement program, the land would remain in private ownership. Easement properties would remain on the tax rolls, and landowners would continue to pay property taxes to the counties. Since lands in both North Dakota and South Dakota are assessed based on soils, which the conservation easements will not affect, no changes to the tax base are anticipated.

Public Use and Wildlife-Dependent Recreational Activities

Opportunities for wildlife observation, nature photography, hunting, and fishing attract visitors to the project area. Because the proposed project area encompasses part of the PPR, waterfowl hunting is a major attraction. Grassland species such as ring-necked pheasant and sharp-tailed grouse are abundant and are highly sought after by hunters.

The 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation found that $539 million were spent on equipment and various trip expenditures for hunting and fishing in North Dakota and South Dakota (U.S. Census Bureau 2008). In 2010, the sale of hunting and fishing licenses in North Dakota and South Dakota generated nearly $42 million in revenue. An additional $206 million were spent on wildlife observation activities in both States.

There is increasing interest in developing wildlife-related tourism opportunities in the proposed project area. Several communities have developed self-guided, wildlife-viewing routes in conjunction with local landowners. Control of public access to easement lands remain under the control of the landowners.

4. ENVIRONMENTAL CONSEQUENCES

Wilson's phalarope is a shorebird that uses both wetland and grassland habitats.

For alternatives A and B described in section 2, this narrative documents the analysis of environmental effects expected to occur from implementing the alternatives.

Effects on the Physical Environment

The estimated effects of each alternative on the Service's ability to address climate change are described below.

Alternative A (No Action)

With current rates of conversion of native grasslands to agricultural production in the PPR, there is a continually decreasing capacity to sequester carbon in this region. These conversion rates, as well as a loss of existing sequestered carbon within agricultural lands, adds to the uncertainty of climate change. The Service would be limited to existing programs and funding to protect wetland and grassland habitats in proposed project area.

Alternative B (Proposed Action)

The proposed DGCA would provide the Service with a strong strategy for conservation action in anticipation of changes in climate. Implementing the proposed project could help secure the carbon already stored within native prairie soils. As preserving migratory bird corridors becomes increasingly important, the proposed DGCA would provide a contiguous north–south stand of native mixed-grass and tallgrass prairie within the central flyway. Conservation actions would help maintain intact the character of this native prairie in the PPR.

In addition, the proposed DGCA would serve as a model for engagement on the issue of climate change by working with producers, nongovernmental organizations (The Nature Conservancy, Ducks Unlimited, Delta Waterfowl, Pheasants Forever, and many local wildlife organizations scattered throughout the proposed DGCA), State and local agencies (South Dakota Game, Fish and Parks; and North Dakota Game and Fish Department), and Federal agencies including the NRCS.

Effects on the Biological Environment

The estimated effects of the alternatives on uplands, wetlands, and federally listed species are described below.

Upland and Wetland Effects—Alternative A (No Action)

Wetlands and grasslands would continue to be protected through a limited number of conservation easements bought with funding sources such as NAWCA and Federal Duck Stamps. Other mea-

sures for protection of wetland and grassland habitat would continue through fee-title acquisitions and restoration projects such as seeding native grasses; however, the cost per acre for these measures is two to four times the cost per acre for wetland and grassland easements. Based on current budgets and no additional money, there would be a projected loss of half of the remaining native prairie within the proposed project area, at current rates of converting native prairie to cropland, over the next 34 years. Furthermore, without perpetual protection in the form of conservation easements, the future of wetland and grassland in the proposed project area would be uncertain.

A survey of landowners in the PPR conducted more than 10 years ago showed that, although most landowners would keep the amount of grassland and cropland on their property the same, 24 percent would like to increase their cropland acreage (Responsive Management 1998). Of those landowners that would like to increase their cropland, the topography of the land, the laws, and the costs are perceived as factors preventing them from doing this. While topography is not changeable, changes in policy and the agricultural economy have historically resulted in changes in tilled acres (Gerard 1995). Several factors have accelerated the conversion of grassland into cropland production: (1) recent development of genetically modified cereal crops; (2) agricultural policy providing increased crop and income protection; and (3) increasing commodity prices (Stephens et al. 2008).

Current and projected grassland conversion rates will undoubtedly accelerate with increasing prices for cereal grains and low cattle numbers absent any meaningful effort to protect grasslands that remain within the proposed DGCA.

- Recent crop prices have increased: (1) sunflowers at $29.19 per CWT (hundred weight) NuSun™ (Enderlin, North Dakota, crushing plant), average for 2011 through March (National Sunflower Association 2011); (2) March hard red spring wheat at $9.82 per bushel (Sun Prairie Grain 2011b); and (3) March corn at $6.59 per bushel (Sun Prairie Grain 2011a)

- Oklahoma State University's Division of Agricultural Sciences and Natural Resources reports the beef cowherd in the United States decreased 12 of the past 14 years. The beef cowherd dropped from a cyclical peak of 35.3 million head in 1996 to 31.3 million head in January 2010, which is the lowest level since 1963. Furthermore, the combined beef and dairy calf crop in 2010 was expected to be 35.4 million head—the smallest United States calf crop since 1950 (Oklahoma State University 2011).

Additional loss of wetland and grassland would contribute to the long-term decline in nest success for upland-nesting waterfowl. Several duck species avoid nesting in cropland, and overall nest success in croplands is below levels considered sufficient to sustain populations (Cowardin et al. 1985, Klett et al. 1988). It is likely that predation would continue to be a major reason for nest loss in waterfowl and other upland-nesting birds, since each additional conversion of grassland to cropland would create an island of grass more easily searched by predators (Cowardin et al. 1985, Sovada et al. 1995). If grassland was converted to cropland, quality duck-nesting habitat could be restored by planting cover (cool-season grasses and forbs). Other intensive management techniques such as predator control, fence exclosures, and artificial nesting islands could also be used (Beauchamp et al. 1996, Reynolds 1999). While these measures might be beneficial to overall nest success, they would be more expensive than protection through conservation easements.

Several species of grassland birds that are restricted to native mixed-grass prairie would be negatively affected if more of this habitat were converted to cropland. Cultivated land is unsuitable nesting habitat for these species (Owens and Myres 1972). A reduction in nesting habitat may mean that the proposed DGCA would no longer be an area with a relatively high density of grassland birds, and populations in the proposed project area may begin

John and Karen Hollingsworth / USFWS

The horned grebe is a wetland-dependent bird in the Prairie Pothole Region.

to decline as they have in other parts of their ranges (Sauer et al. 1997). Some of these species may have to receive protection under the Endangered Species Act, if their populations continued to decline.

Conversion of grassland to cropland would increase the pesticide load on the environment. Pesticide use is almost entirely associated with croplands, and 90 percent of all cropland in North Dakota receives at least one application of herbicide per year (Zollinger et al. 1996). The effects of pesticides on wildlife are variable and include reduction of nesting cover for birds, direct contamination of egg embryos, and losses in the aquatic invertebrate food base that is critical for many nesting birds, particularly waterfowl (Dwernychuk and Boag 1973, USEPA 2011, Messmer and Dahl 1991, Pimentel et al. 1992). The correct application of pesticides reduces impacts to the environment; however, spills and other nonlabeled use unfortunately can occur with resultant impacts to the environment.

Conversion of grassland to crops has negative effects on freshwater ecosystems. Intact grassland retains soil and nitrogen. Soil erosion from cropland increases sediment in fresh water systems, raising temperatures and degrading the habitat for fish. Land planted continuously to crops or close to aquatic systems releases high amounts of nitrates to freshwater systems. When these nitrogen-laden waters reach the larger bodies of water, they contribute to increased algal blooms, which increase biological oxygen demand, lower low oxygen levels, and change the vegetative habitats to a point that make it difficult for fish and other aquatic wildlife to survive.

Even in light of the real pressure for grassland conversion, North Dakota and South Dakota have waiting lists of well over 800 landowners interested in selling wetland and grassland easements on more than 300,000 acres. The only thing restricting the Service from protecting these areas is limited money.

Upland and Wetland Effects—Alternative B (Proposed Action)

Establishing the proposed DGCA project would enable the Service to protect in perpetuity up to 240,000 acres of wetland and 1.7 million acres of grassland. In addition to the funding sources available in alternative A, under this alternative the Service could also use money from the LWCF to buy wetland and grassland conservation easements. The increase in available money would result in increased acreage to complement the Service's current conservation easement program and the existing public grasslands (such as waterfowl production areas and State wildlife management areas)—allowing for the preservation of a network of grasslands throughout the proposed project area. At current easement acquisition rates, the Service would achieve the acreage objectives for the proposed project within 30 years. Importantly, these protected areas would exist regardless of changes in agricultural policy or economy, which are known to affect the rate of grassland conversion (Gerard 1995).

Protection of native prairie watersheds using conservation easements may be one of the best defenses to preclude further degradation of streams and prairie wetlands and the aquatic resources that depend on them. In addition, conservation easements in the proposed DGCA would help maintain the uniqueness of the relatively intact grasslands that harbor a wide variety of wildlife species. Buying grassland easements within the proposed project boundary would prevent the conversion of grassland, where nest success for waterfowl is higher, to cropland where nest success is lower (Klett et al. 1988). Other species of upland-nesting birds also have higher nest success rates in grassland than in cropland (Kantrud and Higgins 1992). Furthermore, nest success increases when the percentage of the landscape in grass increases (Ball et al. 1995, Greenwood et al. 1995, Reynolds et al. 2001). Thus, protecting the relatively intact grasslands in the proposed project area represents a strategic opportunity for maintaining waterfowl populations throughout the PPR.

Protecting grasslands in the proposed DGCA would help buffer the population declines grassland birds are experiencing in other parts of their ranges. Grassland bird populations are steady or increasing in the proposed project area while decreasing throughout many other parts of their ranges (Sauer et al. 1997). Long-term prospects for grassland birds are considered poor (Sauer et al. 1995), and preserving grasslands in this part of the birds' ranges may prevent some of these species from needing protection under the Endangered Species Act. The agricultural economy, and in particular the livestock industry, is cyclical. In general, high prices of cereal crops generate accelerated conversion of grassland to cropland and lower the number of cattle due to high costs and small profit margins related to feeding and finishing beef cattle. Conversely, low crop prices generate gradual buildup of cattle herds to take advantage of low feed costs. This contributes to the cyclical nature of the beef production industry, which does not benefit from protections provided by farm policy and programs to agricultural crop producers. Grassland easement protection through the proposed DGCA project has the potential to augment and moderate the cyclical nature of the livestock industry, helping keep viable cattle production and ranching industries.

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An area restored by planting native vegetation.

Preventing the establishment of some new cropland would slow the increase in volume of pesticides into the environment. Pesticide use is almost entirely associated with cropland, and 90 percent of all cropland in North Dakota receives at least one application of herbicide each year (Zollinger et al. 1996). Protected grasslands would also act as buffers for wetlands near pesticide-treated cropland by filtering up to 70 percent of the water runoff (Hartwig and Hall 1980). This may reduce the negative effects on wildlife, such as nesting ducks, from ingesting contaminated invertebrates or from the loss of the invertebrate food base due to die-offs caused by pesticides (Grue 1988, Kantrud et al. 1989). In addition, an increase in the number of acres of upland buffers would provide an even greater benefit to aquatic resources.

Wetland and grassland easements are the most cost-effective, socially and politically acceptable means to ensure protection of critical habitats in the proposed project area. Although habitat protection through fee title remains an option in some locations, the Service sees easements as the most viable way to conserve lands at the landscape scale necessary to protect wildlife values in the proposed DGCA. The cost for acquisition of easements in the proposed project area would be approximately $588 million. Fee-title acquisition would triple or quadruple the cost of land conservation in addition to requiring increases in long-term management and operational costs for the Service.

The Service views a strong and vibrant rural lifestyle, of which ranching is the dominant land use, as one of the key components to ensuring habitat integrity and wildlife resource protection. The proposed conservation easement program would augment the efforts of other conservation agencies and groups.

Federally Listed Species Effects—Alternative A (No Action)

Through the continued use of wetland and grassland easements acquired with approved money, there would be direct improvement in habitats for listed species such as western prairie fringed-orchid and indirect habitat improvement for other listed species such as pallid sturgeon. However, the pace of habitat protection would be at a slower rate than that for the proposed action.

Federally Listed Species Effects—Alternative B (Proposed Action)

With an accelerated purchase of wetland and grassland easements, the Service anticipates that all endangered, threatened, and candidate species would benefit from the extensive habitat protection under the proposed DGCA. Although management of lands with easements would remain primarily with the private landowner, maintaining wetland and grassland habitats would directly and indirectly benefit federally listed species. Similar to alternative A, direct improvement is expected in habitats for listed species such as western prairie fringed-orchid and indirect habitat improvement for other listed species such as pallid sturgeon.

The Service's Ecological Service Field Offices in North Dakota and South Dakota have concurred with the determination of a "May Affect, Not Likely to Adversely Affect" for federally listed species in the DGCA project area (appendix I).

Effects on Cultural Resources

The estimated effects of each alternative on cultural resources are described below.

Alternative A (No Action)

Some cultural resources could benefit indirectly because, where they occur in a wetland and grassland easement, the cultural resources would be protected from surface-disturbing activities.

Alternative B (Proposed Action)

There would be potential for more protection of cultural resources than under alternative A, due to the accelerated purchase of wetland and grassland easements.

Effects on the Socioeconomic Environment

The estimated effects of the alternatives on landownership, land use, oil and gas development, and wind energy development are described below.

Landownership and Land Use Effects—Alternative A (No Action)

Landownership would not be affected. Limited acquisition of perpetual wetland and grassland easements would continue through existing funding sources. Lands not protected through these traditional funding sources would be at risk of conversion to agriculture at the present rate, thus greatly reducing wetland and grassland resources over time.

Landownership and Land Use Effects—Alternative B (Proposed Action)

Landownership would not be affected. The additional funding source for the acquisition of wetland and grassland easements from willing sellers would improve the Service's ability to protect wetland and grassland resources. In addition, the economic incentive of easement purchases may provide opportunities for farming and ranching operations to remain viable.

In most instances, wetland and grassland easement requirements would be compatible with the current operations on the properties. Protected wetlands may be hayed and grazed without restriction and may be farmed when dry of natural causes. The wetland easements would prohibit the draining, burning, filling, or leveling of protected wetland basins. The grassland easements would not restrict grazing, would prohibit the conversion of the grasslands, and would restrict haying until after July 15.

A recent GAO report indicated that the conversion of grassland to agricultural production in South Dakota would result in a net increase in farm revenue 4 out of 5 years with farm program subsidies (GAO 2007a). However, without farm program subsidies, the farm revenue would only increase 1 out of 5 years. Therefore, maintaining the local ranching communities would provide a much more stable income and would not increase overall farm subsidy payments.

Conservation easements secure a limited interest in private lands, and landowners would continue to pay property taxes. While there is the potential that grassland that could be converted to cropland would generate higher tax revenue than grassland, this Service's conservation easement program would have no direct effect on the existing value of the land. Although the Service would acquire a limited interest in an easement property, there would be no transfer of ownership. The landowner would keep all access control, except the Service may enter the property to ensure compliance with the terms of the easement.

Subsurface Resource Effects—Alternative A (No Action)

The development of subsurface resources would not be affected. Region 6 (Mountain–Prairie Region) requires that subsurface resources in wetland and grassland easements be handled differently from other Service regions, because the Region 6 agreements have rights different from those in other regions. The Service would continue to administer subsurface resources on wetland and grassland conservation easements according to the policies and procedures in the Easement Manual (USFWS 2011a), as described under alternative B.

Subsurface Resource Effects—Alternative B (Proposed Action)

The subsurface resource effects would be the same as for alternative A. The Service would follow policies and procedures in the Easement Manual (USFWS 2011a), which are summarized below.

Wetland Easements

Following Region 6 policy for wetland conservation easements, the Service exercises jurisdiction over all subsurface resources such as sand, gravel, clay, scoria, black soil, other soils, fill, and rock-like materials. This jurisdiction does not include the traditional minerals—gas, oil, and coal—because the rights to these resources are not included in ease-

ments. It needs to be emphasized that this jurisdiction relates only to the wetland protected under easement. If any of the subsurface, resource-extraction activities can be accomplished on upland sites without affecting protected wetlands either directly or indirectly (watershed interference), there is no easement jurisdiction and the activities may occur.

Grassland Easements

Region 6 policy for grassland easements specifies the Service's jurisdiction over limited subsurface resources such as clay, fill, black soil, or other soils; however, under the policy, the Service will not exercise jurisdiction over sand and gravel. As with wetland easements, Service jurisdiction does not include gas, oil, and coal. This policy is consistent with existing grassland easement program administrative guidance, and that has been used by realty and management staffs, as well as portrayed by easement vendors to landowners in the past.

Surface Protection

When it is stated that Region 6 will not exercise jurisdiction over certain subsurface exploration or extraction practices—as described above for sand and gravel on grassland easements—the intent is that no jurisdiction is expressed nor implied. Managers may, however, suggest reclamation procedures or work with the extraction entity or the landowner to minimize surface disturbances; but managers cannot require specific conditions of people or entities exercising their subsurface resource rights. Recommendations can be sent by letter with a map that (1) shows the location of proposed facilities and (2) identifies the natural resource features where minimized disturbance is needed to protect resources and to avoid negative effects on easement interests. In most cases, disturbance to a tame grass site would be less detrimental than on a native prairie site.

The mineral estate owner has a legal obligation to take reasonable measures to protect the surface estate under laws in most States. The Service's involvement is necessary to protect and reduce the negative effects on the wetland and grassland resources. The best situation is for the Service, the mineral company, and the landowner to discuss the alternatives and choices before any agreements between two of the three parties. Region 6's role is limited to those aspects that affect Service easement interests and are reasonable. The Service gives recommendations in writing to the energy or mineral company and the landowner; if agreed to, all three parties sign the recommendations. The approved recommendations are retained and passed on to various entities within the mineral company and will protect the surface interests of the Service and future landowners in case the land or the company is sold.

There are situations related to oil and gas production on easements where the Service has the authority to permit or deny the use and where the Service's compatibility policy would apply. For example, the Service has the authority to deny the crossing of easement lands with pipelines or roads to access oil and gas production on lands not within a Service easement.

Wind Energy Development Effects—Alternative A (No Action)

On easements acquired under existing funding and authorities, the Service would address requested uses such as wind energy development under the policy of reasonable accommodation as described in the Easement Manual (USFWS 2011a). No changes would occur. The Service would evaluate wind energy development that could affect an easement's provisions and would authorize the use only if appropriate. The policy includes an evaluation process that could allow wind energy development to occur on an easement by exchanging that easement for another easement property, with a reversionary clause to reinstate the original easement after development activities cease.

Wind Energy Development Effects—Alternative B (Proposed Action)

For easements acquired under the new authority of the proposed DGCA, the Service would address requested uses such as wind energy development the same as for alternative A, with an expected increase in reviews due to more land protected by easements

Unavoidable Adverse Impacts

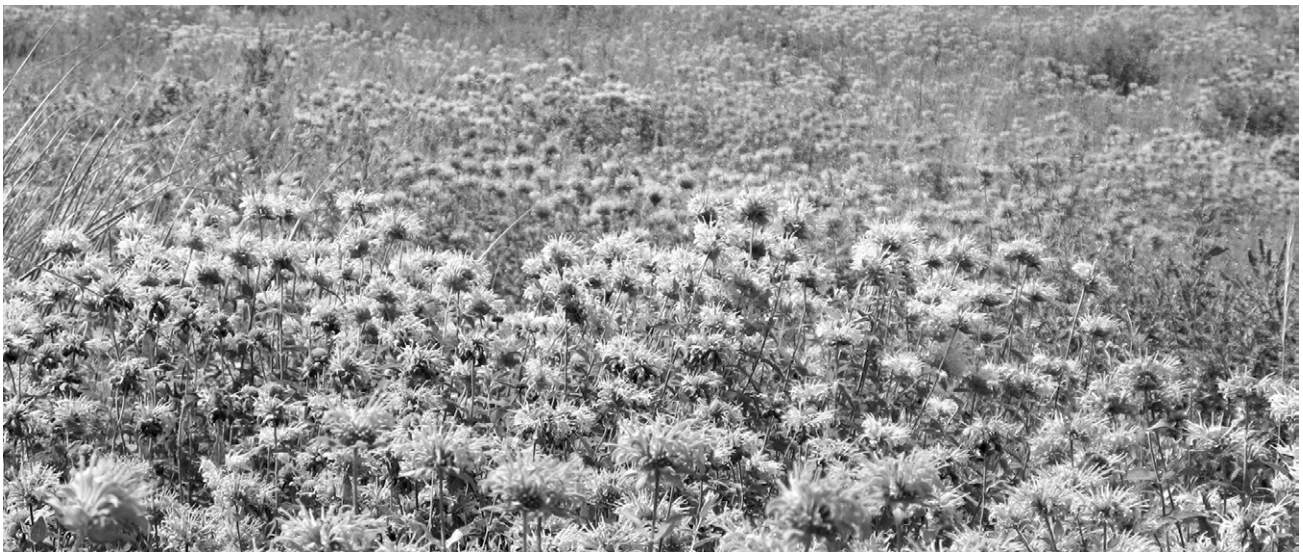
Any adverse effects that may be unavoidable while carrying out alternatives A and B are described below.

Alternative A (No Action)

The loss of wetland and grassland habitats through conversion to agriculture and development would continue, although protection of some of these habitats would continue through existing acquisition authorities and funding.

Alternative B (Proposed Action)

The increased protection of wetland and grassland habitats would reduce fragmentation, increase water



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Native prairie in bloom.

quality, maintain current levels of carbon sequestration, and maintain the area's rich biological diversity. Management of lands for wetlands and grasslands would benefit ranching operations but may reduce the potential production of agricultural crops in the area, although most areas to be protected are not well suited for crop production.

Irreversible and Irretrievable Commitments of Resources

Any commitments of resources that may be irreversible or irretrievable because of carrying out alternatives A or B are described below.

Alternative A (No Action)

There would be no commitment of resources by the Service if no action were taken. The Service's existing authorities would permit the acquisition of easement interests within the proposed project area, although they would be limited to current money constraints.

