Environmental Assessment and Draft Land Protection Plan

Proposed 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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Contents

DRAFT LAND PROTECTION PLAN (LPP)

Summary

The first part of this volume is an environmental assessment, documenting the purpose, issues, alternatives, and analysis for the proposed Dakota Grassland Conservation Area. The draft land protection plan presents an overview of the Service's proposed management approach to wildlife and associated habitats, easement priorities, public uses, interagency coordination, public outreach, and other operations.

The uniqueness of the proposed 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 are highly productive and support a myriad of wetland and grassland birds along with large numbers of spring and fall migrants.

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.

Proposed Dakota Grassland Conservation Area

The U.S. Fish and Wildlife Service is proposing to establish 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 would conserve wetland and grassland resources in the proposed project area primarily through the purchase of perpetual easements from willing sellers. These wetland and grassland easements would 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

Fowler Photography / USFWS

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

of the key components to ensuring habitat integrity and wildlife resource protection. Based on anticipated levels of landowner participation, objectives for the proposed 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 would 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 would be able to protect the most productive, remaining wetland and grassland habitats to help to conserve populations of priority species. Concurrently, the Service would engage the Plains and Prairie Potholes Landscape Conservation Cooperative (a recent initiative that reaches across broad landscapes and involves many partners).

Donna Dewhurst / USFWS

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

Acquisition

To better protect wetland and grassland resources, the Service needs money in addition to Migratory Bird Conservation Act (Federal Duck Stamps) and NAWCA (North American Wetland Conservation Act) Funds for acquiring perpetual easements in the proposed 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 proposal would allow the purchase of critical wetland and grassland easements using Land and Water Conservation Fund money as an alternative funding source. In addition, the Service would continue to use Federal Duck Stamp money as appropriate and available. The estimated cost for acquisition of the easements is about $588 million.

Easement Terms

All land under wetland or grassland 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.

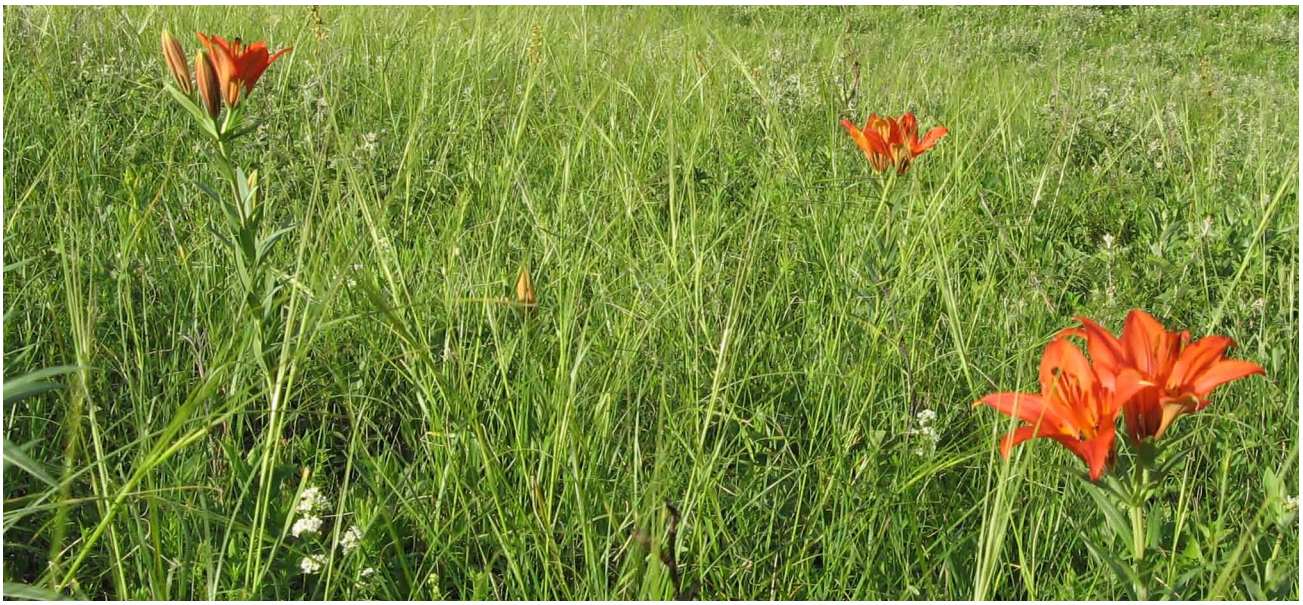
The easement contract would specify perpetual protection of habitat by restricting the conversion of wetland and grassland to other uses. Alteration of the natural topography, conversion of grassland to cropland or other uses, and draining, burning, filling, and leveling of protected wetlands would be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

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

Abbreviations

AFWA	Association of Fish and Wildlife Agencies
DGCA	Dakota Grassland Conservation Area
EA	Environmental assessment
Easement Manual	"Administrative and Enforcement Procedures of Easements within the Prairie Pothole States Manual"
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
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
USFWS	U.S. Fish and Wildlife Service

EA Chapter 1—Purpose and Need for Action



USFWS

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

This EA (environmental assessment) documents the purpose, issues, alternatives, and analysis for the proposed DGCA (Dakota Grassland Conservation Area) in North Dakota and South Dakota. Chapter 1 details the background information and conditions that led to the Service's (U.S. Fish and Wildlife Service) proposal to create the DGCA project for protection of important wetland and grassland habitat through conservation easements with willing landowners.

Introduction

The PPR (Prairie Pothole Region) 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).

Across the Nation, grassland declined by an estimated 25 million acres from 1978 to 2002, according to a recent audit by the GAO (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 PPJV (Prairie Pothole

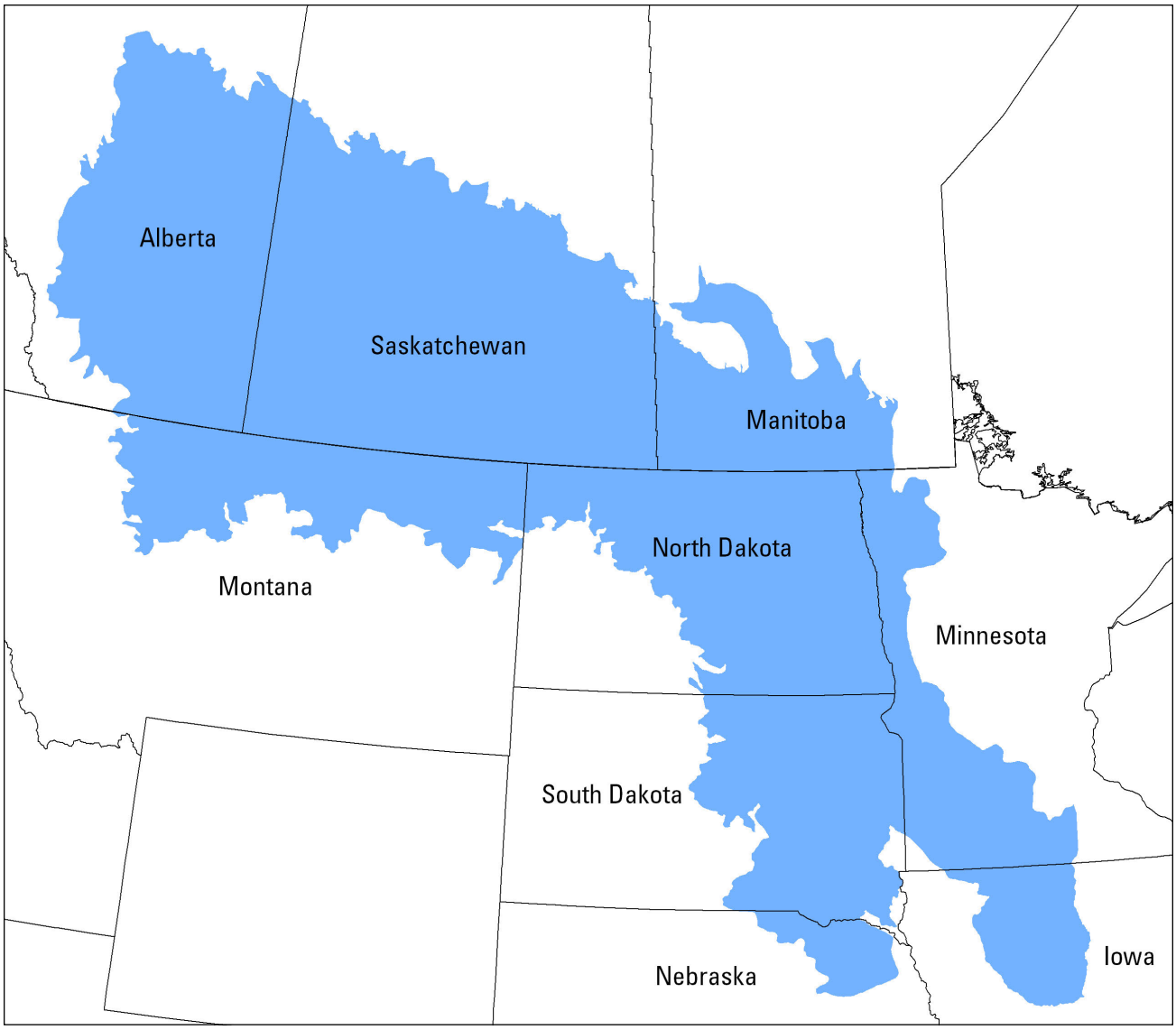


Figure 1. Map of the Prairie Pothole Region of North America.

Joint Venture) 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 SWAP (Small Wetlands Acquisition Program), 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 will 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 2). The proposed project area was selected using models developed by the Service's HAPET (Habitat and Population Evaluation Team), located in Bismarck, North Dakota. The models identify the extent and location of wetlands and grasslands required to help meet the