Alternative B (Proposed Action)

There would not be any irreversible or irretrievable commitments of resources associated with the establishment of the proposed DGCA project. If funded through the LWCF, easements would require an irretrievable and irreversible commitment of resources for the long-term administration of the easement provisions. The administration costs would be shared among the 16 wetland management districts that cover the proposed project area; the costs would represent only a minor increase in overall Service costs to the existing easement-monitoring program.

Short-Term Use versus Long-Term Productivity

Following is a discussion of short- and long-term effects.

Alternative A (No Action)

Wetlands and grasslands are expected to continue to be lost at current rates of conversion, which would create long-term negative implications to the maintenance of the biological and ecological communities they support. Although continued efforts to conserve these habitats would be ongoing through existing authorities and funding, the Service's ability to conserve existing large tracts of wetland and grassland would be diminished; fragmentation of these habitats would continue.

Alternative B (Proposed Action)

The increased ability to acquire perpetual wetland and grassland easements would provide an immediate economic benefit to participating landowners, allowing many operations to expand or simply stay in operation—having positive economic short- and long-term effects. The conservation of remaining wetland and grassland tracts would (1) reduce long-term fragmentation of these vital habitats of many dependent species, (2) maintain current carbon sequestration capabilities, (3) keep the area's

rich biological diversity, and (4) protect endangered, threatened, and rare species currently using wetland and grassland habitats. Lands added to the Refuge System through the proposed DGCA would increase the costs associated with monitoring and management of the Refuge System; however, staff at several existing management units would share this work, which would require no additional Federal resources.

Cumulative Impacts

As defined by NEPA policy, cumulative impacts on the environment are those that result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes the other actions (40 CFR § 1508.7).

The following describes the past, present, and reasonably foreseeable actions related to the proposed DGCA. The discussion documents the analysis of the cumulative impacts of these actions in combination with the actions of alternatives A and B.

Past Actions

The Service's past, land protection efforts within the PPR have included establishment of the Dakota Tallgrass Prairie Wildlife Management Area and the North Dakota Wildlife Management Area, both in 2000. Since the 1960s, the Service has actively used Federal Duck Stamp money to buy wetland and grassland easements. In total, the Service has protected in perpetuity approximately 2,420,414 acres. The Service's Partners for Fish and Wildlife Program has worked with many private landowners on site-specific conservation efforts.

The USDA's Conservation Reserve Program has approximately 3,800,000 acres enrolled in the voluntary conservation program. In addition, the USDA administers approximately 45,000 in the Wetland Reserve Program. Nongovernmental organizations such as Ducks Unlimited have purchased approximately 39,000 acres of conservation easements.

Present Actions

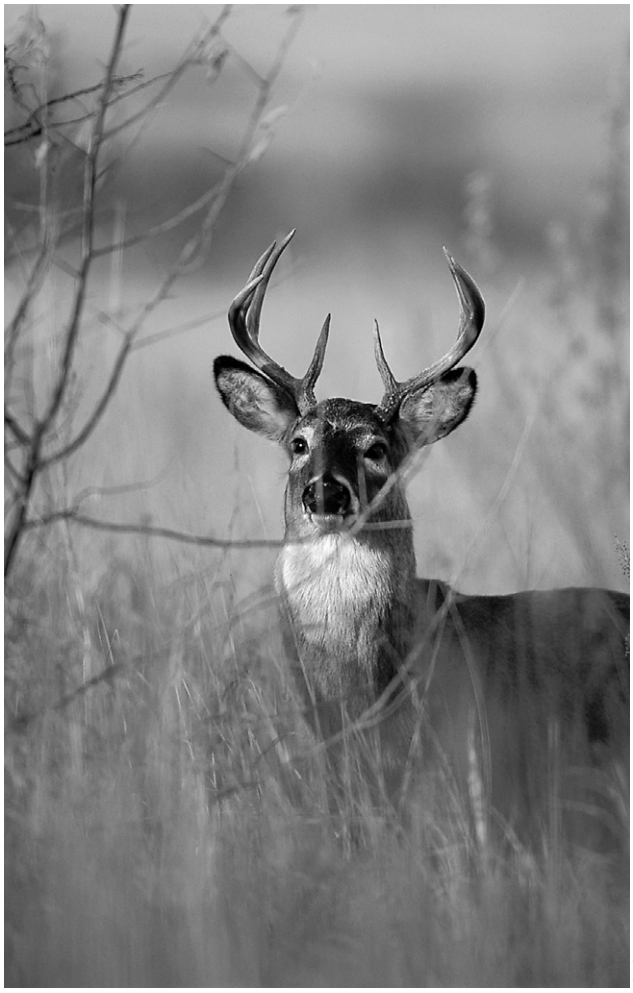
The Service's proposed action to establish the DGCA conservation easement program—up to 240,000 acres of wetland and 1.7 million acres of grassland—is one of the largest known actions for land protection in the PPR of North Dakota and South Dakota. If approved, the Service would be able to use money from the LWCF in addition to money from the Migratory Bird Stamp and NAWCA. If money can be secured, there would likely be an increase in the number of wetland and grassland easements purchased.

Reasonable Foreseeable Future Actions

Reasonably foreseeable actions are activities independent of the proposed action and are anticipated to occur regardless of which alternative is selected; however, the foreseeable actions could result in cumulative or additive effects when combined with the alternatives. The primary, reasonably foreseeable actions in the PPR are the development of energy (oil, gas, and wind), agriculture, and prairie conservation efforts by a variety of organizations.

Oil and Gas Development

Northwestern North Dakota has recently seen a dramatic increase in oil and gas activity in what is commonly known as the Bakken formation. Recent advances in rock fracturing techniques have made oil production more economically viable, and there is an estimated 3.65 billion barrels of recoverable oil



© Craig Bihrle

One of the must abundant large mammals in the proposed project area is the white-tailed deer.

in the Bakken formation within North Dakota and Montana (Pollastro et al 2008). North Dakota has 174 drilling rigs operating; this number of rigs is estimated to remain stable or increase (NDOGC 2011).

Wind Energy Development

North Dakota and South Dakota have remarkable wind energy potential. More than 127,000 square miles or about 85 percent of both States are suitable for commercial wind energy production, with an estimated energy capacity of 1.65 million megawatts (NREL 2011). The proposed DGCA has less than 2.4 percent of North Dakota and South Dakota's wind development area (some priority wetland and grassland resources are not in commercially viable areas).

In coordination with the Western Area Power Administration, the Service is developing a programmatic environmental impact statement to analyze the environmental and socioeconomic effects of wind energy development in two administrative areas: (1) the Upper Great Plains Region of the Western Area Power Administration, which covers all or parts of Iowa, Minnesota, Montana, Nebraska, North Dakota, and South Dakota; and (2) the Service's wetland and grassland easements in North Dakota, South Dakota, and Montana. The environmental impact statement will identify typical environmental effects of wind energy development; prescribe mitigation strategies, standard construction practices, and best management practices; and establish a comprehensive environmental program for evaluating future projects. The final analysis is expected to be completed in 2 years.

Agricultural Development

North Dakota and South Dakota predominantly comprise farming and ranching operations. Commodity prices and farm program subsidies are the main factors leading to the conversion of grassland to cropland. Although farm program subsidies are reviewed on a regular basis, few changes are expected. In contrast, commodity prices are difficult to estimate and change on a daily basis but tend to be cyclic over time.

Other Conservation

Governmental agencies, primarily NRCS, and nongovernmental organizations such as The Nature Conservancy and Ducks Unlimited are expected to continue offering multiple programs to landowners. The proposed action would augment these efforts by collaborating with landowners to provide benefits to wildlife and fisheries resources along with the farming and ranching communities. If the goals of the proposed action were achieved, it is expected the Service would continue to implement remaining elements of the Conservation Strategy. That process would be analyzed at such time.

Development Impacts—Alternative A (No Action)

Incremental increases in infrastructure construction from oil, gas, and wind energy development activities or agriculture production would likely result in more fragmentation and removal of wildlife habitat. Grassland to cropland conversion rates would be expected to remain at current levels, because conversion rates are closely correlated with commodity prices.

Development Impacts—Alternative B (Proposed Action)

The proposed action is a voluntary program where individual landowners would determine if wetland or grassland easements would be appropriate for their operations. Although the extent of energy development is dynamic, the Service would evaluate energy development on a case-by-case basis and authorize it if appropriate; the proposed action could influence where energy development companies select production sites. In addition, the proposed perpetual conservation program may reduce the potential production of agricultural crops in the area, although most areas to be protected are not well suited for crop production.

Other Conservation Impacts—Alternative A (No Action)

Conservation of wetland and grassland habitats would continue under existing acquisition authorities. These programs do not keep pace with current rates of wetland and grassland loss, and the Service would potentially never meet the PPJV conservation objectives. Known impacts from the loss of wetland and grassland include the following:

- Permanent loss of vegetative species diversity
- Increased fragmentation of habitats critical to the survival of many plant and wildlife species
- Decreased carbon sequestration capabilities
- Decreased water retention and water purifying capabilities in wetland and grassland communities

Other Conservation Impacts—Alternative B (Proposed Action)

The accelerated acquisition of conservation easements up to the proposed 240,000 acres of wetland and 1.7 million acres of grassland would conserve

a large part of the remaining wetland and grassland resources within the PPR, with an emphasis on conserving native prairie. This conservation effort would do the following:

- Reduce the loss of vegetative species diversity
- Maintain key habitat blocks for a variety of wetland- and grassland-dependent birds
- Conserve carbon sequestration capabilities
- Protect the area's water resources

Conclusion

Development of lands for either agriculture or energy development is largely determined by the private landowner. Similarly, private landowners determine if protection of lands via wetland and grassland easements is in their best interest. This voluntary program is not expected to have an adverse impact.

5. COORDINATION and ENVIRONMENTAL REVIEW

Section 5 describes how the Service coordinated with others and conducted environmental reviews of various aspects of the project proposal and analysis. Additional coordination and review would be needed to carry out the proposed action.

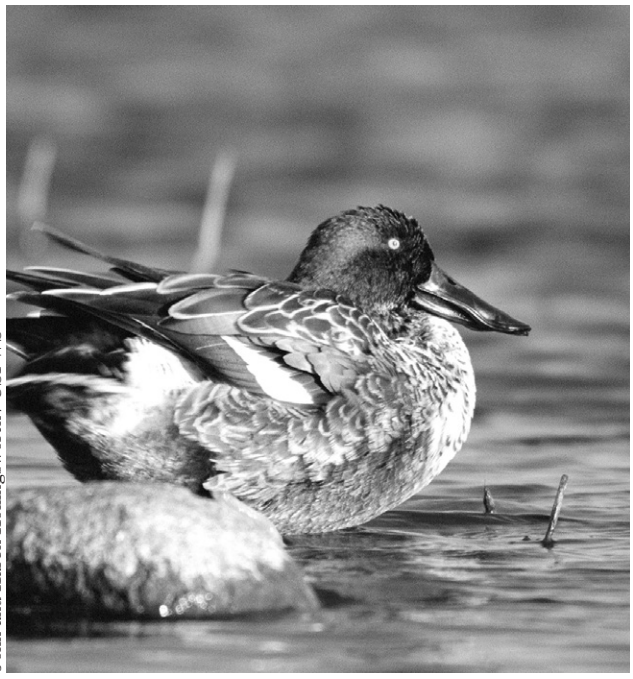
Agency Coordination

The Service has discussed the proposal to establish the DGCA with landowners; conservation organizations; other Federal agencies; tribal, State, and local governments; and other interested groups and individuals.

The Service coordinated within the agency as well as with State wildlife agencies in developing this EA. Field and regional Service staffs conducted the analysis and prepared the documentation (refer to "Appendix A, List of Preparers and Reviewers").

Contaminants and Hazardous Materials

Level 1 pre-acquisition site assessments would be conducted on individual tracts before purchase of any land interests. The Service's environmental contaminants specialists from the Ecological Services offices in North Dakota and South Dakota would be contacted to make sure policies and guidelines are followed before acquisition of conservation easements.



John and Karen Hollingsworth / USFWS

Northern shoveler is a priority bird species in the Prairie Pothole Region.

National Environmental Policy Act

The Service conducted this environmental analysis under the authority of and in compliance with NEPA, which requires an evaluation of reasonable alternatives that will meet stated objectives and an assessment of the possible effects on the human environment.

Environmental Assessment

This EA will be the basis for determining whether implementation of the proposed action would constitute a major Federal action significantly affecting the quality of the human environment. NEPA planning for this EA involved other government agencies and the public in the identification of issues and alternatives for the proposed project (refer to "Appendix D, Public Involvement").

Distribution and Availability

The Service distributed on June 20, 2011, the draft EA (with the associated draft LPP in the same volume) to the project mailing list, which included Federal and State legislative delegations, tribes, agencies, landowners, private groups, and other interested individuals.

After the draft EA was released for a 30-day public review, the Service held two public meetings to gather input and comments about the draft EA and draft LPP in Bismarck, North Dakota, and in Miller, South Dakota, on June 28 and 29, 2011, respectively.

Copies of the draft EA and information about the public meetings were available via the project Web site and through contact with the Service by email, postal mail, phone, or in person.

Additional copies of the final document will be available from the following Web site and office:

- Project Web site: www.fws.gov/mountain-prairie/planning/lpp/nd/dkg/dkg.html

- U.S. Fish and Wildlife Service
  Region 6, Division of Refuge Planning
  134 Union Boulevard, Suite 300
  Lakewood, Colorado 80228
  fw6_planning@fws.gov
  303/236 8145

Strategic Habitat Conservation

The proposed DGCA project is a landscape-scale effort to conserve populations of priority species in a highly diverse and endangered ecosystem over an area of approximately 29.6 million acres. Therefore, it is important to incorporate the elements of SHC to ensure effective conservation. SHC entails strategic biological planning and conservation design, integrated conservation delivery, monitoring, and research at ecoregional scales (figure E). Some elements of SHC have been addressed in migratory bird management plans in the PPR.

Strategic Biological Planning and Conservation Design

Habitat loss due to conversion of wetland and grassland to cropland is the primary limiting factor for all of the priority species in the proposed DGCA. The loss of wetland reduces the carrying capacity for waterfowl and other waterbirds, and the loss of grassland reduces the nest success of waterfowl and other grassland-nesting species (Greenwood et al. 1995, Herkert et al. 2003, Reynolds et al. 2001, Stephens et al. 2005).

Grassland accessible to the greatest number of pairs of breeding ducks would be the primary determinant for acquiring grassland conservation easements. Long-term protection objectives include all grasslands accessible to more than 25 duck pairs, plus a 1-mile buffer of grassland that affects nest success. These objectives were set to rank grasslands accessible to moderate to high numbers of breeding ducks. The Service identified three grassland categories:

- Grassland accessible to more than 60 duck pairs
- Grassland accessible to 40–60 duck pairs
- Grassland accessible to 25–40 duck pairs

Figures F and G are the wetland and grassland flowcharts from the Easement Manual that the Service would use to prioritize areas based on spatial models for waterfowl, threatened and endangered species, grassland birds, shorebirds, and other waterbirds (USFWS 2011a). Priority grasslands and wetlands for waterfowl and nonwaterfowl species overlap substantially, providing benefits for multiple groups of species (Niemuth et al. 2008).

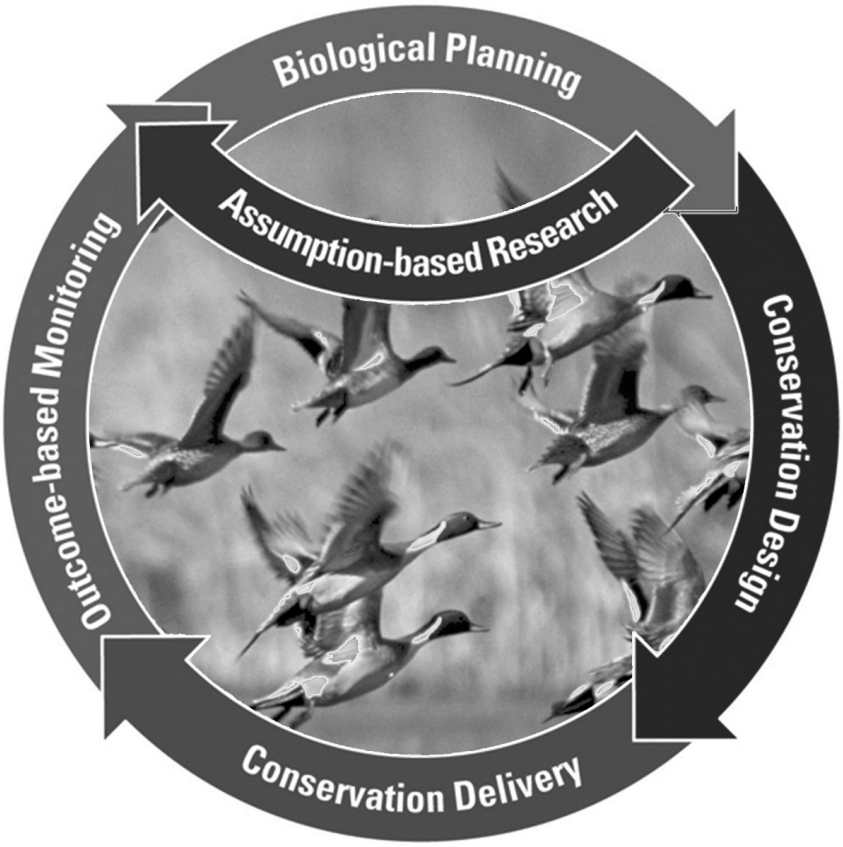


Figure E. Graphic of the elements of strategic habitat conservation.
[Same as figure 7 in chapter 4.]

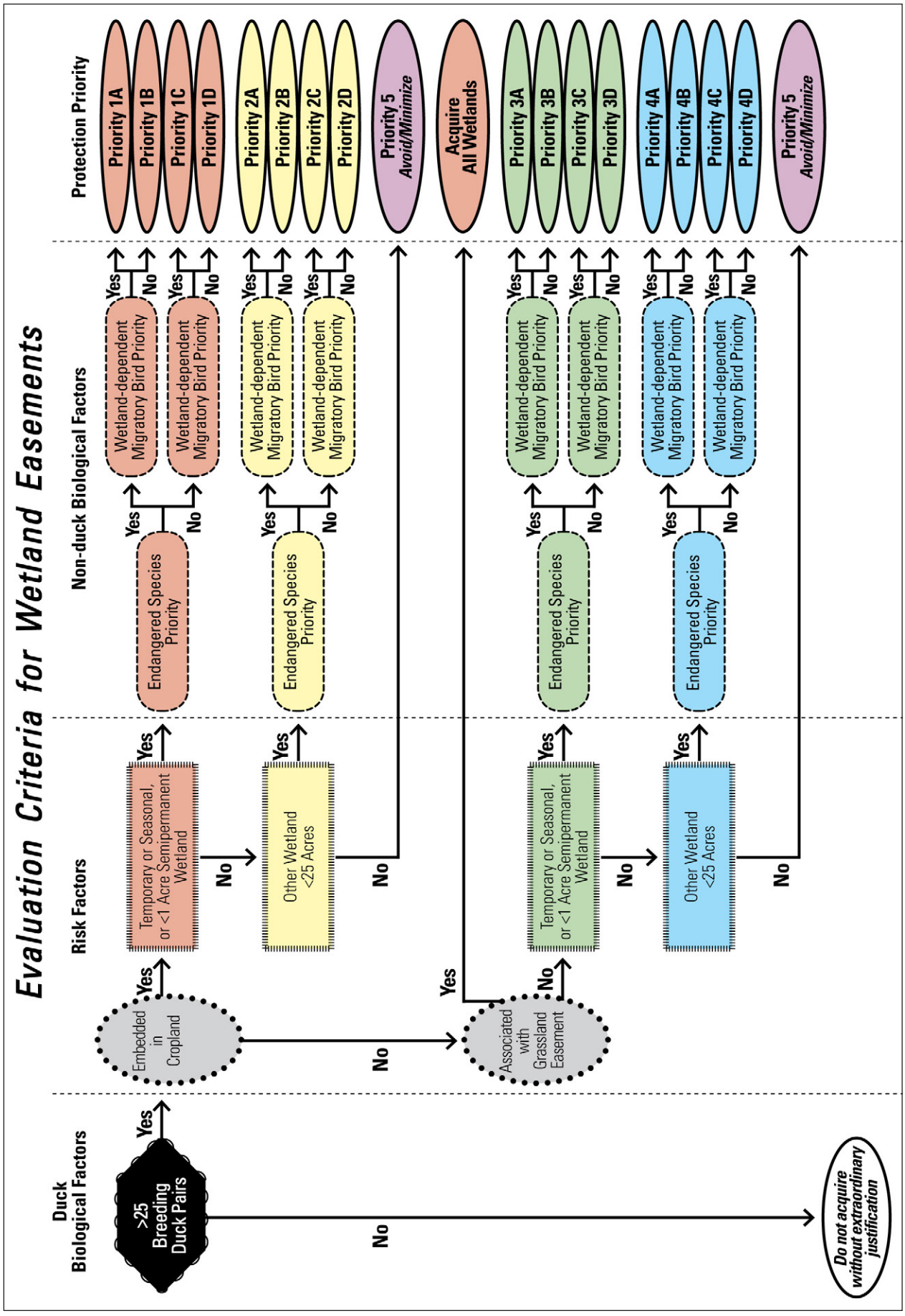


Figure F. Chart of evaluation criteria for acquiring wetland conservation easements. *[Same as figure 6 in chapter 4.]*