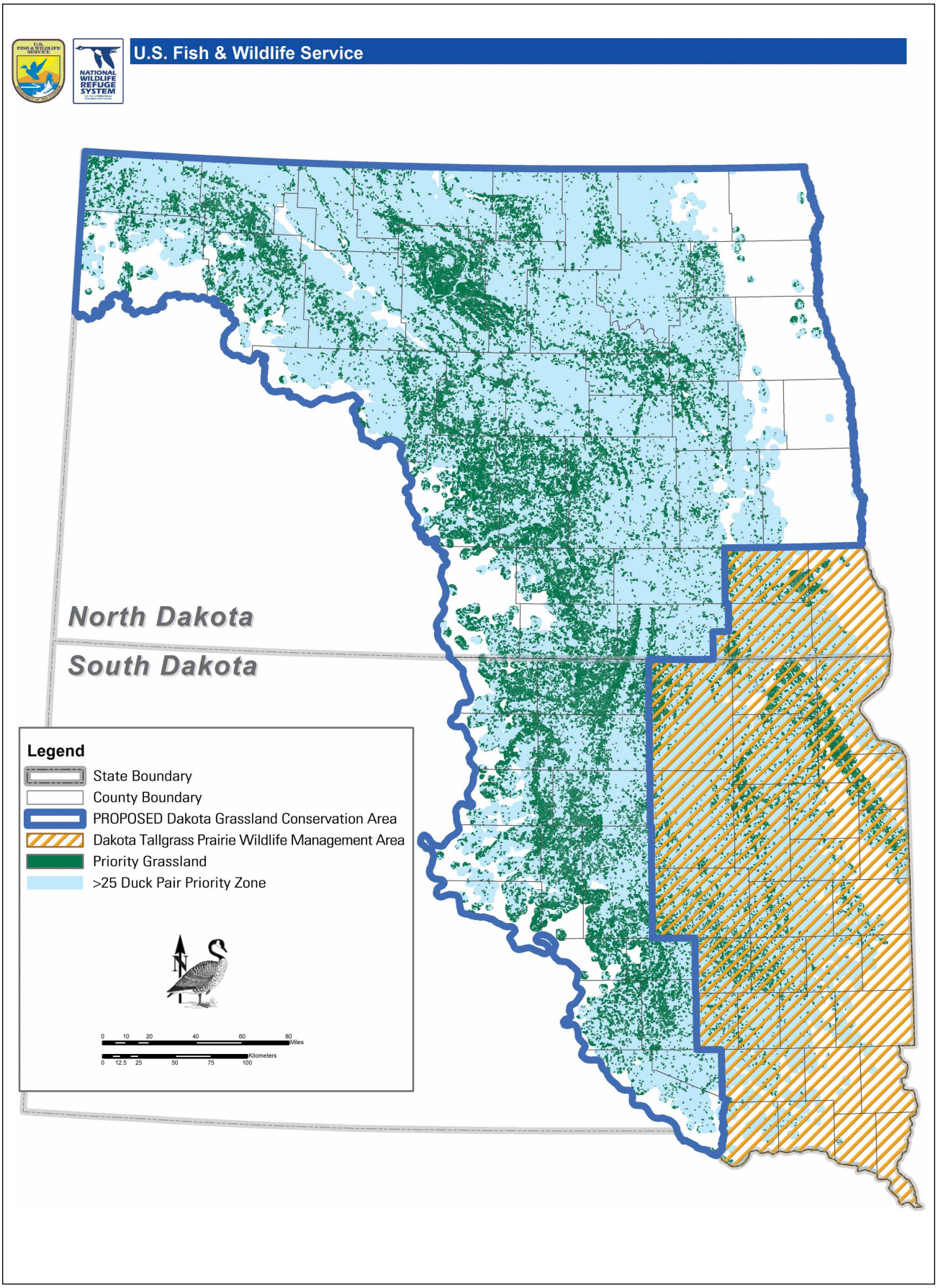


Figure 2. Map of the boundary of the proposed Dakota Grassland Conservation Area.

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 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 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.

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 (Land and Water Conservation Fund) as an alternative funding source. 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 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. Refer to appendix A, which contains chapter 12 of the Easement Manual ("Administrative and Enforcement Procedures of Easements within the Prairie Pothole States Manual") (USFWS 2011a). 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.

Donna Dewhurst / USFWS

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

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 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 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 (environmental assessment), 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 Dakota Grassland Conservation Area and approve the associated land protection plan.

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 (National Environmental Policy Act of 1969). 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.

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 B—Public Scoping Report"). 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 B); 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 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 C) 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.

Gary Eslinger / USFWS

Monarch butterfly clinging to switchgrass.

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 (Federal Duck Stamps)

The act established the Migratory Bird Conservation Commission, which oversees the purchase and lease 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. With this money, the Service has acquired wetland and grassland easements within the PPR in South Dakota and wetland easements in North Dakota. To date, the Service has protected approximately 1,386,279 acres of wetland and 1,128,513 acres of grassland within the above projects.

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 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 (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 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 Treaty Act (1918)

- 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)

- Habitat protection and easement acquisition process in the "Administrative and Enforcement Procedures of Easements within the Prairie Pothole States Manual" (2010)

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 proposed DGCA project is the Fish and Wildlife Act of 1956 (16 U.S.C. 742a–j). The Federal money used to acquire conservation easements is from the Land and Water Conservation Fund, which is derived primarily from oil and gas leases on the Outer Continental Shelf, motorboat fuel taxes, and the sale of surplus Federal property. 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 would be subject to available money.

EA Chapter 2—Alternatives

USFWS

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

Chapter 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, funded by monies from 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 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 chapter 12 of the Easement Manual, which is in appendix A (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 chapter 1, figure 2), with objectives to conserve 240,000 acres of wetland and 1.7 million acres of grassland.

The Service would buy wetland and grassland easements from willing sellers on privately owned wetlands and grasslands. This proposal would allow the purchase of critical wetland and grassland easements using LWCF money as an alternative funding source. 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.

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Wetlands under easement may be grazed without restriction.

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)

- 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 program 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 chapter 1 is landscape-scale protection in perpetu-

ity. 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.

EA Chapter 3—Affected Environment

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

Physical Environment

The section 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 3 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

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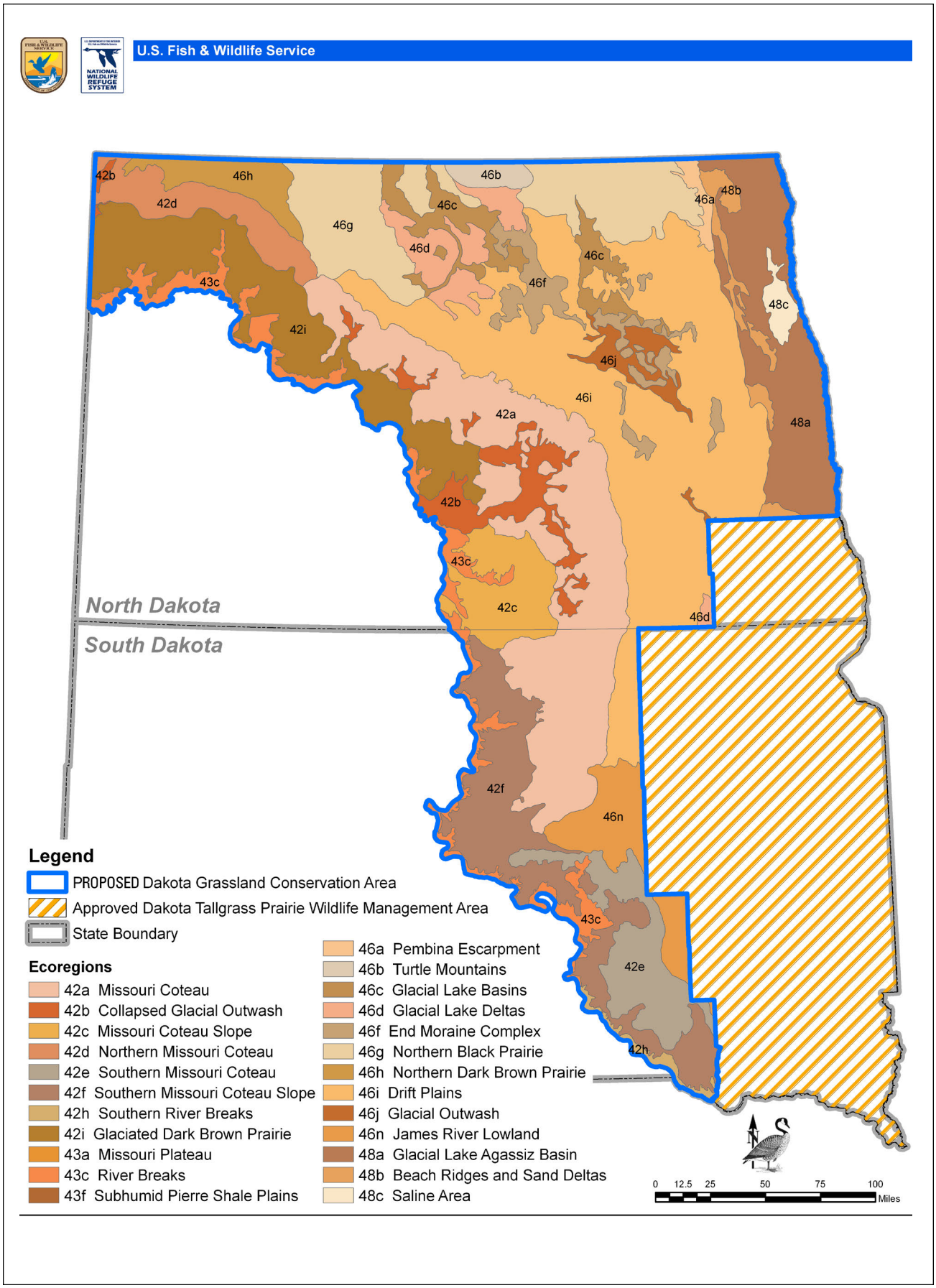

Figure 3. Map of ecoregions in the proposed Dakota Grassland Conservation Area.

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 seasonally 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 (Intergovernmental Panel on Climate Change) (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 pro-

tect 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 proposed project area. Appendix D 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,

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Tallgrass Prairie

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.

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.

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

Mike Morel / USFWS

The piping plover is federally listed as a threatened species.

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 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 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			×

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]
WATERBIRDS	Horned grebe	×	×	×
	Western grebe	×	×	
	American bittern	×	×	×
	Yellow rail	×	×	×
	King rail	×	×	
	Franklin's gull	×	×	
	Black tern	×	×	×
	Least tern (endangered)	×	×	
	Whooping crane (endangered)	×	×	
	Least bittern		×	×
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	×		

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]

[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).*

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 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 1). 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).

USFWS

The gadwall is one of the priority waterfowl species.

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 1, 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.

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 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 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. How-