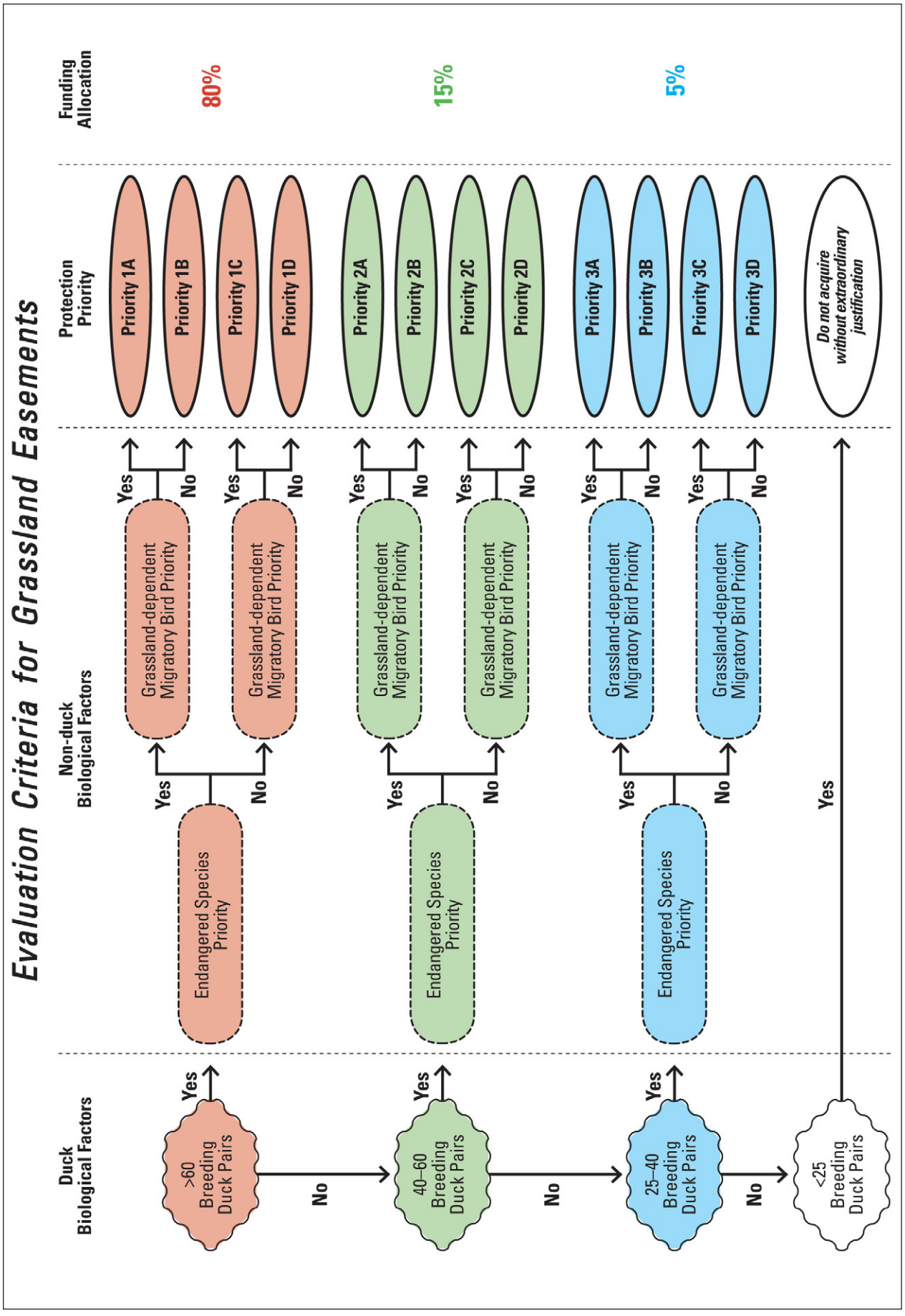


Figure G. Chart of evaluation criteria for acquiring grassland conservation easements. *[Same as figure 5 in chapter 4.]*

Integrated Conservation Delivery

Wetland and grassland easements represent a means to conserve habitat. The habitat conservation strategies for grassland wildlife including migratory birds (many of which are addressed by other bird initiatives) would not differ substantially from those strategies carried out to meet the needs of waterfowl (Ringleman 2005). As understanding of the functional relationships between priority species and habitats increases, the Service will adapt the strategies to target the most influential parcels for meeting the population objectives of the priority species listed in table A (in previous section 1).

Over time, SWAP has used different criteria to guide the acquisition process; however, habitat quality has always been the major criterion. The best waterfowl-breeding habitat in the PPR is intermixed wetland complexes and quality grassland-nesting habitat. Generally, landscapes with high numbers of wetlands attract high numbers of waterfowl breeding pairs, and landscapes with a large percentage of perennial grassland cover exhibit higher nest success. This combination of wetland and grassland is important for many other nonwaterfowl species including shorebirds, other waterbirds, and grassland birds (Beyersbergen et al. 2004, Johnson et al. 1994, Niemuth et al. 2008). These two elements—large numbers of wetlands in association with priority grassland habitat—are the cornerstones of the habitat conservation program.

During development of the EA, the Service developed a draft LPP outlining selection factors for obtaining the highest priority habitat for acquisition. The detailed LPP provides the information necessary to carry out the conservation action of acquiring the "best of the best" habitat for priority species. The Service's Division of Realty would continue to refer to the LPP in assessing opportunities to acquire the highest priority habitat.

Monitoring and Research

Conservation efforts in the PPR focus on the protection and restoration of wetland and grassland, and there is great potential for providing benefits for multiple species. HAPET has developed standalone, single-species models to provide the ability to target different priority species, a combination of species, the treatment types, various locations, or specific funding requirements. Furthermore, this approach would give the Service a rapid response tool for specific decision support and for adaptive changes in models as new information became available.

The Service annually monitors waterfowl, breeding shorebirds, other waterbirds, grassland birds, and raptors in the proposed project area. In addition, the Service is working with partners to develop a more comprehensive marshbird-monitoring program.

HAPET has provided valuable information through current monitoring programs that has been used to develop models of population–habitat relationships for priority waterfowl, shorebirds, grassland birds, and some raptors (Niemuth et al. 2005, Niemuth et al. 2008a, Reynolds et al. 2001, Reynolds et al. 2006). These efforts would be expanded to include other species as resources and methods are developed.

Landscape Conservation Cooperatives

The Service will use LCCs, part of a recent developing initiative, as a means of conducting SHC. The proposed DGCA lies entirely within the Plains and Prairie Potholes LCC. The Secretary of the Interior recently outlined the importance of LCCs as a response to climate change (USFWS 2010). Reaching across broad landscapes, these conservation cooperatives involve many partners and function at a scale necessary to address wildlife adaptation in response to climate change. In carrying out conservation actions through the proposed DGCA, the Service would use the efforts of the LCC in refining priority acquisitions as the Plains and Prairie Potholes LCC develops.

Appendix D

Public Involvement

This appendix describes the public scoping process for the proposed DGCA project, which entailed comment collection, analysis, and summarization by topic.

All comments received on the Service's NEPA documents become part of the official public record. Requests for information contained in comments are handled in accordance with the Freedom of Information Act, NEPA (40 CFR § 1506.6(f)), and other Department of the Interior and Service policies and procedures. In compliance with Service policy about disclosure of personal information, the Service will not publish in this document the name, address, or other personal information of an individual who commented unless that information was spoken in a public meeting; this does not apply to agencies or organizations.

This appendix is designed as two parts: (1) comments received during the release of the draft EA and LPP, with corresponding responses from the Service; and (2) the public scoping report that was developed during the scoping period.

Summary of Comments on the Draft EA and LPP

The Service released the draft EA and LPP on June 20, 2011, for a 30-day public review period. The draft documents were made available to Federal elected officials and agencies, State elected officials and agencies, 32 Native American tribes with aboriginal or tribal interests, and other members of the public identified during the scoping process. In addition, two public meetings were held in Bismarck, North Dakota, and in Miller, South Dakota, on June 28 and 29, 2011, respectively. Approximately 50 landowners, citizens, and elected representatives attended the meetings. The Service received 10 letters from agencies, organizations, and other entities and 347 general public comments. After all comments were received, each was reviewed and incorporated into the administrative record. A large majority of comments received was supportive in nature (more than 92 percent) and highlighted the following:

- The importance of the PPR to a diverse wildlife population, primarily migratory waterfowl and grassland birds.
- The need to protect important habitats in perpetuity for future generations.
- The immediate threat of losing grassland and wetlands, both native and restored.
- The fact that hundreds of landowners are currently waiting to sign easements in North Dakota and South Dakota.
- The secondary benefits of grasslands and wetlands such as clean water, flood control, carbon sequestration, and reduced impacts from climate change.
- The strong support and matching funds (up to $50 million) from nongovernmental agencies.
- The voluntary nature of conservation easements and the benefits to maintaining working farms and ranches.

Comments of opposition (less than 7 percent) focused primarily on the following items:

- The perpetual nature of conservation easements and that future generations should not have decisions made for them.
- The estimated project cost of $588 million during times of economic hardship.
- Impacts to energy development and associated projects such as power lines.
- That easements devalue the land and surrounding properties.

Review Process

All comments were reviewed for substantive information that should be incorporated into the analysis. Comments were considered substantive if they met one of the following criteria:

1. Questions, with reasonable basis, the accuracy of information in the EA.

2. Questions, with reasonable basis or facts, the adequacy of, methodology of, or assumptions used for the environmental analysis.

3. Presents reasonable alternatives other than those presented in the EA.

4. Prompts the Service to consider changes or revisions in one or more of the alternatives.

The following comments from the public were considered substantive comments or were comments that the Service planning team determined needed clarification. Letters from agencies or organizations containing comments follow these public comments.

Public Comments and Service Responses

Comment 1. "Wetlands are equally as important as grasslands, if not more so. Wetlands are not as common as grasslands but have a larger role to play supporting wildlife and fish populations. Wetlands provide habitat and water for many species which in turn provide food for predators. Besides providing habitat and supporting the food web, wetlands are an important niche for species with suffering population numbers as well as migratory birds. According to Techniques for Wildlife Investigations and Management (p. 803) 'up to 43% of federally threatened and endangered species require wetland habitats during some part of their annual cycle' (U.S. Environmental Protection Agency 2000) and more than 50% of protected migratory birds rely on wetlands (Wharton et al. 1982, U.S. Environmental Protection Agency 2000a)."

Response 1. Thank you for your comments. Because the Service realizes that wetlands play a significant role in maintaining a host of wildlife species throughout the United States, we have been actively securing protection of those wetland resources for more than 50 years through our Small Wetlands Acquisition Program. This project will complement our ongoing wetland protection efforts by protecting 240,000 acres of wetland in addition to 1.7 million acres of grassland.

Comment 2. "The Prairie Pothole Region has supported nearly 30% of ALL breeding ducks in North America. It provides critical migration and breeding habitat for threatened and endangered species and is credited by several scientific research and engineering organizations for its capacity to decrease flooding events and provide purified water to underground aquifers which supply municipal and irrigation water to thousands of people living in the mid-west. In addition, these grassland and wetlands soils also contain a rich bank of carbon, which would be depleted if these grassland and wetland complexes would be plowed and converted to cropland."

Response 2. Thank you for your comments. The Service realizes that the ecological benefits of maintaining healthy wetland and grassland ecosystems extend well beyond the boundaries of the DGCA. The carbon sequestration potential of native grasslands is documented in section 3 of the EA.

Comment 3. "The Prairie pothole and grasslands of the Dakotas are a truly unique place in North America. As a hunter, I see the value in their preservation. That preservation is only of value if it will allow for public access. I support the preservation of this unique area and also an increase in public access."

Response 3. Thank you for your comments. This project will encumber private property with only limited interests that are designed to maintain and enhance migratory bird populations. Public access is not a right that will be encumbered through this easement program. The Service will continue with other acquisition programs designed to provide public access opportunities, and this program in no way prevents private landowners from providing public access at their discretion.

Comment 4. "The federal government has no Constitutional duty or obligation to protect wildlife."

Response 4. Thank you for your comment. The Service carries out programs that have been authorized and funded by Congress and does so in accordance with the direction provided within the corresponding legislation. Some programs are national and international in significance such as the protection of migratory bird habitat. For example, in the "United States Treaty with Canada, August 16, 1916," the participating countries committed to addressing the issues of migratory birds. On November 19, 1976, this treaty was amended to include the Soviet Union and added more specific language that stated, "Article IV, number 1: To the extent possible, the Contracting Parties shall undertake measures necessary to protect and enhance the environment of migratory birds and to prevent and abate the pollution or detrimental alteration of that environment." Congress is providing direction, through various programs, for the Service to meet this treaty obligation. In addition, section 1 of the EA describes the Federal mandates, which outline the authorities and responsibilities of the Service and the Refuge System to protect wildlife.

Comment 5. "Hunting and Fishing in North Dakota is big business. Part of the reason for the popularity of North Dakota as hunting and fishing destination is

the large expanses of wetland and grassland habitats. These areas serve not only as the production areas for the game pursued, but also hold sentimental value to the hunters that flock to North Dakota each year. Hunters and anglers in the United States spend about $76 billion a year. That's an amazing $208 million per day pursuing their outdoor passions. That heritage has been passed down through generations of Americans since the founding of our country. For generations, hunters and anglers have placed high priority on taking care of the land and water so that in return they can support abundant fish and wildlife populations. It makes sense. Overall, hunting and fishing support more than 1.6 million jobs and generate more than $25 billion a year in federal, state, and local taxes."

Response 5. Thank you for your comments. This is addressed in the socioeconomic discussion in section 3 of the EA.

Comment 6. "As a result of three studies released by the NSO's Solar Synoptic Network, they are predicting the virtual vanishing of sunspots for the next several decades and the possibility of a solar minimum similar to the Maunder Minimum. During the Maunder Minimum temperatures dropped 7 degrees F. within 20 years. Our climate has changed from semi-arid to cool and wet as we enter a mini-ice age. Flood waters have covered thousands of acres of the most productive farm land in the world. Our farmers and ranchers will need the income provided by these easements."

Response 6. Thank you for your comments. Section 3 of the EA addresses climate change.

Comment 7. "I have heard of the unprecedented flooding which has occurred in the great state of ND this year in areas other than the norm. Areas like Bismarck and presently Minot at this very moment! It is critical that we do what we can as a nation to preserve wetlands for wildlife, as well as to do what nature intended as a purifier for our water supply and to prevent flooding. Had we as humans not filled numerous wetlands over many decades along the Mississippi river, we would not have had all of the historical flooding that has been occurring. This flooding causes an extreme amount of hardship to the residents whose homes and business' are directly affected, both emotionally and financially. I strongly encourage support of the Dakota Grassland Conservation Area."

Response 7. Thank you for your comments. The Service realizes that the continued loss of wetland habitats throughout the PPR contributes to flooding throughout the region. While this project may not significantly reduce the current flooding situations across the region, we recognize the potential for wetlands to reduce the severity of flood events.

Comment 8. "I would just like to comment that I favor allowing people the opportunity to trap furbearers such as muskrats or beaver or trapping in general should be allowed and regulated by the state of North Dakota. If indeed the land in question is multiuse, then trapping should be included as a multiuse activity along with hunting, fishing, bird watching, camping, etc. Regulating these activities is a must, but not including trapping would take away from recreational value from this project."

Response 8. Thank you for your comments. Conservation easements are designed to conserve valuable wetland and grassland habitats while maintaining land in private ownership. Landowners retain the right to control access to their property.

Comment 9. "You claim to have large scale support for this proposal. I would like to know how much of this support actually comes from landowners who would be affected. Or is most of your support coming from wildlife enthusiasts and their organizations."

Response 9. Thank you for your comments. This is a voluntary program; the Service will buy conservation easements from willing sellers only. With hundreds of interested landowners currently awaiting easement offers, there is significant landowner support for this project.

Comment 10. "Many people in my area made the mistake of signing easement with Federal Wildlife many years ago and each one who I have talked to now regrets that decision. As their slough areas have become larger due to our excessive rainfall in the past several years Federal Wildlife now claims authority over the additional areas which are now wet. This is not right as the original easement covered only a certain amount of acreage."

Response 10. Thank you for your comments. Water levels in wetlands naturally fluctuate in size, ranging from completely dry to above-average condition. Wetland easements protect wetland basins under all conditions; however, the Service has administrative procedures that address hardship created by flooded protected wetlands.

Comment 11. "As a potential buyer of agricultural land, I am limited in land availability, because I don't want to purchase land with attached easements. With easements in place, I could not use the land as I preferred, but would have to maintain the use described in the easement. This land is a poor investment with limited use, lower resale value and restricted marketability to a wide range of buyers."

Response 11. Thank you for your comments. As indicated in your comment, lands encumbered by easements are not suitable for all landowners and the decision to buy a property with an easement on it is

a management decision that the buyer must make at the time of the potential purchase. Severing interests from a property such as an easement by the current owner can affect the overall value of the property. The theory of substitution states that a buyer would not pay more for one property than for another that is equally desirable. Conversely, a buyer would likely pay less for a property that is less desirable. Furthermore, Shultz and Pool (2005) documented that 95 percent of the sellers of easements were more than sufficiently compensated for any negative impact to the property caused by the easement.

Comment 12. "We would like to show our support for the Dakota Grassland Conservation Area Project. As ranchers we feel that easements can be a good tool if landowners decided they would like to permanently protect their prairie. Permanent protection of the prairie is not only beneficial to wildlife but to the future of ranching in the Dakotas. The prairie is very fragmented and once a plow it put to the land the plant diversity and soil health is nearly impossible to restore. It is much more economical for ranchers to run cattle on large areas of prairie rather than having to haul their cows all over the countryside to small pastures. Please make funds available so ranchers can protect the prairie and their future."

Response 12. Thank you for your comments. One of the goals for this project is to conserve working landscapes based on livestock and ranching operations. The detrimental effects of habitat fragmentation are well documented. Conservation of large expanses of grassland can provide mutual benefits to migratory birds and ranching operations alike.

Comment 13. "South Dakota Farm Bureau's major concern with the Dakota Grasslands Conservation Area proposal and the draft EA and LPP is the term of the easement. Specifically, we oppose easements that are perpetual. Our members describe perpetuity as 'one year longer than forever.' Perpetuity allows property decisions to be made from the grave, a concept that is contradictory to property rights. To assume that US F&WS can make property and management decisions that last longer than forever is a concept property owners have a hard time understanding. SDFB would instead suggest that easements of a set number of years be offered to landowners as an option or alternative. Allow the discussion to take place, so landowners can choose which term to select. Consider making this 30 years, one generation, or 50 years, so that if in the future an alternative is desired, the possibility exists to renew again for a term certain easement. In summary, mandated easements in perpetual length as the only choice is not a choice at all and is not friendly to landowner property rights."

Response 13. Thank you for your comments. The Service has considered less-than-perpetual easements in the past. A more thorough description of these efforts is in section 2 of the EA (appendix C). The summary of these efforts basically concluded the following: (1) landowners preferred the longer term easements because they offered more compensation or better fit their management plans; (2) short-term easements resulted in short-term conservation and did not provide for meeting the goals that have been established to provide habitat for migratory birds, which is an obligation for the United States under an international treaty (fee acquisition of habitat areas would be another tool to meet these long-term objectives, but that has been determined to be prohibitively more costly and less publicly and politically acceptable); (3) the economics of repeating payment for the same conservation with short-term agreements did not meet the fiscal responsibility of a public agency; and (4) the perpetual nature of this conservation tool has been successfully used since 1958 when Congress authorized the program. Currently, there are hundreds of landowners on a waiting list who have expressed interest in participating in this program. Additionally, in a 2010 survey (Metz and Weigel 2010), 60 percent of North Dakota residents supported voluntary perpetual easements as a means to conserve natural areas, water, and wildlife habitat. The DGCA project is based on a strictly voluntary and willing-seller basis, and only those landowners who determine these conservation easements are in the best interest of the land they are managing participate. Another aspect of a perpetual easement is that is it a conservation tool that offers an alternative to another perpetual decision—converting native prairie to other uses. The conversion of native prairie is an irreversible decision that binds future generations to address the potential impact, for example, associated with tillage of potentially erodible lands.

Comment 14. "Why are ducks now getting priority over people who live on and farm the land? Why are ducks getting priority over private property and ownership? With the increased flooding of the states and middle of the nation, habitat is forming naturally. None needs to be set aside for them."

Response 14. Thank you for your comments. This project is not intended to create new habitats for waterfowl; it is merely an economic incentive for landowners to protect the habitats that currently exist. This is a voluntary program and easements will only be purchased from willing sellers. Also, see response 7.

Comment 15. "Montana-Dakota Utilities Co., a division of MDU Resources Group, Inc. (Montana-Dakota), is an investor owned electric and natural gas utility

company that operates throughout the proposed Dakota Grassland Conservation Area (DGCA). A part of the company's operation includes 2,400 miles of electric transmission lines and associated electric substations within North and South Dakota, much of that lying within the proposed DGCA. Montana-Dakota appreciates the opportunity to comment on the US Fish and Wildlife Service's (FWS) Environmental Assessment proposed for the DGCA as it is expected to have impacts on Montana-Dakota's operations. We agree with conserving wildlife and wildlife habitat in a manner that is sustainable and balances the needs of all stakeholders. The EA prepared by the US Fish and Wildlife Service (FWS) for the agency's proposed DGCA is meant to document the DGCA's purpose, issues, alternatives and analysis for North Dakota and South Dakota. Although brief mention is made in the Environmental Assessment and Draft Land Protection Plan for the proposed DGCA of possible impacts to wind energy and oil and gas development, there is no discussion of potential impacts to the development and maintenance of electric facilities necessary to support development of energy generation facilities, as well as to maintain reliable electric service to retail customers. Montana-Dakota believes this subject to be a vital component to the EA since power lines are critical infrastructure used to meet the electricity needs of customers, regional reliability and energy projects, and the proposed DGCA would restrict a utility's ability to plan, construct and maintain these facilities. Montana-Dakota believes a serious look at these impacts is necessary to develop a balanced view of the impacts of the proposed DGCA…. Also, at the end of Section B.5.C in Chapter 12 of the Easement Manual in Appendix A, there is language stating, 'At this point, if the request is related to Wind Energy Development, go to Chapter XIV for further guidance.' The USFWS did not include a copy of Chapter XIV in the EA appendices and Montana-Dakota could not locate a copy of USFWS Easement Manual on the USFWS to review prior to commenting. That Chapter needs to be included in the EA for utilities to review since a power line project may be 'related' to wind energy development. It would be beneficial for the USFWS to provide discussion on the subject of whether power lines constructed for a wind energy project would indeed be 'related'."

Response 15. Thank you for your comments. The primary purpose of conservation easements is to conserve habitat by restricting the rights to convert wetlands and grasslands. These habitats not only provide for migratory birds and other wildlife, they provide important ecological services to society by improving water quality, reducing soil erosion, lessening the severity of flood events, and sequestering carbon. It is not a program intended to stymie all development, but one that strives to conserve habitats in a working landscape that meets the needs of people as well as wildlife. With respect to your comments on wind energy development, the Service is currently cooperating with the Western Area Power Administration and the Rural Utility Service on a programmatic environmental impact statement where this issue is analyzed in detail. Information on this process can be found on the project's Web site <http://plainswindeis.anl.gov>. Concerning power lines constructed for a wind energy project, we work with the wind energy developer to implement best management practices to minimize the potential for harmful effects. Most commonly, this involves burying collector lines from individual turbines to sub-stations. Transmission lines away from the wind development are generally evaluated independent of the wind farm itself, in accordance with procedures outlined in the Easement Manual. The Service will address these issues and the policy and requirements of the Easement Manual at a later date.

Comment 16. "With additional land placed in perpetual conservation easements, as planned through the proposed DGCA, the power line siting process is expected to be extremely challenging. Already, it has been demonstrated to Montana-Dakota that securing the necessary permits or approvals to occupy land under current USFWS easements is a costly and protracted process that hampers a utility's ability to construct new facilities in a timely manner. Recent efforts to site a 230kV transmission line required to connect a planned wind farm in southeastern North Dakota demonstrated the difficulty in routing a line to avoid land currently under USFWS easements. The easement approval process in Chapter 12 of the Easement Manual, attached in Appendix A of the EA, contains very subjective approval language. Even though corridors for electric transmission lines are addressed in this section, there is uncertainty in how approvals would be obtained and at what reroute cost would an easement crossing be approved, as well as having no expected timeframe for receiving an approval. Normally, there are contractual deadlines or regional reliability time constraints in place for a utility to study, site and construct required electric transmission projects. If the justified right-of-way access cannot be obtained by a utility in a reasonable timeframe, monetary penalties may be incurred by a utility and rerouting would be required …. Furthermore, maintenance of existing and future line is expected to become much more complicated, requiring special right-of-way access permits in order to inspect, maintain and repair power lines, especially since more conservation easements are expected to in place per the proposed

DGCA and the easements would likely correspond with locations of existing power lines."

Response 16. Thank you for your comments. The Service recognizes that, due to the current footprint of the easement program in the Dakotas, it is not uncommon for developments such as pipelines, roads, utility lines, and wind energy developments to overlap with protected areas. As this footprint continues to grow, we expect the occurrence of these overlaps to increase. All Service easements are acquired subject to existing rights-of-way, including those for electrical transmission lines. Therefore, assuming a utility has a right-of-way to maintain its facilities, easements would have no effect on that utility's ability to provide reliable service to its customers. When a new right-of-way is requested across an area protected by easement, we would work with the utility and the landowner to explore options to avoid and then minimize impacts to protected habitats. Rerouting of infrastructure around sensitive areas is a legitimate option and one that we are obligated to pursue when it is reasonable to do so. Once avoidance and minimization options have been considered, we would accommodate reasonable needs to develop protected lands either by issuing a rights-of-way, by issuing a permit, or by executing an exchange of interests whereby the impacted habitats are replaced elsewhere. Similar to response 15, the Service will address these issues and the policy and requirements of the Easement Manual at a later date.

Comment 17. "In addition, much of the most ideal construction period is unavailable in these areas due to the avoidance of impacts during the ground bird nesting period. This creates further constraints on a utility's ability to manage its power line infrastructure and could impact how a utility staffs operations."

Response 17. Thank you for your comments. The easements in this project and others in the Dakotas have no provisions restricting the time of year that construction activities might occur. All entities on all lands, whether protected by easement or not, are still required to comply with the Migratory Bird Treaty Act, which restricts the "take" of migratory birds and their nests.

Comment 18. "In conclusion, Montana-Dakota recommends USFWS to provide the additional analysis requested above to properly address power line and utility impacts in the EA for the proposed DGCA. Montana-Dakota appreciates the opportunity to comment."

Response 18. Thank you for your comment. The Service shares your perspective and strives to conserve wildlife and wildlife habitat in a manner that is sustainable and balances the needs of all stakeholders. Also, see responses 15 through 17 for further discussion about the effects of power lines and utilities.

Agency and Organization Letters and Service Responses

The Service received letters about the draft EA and LPP from the following agencies and organizations:

1. Central Flyway Council
2. Ducks Unlimited
3. The Nature Conservancy in Minnesota, North Dakota, and South Dakota
4. North Dakota Farm Bureau
5. North Dakota Stockmen's Association
6. Pheasants Forever and Quail Forever
7. South Dakota Department of Game, Fish, and Parks
8. State of North Dakota Governor
9. State of North Dakota Department of Agriculture
10. The Wildlife Society, North Dakota Chapter
11. The Wildlife Society, South Dakota Chapter

Each of these letters follow, along with the Service's response to points raised by these groups.

Letter #1—Central Flyway Council (page 1 of 2)

Central Flyway Council

Alberta Kansas Nebraska North Dakota Oklahoma South Dakota Wyoming
Colorado Montana New Mexico Northwest Territories Saskatchewan Texas

www.flyways.us/central

July 11, 2011

Mr. Daniel Ashe, Director
U.S. Fish and Wildlife Service
Main Interior Building
1849 C Street NW, Room 3256
Washington, DC 20240

Dear Director Ashe:

In March, 2011 the Central Flyway Council sent a letter to you expressing our strong support for the proposed Dakota Grassland Conservation Area Project (Dakota Grassland). This letter was submitted during the Scoping Process for the project. Today, during the Environmental Assessment Process, we again convey our strong support for this important project that will protect through U.S. Fish and Wildlife Service conservation easements 240,000 acres of wetland and 1.7 million acres of grassland in the Prairie Pothole Region (PPR) of eastern North and South Dakota. The PPR of North America is known as the "Duck Factory" of the continent because of the high density of wetlands and diversity of wetland types that are present and the associated grasslands that surround the wetlands. The protection of the Region's wetlands and grasslands is vital for the perpetuation of continental waterfowl populations, grassland birds of conservation concern and populations of other wildlife species.

Changes to the landscape in the PPR are ongoing. Grasslands are being lost at a rate up to 2 percent annually in the Region resulting in an approximate loss of 50 percent of the remaining grasslands in thirty years. Wetland losses also continue to occur. North Dakota has lost over 50 percent of its wetlands and South Dakota has experienced wetland losses exceeding 35 percent. The high prices that are currently being paid for commodity crops certainly encourage landowners to convert more grassland to cropland and to drain nuisance wetlands. It is imperative that remaining wetlands and grasslands in the PPR be protected from degradation and loss. The proposed Dakota Grassland Project would complement the U.S. Fish and Wildlife Service's Small Wetlands Acquisition Program (SWAP). The goal of the Dakota Grassland Project and SWAP are the same; to promote profitable farming and ranching practices on private lands that conserve wetland and grassland resources for the benefit of migratory birds. Presently, there are over 600 landowners in North and South Dakota that have expressed a desire to protect the wetlands and grasslands that they own through the selling of a perpetual conservation easement to the U.S. Fish and Wildlife Service. The shortage of funds prevents the acquisition of these easements and the protection of over 300,000 acres of waterfowl production habitat. The need now for an accelerated program to work with willing sellers of conservation easements is clearly evident.

Service Response to Letter #1

Thank you for your comments that recognize the pressures to convert grassland and drain wetlands, which are consistent with our findings and support the urgency for conservation protection of these habitats as described in the purpose and need (section 1) of the EA (appendix C).

Letter #1—Central Flyway Council (page 2 of 2)

The Central Flyway Council commends the U.S. Fish and Wildlife Service for its vision of proposing the Dakota Grassland Conservation Area Project and identifying the Land and Water Conservation Fund of 1965 funding for rapid delivery of this conservation effort. The Central Flyway Council, again, offers to help in whatever way it can to obtain approval and implementation of this initiative.

Sincerely,

John Emmerich

John Emmerich
Chair

cc: Chairs of Atlantic, Mississippi and Pacific Flyway Councils
Congressional Sportsmen's Foundation
Ducks Unlimited, Inc.
Lloyd Jones
Nick Kaczor

Letter #2—Ducks Unlimited (page 1 of 2)

DUCKS UNLIMITED

NATIONAL HEADQUARTERS
One Waterfowl Way
Memphis, TN 38120-2351
(901) 758-3825 fax (901) 758-3850
www.ducks.org

President
John W. Newman
Covington, Louisiana

Chairman of the Board
John R. Pope
Jacksonville, Florida

Chief Executive Officer
H. Dale Hall
Memphis, Tennessee

July 25, 2011

Mr. Daniel Ashe
Director
U.S. Fish and Wildlife Service
Main Interior Building
1849 C Street NW, Room 3256
Washington, DC 20240

Dear Director Ashe:

Ducks Unlimited strongly supports the Dakota Grassland Conservation Area Project in North and South Dakota proposed by the U.S. Fish and Wildlife Service. The proposed project will work with private landowners to accelerate the conservation and protection of 1.7 million acres of native prairie and 240,000 acres of prairie pothole wetlands in Prairie Pothole Region (PPR) of the Dakotas. Two-thirds of North America's waterfowl population is produced in the 300,000 square-mile PPR that includes eastern North and South Dakota.

The overall purpose of the project is to preserve at a landscape scale the ecological integrity and function of the grassland and wetland habitats. The focus is to conserve populations of migratory birds by protecting the unique and highly diverse, but severely threatened ecosystem of the PPR. Notably, this project will preserve working landscapes based on ranching and livestock operations, support the ranching culture in North and South Dakota and bolster a viable livestock industry.

Native grasslands in the Dakotas are rapidly being converted to cropland and wetlands are being severely impacted by pattern tile drainage and drain ditches. Energy development is having significant impact on wildlife habitats in the two states. Implementation of this project will reduce additional habitat fragmentation and protect an intact north-south migration corridor for grassland and wetland-dependent wildlife.

The Dakota Grassland Conservation Area Project was proposed to be an integral component of the Department of Interior's "America's Great Outdoors Initiative". This initiative is an effort to protect some of America's national natural resources treasures. The PPR is unique to this continent and certainly a national treasure; a treasure often not appreciated fully by those living in the area.

Service Response to Letter #2

Thank you for your comments that recognize the multitude of forces adversely affecting and contributing to the conversion of grassland and wetland habitats within the project area. Your letter recognizes the value of conserving working landscapes based on healthy ranching and livestock operations. Your pledge will go a long way in helping the Service accomplish the goals set forth by the DGCA.

Letter #2—Ducks Unlimited (page 2 of 2)

July 25, 2011
Page Two

Ducks Unlimited has pledged $50 million over the next ten years to this project if it is approved and implemented. The project complies with the DU mission to conserve, restore and manage wetlands and associated habitats for North America's waterfowl. These habitats also benefit other wildlife and people. In North and South Dakota over 700 landowners currently are on a waiting list to sell conservation easements and protect the grasslands and wetlands that they own but funding is insufficient to enroll everyone who has applied. The conservation easements will be purchased from volunteer, willing landowner sellers. The land will remain in private ownership.

Ducks Unlimited strongly supports this project because it conserves native prairie and wetlands, maintains healthy wildlife populations and benefits ranchers and other landowners.

Ducks Unlimited commends the U.S. Fish and Wildlife Service for its vision of proposing the Dakota Grasslands Conservation Area Project and identifying the Land and Water Conservation Fund of 1965 funding for rapid delivery of this conservation effort.

Sincerely,

Paul R. Schmidt

Paul R. Schmidt
Chief Conservation Officer

cc: Lloyd Jones
Nick Kaczor

Letter #3—The Nature Conservancy in Minnesota, North Dakota, and South Dakota

The Nature Conservancy
Protecting nature. Preserving life.™

The Nature Conservancy in Minnesota
North Dakota & South Dakota
1101 West River Parkway, Suite 200
Minneapolis, MN 55415

Tel (612) 331-0700
Fax (612) 331-0770

nature.org

July 18, 2011

Nick Kaczor
U.S. Fish and Wildlife Service
Division of Refuge Planning
134 Union Boulevard, Suite 300
Lakewood, Colorado 80228

RE: Dakotas Grassland Conservation Area Comments

Thank you for the opportunity to comment on the proposed Dakotas Grassland Conservation Area. The Nature Conservancy (TNC) would like to add our support for the development and funding of this important program.

Native grasslands of North America, including those of the Prairie Pothole Region are the highest converted and least protected habitat type in the world. Further protection of this habitat will be essential to maintain current populations of species that depend on it.

The area proposed in the DGCA is of global importance for numerous species, including waterfowl, shorebirds, grassland passerines as well as many others. Sometimes referred to as the "duck factory" protection of the grass and wetland feature of this part of North America is of critical importance to waterfowl. Grassland passerines endemic to this area are experiencing rapid declines in populations. Many of these species require large, high quality areas of native prairie historically found in this area. Further protection of this area will be essential to ensure further population decline.

Local ranching communities also depend on these grasslands for forage for cattle. Protection of these grasslands and wetlands via voluntary conservation easements keeps these lands in private ownership, maintains the local tax base, and provides landowners an additional source of income of which they can support their ranching operation and way of life for future generations. The high demand for these easements documented by the U.S. Fish and Wildlife Service suggests that landowners also recognize the many values of programs such as this.

Again, thank you for the opportunity to comment on this proposal. TNC looks forward to working with USFWS and other partners to secure further grassland protection in the project area.

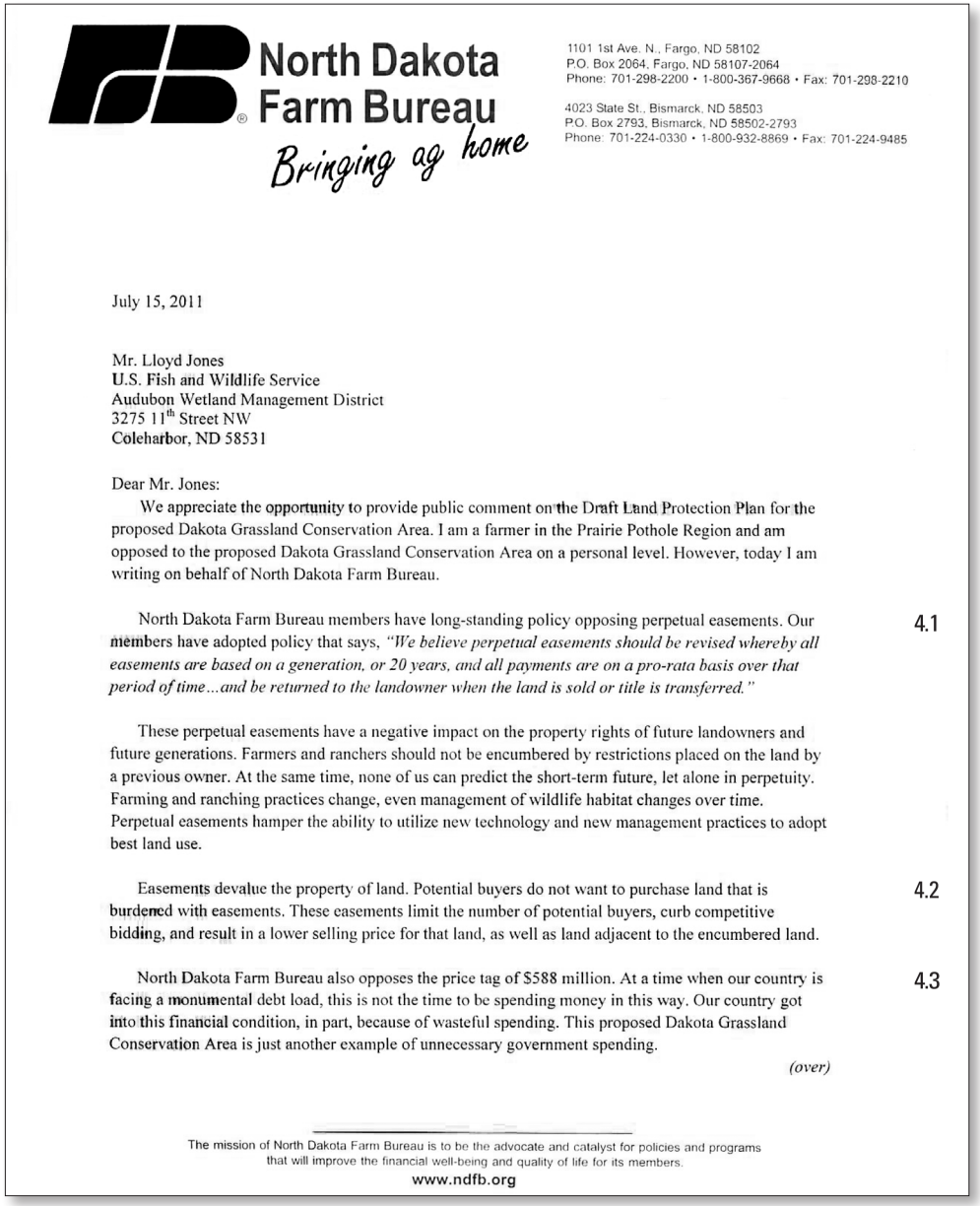
Sincerely,

Peggy Ladner
State Director

Service Response to Letter #3

Thank you for your comments that highlight the multitude of wildlife species other than waterfowl that benefit from grassland conservation. We have acknowledged this in section 3 of the EA (appendix C).

Letter #4—North Dakota Farm Bureau (page 1 of 2)



North Dakota Farm Bureau
Bringing ag home

1101 1st Ave. N., Fargo, ND 58102
P.O. Box 2064, Fargo, ND 58107-2064
Phone: 701-298-2200 • 1-800-367-9668 • Fax: 701-298-2210

4023 State St., Bismarck, ND 58503
P.O. Box 2793, Bismarck, ND 58502-2793
Phone: 701-224-0330 • 1-800-932-8869 • Fax: 701-224-9485

July 15, 2011

Mr. Lloyd Jones
U.S. Fish and Wildlife Service
Audubon Wetland Management District
3275 11th Street NW
Coleharbor, ND 58531

Dear Mr. Jones:

We appreciate the opportunity to provide public comment on the Draft Land Protection Plan for the proposed Dakota Grassland Conservation Area. I am a farmer in the Prairie Pothole Region and am opposed to the proposed Dakota Grassland Conservation Area on a personal level. However, today I am writing on behalf of North Dakota Farm Bureau.

North Dakota Farm Bureau members have long-standing policy opposing perpetual easements. Our members have adopted policy that says, *"We believe perpetual easements should be revised whereby all easements are based on a generation, or 20 years, and all payments are on a pro-rata basis over that period of time...and be returned to the landowner when the land is sold or title is transferred."* 4.1

These perpetual easements have a negative impact on the property rights of future landowners and future generations. Farmers and ranchers should not be encumbered by restrictions placed on the land by a previous owner. At the same time, none of us can predict the short-term future, let alone in perpetuity. Farming and ranching practices change, even management of wildlife habitat changes over time. Perpetual easements hamper the ability to utilize new technology and new management practices to adopt best land use.

Easements devalue the property of land. Potential buyers do not want to purchase land that is burdened with easements. These easements limit the number of potential buyers, curb competitive bidding, and result in a lower selling price for that land, as well as land adjacent to the encumbered land. 4.2

North Dakota Farm Bureau also opposes the price tag of $588 million. At a time when our country is facing a monumental debt load, this is not the time to be spending money in this way. Our country got into this financial condition, in part, because of wasteful spending. This proposed Dakota Grassland Conservation Area is just another example of unnecessary government spending. 4.3

(over)

The mission of North Dakota Farm Bureau is to be the advocate and catalyst for policies and programs that will improve the financial well-being and quality of life for its members.
www.ndfb.org

Service Response to Letter #4

4.1 Thank you for your comments. Please see response 8.2.

4.2 In response to the statement that easements devalue land, a study of land sales in South Dakota (Shultz and Pool 2005) stated, "60 percent of properties had reduced sale prices attributed to easements. However, almost 95 percent of sellers were more than sufficiently compensated for reduced sale prices ... and average net impacts to sellers of easement encumbered land was a positive 30 percent." This study indicated that the income from the sale of an easement more than compensated the seller for any reduction in the selling price.

4.3 Please see response 8.3. The commenter referenced the saving of taxpayer dollars if the project were not funded. The DGCA project proposes to use money from the Land and Water Conservation Fund Act of 1956. This money is not taxpayer dollars; it is derived primarily from the sale of government offshore oil and gas leases and is dedicated to conservation uses by legislation.

The Draft Land Protection Plan readily acknowledges that USFWS does not have the money for this project and will be using alternative funding sources. The USFWS should have to live within its means, like every citizen in this country. Utilizing money from the Land and Water Conservation Fund simply eliminates spending that money for other more useful projects, or better yet, not spending it all and saving some taxpayer dollars.

Our members are simply opposed to USFWS having control over more private land, all in the name of "protecting the ducks and other wildlife." USFWS already has enough land dedicated to wildlife habitat. Common sense tells us that when we are in a wet-cycle, we will have more ducks. When we are in a dry-cycle we will have fewer ducks. That's the natural cycle of life. 4.4

Finally, the Draft Plan allows the USFWS Regional Director of Region 6 to determine if the plan meets the NEPA (National Environmental Policy Act) and if an Environmental Impact Statement (EIS) is needed. Finally, the Region 6 Director signs the "Finding of No Significant Impact (FONSI)." We really question if the Region 6 Director can possibly be objective about a project that is proposed by its own agency. 4.5

For these reasons, North Dakota Farm Bureau is opposed to the Draft Land Protection Plan and the proposed Dakota Grassland Conservation Area. We sincerely hope you will give serious consideration to the landowners' input on this issue.

Thank you for the opportunity to participate in the public comment phase.

Sincerely,

Eric Aasmundstad
President

4.4 Waterfowl and other wildlife populations do fluctuate due to varying weather conditions. However, without adequate habitat in place and available, the opportunity for populations to build during favorable conditions, not decline during unfavorable conditions, is determined by the amount of available habitat. Wetland drainage, for example, functions as a permanent drought that, even under wetter conditions, will not provide waterfowl habitat or provide any of the other benefits such as with flood control.