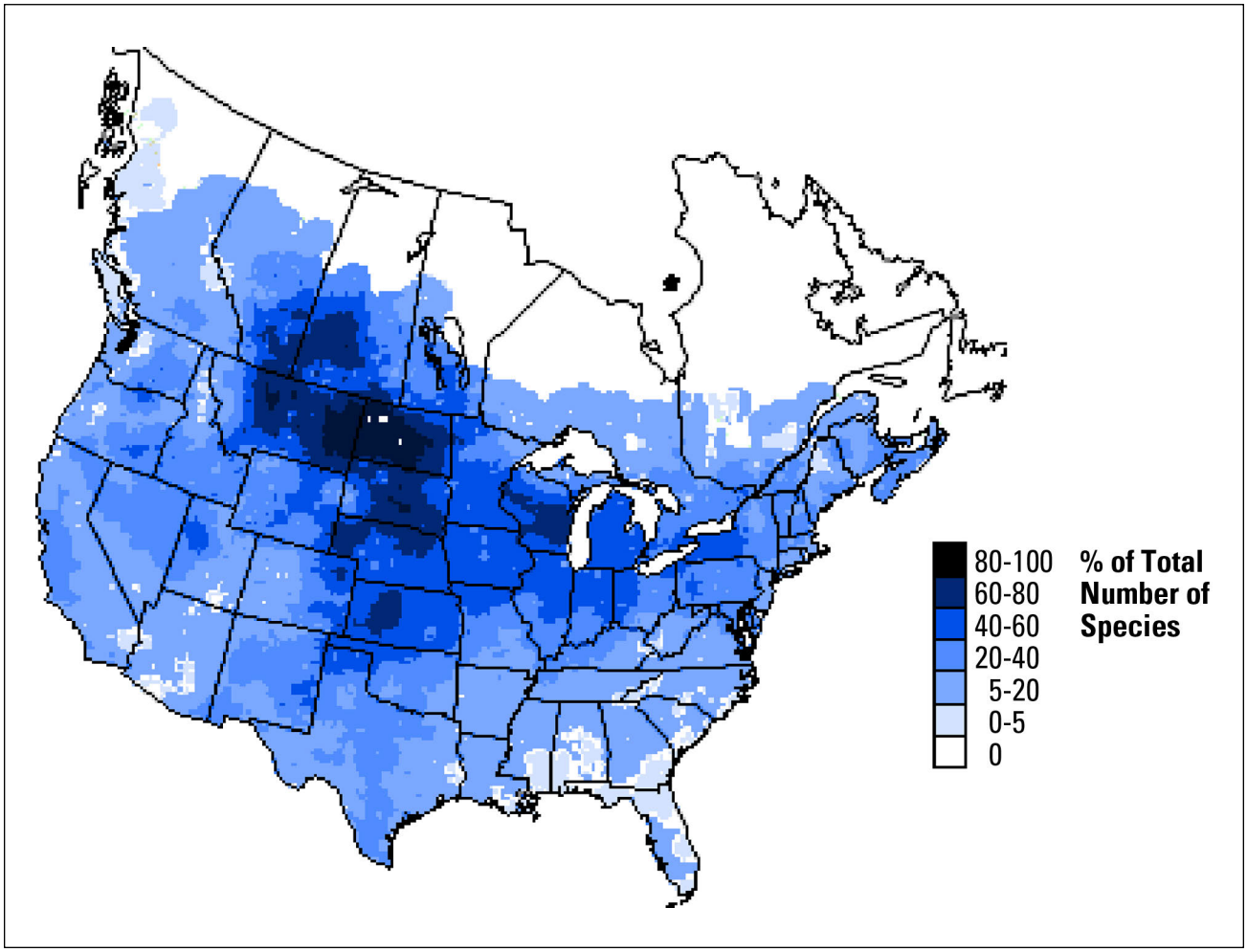


Figure 4. Map of the North American breeding ranges of 27 grassland birds *(Source: U.S. Geological Survey).*

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.

ever, 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 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 Northwestern 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).

This section also describes the more recent history of the area. Modern historical records for the proposed 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 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).

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

Jackie Jacobson / USFWS

Pasqueflower is a native prairie plant.

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 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 National Wildlife 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 per-

cent 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.

EA Chapter 4—Environmental Consequences

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

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

Effects on the Physical Environment

This section describes the estimated effects of each alternative on the Service's ability to address climate change.

Alternative A (No Action)

If spring and summer precipitation were to increase in a changing climate, tree encroachment would accelerate the threat of fragmentation in the proposed project area. The Service would have very limited means to promote conservation of native habitats in the proposed project area other than as a reactive response to climate changes.

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

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

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 measures 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.

John and Karen Hollingsworth / USFWS

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

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 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 estimated to be high and could 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, Messmer and Dahl 1991, Pimentel et al. 1992).

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 increas-

ing 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.

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.

USFWS

An area restored by planting native vegetation.

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.

Effects on Cultural Resources

This section describes the estimated effects of each alternative on cultural resources.

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

This section describes the estimated effects of the alternatives on landownership, land use, oil and gas development, and wind energy development.

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, as described under alternative B (USFWS 2011a).

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, 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. 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

USFWS

Native prairie in bloom.

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 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

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

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 National Wildlife 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).

This section describes the past, present, and reasonably foreseeable actions related to the proposed DGCA. The following 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 North

American Wetland Conservation Act. 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 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.

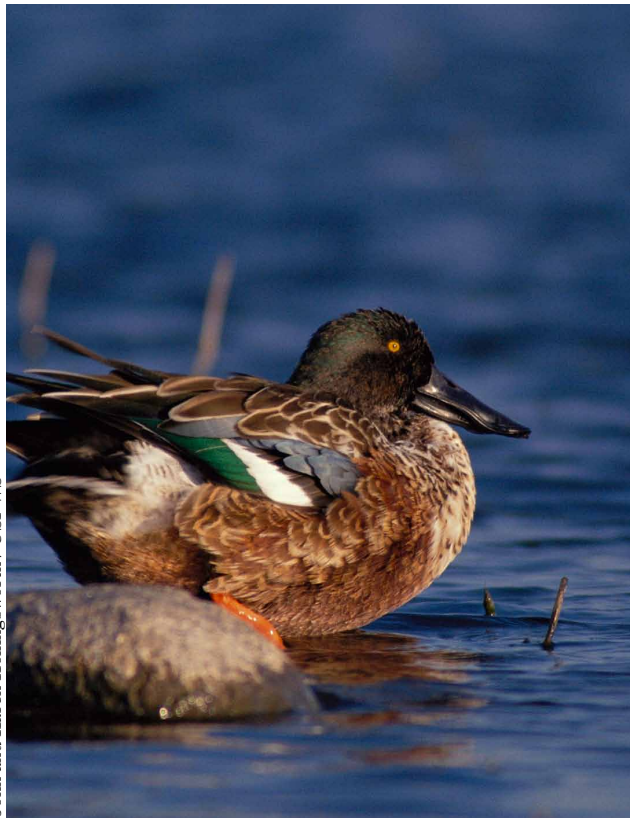
EA Chapter 5—Coordination and Environmental Review

This chapter 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 C, List of Preparers and Reviewers").



John and Karen Hollingsworth / USFWS

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

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.

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 B, Public Scoping Report").

Distribution and Availability

The Service is distributing the EA (with the associated draft LPP in the same volume) to the project mailing list, which includes Federal and State legislative delegations, tribes, agencies, landowners, private groups, and other interested individuals. Copies can be requested. After the EA is released for public review, the Service will hold public meetings to talk about the EA and draft LPP.

Copies of the EA and information about public meetings are available by visiting the project Web site or by contacting the Service by email, postal mail, phone, or in person.

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

- Project email: dgca_comments@fws.gov

- Nick Kaczor, Planning Team Leader
  Attn: Proposed DGCA
  Division of Refuge Planning
  U.S. Fish and Wildlife Service
  134 Union Boulevard, Suite 300
  Lakewood, Colorado 80228
  303/236 4387

- Lloyd Jones, Refuge Manager
  Attn: Proposed DGCA
  Audubon National Wildlife Refuge Complex
  3275 11th Street Northwest
  Coleharbor, North Dakota 58531
  701/442 5474

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 (strategic habitat conservation) to ensure effective conservation. SHC entails strategic biological planning and conservation design, integrated conservation delivery, monitoring, and research at ecoregional scales (figure 5). 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 6 and 7 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).

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

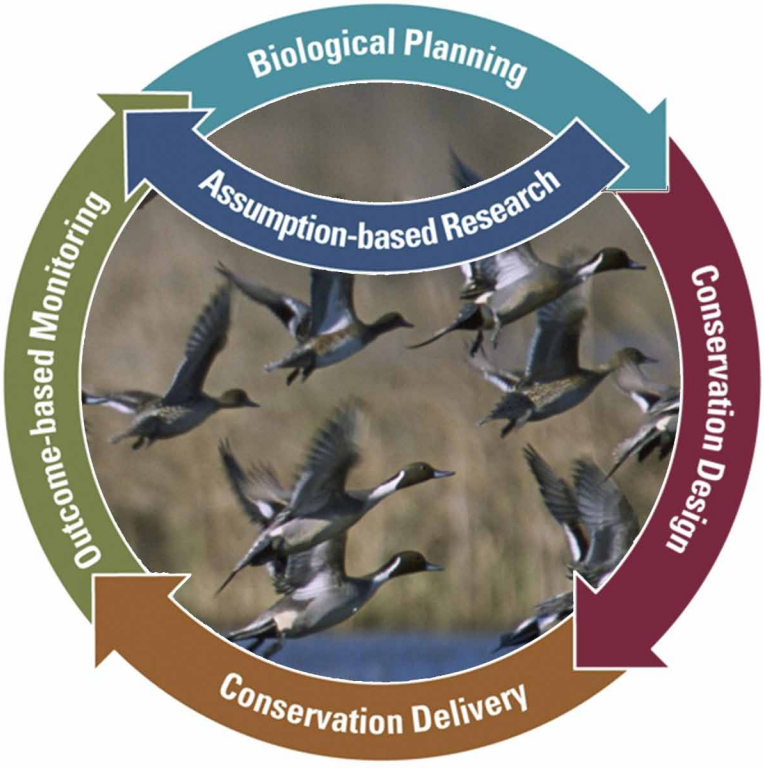


Figure 5. Graphic of the elements of strategic habitat conservation.

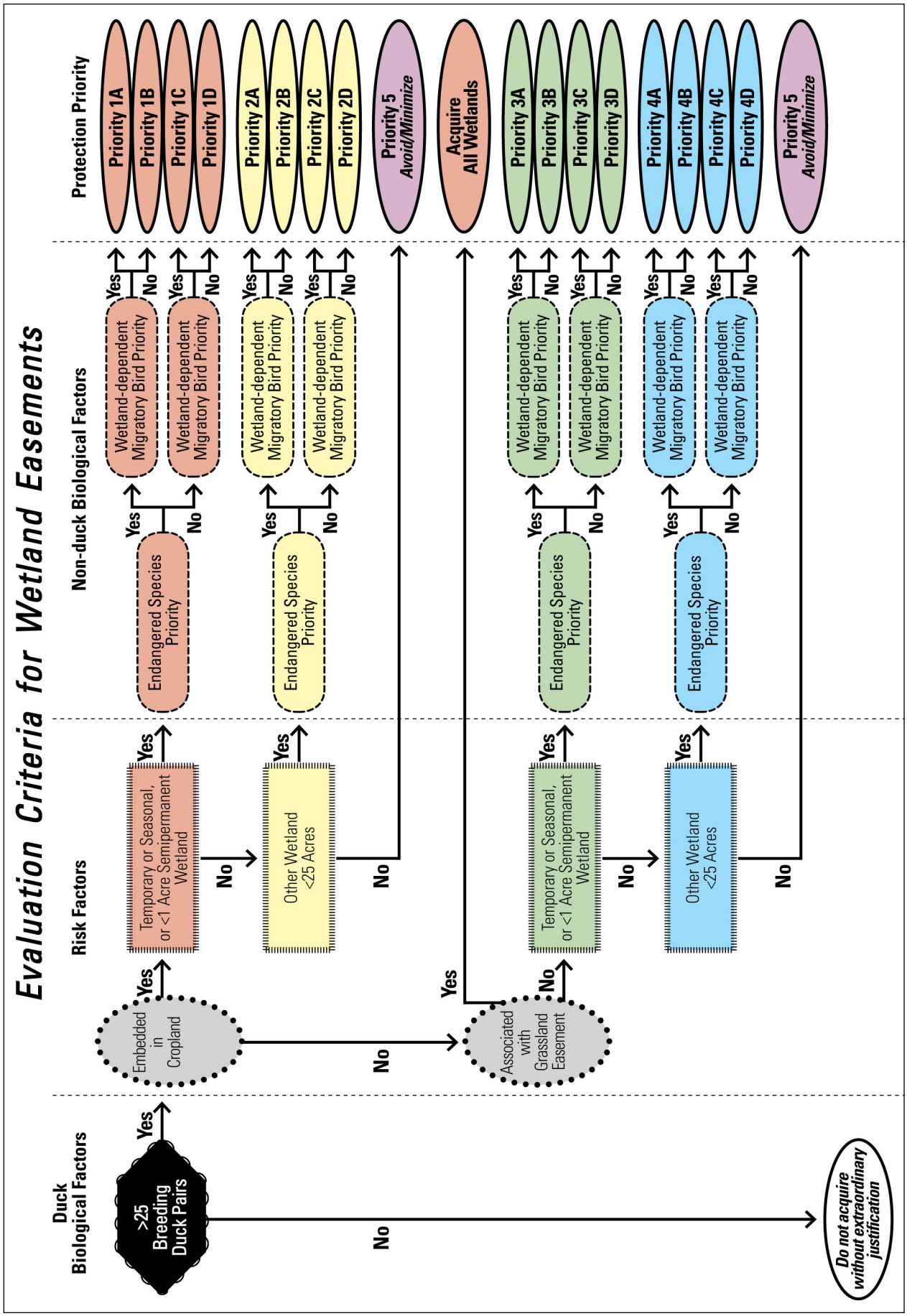


Figure 6. Chart of evaluation criteria for acquiring wetland conservation easements.

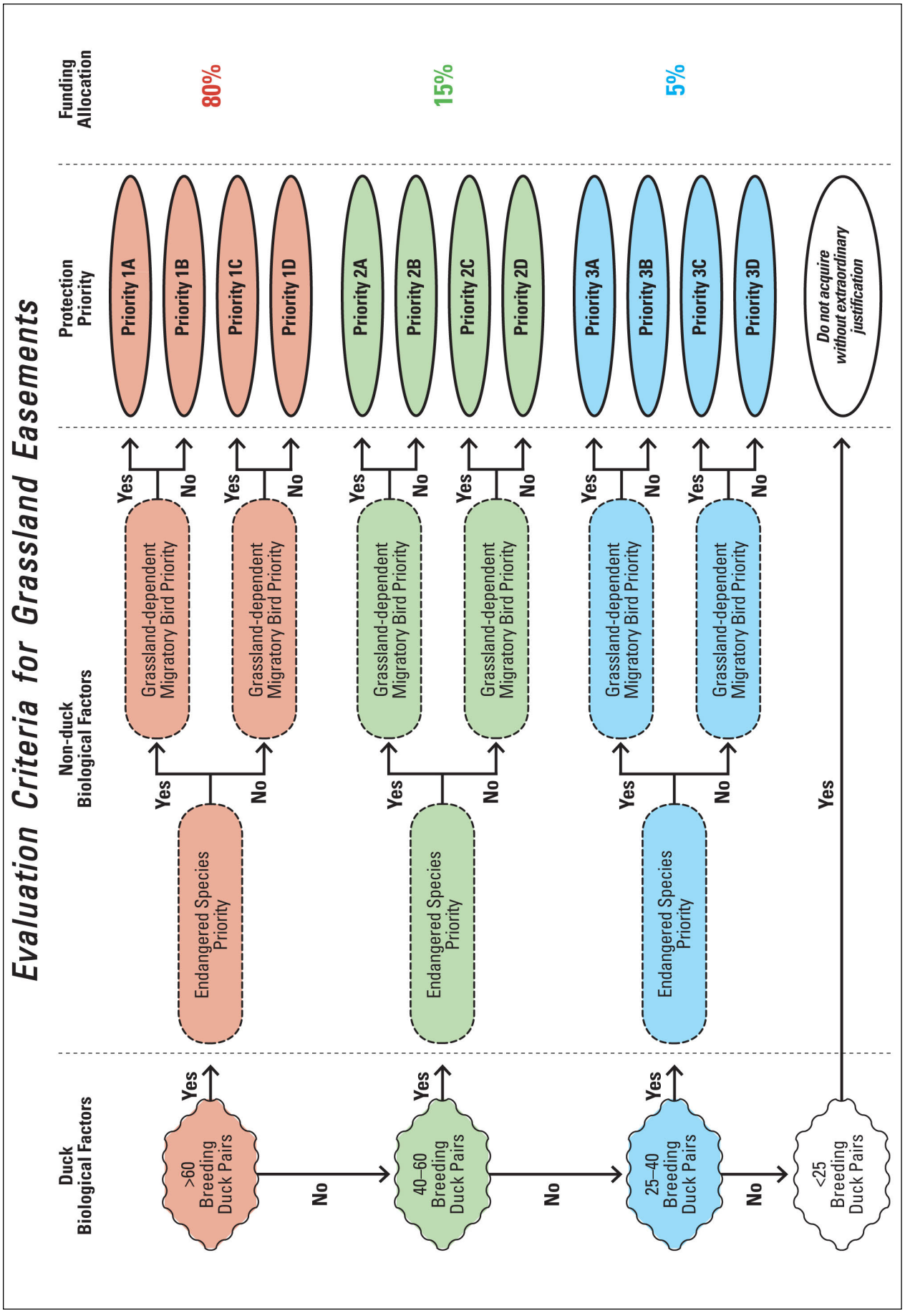


Figure 7. Chart of evaluation criteria for acquiring grassland conservation easements.

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 3).

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 EA and draft LPP provide 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 (landscape conservation cooperatives), 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.

EA 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.

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.

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

EA (environmental assessment)—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.

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 CRP (Conservation Reserve Program) 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.

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.

NDGFP—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 would affect easement wetlands or grasslands—would have 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.

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.

EA Appendix A

Requests for Use or Modification of Easement Properties

Following is the complete 27-page chapter XII, which is an excerpt from the "Administrative and Enforcement Procedures of Easements within the Prairie Pothole States Manual, 2nd Edition, revised March 2011." Chapter XII is also referred to as "Requested Uses."

CHAPTER XII

REQUESTS for USE or MODIFICATION of EASEMENT PROPERTIES

A. General Discussion

When wetland and grassland easements are purchased, the Service acquires certain rights in the described property. All of these documents are perpetual (except for a very few 50-year agreements within the Devils Lake WMD), and the intent is that wetland managers will enforce the provisions of every easement according to the rights acquired. When easements are acquired, consideration needs to be given to future uses of the property that may conflict with the easement purposes. Measures should be taken during acquisition to eliminate future conflicts if possible. However, circumstances may arise from time to time when an easement may cause undue hardship to a landowner, public service entity, or a municipality that may need to improve its public service facilities; all of which may result in the need to modify a Service-held easement. In these cases, managers are encouraged to work with these entities when possible to alleviate or help minimize the hardship which may be created by the easement. This chapter outlines the procedures that must be followed when considering the modification of lands protected by Service easements. It is not the intent of this chapter to allow for the exchange or amendment of easements for matters of convenience or just because landowners don't like the easement on their property.

The criteria which may justify either temporary relief or an exchange of easement rights involve issues surrounding health, safety, or major threats to private or public property; issues associated with units of local government or other public entities; or certain issues surrounding farm/ranch operations. If the request is justified, based on the manager's experience and best judgment, then the following process should be pursued in an effort to resolve the issue.

This process and accompanying flowchart are designed to help managers evaluate requested uses regardless of whether it is related to health and safety, a right-of-way request, or a proposal from a private landowner concerning his private farm operation. Much thought and preparation has gone into this process; and while it is not fool-proof, it does provide managers a systematic and consistent way of looking at and dealing with the myriad of issues associated with administering easement properties. This process is intended to be used for **ALL** requested uses of easement properties, including the authorized activities listed in the "old" manual guidance known as "permitted activities." Managers **must** use the flowchart to evaluate proposed uses of easement properties. As discussed earlier, it is intended to provide a systematic thought process when evaluating proposals. Part of this thought process is determining whether the proposal is reasonable and whether there are alternatives to accommodating the request on easement property. Managers should try to accommodate the request off easement property if possible. The "Easement Use Evaluation Form" (Exhibit XII-3) is to be used to aid the evaluation, and to serve as a permanent record of the decision for the easement file.

If any pre-76 wetland easements are involved with the request, then the easement wetlands must be mapped according to the policies found in Chapter XI.

Needless to say, activities which do not impact the rights acquired by the Service are allowable without the need for a permit. This process for evaluating proposed uses is NOT intended to apply to commonly-accepted operational practices which go along with normal farming/ranching operations. Activities like fencing needs, corrals, vehicle and equipment access trails, temporary hay storage, and other operational necessities are allowed on easement properties WITHOUT the need for a permit or advanced approval from the Wetland Management District office.

Issuance of Permits and/or Letters of Authorization:

The permit application (use request) may be either in writing or verbal. In all cases, however, the manager must know exactly what is being requested. Even though use requests can be made verbally, in no case will the authorization be verbal. It must be on a Special Use Permit (SUP) or through a Letter of Authorization (LoA), with stipulations and a map if necessary. If a request is received from a 3rd party (e.g., a utility company, highway department, etc.), then it must be in writing. Managers must visit the site of any proposed activity prior to issuing authorization to impact any easement area. If the request is to resolve an emergency, authorization can be granted prior to visiting the site, but the manager must visit the site as soon as practicable.

All permits must be issued before acts of burning, draining, filling, and leveling in wetlands, or cultivation or alteration of grasslands or other protected habitats are allowed. **No "after-the-fact" permits shall be issued.** All non-permitted acts of burning, draining, filling, and leveling of wetlands, or cultivation or alteration of grassland vegetation will be treated as easement violations and referred to the U. S. Attorney, through the Regional Easement Coordinator, if necessary, for resolution.

Permits can only be issued when the requested activity successfully passes the flowchart (see stepped process below) and 1) approval of Appropriate Use and Compatibility Determinations (use Programmatic CD if appropriate; authorized habitat management activities excluded), and 2) documentation of NEPA compliance, Cultural Resource compliance, and Endangered Species Act compliance. Current regional guidelines, policies, and delegations of authority apply to the preparation and processing of NEPA and Endangered Species documentation as well as Appropriate Use and Compatibility Determinations. Except for emergency situations and authorized refuge habitat management activities as discussed in this chapter, and recognizing that the applicant is not relieved from complying with other local, state, or federal regulations, all activities within easement protected habitats require preparation of Appropriate Use and Compatibility Determinations (use Programmatic CD if it applies) as well as NEPA and Endangered Species Act (Section 7) documentation prior to issuance of a permit. Permits issued for any request involving economic activities **must** meet the higher standard of compatibility by "contributing" to the refuge area. See 50CFR, 29.1 for definitions and examples of "economic activities."

In some situations, field stations have an approved Comprehensive Conservation Plan that describes the permitted activities and includes programmatic compatibility determinations, environmental assessments, and intra-Service Section 7 Biological Consultations. These

documents should meet the above requirements. At other stations where no generic documents exist to meet the requirements of Appropriate Use, Compatibility, NEPA, and the Endangered Species Act, Appropriate Use and Compatibility Determinations will need to be prepared (or use Programmatic CD if applicable), as well as NEPA compliance, and consideration of Endangered Species Act requirements.

Where the Service has purchased or acquired an easement interest to preserve wetland, grassland or other habitats, certain acts of draining, burning, filling, and leveling of a limited nature may be allowed in protected wetland(s) or cultivation or alteration of grasslands by issuance of a permit. The Regional Director, or his designee, may issue a permit when such activities will not detract from or impair the basic purposes for which the easement was acquired. The Solicitor's opinion of August 14, 1980 (Exhibit XII-1) further discusses the legal aspects of permitting limited acts of draining, burning, filling, or leveling in wetlands under easement. While this opinion is specifically for wetland easements, the intent applies to other types of easement interests.