4.5 NEPA procedures direct that the Federal agency undertaking the action, in this case the Service, make the determination of whether a "finding of no significant impact" is appropriate or if other NEPA action is needed. Furthermore, Department of the Interior policy (516 DM 8) considers the establishment of most new units of the Refuge System to be an action normally requiring an EA.

Letter #5—North Dakota Stockmen's Association (page 1 of 2)

NORTH DAKOTA STOCKMEN'S ASSOCIATION

407 S. Second St.
Bismarck, ND 58504
701-223-2522 • www.ndstockmen.org

July 24, 2011

Lloyd Jones
U.S. Fish and Wildlife Service
Audubon Wetland Management District
3275 11th Street NW
Coleharbor, ND 58531

RE: Dakota Grassland Conservation Area Comments

Dear Mr. Jones:

The North Dakota Stockmen's Association is an 82-year-old beef cattle trade organization. On behalf of our nearly 3,000 members, many of whom farm and ranch in the Prairie Pothole Region of North Dakota, I write to oppose the Dakota Grassland Conservation Area as currently proposed.

As you know, livestock producers take great pride in being stewards of their resources. Pro-conservation, we regularly employ many conservation practices on our operations, whether it be rotational grazing, weed control, tree planting or wildlife habitat and water development, to enhance our own businesses and to leave our operations in better shape for those who come after us. It's part of our livelihood and our legacy.

The Dakota Grassland Conservation Area's Alternative B, the U.S. Fish and Wildlife Service's preferred alternative, would include the establishment of perpetual conservation easements to accelerate the acquisition of wetland and grassland habitat. Our members have and continue to be adamantly opposed to perpetual easements, and for good reason. Perpetual easements can negatively impact the ability of future generations to best manage the land for that point in time and infringe on their private property rights. We also believe that perpetual easements devalue property, as potential buyers are less apt to be interested in parcels if they come with restrictions that last forever. In a public hearing held earlier this summer, U.S. Fish and Wildlife Service officials assured the crowd that modifications to the terms of the perpetual easements could be requested and considered. The complicated flow chart outlining the steps that would need to be taken in order to make a change, though, are indicative of the unlikelihood that these modifications would ever be granted. 5.1 5.2

Shorter-term easements would be much more palatable. If arrangements are mutually beneficial for both the individual landowner and the U.S. Fish and Wildlife Service, achieving renewal of a shorter-term easement should not be difficult. We noted, though, that the shorter-term easement alternative 5.3

Service Response to Letter #5

5.1 Thank you for your comments. Please see response 8.2.

5.2 The Service has a long history of accommodating reasonable uses on easement lands. Pipelines and other buried utilities, transmission lines, and wind energy projects have all been authorized on easement lands.

5.3 Please see response 8.2. As noted, with hundreds of landowners on a waiting list interested in participating in the program, it is evident the program is considered favorable.

wasn't even studied. The rationale given in the report was that shorter-term easements would merely be conservation rental, whereas perpetual easements would be conservation ownership. If conservation is at the core of this discussion, the U.S. Fish and Wildlife Service's goal should be achieving the conservation objectives, not controlling the land. Besides, shouldn't each generation be given the same opportunity as the one that came before it to implement decisions in the management and stewardship of their lands?

We cannot listen to the television or radio news or read a newspaper without hearing about the federal deficit and extreme steps being taken to cut that debt. Considering our overall federal economic condition, it seems misplaced for the U.S. Fish and Wildlife Service to be pursuing easements at a cost of more than $580 million over the next 25 years, particularly when the agency will have to seek alternative funding in order to pay for the project. 5.4

Additionally, the scope of this proposal is massive, encompassing more than half of our state, for a total of 1.7 million acres of grasslands and 240,000 acres of wetlands initially. Yet, there are already plans to grow the size to 1.8 million acres of wetlands and 10 million acres of grasslands. It would seem only reasonable that, if it moves forward, such a project be conducted with a take-it-slow approach, with shorter-term easements and on a pilot-project basis first. 5.5

I'd also point out, that, just as migratory birds have seen a decline in the last quarter century, so have beef cattle. In fact, cow numbers are the lowest they've been since the 1950s and, just as with the migratory birds, that's due to a multitude of reasons. Protecting livestock grazing and the livelihood of livestock producers are important too. Because we have seen a shift away from livestock grazing as a priority or equally weighted use in other federal government agency actions, we are very concerned that that same shift away from a multi-use concept that includes livestock grazing will result with this plan, and that the consequences of that action will last in perpetuity. 5.6

Therefore, we urge you to abandon Alternative B and, instead, explore with all stakeholders a shorter-term easement option that recognizes the environmental and wildlife benefits of livestock grazing. If the U.S. Fish and Wildlife Service is unwilling to do that, we urge you to choose Alternative A and simply abandon the plan. 5.7

We appreciate the opportunity to comment on this issue. If you have any questions, feel free to contact our office at (701) 223-2522.

Regards,

Jason Schmidt, President
North Dakota Stockmen's Association

CC: Sen. Kent Conrad
Sen. John Hoeven
Rep. Rick Berg

5.4 Please see response 8.3.

5.5 The DGCA project has identified the threat that currently exists with the loss of native prairie. A "go slow" approach would greatly reduce the ability of the program to curb the loss of native prairie that, once lost, can never be replaced ecologically. The Service has already tested the viability of shorter-term easements and found that longer-term easements are more effective in meeting habitat goals and more fiscally appropriate. See response 8.2 and section 2 of the EA (appendix C). In addition, we are addressing the high level of landowner interest—one benefit of the program is to provide compensation to landowners for conservation, and that need is apparently very high at this time.

5.6 The DGCA project has a stated purpose of supporting livestock operations; the purpose stated as, "Conserve working landscapes based on ranching and livestock operations that support a viable livestock industry." The DGCA project directly and specifically addresses this concern by perpetually preserving grasslands that would be used for livestock grazing for generations to come.

5.7 The analysis of the no-action alternative indicated that it would not meet the stated purposes of the project. Furthermore, more than 92 percent of the commenting public supported the proposed action (alternative B).

Letter #6—Pheasants Forever and Quail Forever (page 1 of 2)

Lloyd Jones, Refuge Manager

Nick Kaczor, Planning Team Leader

U.S Fish & Wildlife Service

P.O. Box 25486, DFC

Denver, Colorado 80225

Reference: The Proposed Dakota Grassland Conservation Area

For North Dakota, South Dakota and Montana

Dear Mr. Jones and Mr. Kaczor:

On behalf of Pheasants Forever(PF) and Quail Forever (QF), I want to express our organizations overwhelming support for the proposed Dakota Grassland Conservation Area initiative. We strongly support the Environmental Assessment (EA) and the Draft Land Protection Plan which soundly documents the purposes, issues, alternatives and analysis for this initiative and the accompanying Land Protection Plan put forth by the USFWS. We urge full funding and implementation of the project as noted in the Proposed Action section of the EA.

PF and QF have long been involved in the Prairie Pothole Region (PPR) and recognize its importance as one of the most important migratory bird habitats and ground nesting bird habitats in the Western Hemisphere. We also recognize the large scale change in land use and the resultant conversion of grasslands and wetlands to crop production imperils the ability of the PPR to support the myriad of wetland and grassland species it houses. In fact, at current rates of grassland conversion, an estimated one-half of the remaining native prairie in the PPR will be lost in three decades unless out nation can increase its investment in the conservation of these lands and waters.

Along with the loss of critical habitats comes significant loss of economic gains. Pheasant hunting alone provides an estimated $200 million per year to South Dakota's income base and is directly related to maintaining several small rural towns and communities.

We especially support and encourage conservation programs that are voluntary and incentive based so that meaningful conservation on a large landscape level can be accomplished by working with private landowners on a willing seller basis. The DGCA specifically allows ranchers and farmers to decide if, when and to what extent they want to participate in individual programs on their lands to compliment their ongoing grazing and crop production operations.

Service Response to Letter #6

Thank you for your comment about the intrinsic value of the wildlife found in the project area, as well as the economic value of wildlife resources that we address in the socioeconomic portion of the EA (appendix C).

Letter #6—Pheasants Forever and Quail Forever (page 2 of 2)

We make this above statements on behalf of our 138,000 members participating in over 700 Chapters nationwide. We appreciate the opportunity to comment in support of this very critical project and your willingness to consider our views.

Sincerely Yours,

David E. Nomsen

Vice President

Pheasants Forever and Quail Forever

Letter #7—South Dakota Department of Game, Fish, and Parks

DEPARTMENT OF GAME, FISH, AND PARKS
Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

SDGF&P Comments re: USFWS Proposed Dakota Grasslands Conservation Area. Miller, SD public meeting, June 29, 2011. Delivered by Tim Olson, Senior Habitat Biologist

1. South Dakota Game, Fish & Parks has reviewed both the Dakota Grassland Conservation Area environmental assessment and the associated draft land protection plan. We offer our full support for both.
2. We recognize the international importance of the Dakota Grasslands Conservation Area and are proud of the conservation partnerships we have forged with the USFWS, hundreds of private landowners, producer groups, Ducks Unlimited, Pheasants Forever and others to conserve this priority landscape.
3. The purpose of the proposed Dakota Grassland Conservation Area project is to provide for the long-term viability of breeding waterfowl and other migratory bird populations by conserving wetlands and grasslands through the use of Fish & Wildlife Service easements. These same habitats are also vital to a host of other game and non-game wildlife.
4. This effort to protect the integrity of our native prairies and associated wetlands works in concert with SDGF&P's mission of conserving, managing, and protecting South Dakota's wildlife resources and their associated habitats, for the use, benefit, and enjoyment of the people of this state and its visitors. It will also help us meet important habitat and priority species conservation goals outlined in our State Wildlife Action Plan.
5. We have long known that to meet many of our wildlife management goals we must continue and enhance cooperative relationships with private landowners, particularly those running grass-based cattle operations who share our interest in grassland and wetland conservation.
6. The Dakota Grassland Conservation initiative will accelerate protection of highly threatened priority grassland landscapes on working ranch and livestock operations. We believe it's very important to recognize that landowners will make their own land use decisions regarding voluntary participation in the Service's easement program – an approach consistent with the well accepted model of locally led conservation.
7. Finally, while the plan and its goals are science-based, it's important to keep in mind that Fish & Wildlife Service easements are a cost-effective and publicly supported means of protecting wetland and grassland habitats. And while there are a variety of ways to protect habitat, South Dakota Game, Fish & Parks views Fish & Wildlife Service easements as perhaps the most viable way to conserve habitat in South Dakota at a landscape scale. We see a strong and vibrant grass-based livestock ranching lifestyle as a key component to protecting our remaining native prairie and the wildlife it sustains. South Dakota Game, Fish & Parks therefore offers its full and complete support for the Dakota Grasslands Conservation Area.

Office of Secretary: 605.773.3718 Wildlife Division: 605.223.7660 Parks/Recreation Division: 605.773.3391 FAX: 605.773.6245
TTY: 605.223.7684

Service Response to Letter #7

Thank you for your comments. Partnerships with the stakeholders you mention, as well as others, are essential in order to meet the goals stated in the environmental assessment. Your comments recognize that the success of this project relies heavily on its acceptance by landowners, their decisions, and the concept of locally led conservation. Your letter highlights the value of a strong ranching-based component as an essential part of conserving those remaining tracts of native grass prairies. Your assessment of the easements involved in this project is that they are a cost-effective and publicly supported means of protecting wetland and grassland habitats, which we address in section 2 of the EA (appendix C). Your letter confirms that, together with our State partners, we are working to protect those resources necessary for the use, benefit, and enjoyment of the people within these States and to those well beyond our borders.

Letter #8—State of North Dakota Governor (page 1 of 2)

— State of —
North Dakota
Office of the Governor
Jack Dalrymple
Governor

July 25, 2011

Mr. Lloyd Jones
U.S. Fish and Wildlife Service
3725 11th Street NW
Coleharbor, ND 58531

Dear Mr. Jones:

Thank you for the opportunity to submit comments regarding the proposed Dakota Grasslands Conservation Area. While I appreciate the U.S. Fish and Wild Service's (FWS) goal of accelerating the conservation of wetland and grassland habitat in the Prairie Pothole Region and the habitat it would provide for conserving populations of migratory waterfowl, I believe that this goal could be accomplished through less restrictive methods.

One of the areas of concern I have with the Dakota Grassland Conservation Area is its potential impact on future development on the lands subject to easements. For example, wind farms sited anywhere within the Conservation Area would be allowed only under very limited circumstances, even if best practices are used to substantially reduce environmental impacts. Reducing ability to produce wind on such a large land area could potentially hamper the development of renewable energy resources in North Dakota. Other concerns of mine include impeded installation of oil pipelines through the broad swath of land that could be subject to these perpetual easements, as well as the difficulties in obtaining permission to construct roads that might be necessary in the future. FWS could accomplish the same goals while being less restrictive of future development. 8.1

The length of the proposed conservation easements is another area that I believe should be reconsidered. Instead of primarily utilizing perpetual easements, as is proposed in the Environmental Assessment, use of easements on a generational level would be a more appropriate way to deal with this issue, to prevent future generations of farmers and ranchers from being encumbered by restrictions made without their consent. A more appropriate time period for these easements would be 30 years, ensuring that land is not encumbered in perpetuity due to the decision of one generation of landowner. If it is deemed necessary that perpetual easements be used, payments should be distributed over the course of the easement to ensure that future 8.2

600 E Boulevard Ave. • Bismarck, ND 58505-0001 • Phone: 701.328.2200 • Fax: 701.328.2205 • governor.nd.gov

Service Response to Letter #8

8.1 Thank you for your comments. The Service would administer conservation easements under the DGCA project under established procedures that are based on the premise of reasonable accommodation. This process allows these activities to be conducted on lands with conservation easements. For example, since 1975 the Service has had a memorandum of understanding in place with the North Dakota Department of Transportation that allows a quick replacement of easement areas affected by road projects. Accommodation is also made for projects such as buried pipelines where disturbance may be temporary and technology allows for actions that eliminate surface impacts. In addition, an exchange with reversionary clause has been developed and used to accommodate wind projects on easement lands. We have a stated goal of continuing a cooperative relationship with landowners to accomplish conservation objectives and, to do so, the Service recognizes that administering an easement program and addressing requested uses in a reasonable manner is required.

8.2 The Service has considered less-than-perpetual easements in the past. A more thorough description of these efforts is in section 2 of the EA (appendix C). Short-term easements as discussed are good tools for conservation efforts. However, the summary of these efforts basically concluded the following: (1) landowners preferred the longer term easements because they offered more compensation or better fit their management plans; (2) short-term easements resulted in short-term conservation and did not provide for meeting the goals that have been established to provide habitat for migratory birds, which is an obligation for the United States under an international treaty (fee acquisition of habitat areas would be another tool to meet these long-term objectives, but that has been determined to be prohibitively more costly and less publicly and politically acceptable); (3) the economics of repeating payment for the same conservation with short-term agreements did not meet the fiscal responsibility of a public agency; and (4) the perpetual nature of this conservation tool has been successfully used since 1958 when Congress authorized the program. Currently, there are hun-

Letter #8—State of North Dakota Governor (page 1 of 2)

generations are not subject to the restrictions of an easement without a correlative benefit.

A final concern with this project is the $588 million in funds that would be required to obtain the easements and to administer the program. While the goals of the proposed program are commendable, spending this large sum of money at a time when cuts are being considered in many critical federal programs might not be well received.

Thank you for your consideration of my comments.

Sincerely,

Jack Dalrymple

Jack Dalrymple
Governor

37:68:71

dreds of landowners on a waiting list who have expressed interest in participating in this program. Additionally, in a 2010 survey (Metz and Weigel 2010), 60 percent of North Dakota residents supported voluntary perpetual easements as a means to conserve natural areas, water, and wildlife habitat. The DGCA project is based on a strictly voluntary and willing-seller basis, and only those landowners who determine these conservation easements are in the best interest of the land they are managing participate. Another aspect of a perpetual easement is that is it a conservation tool that offers an alternative to another perpetual decision—converting native prairie to other uses. The conversion of native prairie is an irreversible decision that binds future generations to address the potential impact, for example, associated with tillage of potentially erodible lands.

8.3 Conservation programs have demonstrated that they generate considerable economic activity, far in excess of the expenditures. Additionally, when the associated benefits of wetland and grassland conservation are considered—such as with reducing runoff and flooding, contributing to ground water recharge, and improving downstream water quality—the benefits of investment in conservation are value added to the habitat value provided. A very important justification for investing in conservation is that restoration of lost wetland and grassland areas is extremely difficult to accomplish and very expensive. And with native prairie, full restoration to historical conditions is not possible.

Letter #9—State of North Dakota Department of Agriculture (page 1 of 2)

STATE OF NORTH DAKOTA
DEPARTMENT OF AGRICULTURE
600 E BOULEVARD AVE, DEPT 602
BISMARCK, ND 58505-0020

DOUG GOEHRING
COMMISSIONER

July 22, 2011

Nick Kaczor
U.S. Fish and Wildlife Service
Division of Refuge Planning
134 Union Boulevard, Suite 300
Lakewood, Colorado 80228

Dear Mr. Kaczor:

I am writing you to comment on the draft Environmental Assessment (EA) and Draft Land Protection Plan (LPP) for the proposed Dakota Grassland Conservation Area (DGCA) under consideration by the United States Fish and Wildlife Service (USFWS). As agriculture commissioner for North Dakota, I am pleased to comment on the draft EA and LPP.

The statements made against agriculture are troublesome in the draft EA and LPP. I believe these statements are biased and the documents fail to recognize agriculture's many benefits to wildlife. 9.1

There are statements in the draft EA that are unjustifiable and have no hard evidence behind them. For example, "Current and projected grassland conversion rates will undoubtedly accelerate with increasing prices for cereal grains and low cattle numbers absent any meaningful effort to protect grasslands that remain within the proposed DGCA." 9.2

The draft EA fails to recognize factors other than crop prices and cattle numbers. For example:

- The draft EA is correct that crop prices have risen in the recent past however, it fails to recognize that farmers and ranchers make a living based on profit margins. Input costs for agriculture have risen at a similar rate as commodity prices, squeezing out any large profit margin. Based on the data collected by the Economic Research Service (ERS) of the United States Department of Agriculture (USDA), anhydrous ammonia prices have more than tripled since 2000.
- The draft EA recognizes that the beef cowherd has dropped 11.3 percent from February of 1996 to January of 2010. The draft EA does not mention that beef cow carcass weight has increased by 8.6 percent in that period (ERS-USDA). The gain in beef cow carcass weight begins with the cow-calf producer who now requires greater pasture acres to produce a cow-calf pair.

In other areas of the draft EA, the research and studies referenced are outdated and should be ignored. For example, the draft EA recognizes two studies, one from 1985 and the other from 1988 stating that, "Several duck species avoid nesting in cropland, and overall nest success in croplands is below levels considered sufficient to sustain populations." North Dakota agriculture production practices have changed drastically since these studies were done over 20 years ago. We now utilize conservation production practices such as no-till and minimum-till, which leave greater amounts of residue on the land. In addition, the increased 9.3

701-328-2231
800-242-7535

Equal Opportunity in Employment and Services

GOEHRING@ND.GOV
WWW.AGDEPARTMENT.COM

Service Response to Letter #9

9.1 Thank you for your comments. The purpose of the draft EA and LPP was to describe a proposed project of wetland and grassland conservation. The contribution of agriculture to wildlife is significant and, with the limited amount of land that is fully dedicated to wildlife habitat, agriculture's major contribution to wildlife will always exist. The DGCA project recognizes this reality and specifically identified a goal of supporting a viable livestock industry in a cooperative and collaborative manner.

9.2 Globally, temperate grasslands are the most human altered biome and have the highest risk of biome extinction (Hoekstra et al. 2005). The amount of ecosystem loss in the eastern prairie region ranks amongst the highest levels for any biome in the world (see figure 4 in Hoekstra et al. 2005). This figure shows that historical grassland conversion was evident even before the modern rates of conversion in the last few decades. Conversion of grasslands for crop production continues today (Rashford et al. 2010, Stephens et al. 2008). In the Missouri Coteau region of North Dakota and South Dakota, 0.4 percent of grasslands (90,292 acres) were lost per year during 1989–2003 (Stephens et al. 2008). From 1979–1997, 1.33 percent of grasslands were lost per year during across the entire United States PPR (Rashford et al. 2010). This same pattern of increasing conversion was found in Canada as well and is not unique to the United States (Rashford et al. 2011).

9.3 The increased use of no till or minimum till will attract ground-nesting birds because of the residue. Shorter residue such as grain stubble is minimally attractive to northern pintail as an example. However, the disturbance of seeding small grains using modern equipment with narrow row spacing into this residue at the time of nesting destroys existing nests. There is limited value of higher residue serving as nesting habitat for ground-nesting birds, but there are secondary benefits to wetland-associated birds in the form of reduced impacts on wetlands from soil, water, and wind erosion. In terms of winter cereal grains providing nesting habitat, studies are being conducted to research this potential. Whatever

Letter #9—State of North Dakota Department of Agriculture (page 2 of 2)

production of winter cereal grains has provided additional nesting habitat for various wildlife species including waterfowl.

The draft EA also references studies done on the effects of pesticides on wildlife that were done almost twenty years ago. The study referenced (Pimental et al. 1992) in the draft EA mentions the use of Carbofuran and its impacts on ducks and geese. The Environmental Protection Agency (EPA) removed all food tolerances for Carbofuran in May of 2009 effectively stopping the use of Carbofuran in most crop production. This is one example of many where the referenced studies in the draft EA are out of date. 9.4

The most recent Waterfowl Breeding Population and Habitat Survey conducted for 2011, shows the second highest number of ducks since the survey began in 1955. In North Dakota, breeding duck numbers were 85 percent above the average. This survey discredits your argument that agriculture has recently had a negative impact to waterfowl production. A perpetual easement on almost 2 million acres of North Dakota and South Dakota land is unwarranted. 9.5

As a state elected official, I do not believe that the USFWS should be allowed to circumvent our existing state law and our governor's power by using other sources of funding to purchase perpetual easements in our state. 9.6

The world population is expected to grow by 50 percent in the next forty years. Is it ethical not to use a resource that will benefit society when that resource can be better utilized and protected with the use of new technologies, systems, and practices? I would encourage your agency to develop a program that looks at short term agreements that support activities you are seeking to promote. We are borrowing this land from future generations, our children, and we should not tie their hands through perpetual easements. Perpetual easements emplace barriers and restrictions that do not allow the agriculture community to adapt to the needs of society when it comes to the production of food, feed, and fiber. 9.7

Because of the draft EA and LPP's bias and negativity to agriculture, its use of outdated studies, the recent survey showing record number of ducks, USFWS's circumvention of current state law, and the perpetual nature of the easements, I oppose the draft EA and LPP for the proposed Dakota Grassland Conservation Area.

Sincerely,

Doug Goehring
Agriculture Commissioner

CC: The Honorable Kent Conrad
The Honorable John Hoeven
The Honorable Rick Berg

results are found, the acreage of crops such as winter wheat is minimal in the context of other crop acreages (USDA–NASS 2011). For example, the 2010 acreage of winter wheat in North Dakota was less than 4 percent of the total crop area for winter wheat, corn, and spring wheat combined.

9.4 The Service recognizes that the U.S. Environmental Protection Agency (EPA) has removed the pesticide carbofuran for food use. However, the citation in reference (Pimental et al. 1992) still presents valuable information about pesticides and their potential effects on migratory birds. For example, the study discusses the effects of phorate, which is currently an approved pesticide in agricultural production to control corn rootworm and European corn borers as examples. The EPA considers phorate to pose acute and chronic risks to birds and this chemical has also been involved in several bird kills, some involving large numbers (USEPA 2011). The correct application of pesticides does reduce effects on the environment; however, spills and other nonlabeled use unfortunately does occur, with the resultant impact to the environment. We also recognize the ever-changing development and use of various pesticides, each with their own effect on the environment. This dynamic situation emphasizes the need for conducting ongoing research on the effects of pesticides to the environment.

9.5 Please see response 4.4.

9.6 The Service recognizes that the language in the LWCF Act does not contain a State review or approval component. We also recognize that the Service must comply fully with directives established by Congress and not circumvent necessary approvals and requirements. Based on the comment received during the planning process, we have decided to diversify the funding sources available for the DGCA. The project now includes the ability to use money from the Migratory Bird Hunting and Conservation Stamp Act (1934) under the acquisition authority provided by the Migratory Bird Conservation Act (1929). The use of this money requires approval from the State in which lands are purchased and requires approval by the MBCC (see table 2 in chapter 4).

9.7 Please see response 8.2.

Letter #10—The Wildlife Society, North Dakota Chapter (page 1 of 2)

North Dakota Chapter

THE WILDLIFE SOCIETY

P.O. BOX 1442 • BISMARCK, ND 58502

July 24, 2011

Nick Kaczor, Planning Team Leader
Division of Refuge Planning
U.S. Fish and Wildlife Service
P.O. Box 25486, DFC
Denver, CO 80225
Phone: 303-236-4387
Fax: 303-236-4792

Lloyd Jones, Project Leader
Audubon National Wildlife Refuge
U.S. Fish and Wildlife Service
3275 11th Street NW
Coleharbor, ND 58531
Phone: 701-442-5474 Ext. 111
Fax: 701-442-5546

Dear Sirs:

The North Dakota Chapter of the Wildlife Society (NDCTWS) appreciates the opportunity to comment on the Draft Environmental Assessment (EA) for the Dakota Grasslands Conservation Area (DGCA). The mission of the NDCTWS is to provide a forum for discussion of ecological issues among natural resources professionals; to enable its membership to pursue conservation of natural resources; and to inform the public on ecologically wise uses of natural resources in support of a conservation ethic.

The NDCTWS commends and supports the U.S. Fish and Wildlife Service DGCA proposal, which aims to accelerate the conservation of wetland and grassland habitats across the Prairie Pothole Region of North Dakota, South Dakota and eastern Montana. The DGCA proposal will help preserve the ecological integrity and function of the grassland and wetland habitats of this unique but severely threatened ecosystem at a landscape-scale and conserve populations of migratory birds. Importantly, the DGCA proposal will also help preserve working landscapes based on ranching and livestock operations, support the ranching culture and bolster a viable livestock industry; a critical element for maintaining healthy populations of wetland and grassland dependent migratory birds. Native prairie grasslands not only provide critical habitat for nesting waterfowl, other grassland nesting birds and many other species of wildlife, but they also form the backbone of our ranching industry, help purify our water supplies and support our tourism industry. In North Dakota, beef production is the #2 commodity and the majority occurs on our native grasslands. Tourism is the third largest industry in North Dakota, supported largely by hunting, fishing and other outdoor recreation and as noted; our wildlife populations

Service Response to Letter #10

Thank you for your comments that recognize the value of native grasslands to viable ranching and tourism industries in the State of North Dakota. The Service has identified these values in our proposed action.

Letter #10—The Wildlife Society, North Dakota Chapter (page 2 of 2)

thrive because of the habitat base (much of which is native prairie and wetlands) that still remains.

Landowner interest for voluntary, perpetual grassland easements remains high in the eastern Dakotas. Currently, more than 600 landowners are on a waiting list for perpetual grassland easements. However, limited funding prevents many of these landowners from fulfilling their dream of protecting their grasslands and their ranching livelihoods. The DGCA proposal aims to address this shortfall and does so in a fiscally responsible manner without increasing taxes. Funding will be provided by the Land and Water Conservation Fund, which is generated from existing offshore oil and gas lease revenues. The intent of the Land and Conservation Fund Act in 1965 was to dedicate these funds for conservation; something that has not been happening throughout the years. In addition, lands protected with voluntary, perpetual grassland easements remain in private ownership, taxes and weed control remain the responsibility of the landowner and the landowner retains control over public access.

In closing, the NDCTWS fully supports the DGCA proposal and believes it is a win: win for migratory bird populations, other grassland and wetland-dependent wildlife, ranchers, other private landowners, outdoor recreationists and the American taxpayer. It is a proposal that aims to conserve important grassland and wetland habitats in a landscape that is under a growing threat of conversion in a fiscally sound manner and in cooperation with willing landowners.

Sincerely,

Brian Kietzman
President

Letter #11—The Wildlife Society, South Dakota Chapter

THE WILDLIFE SOCIETY
South Dakota Chapter
20515 Shamrock Ave.
Pierre, SD 57501
(605) 224-8861

July 5, 2011

Nick Kaczor, Planning Team Leader
Division of Refuge Planning
U.S. Fish and Wildlife Service
P.O. Box 25486, DFC
Denver, Colorado 80225

Dear Mr. Kaczor:

The South Dakota Chapter of The Wildlife Society (SDTWS) is a professional society of natural resource managers, researchers and biologists dedicated to the sound stewardship of wildlife resources and the environment upon which wildlife and humans depend. We have reviewed the Environmental Assessment and Land Protection Plan. The SDTWS would like to take this opportunity to provide our support for Alternative B of the proposed Dakota Grassland Conservation Area. We provided our support for this grassland protection project at your public meeting held on June 29, 2011, in Miller, South Dakota.

The Prairie Pothole Region of South Dakota is a landscape that has undergone numerous changes in the past 100 years. The conversion of native grassland to cropland and pressure to drain pothole wetlands continues at an alarming rate today. Native grasslands and prairie wetlands are habitats for hundreds of wildlife species and provide numerous environmental and aesthetic benefits to South Dakotans and our visitors. Protection of these habitats has never been more critical and we hope you are successful in obtaining additional funds to accelerate the purchase of grassland and wetlands easements from willing landowners. If implemented, this Land Protection Plan would encourage sustainable ranching while concurrently protecting vital wetland and grassland habitat for wildlife.

Please feel free to contact the SDTWS if we can be of any further assistance as you continue to move forward with this vital effort. Again, thank you for your efforts to conserve these habitats for future generations.

Sincerely,

Rocco Murano, President
South Dakota Chapter of the Wildlife Society

Service Response to Letter #11

Thank you for your comments that emphasize the value that native grasslands and prairie wetland habitats provide to numerous wildlife species while sustaining a viable ranching community as outlined in alternative B of the EA (appendix C).

Scoping Report

The objective of the scoping process was to gather the full range of comments, questions, and concerns that the public has about the proposed action. The Service issued a scoping notice on December 1, 2010 (refer to the news release on the next two pages) to all media outlets in Montana, North Dakota, and South Dakota and to several major, daily papers in Minnesota and Iowa. This information was also posted to the Service's Web pages and Facebook and Twitter profiles. Due to the holiday season, the Service extended the public scoping period by 2 weeks, until January 14, 2011 (refer to this news release following the first release); with this extension, there was a total of 45 days for the public comment period.

The Service mailed a four-page fact sheet to 1,275 individuals and organizations; in addition, 1,737 postcards were mailed out to individuals informing them of the project. Names on the mailing list came from previous Service projects where groups or individuals had expressed interest in the general area or in easement programs.

For face-to-face interaction with the public, the Service conducted three scoping meetings on December 14, 15, and 16, 2010—at Minot, North Dakota; Jamestown, North Dakota; and Huron, South Dakota; respectively. Public attendees at the three scoping meetings totaled 93 individuals.

Summary of Scoping Comments

The public offered comments and asked questions at the public meetings held December 14–16, 2010. In addition, individuals and organizations submitted comments in writing during the 45-day public scoping period that ended January 14, 2011. In summary, the Service received 1,469 emails, 24 written letters, and 60 phone calls.

The planning team made every effort to document and review all of the comments, questions, and issues—whether from written submissions or recorded at public meetings—and then organize the information by topic in a spreadsheet. Regardless of whether comments and questions were general in nature or about specific points of concern, they were added to the spreadsheet one time for each comment or question. Comments are considered to be of equal importance; however, public scoping is not a voting process. Figure H shows the proportion of comments by each topic.

Most of the comments reflected concern about the loss of wetland and grassland and stated general support for the proposed project, while comments against the proposal emphasized the need for easements of shorter duration, that is, not perpetual.

Below is a summary of the comments and questions raised during public scoping.

Purpose and Need

Comments

- Government assistance is not needed because farmers and ranchers already do a good job.
- The Service should educate farmers to conserve wildlife and habitat.
- The project would enhance beef production and ranching operations.
- The swampbuster provision does not work.
- The project would increase water quality.
- The project would reduce flooding issues.
- There needs to be more grassland focus.
- More than 800 landowners are currently on a waiting list.
- Landowners should manage their own land.
- This is the same situation as in 1960.
- This project is in line with the vision for Refuge System growth and America's Great Outdoors.
- The project is important for outdoor recreation.
- The project size and scope need to be increased.
- The project should be expanded to all of North Dakota and South Dakota.
- More of Montana, Minnesota, Nebraska, Wyoming, and Iowa should be included.

Questions

- Why is there a need for this project if there is such a long waiting list of landowners?
- Why is more Federal ownership needed?
- Can Congress deauthorize easements?
- No ducks or geese are threatened or endangered, so why is there a need?
- Why should North Dakota be concerned about producing migratory birds that leave?
- Why is there an urgency?
- Why does this project identify two sets of goals?

Perpetual Nature of Easements

Comments

- The Service needs to consider term easements (e.g., 20-, 30-, or 40-year easements).
- Perpetual easements punish future generations.
- There is opposition to perpetual easements.
- Future generations would have their property rights removed.
- Converting native prairie to agriculture is perpetual.
- Perpetual easements protect valuable habitats.
- All easements should be perpetual.
- Even though easements are perpetual, the easement program is still voluntary.

NEWS RELEASE

U.S. FISH AND WILDLIFE SERVICE
Audubon National Wildlife Refuge
3275 11th St. NW
Coleharbor, ND 58531

For Immediate Release

Date: December 1, 2010
Nick Kaczor (303) 236-4387
Lloyd Jones (701) 442-5474, ext. 111

U.S. Fish and Wildlife Service to Host Public Meetings Regarding the Proposed Dakota Grassland Conservation Area in the Dakotas and Montana

Public Scoping Comments Regarding This Landscape Conservation Effort Will Be Accepted Until December 31, 2010

The U.S. Fish and Wildlife Service (Service) is proposing to accelerate the conservation of wetland and grassland habitats within the Prairie Pothole Region in eastern North Dakota, South Dakota, and Montana through the use of conservation easements. The easements will be used to create the Dakota Grassland Conservation Area (Dakota Grassland. The proposed Dakota Grassland will be part of a landscape-scale, strategic habitat conservation effort to conserve populations of migratory birds by protecting the unique, highly diverse, and endangered ecosystem known as the Prairie Pothole Region.

Establishment of the Dakota Grassland would allow the Service to further the protection of wetland and grassland habitats by working with private landowners to develop conservation easement agreements. Conservation easements are voluntary legal agreements between landowners and the Service. The easements protect wetlands and grasslands from being converted to other uses, but allow for the continuation of traditional activities such as farming wetlands when dry from natural conditions and livestock grazing and haying in grasslands.

The Service wants to hear from the community and will hold several meetings about the Dakota Grassland Conservation Area proposal from December 14-16, 2010 at various locations (see meeting schedule below). At the meetings, you will be able to meet with Service personnel, learn about the proposal, and provide input. These meetings will be forums for sharing ideas and issues about proposed land conservation efforts. The Service also encourages the public to comment through letters, emails, and phone calls to the local or regional contact listed below. Comments and information received will help determine the appropriate level of environmental review required by the National Environmental Policy Act to develop the land protection plan for the proposed Dakota Grassland Conservation Area.

Whether you are an individual or a group representative, please do not hesitate to call, write, or request information on upcoming meetings with Service staff to discuss this proposal and your perspective on the future of the Dakota Grasslands. The Service will accept public scoping comments until December 31, 2010. However, there will be another opportunity to comment on the Land Protection Plan in the winter of 2011.

You can also visit the project website to gather more information – http://www.fws.gov/audubon/DakotaGrassland.html

All meetings will begin at 7:00pm local time at the following dates and locations:

December 14, 2010
Sleep Inn – Inn and Suites
2400 10th St. SW
Minot, ND 58701

December 15, 2010
Gladstone Inn & Suites
111 2nd St. NE
Jamestown, ND 58401

December 16, 2010
Crossroads Hotel
100 4th St. SW
Huron, SD 57350

For more information or to provide comments, contact:
Lloyd Jones, Wildlife Refuge Manager
Audubon National Wildlife Refuge
U.S. Fish and Wildlife Service
3275 11th Street NW
Coleharbor, ND 58531
DGCA_comments@fws.gov
701- 442-5474 x111

Nick Kaczor, Planning Team Leader
Division of Refuge Planning
U.S. Fish and Wildlife Service
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DGCA_comments@fws.gov
303- 236-4387

The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. We are both a leader and trusted partner in fish and wildlife conservation—known for our scientific excellence, stewardship of lands and natural resources, dedicated professionals, and commitment to public service. For more information on our work and the people who make it happen, visit www.fws.gov.

NEWS RELEASE

U.S. FISH AND WILDLIFE SERVICE
Audubon National Wildlife Refuge
3275 11th St. NW
Coleharbor, ND 58531

For Immediate Release

Date: December 29, 2010
Lloyd Jones (701) 442-5474, ext. 111
Nick Kaczor (303) 236-4387

U.S. Fish and Wildlife Service to Extend Public Scoping Period for the Proposed Dakota Grassland Conservation Area in the Dakotas and Montana

Public Scoping Comments Regarding This Landscape Conservation Effort Will Be Accepted Until January 14, 2011

Due to the holiday season, the U.S. Fish and Wildlife Service (Service) is extending the comment period for the Proposed Dakota Grassland Conservation Area until January 14, 2011. The proposal is to accelerate the conservation of wetland and grassland habitats within the Prairie Pothole Region in North Dakota, South Dakota, and Montana through the use of conservation easements. The easements will be used to create the Dakota Grassland Conservation Area. Although the Service has previously, and is currently purchasing easements in the Prairie Pothole Region, this proposal identifies a new avenue of funding to use in cooperation with will willing landowners. The funds for this project would come from the Land and Water Conservation Fund which is primarily derived from the proceeds of outer continental shelf oil and gas lease, excess motorboat fuel tax, and the sale of surplus federal property.

Comments and information received will help determine the appropriate level of environmental review required by the National Environmental Policy Act to develop the Land Protection Plan for the proposed Dakota Grassland Conservation Area.

The Service encourages individuals or group representatives to call, write, or request information on the proposal with Service staff. The Service will accept public scoping comments until January 14, 2011. However, there will be another opportunity to comment on the Land Protection Plan in the spring of 2011.

You can also visit the project website for more information – http://www.fws.gov/audubon/DakotaGrassland.html

For more information or to provide comments, contact:
Lloyd Jones, Wildlife Refuge Manager
Audubon National Wildlife Refuge
U.S. Fish and Wildlife Service
3275 11th Street NW
Coleharbor, ND 58531
DGCA_comments@fws.gov
701- 442-5474 x111

Nick Kaczor, Planning Team Leader
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U.S. Fish and Wildlife Service
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303- 236-4387

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-FWS-

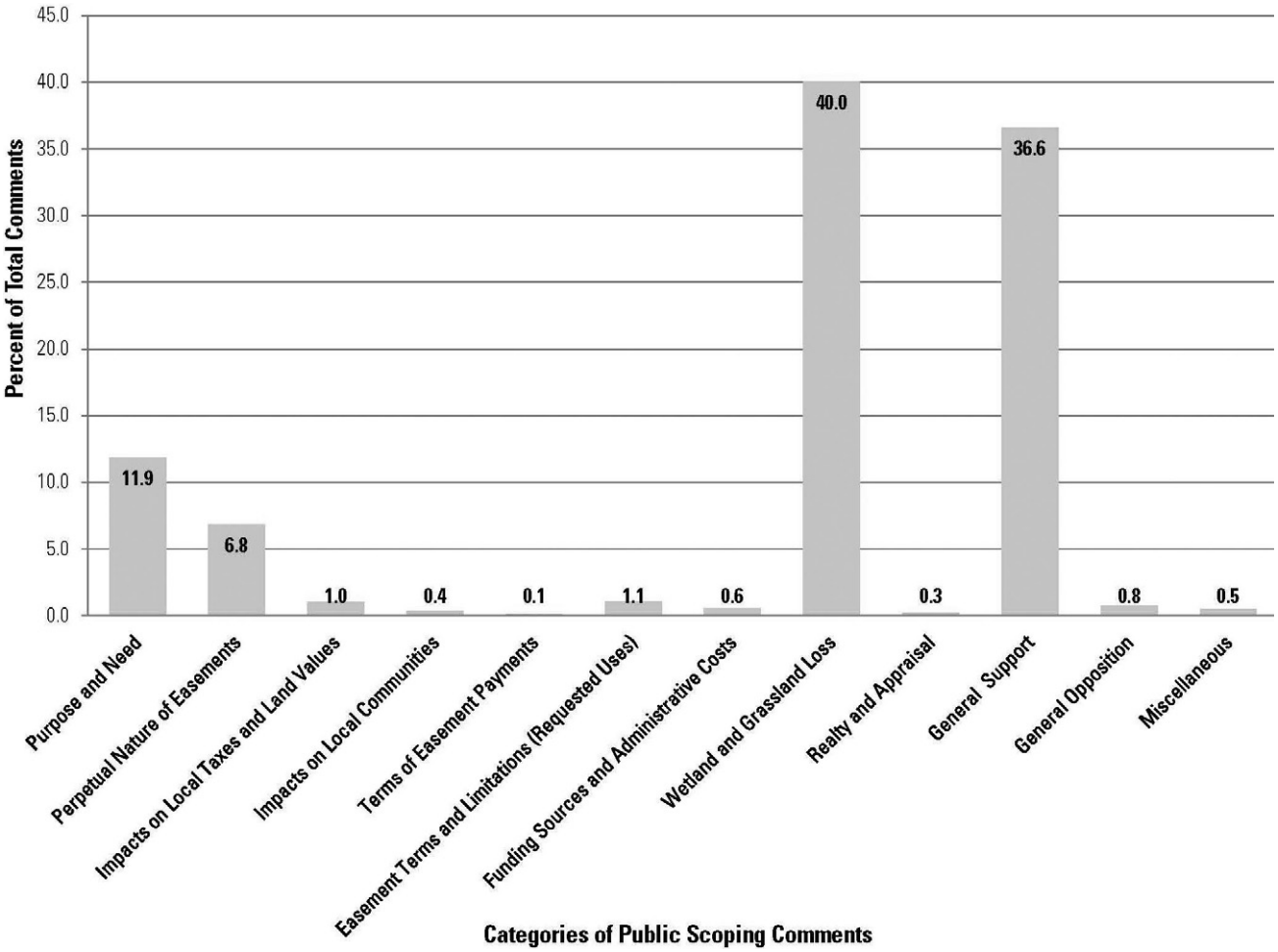


Figure H. Graph of percentage of public scoping comments, by category, about the proposed Dakota Grassland Conservation Area.

- Most landowners on the waiting list are absentee landowners.

Questions

- Will future generations be able to produce enough food?
- Would there be an option to buy out 10 percent of an easement?

Impacts to Local Taxes and Land Values

Comments

- The Service would need to compensate the tax base.
- Other land to farm is getting increasingly harder to buy.
- Easements are detrimental to efficiency and profitability.
- This project would take land away from private ownership.
- This project would keep lands in families and private ownership.
- It is important to maintain some agriculture on the landscape.
- Lands with easements are valued lower.

Questions

- Do easements take land off the local tax rolls?
- How would this affect the local tax base?
- Would an easement payment be subject to taxes?
- Is property assessed at one fee and an easement at another fee?
- How would this affect the new agricultural assessment law in South Dakota?

Impacts on Local Communities

Comments

- The project would impact agricultural service providers.
- Easements are a cost to small farming operations due to flooding.
- The NRCS will not process a 1026 until the Service approves; the process needs to speed up.

- More wildlife would lead to increased tourism.
- Native grasslands are truly a national treasure.
- Easements should not have an effect on others (townships and counties), particularly for road projects.

Question

- Will a socioeconomic analysis be conducted?