Exhibit XII-2 is an example of a permit with the standard wording that is to be used in the Statement of Effect and Compatibility section to the permit. This statement will be used on all Special Use Permits issued (except emergencies and authorized habitat management activities as discussed below in this chapter).

Authorized burning is considered a habitat management activity and will not require a compatibility statement. For authorized activities, other than habitat management activities, the statement to be used on the Statement of Effect and Compatibility section of the permit will read as follows:

> "The activity described and allowed by this permit is hereby determined to be compatible with the purposes for which the easement interest was acquired."

This statement represents only the **decision** made on compatibility and does not represent a determination of compatibility.

Special Use Permits are issued at the field level for a period of 1 to 5 years and with Regional Office approval, for up to 10 years. Stipulations can be added to the permit to require any type of restoration, reseeding, packing, returning the soil profile, etc. Generally, this permit is for activities with temporary impacts or to authorize the construction period for activities that will later be covered by a Right of Way permit. The SUP can be used for example, to authorize crossing a wetland with a buried pipeline or crossing a grassland easement with a chiseled in waterline. These types of activities generally have limited and quick recovery impacts. The limitation however, is that if future maintenance is required for example with a broken line after the SUP has expired, another SUP would be needed to authorize the additional work.

A Letter of Authorization can also be issued at the field level and is for the duration of time as indicated in the letter. Generally LoA's are used to authorize a long term or permanent use on easement lands; e.g., a request to lower a wetland that is flooding a driveway. If it's a short term, one-time need, the SUP would best meet the authorization need. However, if it is expected that the relief being provided will be long term or permanent, that is where a LoA is most applicable.

The LoA basically goes to the landowner and into the files and can be a permanent authorization of that requested use.

The third method of authorizing an activity is through the granting of a Right of Way (ROW) permit as the result of an application from the project sponsor. This application process is identified in CFR Subpart B – Rights-of Way General Regulations, 50 CFR 29.21. ROW permits can be granted for as long as it is used for the purpose granted, generally up to 50 years or lesser where appropriate. ROW applications are to be provided to the state Realty Supervisor. Any descriptive information or background should be provided by the field managers to this Realty office as well. The advantage of authorizing a use with a ROW permit is that current and future construction and maintenance would be allowed without any further administrative action, for the term of the ROW and within any limitations or stipulations within the permit. For example, if a ROW were granted for a buried waterline on a grassland easement and the line broke 20 years later, maintenance activity would be already approved under the ROW and no additional permit or authorization would be needed. However, the requestor may not want to apply for a ROW permit due to cost or application requirements. They may determine that the need for future maintenance is limited and if needed, they may assume another SUP would be granted to cover that activity. Again, the decision to apply for a ROW or not, is a decision for the requestor.

Discussions have occurred relative ROW's on the extent of information needed to describe the location of the ROW area. The CFR (29.21-2 Application procedures.) clearly states the intent of information needed as being sufficient to "show the right-of-way in such detail that the right-of-way can be accurately located on the ground." The CFR references that maps, sketches or a plat provided by the applicant are sufficient and provides direction on specific location information. In the 50 year administration of the program, there has never been an identified need by field managers to require a legal survey completed by registered surveyors in order to locate any ROW boundary. For example, field managers have the ability to accurately locate and relocate FmHA easement boundaries using GPS technology and very basic maps. Therefore, finding a ROW boundary for compliance purposes with GPS coordinates would be a similar, accurate and easy task.

In a ROW application, at a minimum, the requestor needs to provide a level of point information that can be accurately duplicated by field managers, such as GPS coordinates. A legal survey of the ROW is not required. However, if the project sponsor is surveying other features of the project, off easement, they should be encouraged to provide survey data for the ROW as well.

In the advent that the project requestor applies for a ROW permit, it is their choice to do so, there may be a time delay before the ROW permit is actually granted. At the discretion of the field manager, the project sponsor can be issued a SUP to cover the initial construction while the ROW permit is being processed.

Depending on the outcome of a flowchart review, there may also be an option to use an exchange. This is not however, authorizing a use on an easement, an exchange is removing that defined area from the system and therefore no permit or authorization is needed. Exchanges are discussed in Chapter XV and exchanges with a reversionary clause as is used in wind projects can be found in Chapter XIV.

If the requested activity passes the flowchart process and is approved, the requesting entity will receive the original of the SUP or Letter of Authorization. The issuing office will retain copies in the appropriate easement file. NEPA compliance documents, cultural resource compliance documents, and any other documents requiring approval must be forwarded to the RO for approval/concurrence prior to issuing the permit/letter of authorization; however, it is no longer necessary to send copies of the signed SUP into the Regional Office.

To provide as much consistency as possible among Wetland Management Districts, managers **must** authorize requested uses of easement properties if the proposal passes the flowchart and can be accomplished within the guidelines presented in this section and with the guidelines contained in Exhibit V-6 (if they apply), unless they can justify a denial of the request to the Standing Easement Review Committee. Proposals which fail to pass the flowchart, but involve special circumstances associated with the proposed use, may also be appealed to the Committee.

If circumstances apply, requesters may also need a formal ROW permit from the Regional Office-Realty. See Chapter XIII for guidance on the right-of-way permit process.

Concept of Threshold Levels of Disturbance: One of the major components of the flowchart process is the concept of threshold levels of disturbance. Section 2.11 B-1 of the 2000 Compatibility Policy states that compatibility is, in fact, a "threshold issue" and that proposed uses must pass a "threshold test."

Region 6 has developed several programmatic compatibility determinations (CD) (Exhibits XII-4a-g) authorizing managers to accommodate certain requested uses or activities on easements. These CDs are not intended to cover any activities or proposed uses of any Service-administered fee lands (refuges and WPA's, except Exhibit XII-4e and 4g which may apply to WPA's). The requested activity must first successfully pass the flowchart process for it to be considered a compatible use. Appropriate Use and Compatibility must be addressed in every case, unless an Exchange of Interests is being considered or the use qualifies as a non-economic habitat management activity. For managers to use one of the programmatic CDs, the situation at hand must fit the discussion in the programmatic CD exactly. Otherwise, an individual CD will be required. Assurances have been incorporated into the process to protect the integrity of the NWRS, and to comply with policy requirements governing the System. As part of the compatibility evaluation process, managers must also address any associated or secondary impacts. This is further explained in Section B-7 of this chapter.

Only two of the programmatic CDs involve the use of threshold levels; the others involve temporary impacts only to easement interests. Region 6 has defined "threshold" levels of impact which may occur as a result of authorizing a requested use, but will not materially interfere with or detract from the purposes for which the easement interest was acquired. These levels of impact are defined more fully in the programmatic CD on curtilage expansion (Exhibit XII-4a) for threshold levels associated with uplands, and in the programmatic CD on Health and Safety wetland issues (Exhibit XII-4b) for threshold levels associated with protected wetlands. They are based on years of scientific evaluation of prairie pothole habitat and how habitat impacts affect waterfowl populations.

These threshold levels of impact have been established at 0.4 acres of wetland, and not to exceed 25% of the wetland basin, and/or 8 acres of easement-protected upland. These levels have been established based on biological models developed by the Habitat and Population Evaluation Team (HAPET) in Bismarck, ND. The justification for these levels is also found in the previously-mentioned programmatic CD's.

If the requested use passes the flowchart's screens and filters, is found to be appropriate and compatible, and results in a permanent impact to the Service's easement interests at or below the threshold levels, then the use can be approved, meaning that the impact will not result in a "material" interference or detraction from the purposes for which the easement area was acquired.

Threshold levels should not be viewed as an automatic "allowance" or "manager's discretion" for easement properties. Each proposal must pass all the screens and filters in the flowchart and be appropriate and compatible to be approved. The following guidelines will apply to authorized uses, WHICH HAVE SUCCESSFULLY PASSED ALL steps of the flowchart, relative to the concept of threshold levels:

- Each easement contract will be authorized up to one threshold level of impact in total, whether it occurs all at one time, or in different authorizations for wetlands and/or uplands.

- The Easement Use Evaluation form (Exhibit XII-3) will serve as the official record for each easement contract.

- Authorized third party requests (road improvement projects, utility projects, water lines, etc.) will NOT count against the landowner's aggregate potential threshold.

- Easement contracts which are sub-divided by sale or which are less than 160 acres to begin with will be capped at an aggregate total which is pro-rated based on the threshold level of 8 acres (i.e., an 80 acre parcel will be capped at 4 acres, etc.). This requirement applies to upland acres only. The established threshold levels for wetlands (0.4 acres) will apply even to subdivided wetland easement contracts.

- If an easement contract has received past authorizations amounting to a fraction of the potential total, and subsequently the land is subdivided through sale, then the balance of future potential authorization will also be pro-rated, based on what was previously authorized, but will not exceed the total of potential authorization for the easement contract.

- In the unlikely event that the threshold levels for a given easement contract have been reached through past authorizations, and another requested use meets the authorization criteria (flowchart process), the manager may appeal the case to the Standing Easement Review Committee for a decision.

- If the appeal is denied, the only option at this point is an exchange of interests, even for below-threshold levels of impact.

- Proposals which are authorized and result in ABOVE-threshold levels of impact must be accommodated through an exchange of interests (Exhibit XV-1).

Region 6 has adopted a process to replace values for **any** impact to refuge system interests, however slight. This process will be accomplished independently of compatibility requirements associated with such uses, and will not enter into, nor affect, any decisions made relative to Compatibility Policy requirements.

The biological values for any habitat impacted below-threshold levels will preferably be replaced on-site. An informal replacement of lost values may be an option. It is anticipated some events will involve miniscule acreage for Health/Safety or Farm/Ranch-related impacts. For example, a landowner wishes to fill in part of a co-owned easement wetland basin in order to construct a fence on the property line. The fill may come from the "shoulder" of the wetland or from a spoil pile in the basin created by a previously-constructed livestock dugout. The end result in this case is no net loss of easement wetland acreage.

Another option is to replace lost values on or off site with use of grant monies (Health/Safety and Farm/Ranch impacts only). In those cases where there is Public Service, Government, or Corporate involvement, cash receipts will be generated by the requestor which will be used to replace lost values on or off site. A good example for these scenarios would be restoration of a previously-drained wetland.

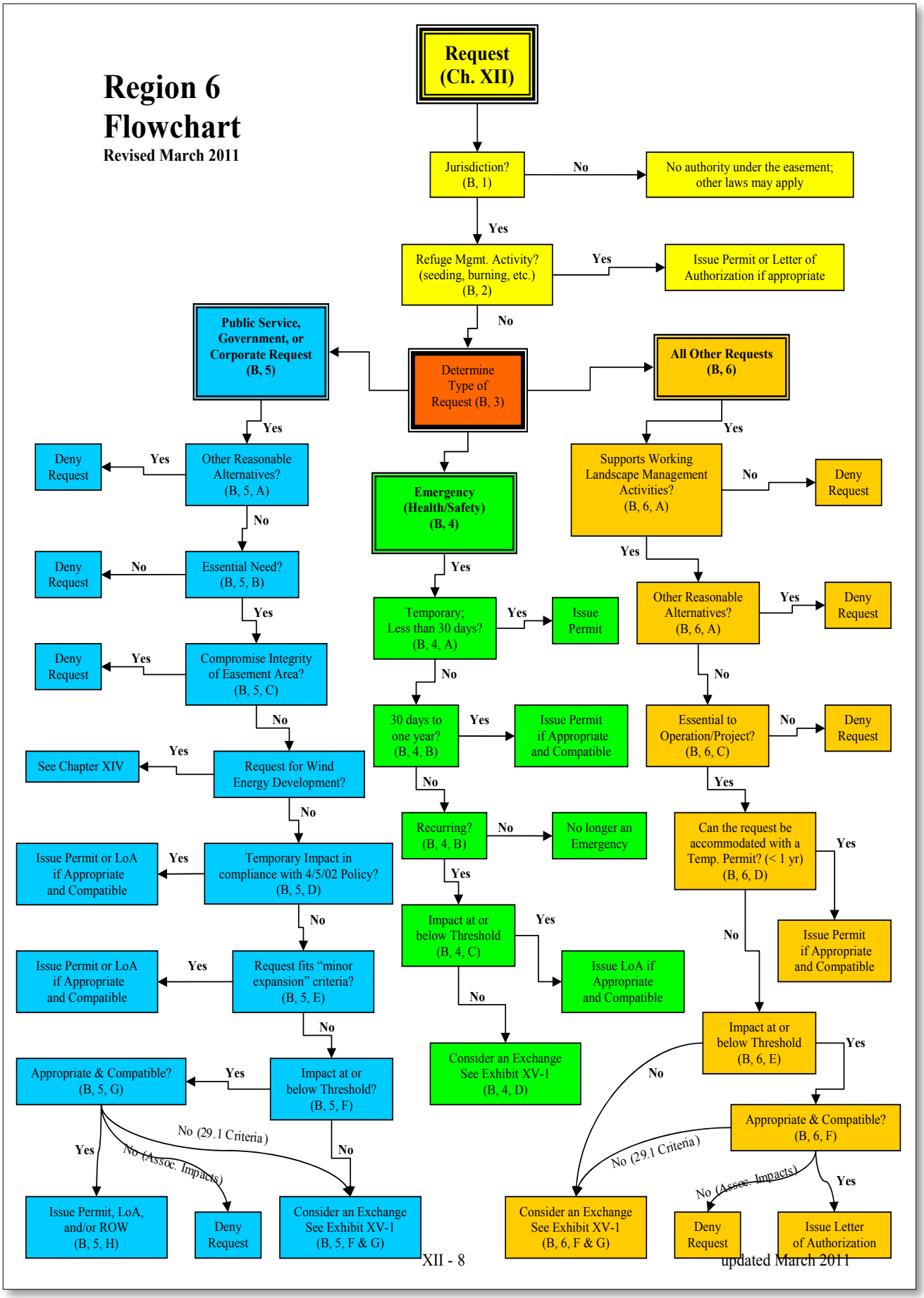
The third option is the Madison Contributed Funds Account in those cases where revenues are generated by Public Service, Government, or Corporate requests – OR – use of Madison NAWCA grant money when replacement of lost values is associated with Health/Safety or Farm/Ranch impacts. Currently, there is ample opportunity on the Madison WMD to do wetland/upland restoration work.

Authorizations for Health and Safety (green blocks on Easement Permit Flowchart) or from the "Other Request" category (orange blocks on the Easement Permit Flowchart) will not include a cash payment obligation for any below-threshold habitat restoration work; grant monies will be used as necessary for these entities for below threshold impacts.

For any exchange process involving above-threshold acreage (NOTE: exchange agreements to accommodate wind energy infrastructure now involve a reversionary clause – see the Wind Energy chapter for more information), the exchange will be based upon the current market value of easement interest to be relinquished. Cash payments will be required of the requestors. Replacement acreage priorities to be followed as part of an exchange are:

Priority 1 - restorable acres/replace lost values on site.
Priority 2 - restorable acres/replace lost values in project area.
Priority 3 - restorable acres/replace lost values in State.

Any exchange will be consistent with USFWS policy (Exhibit XV-1).


Region 6
Flowchart
Revised March 2011
Request (Ch. XII)
Jurisdiction? (B, 1)
No
No authority under the easement; other laws may apply
Yes
Refuge Mgmt. Activity? (seeding, burning, etc.) (B, 2)
Yes
Issue Permit or Letter of Authorization if appropriate
No
Public Service, Government, or Corporate Request (B, 5)
Determine Type of Request (B, 3)
All Other Requests (B, 6)
Yes
Yes
Deny Request
Yes
Other Reasonable Alternatives? (B, 5, A)
Emergency (Health/Safety) (B, 4)
Supports Working Landscape Management Activities? (B, 6, A)
No
Deny Request
No
Deny Request
No
Essential Need? (B, 5, B)
Yes
Yes
Temporary; Less than 30 days? (B, 4, A)
Yes
Issue Permit
Yes
Other Reasonable Alternatives? (B, 6, A)
Yes
Deny Request
Deny Request
Yes
Compromise Integrity of Easement Area? (B, 5, C)
No
No
30 days to one year? (B, 4, B)
Yes
Issue Permit if Appropriate and Compatible
Essential to Operation/Project? (B, 6, C)
No
Deny Request
No
Yes
See Chapter XIV
Yes
Request for Wind Energy Development?
No
Recurring? (B, 4, B)
No
No longer an Emergency
Yes
Can the request be accommodated with a Temp. Permit? (< 1 yr) (B, 6, D)
Yes
Issue Permit if Appropriate and Compatible
Issue Permit or LoA if Appropriate and Compatible
Yes
Temporary Impact in compliance with 4/5/02 Policy? (B, 5, D)
No
Impact at or below Threshold (B, 4, C)
Yes
Issue LoA if Appropriate and Compatible
No
Issue Permit or LoA if Appropriate and Compatible
Yes
Request fits "minor expansion" criteria? (B, 5, E)
No
No
Consider an Exchange See Exhibit XV-1 (B, 4, D)
Impact at or below Threshold (B, 6, E)
Yes
No
Appropriate & Compatible? (B, 5, G)
Yes
Impact at or below Threshold? (B, 5, F)
Appropriate & Compatible? (B, 6, F)
Yes
No (29.1 Criteria)
No (Assoc. Impacts)
No
No (29.1 Criteria)
No (Assoc. Impacts)
Yes
Issue Permit, LoA, and/or ROW (B, 5, H)
Deny Request
Consider an Exchange See Exhibit XV-1 (B, 5, F & G)
Consider an Exchange See Exhibit XV-1 (B, 6, F & G)
Deny Request
Issue Letter of Authorization

B. Process for Evaluating Requests for Use or Modification of Easement Properties:

This process is designed as a "screen-out" mechanism, meaning that a proposal must meet ALL the criteria (except bona fide health and safety issues) rather than any single criterion in the process to be considered.

Managers will use the Special Use Permit Flowchart to help guide the proposal (requested use) to a logical conclusion and decision. Exhibit XII-3 contains a form which follows the flow diagram, and this may also be helpful for managers to use in evaluating requested uses. A copy of this form must be retained in the permanent easement file as a record of your decision, and to provide a record of authorized uses for the easement area.

While the decision criteria used to evaluate a request for an easement use or modification are presented in a linear stepped process on the flow chart, the actual consideration of a request should be made with the majority of the steps in mind. If a request is likely to be found incompatible due to the loss of endangered species, such as the loss of prairie fringed orchids for stock water development, or the loss of a water bird nesting colony for farmstead expansion, discussion with the requestor should likely focus around avoiding those impacts. When evaluating an exchange which does not require compatibility, unique or rare values would be considered as part of the Environmental Site Assessment. Managers should keep in mind that some easements will protect unique or rare wildlife and habitats which the Service should maintain regardless of how well the request may fit the remainder of the criteria in the flow chart.

1. Authority to Regulate the Proposed Use:

First, the wetland manager must determine if the Service has the authority to administer the proposed use. Does the Service have jurisdiction under the terms of the easement? If the answer is "NO," then, while there may be other laws that regulate the use, the Service has no authority under the terms of the easement. The wetland manager should inform the requester that, although the Service does not have the authority under the easement, this does not exempt them from other laws and/or regulations which may regulate the request.

The Service occasionally receives requests from USDA Wildlife Services to spray cattails for the purpose of eliminating blackbird roosting habitat. When this request is on land protected by a wetland easement only, then the Service has no jurisdiction to restrict the use since the activity does not constitute a "drain, burn, fill, or level." However, the Service would have jurisdiction when that same request is made on land protected by a grassland easement since the activity would effectively be "destroying the vegetative cover."

2. Refuge Management Activity for Habitat Improvement:

If the Service has jurisdiction, then determine if the request can be considered a "refuge management activity," defined as an activity that could be conducted by the Service or a

Service-authorized agent to fulfill one or more purposes of the national wildlife refuge (area), or NWRS mission. Service-authorized agents may include state or federal agencies, educational institutions, contractors, private organizations or individuals. Qualifying refuge management activities are exempt from the compatibility process.

These activities must benefit wildlife populations or easement habitat, they must further the purposes and goals of the Wetland Management District and the mission of the NWRS, and they must be commonly-accepted as practices which are normally accomplished by natural resource agencies to promote wildlife populations. Examples include, but are not limited to, prescribed burning of upland or wetland vegetation to enhance vigor or provide better breeding pair habitats in wetland, planting food plots for use by wintering wildlife, planted shelterbelts for cover and winter protection, interseeding upland areas to introduce more resilient or diverse native grasses and/or forbs, and restoration of previously-drained wetlands. Authorized refuge management activities are exempt from compatibility requirements, EXCEPT for Refuge Management Economic Activities which are NOT exempt from compatibility and must meet a higher standard as defined below. Refuge management activities which are also economic uses (e.g., early haying of a grassland easement) can be approved at this level without the need for using the rest of the flowchart, but managers must still develop Appropriate Use (AU) and Compatibility Determinations (CD) before the request is authorized (see discussion below for more detail). If, in the judgment of the wetland manager, requests do not fit logically within a refuge management activity category, then the request must be evaluated using the rest of the flowchart, including economic uses which do not qualify as refuge management activities. An example would be a request to mine top soil from a grassland easement or borrowing fill material to facilitate road construction. These are not refuge management activities as defined in this section, but are economic uses as defined in 50 CFR 29.1, so the proposals would have to be evaluated through the remainder of the flowchart.

In general, any authorized upland habitat management activity, or combination of activities, must not exceed 8 acres per 160 acres of easement. Some activities, such as interseeding or reseeding upland areas or burning, will not be limited to the 8 acres per 160 acres. These activities will generally also be limited in terms of length of time. A Special Use Permit can be issued for up to 5 years. Activities like native shrub plantings and authorized wildlife dugouts, however, will be more permanent modifications to the landscape than the 5 year permit limitation. In these cases, issue a Letter of Authorization rather than a Special Use Permit.

There are also specific requirements associated with some of the Habitat Management Activities. See also Exhibit V-6 for additional conditions on other Habitat Management Activities.

- Shelterbelts - to qualify as a habitat management activity, shelterbelts must be of native shrub species and be planted on non-native grassland areas; other requested tree/shrub plantings, such as field or farmstead windbreaks, will not fit this category, and must be evaluated with the remainder of the flowchart. Limited to no more than 8 acres/160 acres of easement.