Terms of Easement Payments

Comments

- The Service needs to consider annual payments.
- The Service should consider term easements to also pay future generations.

Question

- Is it a one-time payment for an easement or would there be another signup in 20 years?

Easement Terms and Limitations (Requested Uses)

Comments

- Easements should be purchased on all lands within a drainage system.
- Farming in wetlands should not be allowed.
- Easements prevent orderly water management.
- Wind energy should be considered compatible with easements and conservation.
- The Service needs to consider the recent FACA wind energy guidelines.
- The LPP should address prairie dog management.
- The Service should change the term "requested uses" to "habitat allowances."
- The Service needs to resolve easement conflicts.
- Public access should be allowed.

Questions

- Who has jurisdiction of easements that border lands without easements?
- What are limited circumstances?
- Can Congress change easement terms?
- What uses can be conducted on grassland easements?
- Can the landowner burn in a grassland easement?
- Why does the Service limit haying and seed harvest?
- Can "interseeding" be conducted?
- Can trees be planted on easements?
- Can wind energy development occur on easements?
- Why does the Service have jurisdiction over placement of wind turbines?
- What are the Service setbacks on wind farms?
- What would be allowed for access roads to wind farms on both wetland and grassland areas considered for easement?
- How would ground-water usage next to wetland easements be affected?
- Who has jurisdiction of wetland easements, for example, tiling around a wetland?
- Would tiling be allowed in a wetland basin?
- How does this project compare to how NRCS determines a wetland?
- Does the Service wetland determination compare with the NRCS determination and does it matter?

Funding Sources and Administrative Costs

Comments

- The Federal budget cannot afford this.
- LWCF money should be used to pay down the Federal deficit.
- The Service should also consider other funds.

Questions

- How many employees would be needed?
- Where would the money come from?
- How much funding is estimated for this project?
- Are there surplus dollars in LWCF today?

Wetland and Grassland Loss

Comments

- There is a small amount of native prairie left.
- The Service needs to focus on grassland easements, because the wetlands would also be incorporated.
- The Prairie Pothole Region is important to many populations of wildlife.
- This project is necessary to decrease wetland and grassland loss.
- Wetland and grassland habitats are vanishing rapidly.
- Sufficient habitat is already in place.

Questions

- How many wetlands have been lost in last 10 years?
- How is wetland loss determined?
- Have wetland definitions changed since 1960?
- What is native prairie?
- Why does the Service buy easements on more land than just native prairie?
- How does the Service know land has not been previously disturbed?

- What is the situation with urban sprawl and its effects?

Realty and Appraisal

Comment

- The Service needs to clarify easement appraisals and valuation.

Questions

- Does this process require Governor approval?
- How are properties evaluated?
- Would the Service be interested in "go-back" grass or restored grasslands?
- Is there a minimum tract size?
- How many acres are proposed in South Dakota?

Miscellaneous

Comments

- The Service should work more with agricultural groups.
- The Service should not support North Dakota and South Dakota, because they restrict out-of-state hunters.
- The Service should work more with USDA and encourage conservation through farm program incentives.
- Easements can be purchased to offset depredation, and the Service should investigate that.
- Landowners with threatened and endangered species should be compensated.
- The project would increase public education about wetland and grasslands.
- The Service needs to allow ample time for the public to comment.
- The Service needs to conduct an EIS.
- The Service needs to use the Endangered Species Act as leverage.
- The Service should resolve easement conflicts.
- The project name should be changed.

Questions

- How many wetland acres are needed in a quarter section of land?
- Does the goal for 240,000 acres of wetland include upland buffers?
- Are perpetual easements possible in North Dakota?
- What repercussions would there be for easement violations?
- What is the situation with the recent sale of land in Kidder County?
- Is this project for Louisiana hunters?

List of Agencies and Organizations that Submitted Comments

Archery Trade Association
Association of Fish and Wildlife Agencies
Badlands Conservation Alliance
Bear Trust International
Boone and Crockett Club
Bowhunting Preservation Alliance
BP Wind Energy
Campfire Club of America
Congressional Sportsmen's Foundation
Congressman Denny Rehberg
Conservation Force
Dallas Safari Club
Delta Waterfowl
Ducks Unlimited
International Hunter Education Association
Izaak Walton League of America
Maryland Ornithological Society
Masters of Foxhounds Association
Mule Deer Foundation
National Shooting Sports Foundation
National Trappers Association
National Wild Turkey Federation
National Wildlife Federation
National Wildlife Refuge Association
North American Bear Foundation
North American Grouse Partnership
North Dakota Chapter of The Wildlife Society
North Dakota Grain Growers Association
Orion–the Hunters' Institute
Pheasants Forever
Quail Forever
Quality Deer Management Association
Sand County Foundation
South Dakota Chapter of The Wildlife Society
South Dakota Farm Bureau Federation
South Dakota Wildlife Federation
Texas Wildlife Association
The Nature Conservancy
The Wildlife Society
Theodore Roosevelt Conservation Partnership
Tread Lightly
Whitetails Unlimited
Wild Sheep Foundation
Wildlife Forever
Wildlife Management Institute

Appendix E

Finding of No Significant Impact

U.S. Department of the Interior
Fish and Wildlife Service, Region 6
Lakewood, Colorado

Finding of No Significant Impact
Dakota Grassland Conservation Area

All counties north and east of the Missouri River in North and South Dakota (not including counties in the Dakota Tallgrass Prairie Wildlife Management Area).

North Dakota Counties						*South Dakota Counties*		
Barnes	Cavalier	Grand Forks	McIntosh	Ramsey	Towner	Aurora	Edmunds	McPherson
Benson	Dickey	Griggs	McLean	Renville	Trail	Brule	Faulk	Potter
Bottineau	Divide	Kidder	Mountrail	Rolette	Walsh	Buffalo	Hand	Sully
Burke	Eddy	LaMoure	Nelson	Sheridan	Ward	Campbell	Hughes	Walworth
Burleigh	Emmons	Logan	Pembina	Steele	Wells	Charles Mix	Hyde	
Cass	Foster	McHenry	Pierce	Stutsman	Williams	Douglas	Jerauld	

The U.S. Fish and Wildlife Service has completed the "Environmental Assessment, Proposed Dakota Grassland Conservation Area." The environmental assessment evaluates two alternatives, including a no-action alternative, and the subsequent environmental consequences of establishing the Dakota Grassland Conservation Area.

Alternative B, the preferred alternative, was selected for implementation because it best meets the Service's objective to protect wetland and grassland resources in the Prairie Pothole Region for the benefit of migratory birds and other wildlife. The Dakota Grassland Conservation Area was proposed to help conserve these habitats in a working agricultural landscape by complementing farming and ranching practices while preventing the destruction of wetlands and conversion of grasslands to other uses. This project would also benefit the American public by protecting wildlife, water quality, and the carbon sequestering potential of the landscape.

Environmental Effects

The following is a summary of environmental effects from implementation of the proposed action.

1. Establishing the Dakota Grassland Conservation Area would provide for the conservation of wetlands and grasslands on private land in the Prairie Pothole Region of North Dakota and South Dakota. This project would help maintain the value of the area to grassland- and wetland-dependant migratory birds and would complement the Service's Small Wetland Acquisition Program. It would also supplement the conservation efforts of private landowners; Ducks Unlimited; The Nature Conservancy; Pheasants Forever; the North Dakota Game and Fish Department; the South Dakota Game, Fish, and Parks; and several other partners initiated through the North American Waterfowl Management Plan.

2. Conservation easements within the Dakota Grassland Conservation Area would help prevent habitat fragmentation. Maintaining the landscape-scale ecological integrity of wetland and associated grasslands would provide breeding and migrating habitat for at least 130 species of birds, including the endangered piping plover and whooping crane. Additionally, several aquatic species, amphibians and reptiles, and mammals would benefit from the conservation of prairie habitats and associated riparian corridors.

3. Compatible agricultural practices such as livestock grazing or haying (after July 15 of each year) would continue on grassland easements, and farming and haying of naturally dry wetlands would continue on wetland easements. The destruction of wetlands and conversion of grasslands to other uses would be prohibited. Easements would maximize the connectivity

with other protected wetlands and grasslands and would decrease the negative effects of habitat fragmentation on wildlife species.

4. The Dakota Grassland Conservation Area would affect the location and distribution, but not the rate or density, of human population growth. Positive effects may occur from increased public opportunities for wildlife viewing and hunting. Open space consisting of native prairie may enhance property values on adjoining lands as people begin to seek undeveloped lands in the future.

5. The Service, within the approved project boundary, would create no additional land-use regulations. The purchase of an easement would not result in the transfer of land title, and private landowners would continue to pay property taxes. Preventing some types of development could decrease tax revenues in certain market areas. However, open space could actually provide a net savings to local governments when compared to the revenues generated and the costs of services associated with residential development.

6. The Dakota Grassland Conservation Area would not necessarily preclude wind development on private lands protected by easement. Where a pre-existing wind lease occurs, the Service would work with the landowner and developer to minimize any negative effects of development activities. When development is proposed on easement lands where no pre-existing wind lease occurs, the Service would work with the landowner and developer to first avoid impacts if possible and then minimize the impacts to the extent practicable. The Service would release and relinquish its easement rights on any directly affected acreage in exchange for replacement habitat of similar quantity, quality, and protection. The easement interest relinquished would be restored and revert to the Service when the development is decommissioned.

7. Conservation easements purchased on private land would not change the landowners' rights to manage public access to their properties. Private landowners would retain full control over their property access rights, including allowing or restricting hunting and fishing on their lands, under the Dakota Grassland Conservation Area easement program.

8. Through the Dakota Grassland Conservation Area easement program, up to 240,000 acres of wetlands and 1.7 million acres of grasslands would be added to the more than 2.5 million acres of privately owned lands within North Dakota and South Dakota that are already protected by Service easements. Combined with Federal- and State-protected lands, this would result in the long-term conservation of migratory birds, particularly waterfowl; threatened and endangered species; native plants; and the overall biological diversity and ecological integrity of the Prairie Pothole Region in the Dakotas.

Public Involvement

As part of the public scoping process associated with this action, comments were solicited from the public through direct mailings, news releases, public meetings, and direct contacts.

- The Service issued a scoping notice to all media outlets in Montana, North Dakota, and South Dakota and to several major daily newspapers in Minnesota and Iowa.

- Project information was posted on the project Web site as well as on the Service's Facebook and Twitter profiles.

- The Service mailed a four-page fact sheet to 32 Native American tribes and 1,275 individuals and organizations; in addition, 1,737 postcards were mailed.

- Three public scoping meetings were held in Minot, North Dakota; Jamestown, North Dakota; and Huron, South Dakota. Approximately 98 landowners, citizens, and elected representatives attended the meetings.

Most scoping comments received—whether by email, written letters, and phone calls, or during scoping meetings—reflected a concern over the loss of wetland and grassland habitats and stated general support for the Dakota Grassland Conservation Area.

The Service released the draft environmental assessment and land protection plan on June 20, 2011, for a 30-day public review period. The draft documents were made available to Federal elected officials and agencies, State elected officials and agencies, 32 tribes, and other members of the public that were identified during the scoping process.

- Two public meetings were held in Bismarck North Dakota, and in Miller, South Dakota, on June 28 and 29, 2011, respectively. Approximately 50 landowners, citizens, and elected representatives attended the meetings.

- The Service received 10 letters from agencies, organizations, and other entities, and 347 other public comments.

After all comments were received, each was reviewed and incorporated into the administrative record. A large majority (more than 92 percent) of comments received were supportive of the project.

Evaluation

The environmental assessment has taken a thorough look at the environmental impacts to inform the public and the Service about the consequences of the Dakota Grassland Conservation Area.

- Environmental consequences will be beneficial to wildlife habitat; migratory birds, particularly waterfowl; endangered and threatened species; and water and air quality.

- While the proposal to establish the Dakota Grassland Conservation Area will largely preserve the current state of the natural environment and prevent degradation, there may be some reduction in energy development requiring the destruction of grasslands or wetlands that would otherwise occur, but for the easements proposed by the Fish and Wildlife Service. However, substantive conflict is not apparent over this land use issue; more than 90 percent of comments received during scoping meetings and on the environmental assessment were in favor of the establishment of the Dakota Grassland Conservation Area and its use of voluntary conservation easements.

In determining whether this project is a major action significantly[1] affecting the quality of the human environment, the Service looked at both the context and intensity of the action (40 CFR § 1508.27, 40 CFR § 1508.14) as required by the National Environmental Policy Act. The project will be implemented over time, dependent on the Service's ability to obtain the funding needed for easement acquisitions. Of the 29.6 million acres within the overall boundary area, easements may be purchased by the Service only from willing sellers on a strictly voluntary basis on up to 1.94 million acres through this project.

Because the human environment[2] is interpreted by the National Environmental Policy Act to mean the natural and physical environment and the relationship of people with the environment (40 CFR § 1508.14), in addition to the Service's thorough analysis of physical environmental effects, the manner in which the local people relate to the environment in the Prairie Pothole Region was carefully assessed. Economic or social effects are not intended by themselves to require the preparation of an environmental impact statement (40 CFR § 1508.14). The location of the project is largely rural and dominated by agricultural industries, mainly farming and ranching. The vast majority of commenters on the Dakota Grassland Conservation Area supported the proposed action and indicated in various comments that it would help them relate to their natural and physical environment in much the same way they do now, whether through a farming or ranching economy or through other outdoor recreational pursuits. Those interested in other economic development opportunities, such as wind energy, will not necessarily be precluded from doing so because (1) the preferred alternative involves voluntary easements acquired from willing sellers only, and (2) the Service has procedures to provide reasonable accommodations for requests under certain circumstances.

Finding

Therefore, in consideration of the fact that the Service's conservation easement approach has a proven track record of effectiveness and minimal controversy due to its fundamental basis of voluntary participation to accomplish mutual goals of the Service and landowners, the compelling science in support of the project, and my review and evaluation of the information contained in the supporting reference, I have determined that establishing the Dakota Grassland Conservation Area is not a major Federal action that would significantly affect the quality of

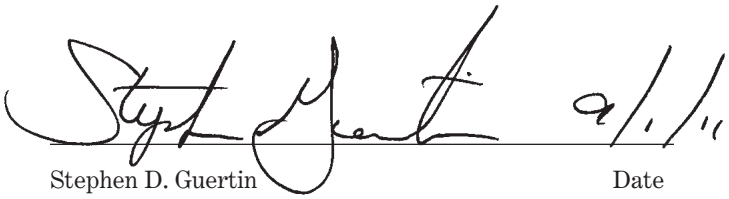
[1] *40 CFR § 1508.27 "Significantly" as used in the National Environmental Policy Act requires consideration of both context and intensity:*
(a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interest, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.
(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action.

[2] *40 CFR § 1508.14 "Human environment" shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. (See definition of "effects" in 40 CFR 1508.8.) This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.*

the human environment within the meaning of Section 102(2)(C) of the National Environmental Policy Act of 1969.

The finding of no significant impact and supporting environmental assessment are available to all affected landowners, agencies, private groups, interested parties, and the public. The finding of no significant impact, the environmental assessment, and other supporting documents are on file at the U.S. Fish and Wildlife Service, Division of Refuge Planning, P.O. Box 24586–DFC, Denver, Colorado 80225. They are available for public inspection on request.

Supporting Reference: U.S. Fish and Wildlife Service. 2011. Environmental Assessment, Proposed Dakota Grassland Conservation Area, Lakewood, Colorado.



Stephen D. Guertin Date
Regional Director
U.S. Fish and Wildlife Service
Region 6, Mountain–Prairie Region
Lakewood, Colorado

Appendix F

Environmental Action Statement

U.S. Department of the Interior
Fish and Wildlife Service, Region 6
Lakewood, Colorado

Environmental Action Statement
Dakota Grassland Conservation Area

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and have determined that the action of establishing an executive boundary for the Dakota Grassland Conservation Area:

____ is a categorical exclusion as provided by 516 DM 2, appendices 1 and 2, and 516 DM 6, appendix 1. No further documentation will be made.

_X_ is found not to have significant environmental effects as determined by the attached finding of no significant impact and environmental assessment.

____ is found to have special environmental conditions as described in the attached environmental assessment. The attached finding of no significant impact will not be final nor any actions taken pending a 30-day period for public review [40 CFR 1501.4(e)(2)].

____ is found to have significant effects and, therefore, a notice of intent will be published in the Federal Register to prepare an environmental impact statement before the project is considered further.

____ is denied because of environmental damage, Service policy, or mandate.

____ is an emergency situation. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to National Environmental Policy Act review.

Other supporting document: "Land Protection Plan and Environmental Assessment, Dakota Grassland Conservation Area."

Richard A Coleman 8/26/11

Richard A. Coleman, Ph.D. Date
Assistant Regional Director
U.S. Fish and Wildlife Service
Region 6, Mountain–Prairie Region
National Wildlife Refuge System
Lakewood, Colorado

Stephen D. Guertin 9/1/11

Stephen D. Guertin Date
Regional Director
U.S. Fish and Wildlife Service
Region 6, Mountain–Prairie Region
Lakewood, Colorado

Appendix G

Environmental Compliance Certificate

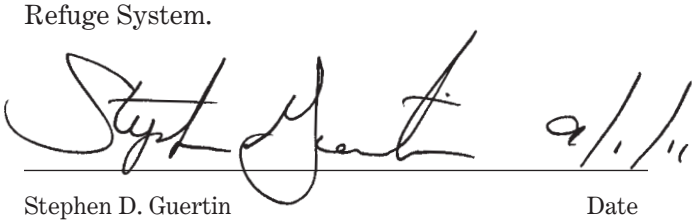
U.S. Department of the Interior
Fish and Wildlife Service, Region 6
Lakewood, Colorado

Environmental Compliance Certificate
Dakota Grassland Conservation Area

Project: Dakota Grassland Conservation Area
State: North Dakota and South Dakota

ACTION (indicate if not applicable)	**DATE**
National Environmental Policy Act (indicate one)	
Categorical Exclusion	N/A
Environmental Assessment/Finding of No Significant Impact	8/29/2011
Environmental Impact Statement/Record of Decision	N/A
Executive Order 11593, Protection of Historical, Archaeological, and Scientific Properties	8/5/2011
Executive Order 11988, Floodplain Management	8/5/2011
Executive Order 11990, Protection of Wetlands	8/5/2011
Executive Order 12372, Intergovernmental Review of Federal Programs	8/5/2011
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations	8/5/2011
Executive Order 12996, Management and General Public Use of the National Wildlife Refuge System	8/5/2011
Endangered Species Act, Section 7	7/8/2011
Coastal Zone Management Act, Section 307	N/A
Uniform Relocation Assistance and Real Property Acquisition Policies Act	N/A
Level I Contaminants and Hazardous Waste (Secretarial Order 3127: 602DM2)	8/5/2011

I hereby certify that all requirements of the law, rules, and Service regulations or policies applicable to planning for the above project have met with compliance. I approve the establishment of an executive boundary for the Dakota Grassland Conservation Area to be administered and managed as part of the National Wildlife Refuge System.



Stephen D. Guertin — Date
Regional Director
U.S. Fish and Wildlife Service
Region 6, Mountain–Prairie Region
Lakewood, Colorado

Statement of Compliance

The following Executive orders and legislative acts have been reviewed as they apply to the establishment of an executive boundary for the Dakota Grassland Conservation Area:

1. *Executive Order 11593, Protection of Historical, Archaeological, and Scientific Properties.* The regional archaeologist determined that the acquisition of easements within the Dakota Grassland Conservation Area is not an undertaking under section 106 of the National Historic Preservation Act. In fact, the project has the potential to protect cultural resources. If, in the future, the Service grants a special permit for the landowner under the easement, section 106 may be relevant at that time. If so, the Service will take the necessary steps to address any historical or archaeological issues.

2. *Executive Order 11988, Floodplain Management.* No structures that could be damaged by, or that would significantly influence the movement of floodwater, are planned for construction by the Service on easements acquired as part of this project.

3. *Executive Order 11990, Protection of Wetlands.* This action is consistent with protection of existing wetland resources from incompatible activities and thereby complies with this Executive order.

4. *Executive Order 12372, Intergovernmental Review.* The Service has discussed the proposal to establish the Dakota Grassland Conservation Area with landowners; conservation organizations; other Federal agencies; tribal, State, and county commissioners; and other interested groups and individuals. At the Federal level, the Service staff has coordinated with the U.S. Department of Agriculture (the Natural Resources Conservation Service and the Farm Service Agency), U.S. Department of the Interior (National Park Service, Bureau of Reclamation, U.S. Geological Service, and Bureau of Land Management), and the U.S. Army Corps of Engineers. At the State level, all Governors' offices, U.S. senators and representatives, and State wildlife management agencies in both States have been notified of this proposed action and given the opportunity to review the environmental assessment. In addition, the Service has provided information to 32 tribes with potential interest in this project.

5. *Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations.* Establishing the Dakota Grassland Conservation Area will not have a disproportionately high or adverse human health or environmental effect on minority or low-income populations. Therefore, this action complies with this Executive order.

6. *Executive Order 12996, Management and General Public Use of the National Wildlife Refuge System.* The public has been invited to participate in the planning process and has been very engaged. The Service held five public meetings—three scoping and two meetings to get input on the draft EA and LPP in the project area. Over 1,800 comments have been received from the public. The public's issues and comments have been incorporated into the environmental assessment and a copy of the final document will be sent to all interested landowners, agencies, private groups, and other parties. Since this project will strictly be easement acquisition, the Service will not manage or have control over public access to the protected lands. This right will remain with the private landowner and, therefore, a compatibility determination is not needed for this project.

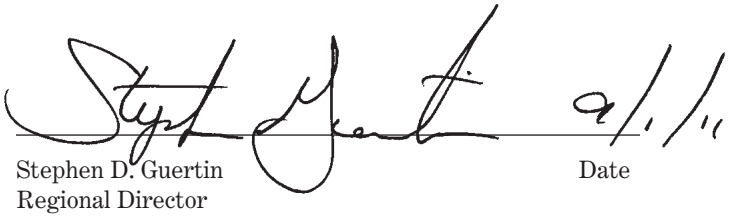
7. *Endangered Species Act, Section 7.* An internal section 7 consultation concluded that the proposed action would have a "May affect, but is not likely to adversely affect species/modify critical habitat" on listed species within the acquisition project area.

8. *Coastal Zone Management Act.* Due to the location of the project area, compliance with this act was determined not to be needed.

9. *Uniform Relocation Assistance and Real Property Acquisition Policies Act.* Since the Service will not be acquiring any land within the project area in fee title, no relocation assistance will be needed and no real property acquisition will occur.

10. *Secretarial Order 3127, Contaminants and Hazardous Waste.* A Level 1 pre-acquisition contaminant survey will be completed before the purchase of any easement.

I hereby certify that the Service has complied with all requirements of law, rules, or regulations applicable to pre-acquisition planning for the above project. I approve the establishment of an executive boundary for the Dakota Grassland Conservation Area and the subsequent acquisition of up to 240,000 acres of wetland easements and up to 1,700,000 acres of grassland easements from willing sellers.



Stephen D. Guertin Date
Regional Director
U.S. Fish and Wildlife Service
Region 6, Mountain–Prairie Region
Lakewood, Colorado

Appendix H

U.S. Fish and Wildlife Service Director's Approval

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

In Reply Refer To:
FWS/ANRS-NRCP/049419

SEP 0 6 2011

Memorandum

To: Regional Director, Region 6

From: Director

Subject: Approval to Proceed with Publication and Distribution of the Final Planning Documents for the Establishment of the Dakota Grassland Conservation Area,

I approve your request dated September 1, 2011, to establish, in cooperation with our partners, the Dakota Grassland Conservation Area in eastern North Dakota and South Dakota.

The Decision Package you submitted for my review included the Environmental Assessment, Finding of No Significant Impact, and other related documents indicative of detailed planning. These documents comply with the requirements of the Director's land acquisition planning procedures memo dated August 11, 2000.

The lands targeted for protection will conserve up to 240,000 acres of wetlands and 1,700,000 acres of grasslands in the Prairie Pothole Region. The newly established conservation area will buffer against the adverse impacts associated with a variety of environmental stressors and ensure progress in achieving the mission of the National Wildlife Refuge System.

Attachments

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mountain-Prairie Region

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SEP 01 2011

Memorandum

To: Director

From: Regional Director, Region 6

Subject: Transmittal of Decision Document – Establishing the Dakota Grassland Conservation Area

The Decision Document to establish the Dakota Grassland Conservation Area (DGCA), in eastern North Dakota and South Dakota has been approved. With approval of this project, the Service, in cooperation with our partners, will be able to conserve up to 240,000 acres of wetlands and 1,700,000 acres of grasslands in the Prairie Pothole Region (PPR).

The DGCA project is a landscape-scale effort to conserve populations of priority species in a highly diverse and endangered ecosystem over an area of approximately 29.6 million acres. The Prairie Pothole Joint Venture, Partners in Flight and The Nature Conservancy have identified priority species for the PPR which include: 8 species of waterfowl, 22 species of shorebirds, 10 species of other water birds, and 20 species of grassland birds (land birds). Five of the priority waterfowl species are upland-nesting duck species—mallard, northern pintail, gadwall, northern shoveler, and blue-winged teal. Conservation efforts in the PPR will continue to focus on the protection and restoration of grassland and wetland habitats, and there is great potential for providing benefits for multiple species. The Service's Habitat and Population Evaluation Team (HAPET) has developed standalone, single-species models to provide the ability to target different priority species, a combination of species, the treatment types, various locations, or specific funding requirements. Furthermore, this approach gives the Service a rapid response tool for specific decision support and for adaptive changes in models as new information became available.

Habitat loss due to conversion of wetland and grassland to cropland is the primary limiting factor for all priority species in the DGCA. Loss of these habitats reduces carrying capacity and nest success. This project allows the purchase of critical wetland and grassland easements using Land and Water Conservation Funds while continuing to use Federal Duck Stamps and the authority of the Migratory Bird Conservation Act. North Dakota and South Dakota have a waiting list of well over 800 landowners interested in selling wetland and grassland easements. The only thing restricting the Service from protecting the more than 300,000 acres on the waiting list is limited money. The DGCA project to conserve up to 240,000 acres of wetlands and 1.7 million acres of

grassland will augment the efforts of other conservation agencies and groups. Wetland and grassland easements are the most cost-effective, socially and politically acceptable means to ensure protection of critical habitats in the project area. Although habitat protection through fee title remains an option in some locations, the Service sees easements as the most viable way to conserve lands at the landscape scale necessary to protect wildlife values in the DGCA.

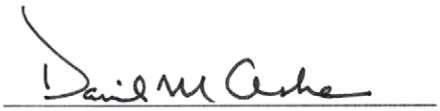
Attached are the following documents, in accordance with land acquisition planning requirements, submitted for the Director's concurrence.

1. Environmental Assessment
2. Finding of No Significant Impact
3. Environmental Compliance Certificate
4. Environmental Action Statement
5. Land Protection Plan
6. Realty Feasibility Report

An Engineering Assessment was not completed, as this project involves primarily conservation easements; therefore, limited fee-title interests will be acquired and no structures are planned be built by the Service on any land acquired through this project. A Conceptual Management Plan was not completed because daily management rights and responsibilities will remain with the private landowners. The only Service management responsibility will be annual monitoring for compliance with the terms of the easements.

✓ Concurrence

___ Non-concurrence



Director, U.S. Fish and Wildlife Service

9.6.2011

Date

Attachments

Appendix I

Section 7 Biological Evaluation

Intra-Service Section 7 Biological Evaluation Form - Region 6

Originating Person: Nick Kaczor, Lloyd Jones Date Submitted: 6/30/11

Telephone Number: 303-236-4387, 701-355-8529

I. **Service Program and Geographic Area or Station Name**: FWS wetland and grassland conservation easements, North and South Dakota - see attached project area map

II. **Flexible Funding Program** (e.g. Joint Venture, etc) if applicable: LWCF

III. **Location**: Location of the project including County, State and TSR (township, section & range): North and South Dakota, see project map attached and county list below.

The proposed project area for the DGCA includes parts of North Dakota and South Dakota lying north and east of the Missouri River, except those parts of southeastern North Dakota and eastern South Dakota encompassed by the Dakota Tallgrass Prairie Wildlife Management Area, a grassland easement program approved in 2000 (figure 2). The total area within the proposed DGCA boundary is 29.6 million acres or 46,267 square miles; the priority zone in this area covers 8.5 million acres.

IV **Species/Critical Habitat**: List federally endangered, threatened, proposed, and candidate species or designated or proposed critical habitat that may occur within the action area.

SPECIES	*COUNTIES*
Whooping Crane (*Grus Americana)* Endangered	ND: Barnes, Benson, Bottineau, Burke, Burleigh, Cass, Cavalier, Dickey, Divide, Eddy, Emmons, Foster, Grand Forks, Griggs, Kidder, LaMoure, Logan, McHenry, McIntosh, McLean, Mountrail, Nelson, Pembina, Pierce, Ramsey, Renville, Rolette, Sheridan, Steele, Stutsman, Towner, Traill, Walsh, Ward, Wells, and Williams SD: Aurora, Brule, Buffalo, Campbell, Charles Mix, Douglas, Edmunds, Faulk, Hand, Hughes, Hyde, Jerauld, McPherson, Potter, Sully, and Walworth
Least tern *(Sterna antillarum)* Endangered	ND: Burleigh, Emmons, McLean, Mountrail, and Williams SD: Aurora, Brule, Buffalo, Campbell, Charles Mix, Hughes, Hyde, Potter, Sully, and Walworth
Gray Wolf *(Canis lupus)* Endangered	ND: Barnes, Benson, Bottineau, Burke, Burleigh, Cass, Cavalier, Dickey, Divide, Eddy, Emmons, Foster, Grand Forks, Griggs, Kidder, LaMoure, Logan, McHenry, McIntosh, McLean, Mountrail, Nelson, Pembina, Pierce, Ramsey, Renville, Rolette, Sheridan, Steele, Stutsman, Towner, Traill, Walsh, Ward, Wells, and Williams

Pallid Sturgeon *(Scaphirhynchus albus)* Endangered	ND: Burleigh, Emmons, McLean, Mountrail, and Williams SD: Brule, Buffalo, Campbell, Charles Mix, Hughes, Hyde, Potter, Sully, and Walworth
Topeka shiner *(Notropis Topeka)* Endangered	SD: Aurora, Douglas, and Jerauld
Piping Plover *(Charadrius melodus)* Threatened	ND: Benson, Burke, Burleigh, Divide, Eddy, Emmons, Foster, Kidder, Logan, McHenry, McIntosh, McLean, Mountrail, Pierce, Renville, Sheridan, Stutsman, Ward, Wells, and Williams SD: Brule, Buffalo, Campbell, Charles Mix, Hughes, Hyde, Potter, Sully, and Walworth
Sprague's Pipit *(Anthus spragueii)* Candidate	ND: Barnes, Benson, Bottineau, Burke, Burleigh, Cavalier, Dickey, Divide, Eddy, Emmons, Foster, Kidder, LaMoure, Logan, McHenry, McIntosh, McLean, Mountrail, Pembina, Pierce, Ramsey, Renville, Rolette, Sheridan, Stutsman, Towner, Walsh, Ward, Wells, and Williams SD: Campbell, Edmunds, McPherson, and Walworth
Dakota Skipper *(Hesperia dacotae)* Candidate	ND: Bottineau, Burke, Eddy, McHenry, McLean, Mountrail, Rolette, Stutsman, Ward, Wells, SD: Edmunds, and McPherson

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

The objectives for the proposed DGCA would be to conserve 240,000 acres of wetland and 1.7 million acres of grassland. The wetland and grassland resources in the proposed DGCA would be conserved primarily through the purchase of perpetual wetland and grassland conservation easements from willing sellers. All land under conservation easement would remain in private ownership. Protected wetland basins may be hayed or grazed without restriction and farmed when dry from natural causes. However, wetland easements would prohibit the draining, burning, filling, or leveling of protected wetland. Grassland easements would not restrict grazing in any way, and haying would be permitted after July 15 each year. Conversion of these grasslands to crop production or other uses that destroy vegetation would be prohibited.

The cost for acquisition of conservation easements in the proposed DGCA would be approximately $588 million. This proposal would allow the purchase of critical wetland and grassland easements using money from the LWCF (Land and Water Conservation Fund) as an alternative funding source.

In addition, the Service would continue to use Federal Duck Stamp and NAWCA funds as appropriate and available. At current acquisition rates, the goal for the proposed project would be achieved within 30 years.

The Service proposes to affirm an established review process for evaluating requested uses on all current and future wetland and grassland easements in the prairie pothole States of Region 6 of the U.S. Fish and Wildlife Service. This review process is chapter 12 of the Easement Manual ("Administrative and Enforcement Procedures of Easements within the Prairie Pothole States Manual") (USFWS 2010a). This review process would apply not only to easements bought under the proposed DGCA project but also to those easements the Service had acquired earlier

VI. **Determination of Effects:**

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

With accelerated purchase of conservation easements, the Service anticipates that a number of endangered, threatened, and candidate species would benefit from the extensive habitat protection under the proposed DGCA, especially those that occupy or utilize the habitats targeted for conservation. Other T & E and candidate species which occur in and/or utilize non-targeted and periphery habitats (primarily riparian habitats) within and adjacent to the DGCA, may benefit indirectly. None of the listed or candidate species that occupy or utilize the DGCA Project Area would be adversely affected. The DGCA Project would not directly augment existing population levels of T & E and candidate species, but rather, benefit them through protection of currently occupied and/or utilized habitats from conversion and drainage.

Several goals of the DGCA further T & E and candidate species conservation efforts. They are:

- supporting the recovery and protection of threatened species, and reducing the likelihood of future listings under the Endangered Species Act
- preserving the ecological function of these habitats by providing for floodwater retention, ground water recharge, carbon sequestration, improved water quality, and reduced soil and water erosion
- providing a buffer against climate change by providing resiliency for the grassland ecosystems and associated prairie pothole wetlands through landscape-scale conservation.

These goals indirectly affect the T & E and candidate species within the project area in a positive manner.

Although management of lands with easements will remain primarily with the private landowner, maintaining wetland and grassland habitats will direct and indirectly benefit federally listed species by preventing future habitat degradation due to grassland conversion and wetland drainage. Similar to the positive effects of habitat protection programs at current levels (No Action Alternative), direct improvement in habitats for listed species such as western prairie fringed-orchid and indirect habitat improvement for other listed species such as pallid sturgeon are expected to increase as more habitat is protected with funding provided by the DGCA project.
This project will simply accelerate the protection of wetland and grassland habitats.

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

	Determination
No Effect: This determination is appropriate when the proposed project will not directly or indirectly affect (neither negatively nor beneficially) individuals of listed/proposed/candidate species or designated/proposed critical habitat of such species. **No concurrence from ESFO required.**	____
May Affect but Not Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to cause insignificant, discountable, or wholly beneficial effects to individuals of listed species and/or designated critical habitat. **Concurrence from ESFO required.**	X
May Affect and Likely to Adversely Affect: This determination is appropriate when the proposed project is likely to adversely impact individuals of listed species and/or designated critical habitat. **Formal consultation with ESFO required.**	____
May affect but Not Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project may affect, but is not expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. **Concurrence from ESFO optional.**	X
Likely to Jeopardize candidate or proposed species/critical habitat: This determination is appropriate when the proposed project is reasonably expected to jeopardize the continued existence of a species proposed for listing or a candidate species, or adversely modify an area proposed for designation as critical habitat. **Conferencing with ESFO required.**	____

[Supervisor at originating station]

Signature: _____ Date: 6-30-11

Nick Kaczor
Land Protection Planning Team Lead
Division of Planning
National Wildlife Refuge System, Region 6

Signature: _____ Date: 4/30/11

Lloyd Jones
Project Leader
Audubon National Wildlife Refuge Complex
National Wildlife Refuge System, Region 6

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

A. **Concurrence** ✓ **Nonconcurrence** _____
Explanation for nonconcurrence:

B. Formal consultation required _____
List species or critical habitat unit

C. Conference required _____
List species or critical habitat unit

Name of Reviewing ES Office: North Dakota Field Office, South Dakota Field Office

Signature Jeffrey K. Towner Date 6/30/11

Jeffrey Towner
Field Office Supervisor
North Dakota Ecological Services

Signature Scott Larson Date 7/8/11

Scott Larson
Field Office Supervisor
South Dakota Ecological Services

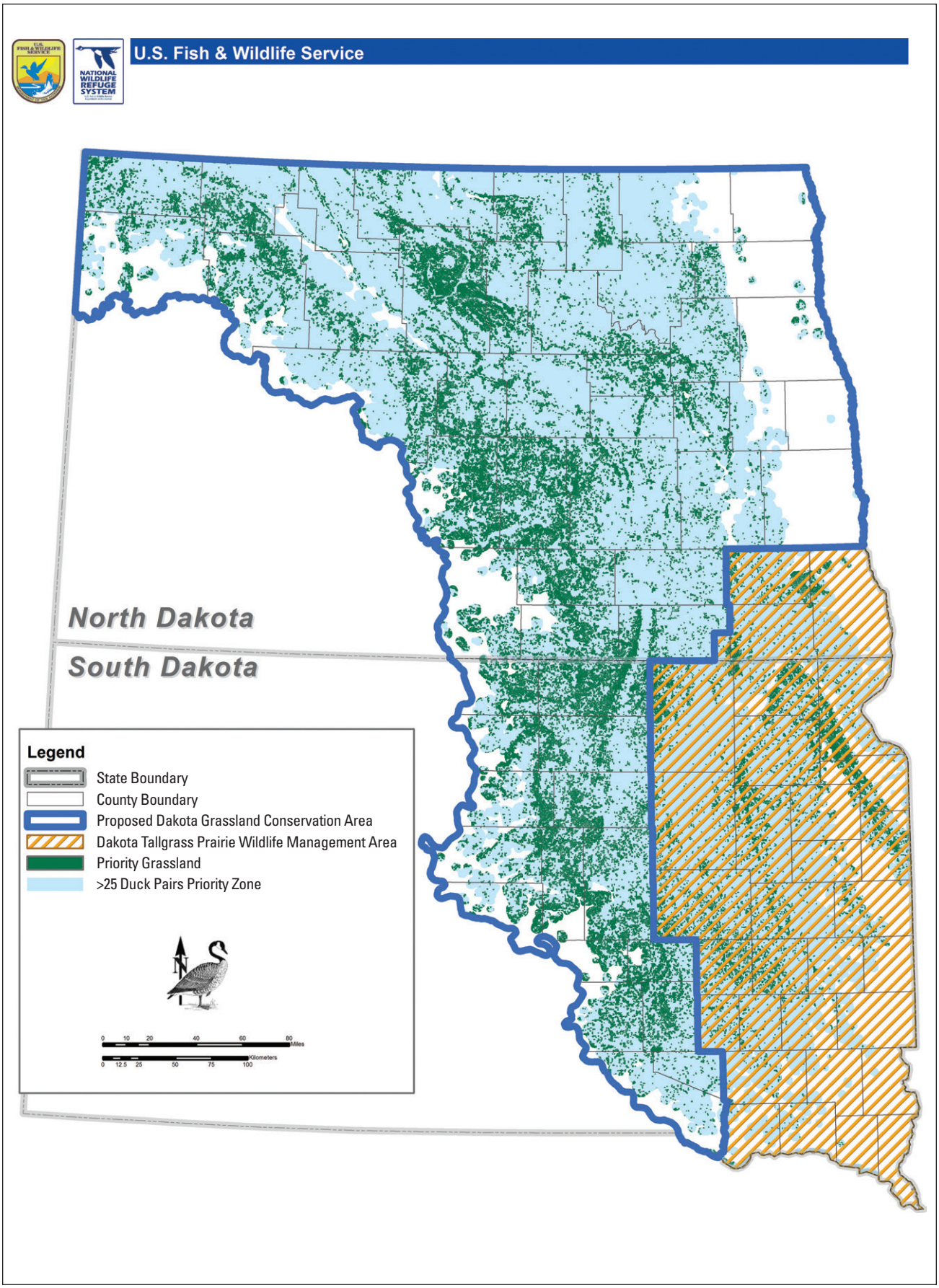


Figure 1. Proposed Dakota Grassland Conservation Area.

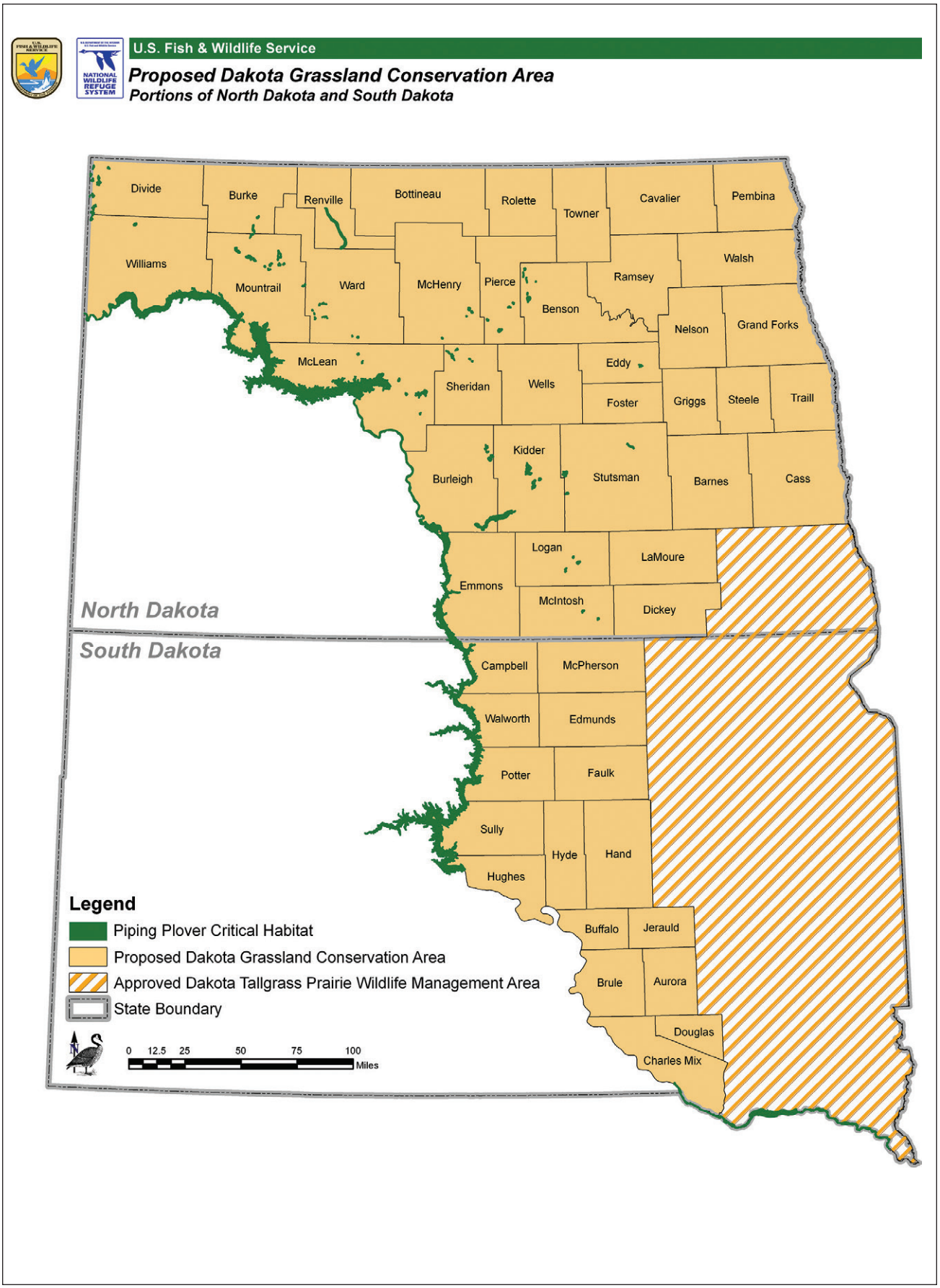


Figure 2. Piping plover critical habitat.

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