- Foodplots - positively **NO foodplots** will be authorized on native prairie grasslands protected by easement. Previously, Special Use Permits were limited to 5 years for non-native uplands. This time limit is no longer applicable, and a Letter of Authorization should now be used to permit food plots rather than an SUP; the LOA should consider the following conditions:

  a. no food plots to be planted in wetlands;
  c. specify the type of crop, or crop rotation;
  d. no harvesting or grazing except after March 31, and prior to spring planting;
  e. must include a plan for re-establishment of grass after the food plot is terminated;
  f. limited to no more than 8 acres per quarter section;
  g. the use of insecticides is discouraged on the food plots; and
  h. NO native prairie shall be broken for food plots.

  The LOA can be revoked by either party at any time. Exhibit XII-8 contains an example of an LOA to use for food plots.

- Burning of wetlands - will not be authorized more than once in every 3 years, or not to exceed 1/3 of the wetland easement acres annually, with individual permits issued each year. See Exhibit V-6 for additional required conditions.

- Wildlife ponds- which are constructed in accordance with NRCS specs for a wildlife development are permitted under this category. Dugouts for stockwater only are covered by the Programmatic CD (Exhibit XII 4-g).

- Farming/Seeding of Wetlands - protected wetlands which are overlaid by a grassland easement are protected against farming and/or cultivation just the same as upland acres. As a general policy, requests for farming them will not be authorized. However, managers may authorize farming of wetlands with a permit and justification for the improvement of the area, the same way they are authorized to farm upland acres for the improvement of the area. This practice will be considered a habitat management activity if it results in an improvement of the area. It may be considered as a "refuge economic use" if removal and or harvesting of products is part of the authorization. Economic use activities require an individual CD written to the higher standard (see below). If the seeded wetland is grazed (anytime) or hayed after July 15, then it is NOT an economic use; if the area is cropped, and the crop harvested, then it IS an economic use. Non-economic uses considered to be habitat management activities do not require a compatibility determination.

  Food plots are NOT authorized in wetland basins as stated above. Wetlands within native prairie will NOT be farmed, seeded, or manipulated under any circumstances. Wetlands protected by only a wetland easement may be farmed when dry of natural causes without permission from the WMD.

- Interseeding- Grassland improvement must be the goal of any authorized interseeding. This practice can be authorized under this category if, in the judgment of the wetland manager, a

net improvement for wildlife will occur. Practices for the benefit of the landowner's operation must be evaluated under the remainder of the flowchart.

Interseeding is a habitat management activity and exempt from compatibility determinations unless the use of glyphosate or any other contact herbicide on native prairie is being requested. **Native prairie is defined as:** Grasslands that do not have and never had a cropping history or any other type of modification to the original prairie excluding burning, haying, grazing or grass tolerant herbicide application. The request shall identify the species composition of the original planting in non native grasslands or re-established native grasslands prior to any approval for interseeding.

Interseeding into native prairie must be with native grasses and forbs only. The use of glyphosate or any contact herbicide to eliminate certain exotic grasses (crested wheatgrass, smooth brome, or Kentucky bluegrass) can have detrimental effects on native grasses and forbs especially cool season native grasses and will require a compatibility determination. If permitted, this practice should occur in the early spring prior to any warm season grass or warm season forb emergence. Wetland managers must inspect the proposed native prairie tract and identify any cool season native grasses or forbs that could be affected prior to completion of the compatibility determination or any approvals. Interseeding is not limited to the 8 acre per 160 acres requirement. Additionally, an easement use evaluation form must be filled out and placed in the easement file for **any** interseeding activity.

- Wetland Restorations - are authorized on easement properties. They can be either permanent, which requires either another easement agreement or an amendment, or under a term agreement, such as a Partners for Fish and Wildlife Agreement, or in conjunction with a USDA or CRP requirement. See Exhibit V-6 (11) for additional information.

If the proposed activity qualifies under any of these criteria, then issue a Special Use Permit or Letter of Authorization. A compatibility determination is not required for practices implemented under this category, except for those that are determined to be economic uses.

Refuge Management Economic Activities:

If the requested use is considered to be a "refuge management economic activity," then it must meet a higher standard of compatibility by "contributing to the achievement of the national wildlife refuge purposes or the National Wildlife Refuge System mission." If the request is approved, the wetland manager must describe how the economic use contributes to the achievement of the purposes and mission statement and explain such in the CD. The "normal" compatibility standard of not "interfering with or detracting from" the purposes or mission will not suffice for economic use requests.

Economic Uses are defined in 50 CFR 29.1 as "including, but not limited to grazing livestock, harvesting hay and stock feed, removing timber, firewood or other natural products of the soil, removing shell, sand, or gravel, cultivating areas, or engaging in operations that facilitate approved programs on national wildlife refuges." Another way of defining an economic use is if the activity results in the "harvest of the interest" the Service acquired in the easement.

A differentiation is made between refuge economic uses and potential commercial uses. Authorizing a communications cable to cross easement properties is a use request from a commercial entity, but it does not fit the definition of "economic use" for this section. Other examples of commercial uses which do not meet the definition of a "refuge economic use" include: buried water pipelines completed by incorporated rural water companies, electric utility cables, television cable crossings. Another way of looking at this is if the use results in only an "occupation" of the easement property, then it is probably not an economic use. If the use results in a "withdrawal" of a product, then it probably is an economic use.

If the request falls under the category of a "refuge management economic use," then the manager must complete a CD, evaluated on the higher standard, for RO approval. After approval, issue a Special Use Permit or letter of authorization. If the use request is for early haying of a grassland easement for management purposes, there is a programmatic CD which can be used if it fits the exact circumstances of the request at hand. (Exhibit XII-4c)

"8 acres per contract" vs. "8 acres per quarter"

Since the release of the first edition of the Easement Administrative and Enforcement Manual in December 2005, confusion and disagreements over the proper applications of the "8 acre per contract" and "8 acre per quarter" standards have surfaced. An attempt is made here to clarify these two standards, including an explanation of their genesis and their intended applications as they relate to administering proposed modifications of easement properties.

"Eight acres per contract" refers to a threshold value that Region 6 defined as a *material interference or detraction*, and is used to assist in the determination of whether or not a proposed impact to a grassland easement is compatible. The Compatibility Policy of 2000 defines a compatible use as a wildlife-dependent recreational use or any other use of a refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the mission of the NWRS or the purpose of the refuge.

Making this determination is a *threshold issue*. By way of programmatic compatibility determinations completed in 2005, Region 6 defined the threshold levels of impact for not only grassland easements (8 acres), but also for wetland easements (0.4 acres, not to exceed 25% of the total wetland basin). These levels of impact are more fully defined in the Justification sections of the CDs, and are based on years of scientific data which suggest these levels of impact will not result in the destruction of habitats capable of supporting one pair of ducks. In other words, impacts exceeding these levels could diminish an easement's capacity for providing habitat for nesting waterfowl (i.e., one pair of ducks) which Region 6 has determined constitutes a "material interference or detraction from" the easement's purpose.

Neither the Easement Manual, nor the programmatic CD defining the 8 acres per contract, precludes a wetland manager from drafting a compatibility determination which finds levels of impact exceeding 8 acres compatible. However, the onus is on the manager to successfully argue that the level of impact does not materially interfere with or detract from the NWRS mission or purpose of the easement; and, given the background and justifications included in the existing programmatic CDs, this argument would be difficult, if not impossible, to uphold.

"Eight acres per quarter" refers to the amount of impact that will generally be tolerated on grassland easements for those modifications that can be considered *habitat or refuge management activities* (the terms "habitat" and "refuge" are used interchangeably for this discussion). Unless also an economic use, habitat management activities are exempt from compatibility requirements; thus, no CD is necessary for their approval.

Habitat management activities are defined as those that could be conducted by the Service or a Service-authorized agent to fulfill one or more purposes of the easement area or the NWRS mission. Examples could include shelterbelts, food plots, wildlife ponds, wetland restorations, and interseeding. Most habitat management activities are *generally* limited to 8 acres per 160 acres, but not all are. Interseeding and burning, for example, are not limited to this acreage. The foundation for 8 acres per 160 acres likely came from previous easement manuals which contained flexibility to allow "minor changes" in the easement up to 5% of the easement area. Five percent of 160 acres is 8 acres.

The fact that habitat management activities are generally allowed on up to 8 acres per quarter (or 5% of the easement area), and that the Region 6-defined level of impact deemed less than a material interference or detraction is 8 acres (per contract of at least 160 acres), is merely coincidental. One had absolutely no influence on the establishment of the other.

Further discussion on both standards can be found elsewhere in the Manual. Specifically, discussions, rationale, and justifications for the 8 acres per contract standard as it relates to Compatibility can be found elsewhere in Chapter XII-a, and in programmatic CDs included as Exhibits XII 4-a and XII 4-b. Text pertaining to the 8 acres per quarter standard as it relates to habitat management activities can also be found elsewhere in Chapter XII-a, and background information concerning the intent to incorporate flexibility in easement administration is well covered in Chapter I.

Finally, extreme diligence and care must be exercised by all individuals when discussing easement restrictions with landowners, especially during the negotiation phase of acquisition. Prior to the sale of the easement, landowners must be made to understand the terms of the easement contract exactly, and should have no expectation of being allowed to negatively impact the protected easement interests in the future. While the Service wishes to maintain flexibility to address legitimate needs to modify easement areas, the landowner must not be given the impression that any modification is guaranteed. In other words, the ability and decision on whether or not to allow an impact on a grassland easement contract belongs solely to the Service, and may only be exercised after an exhaustive review process through the flowchart. It is not the landowner's "allowance," nor is it at the landowner's discretion to impact those acres whenever he/she sees fit. In other words, the *landowner has no flexibility* to impact a grass easement in a way that is restricted by the easement contract. Rather, the *Service has limited flexibility* to permit legitimate needs to modify easement lands when the impacts are deemed less than material.

3. <u>Determining the Type of Requested Use of Easement Property</u>:

If the request is not a Habitat Management Activity, then managers must categorize the type of request. The request can be one of three alternatives:

- Health, Safety, or Major Threat to Public or Private Property - Use Green-colored blocks through the center of the Easement Request Flow Chart

- Public Service, Government-sponsored or supported, or Corporate-type requests - Use the blue-colored blocks on the left side of the Flowchart

- All Other Requests - Use the orange-colored blocks on the right side of the Flowchart
If the requested use successfully passes the flowchart, then managers should review Exhibit V-6 to check for conditions and/or stipulations for some of the more commonly requested uses of easement properties. This exhibit also contains conditions and/or stipulations for commonly requested habitat management activities. Region 6 has developed seven programmatic CD's which can be used to address compatibility if the circumstances fit the description in the CD. If not, then an individual CD will need to be developed.

The seven programmatic compatibility determinations are:

- a CD (Exhibit XII-4a) to address necessary expansions of building sites, etc. involving established threshold levels for upland habitats.

- a CD (Exhibit XII-4b) to address resolving chronic Health and Safety issues involving "non-material" impacts to protected wetlands (below threshold levels).

- a CD (Exhibit XII-4c) covering authorized early haying of grassland easements for management purposes. This activity represents an economic use, so the CD is written to achieve the higher standard.

- a CD (Exhibit XII-4d) to address temporary impacts (only) to protected wetlands to resolve Health and Safety issues.

- a CD (Exhibit XII-4e) to evaluate proposed uses which are consistent with the Region 6 policy letter of April 5, 2002 (Exhibit XII-7) involving impacts to easement interests resulting in only temporary and minor impacts.

- a CD (Exhibit XII-4f) to be used in conjunction with pipelines for livestock water crossing grassland easements. (Previously completed).

- a CD (Exhibit XII-4g) to be used for dugouts for livestock water on easements and WPAs (completed in 2008).

Region 6 has a long standing policy that activities which may impact native prairie will not be authorized. While, in general, this is still the case, impacts which may result to native prairie from legitimate activities which pass the flowchart may be acceptable. However, ALL other alternatives must be exhausted before authorization is given to impact native prairie. An example would be the need to reroute a driveway access to a residence as a result of flooding, and there is no alternative but to route the new access through native prairie.

4. Health and Safety or Major Threat to Personal or Public Property:

Situations involving health, safety, or major threats to buildings, roads, and infrastructure-Examples: Basement flooding caused by high water in a nearby wetland, barnyard or feedlot flooding, driveway or other road flooding, or threat to domestic water supply or sewer system. Most health and safety issues will likely involve protected wetlands, but could also occur with protected uplands such as tall, dry, easement-protected grasslands adjacent to farm buildings constituting a fire hazard.

A landowner's inability to hay or farm wetlands during wet periods or in high water years, will **not** be considered as health or safety issues.

For situations which involve health, safety, or major threats to landowner appurtenances which cannot be resolved without violating the easement and for which no reasonable alternative exists, the wetland manager, upon verification of the circumstances, is authorized to allow alteration of a wetland(s) or grasslands under easement under the following guidelines (continue to evaluate the proposal under the "Health and Safety" provisions of the flowchart [green-colored boxes through the center]).

A. If the needed relief can be accomplished within 30 days, then issue a Special Use Permit with stipulations and restoration requirements (if necessary). This action is considered a temporary action, and a Compatibility Determination is not required if resolution can be achieved in under 30 days. See next paragraph.

Emergencies Defined under Compatibility: The Refuge Administration Act states that the Secretary may temporarily suspend, allow, or initiate any use in a refuge if the Secretary determines it is necessary to immediately act in order to protect the health and safety of the public or any fish or wildlife population. Authority to make decisions under this emergency power is delegated to the refuge manager. Temporary actions should not exceed 30 days and will usually be of shorter duration. Such emergency actions are not subject to the compatibility determination process. When using this authority, the refuge manager will notify the Regional Chief in advance of the action, or in cases where the nature of the emergency requires immediate response, as soon as possible afterwards, and typically no later than the start of business on the first normal workday following the emergency action. The refuge manager will create a written record (see Exhibit XII-3) of the decision, the reasons supporting it, and why it was necessary to protect the health and safety of the public or any fish or wildlife population.

B. If the situation requires longer than 30 days to remedy, then an AU & CD will also be required. Determine if one of the programmatic CD's will fit; if not, then an individual

CD will be necessary. This action is also considered a temporary action and can be authorized with a Special Use Permit. If the situation is still unresolved at the end of 1 year, the manager may issue another one-year permit. If it is apparent and obvious that temporary actions will not satisfactorily resolve the issue, then consider a more permanent solution.

C. If a permanent impact to an easement interest will likely result, determine the least amount of impact required to resolve the H&S problem. If the request can be accomplished within the specified threshold levels (see Flowchart and Exhibit XII-4a or b for defined threshold levels for wetland and upland impacts), then the action can be considered compatible if either of these two programmatic CDs fit the circumstances of the issue at hand. As an alternative, managers may need to develop an individual CD.

D. If the required level of impact exceeds the threshold levels, then an exchange of rights or interests will be necessary in order to accommodate the request. If an exchange is necessary in order to accommodate the request, the exchange will be based upon the current market value of the easement interest that will be relinquished. The Easement Exchange process is detailed in Exhibit XV-1. A CD will not be required for the exchange, but NEPA compliance must be addressed. A Land or Interest Exchange Checklist (Exhibit XV-2) will also be required. It will be completed jointly by the management office requesting the exchange and the servicing Realty Office, and a biological analysis of the property to be relinquished must be completed as part of the Exchange proposal.

In very rare instances, health and safety issues may involve "economic uses" of easement properties as defined in 50 CFR 29.1. An example would be allowing a county or township to remove clay from a grassland easement to build up the road through a flooded wetland. The extraction of the clay material, even though deemed to be a temporary impact, and necessary to avert a Health and Safety issue would still have to meet the higher compatibility standard of benefiting the refuge area.

The Service would have no jurisdiction, however, if fill material was borrowed from an upland site on a wetland easement (only) with no involvement of the protected wetlands.

5. <u>Public Service, Government-supported, and/or Corporate Requests</u>:

Does the proposal qualify as a Public Service request such as a highway improvement project, rural water system, electric transmission lines, fiber optic cables, and other area-wide projects which promote the greater public good? Is the proposal related to a request from a local, State, or other Federal unit of government, or a proposal which is sponsored or supported by a unit of government? Generally, these are requests by municipalities, other governmental entities, or utility companies to extend city boundaries, build relay towers, relocate sewage lagoons, relocate landfills, etc. The third category of possible requests to be evaluated under this part of the flowchart are requests which may be received from corporate entities such as an ethanol production plant, a major pipeline crossing, a manufacturing plant, or wind energy development proposals. Requests which fall under this heading will be evaluated under the blue boxes on the flowchart.

A. First, the manager must ascertain and the requester must be able to demonstrate that there are **no reasonable alternatives** off easement property which will accommodate the requester's need. For example, can the activity be accomplished on non-easement property without causing undue economic hardship or has there been a past precedent for an alternative being proposed and used? Alternatives to the request should be thoroughly explored with the goal of developing an acceptable alternative that will not result in the development of any portion of the Service's easement interest. If the requester's needs can be met on nearby or adjacent non-easement land, then reasonable alternatives are deemed to exist and the proposal must be denied. The manager should always try to determine if the requester can work around the easement interest. In some cases the project can be modified, the change is not significant and the easement interest is not affected. If the development can take place on non-easement lands, there is no need for further consultation.

Determining a reasonable alternative is a collaborative process with the requestor. Often, during this discussion cumulative impacts may be reduced, but not eliminated. For example, during discussions regarding a wind development site, a manager may reduce the proposed miles of service roads and the number of towers on grassland easements; or during discussions on a pipeline project, a manger may reduce the number of easement tract crossings or successfully route the line around individual easement wetlands. At a point in these discussions, a manager can develop a feel for what may be a reasonable alternative. The reasonable alternative may include some easement impacts, but they have been reduced and minimized through discussion with a requestor. This discussion also helps the manager develop a feel for the nature of the request and whether it fits the category of essential need.

If there seems to be no reasonable alternative to the proposed action **on** easement property, then move down to the next block. If there are reasonable alternatives, then the proposal is denied.

B. The next evaluation is to determine whether the proposal is essential. This area requires the proposal to be an **essential** need. Is it necessary for the greater public benefit? Is it essential to promote the general public welfare? Convenience requests are generally not essential. A rural water system installation which cannot be rerouted to avoid Service interests would be an example of an essential need in this category of requested uses. The proposal must meet a level of importance beyond mere convenience and be absolutely necessary or indispensable. If the proposal is determined not essential or absolutely necessary, then it will not be authorized.

C. If the proposed use of the easement area is essential to the project, and there are no reasonable alternatives to accomplishing the proposal on easement property, then evaluate whether the project will seriously affect the **integrity of the easement**. If the proposal will destroy the very nature or integrity of the easement, defined as affecting a high proportion of the easement area, or seriously degrading the quality of the easement through fragmentation, then the project will be denied. Proposals which result in only a corridor or ROW request or an expansion of an existing right-of-way are likely not of the magnitude that will destroy the integrity of the easement area. Proposals resulting in the

destruction of an easement area that extends beyond a corridor or the destruction of a significant proportion of the easement interest should be determined to violate the integrity of the easement area, and should be denied. When considering proposals for wind projects, pipelines, etc. involving several easement contracts, the "easement area" is the total area protected by the easements, rather than each easement contract independent of one another.

If the proposal passes the previous three filters, then it will likely be authorized, but must still be evaluated by the remainder of the dark blue blocks on the flowchart to determine how the proposal will be authorized.

At this point, if the request is related to Wind Energy Development, go to Chapter XIV for further guidance.

D. Determine if the project can be accommodated under the specifications of a "Minor Disturbance Project." See Exhibit XII-7 for the regional policy on minor disturbance-type projects.

If impacts are determined to be only temporary and minimal, then a formal right-of-way permit from the Regional Office may not be necessary. This policy now allows managers to forego the formal ROW process, and instead, issue a Special Use Permit directly from their office if the following conditions and circumstances apply:

- Impacts to Service-acquired interests are determined to be temporary and minor or less. Examples are cited in the policy.

- The ROW requester must understand that the permit is for the installation or initial construction only, and any subsequent need to complete work on the easement property will necessitate another permit process, which will be evaluated individually in each case.

- If permanent impacts occur, however, slight, appropriate use and compatibility determinations must be completed, and determinations of "appropriate" and "compatible" must be obtained for this process to be used. See Exhibit XII-4e for a copy of the Programmatic CD which may cover this issue. If none of the acquired rights are impacted, then a CD will not be necessary, but managers should document the fact that compatibility was considered and evaluated during the process.

If the proposal meets these criteria, then issue a Special Use Permit with stipulations for site restoration, etc. and use the Programmatic CD developed for this situation (Exhibit XII-4e). The requester may desire a ROW permit to allow for future needed maintenance. If so, then pursue a formal ROW as discussed in Chapter XIII.

E. If the proposal will not qualify under the minor disturbance guidelines, then determine if the proposal will qualify as a "minor expansion of an existing right-of-way." This category of requests is the ONLY place where "mitigation" can be used to offset impacts

to Service interests as a result of the project. See Chapter XIII-C and Exhibit XIII-2 for additional guidance.

Managers are encouraged to use the "minor expansion" category whenever possible to avoid the need for an exchange. Some guidelines are available in the 2000 Compatibility Policy on what constitutes a "minor expansion." If the request will qualify under this category, then individual appropriate use and compatibility determinations must be prepared referencing the required mitigation and stipulations to achieve compatibility. A Special Use Permit with site restoration requirements, and, at a minimum, a completed NEPA Compliance Checklist (Exhibit II-8) should also be prepared. A formal ROW permit will also probably be needed. Check with your ROW specialist in the Regional Realty Office for guidance, and also review the guidelines found in Chapter XIII.

F. If the request will not qualify under either of the two previously-discussed scenarios (paragraphs D and E above), next consider if the project can be accomplished within the established threshold levels for protected wetland and upland habitats. If not, then managers must consider an exchange option according to the criteria found in Exhibit XV-1.

G. If the request will result in an impact to easement interests at or below threshold levels, then managers must address Appropriate Use and Compatibility with either one of the Programmatic CD's (if the circumstances fit the situation) or an individual CD. Other compliance requirements must also be satisfied (NEPA, CR, Endangered Species, etc).

If the proposal is determined to be not compatible because of secondary or associated impacts, then the request must be denied. It is expected that secondary or associated impacts will be evident much earlier in the process. Rarely will a proposal pass all the screens and filters, *and then* be denied at this level. When secondary impacts that will render a proposal not compatible are known, there is no need to proceed through the flowchart since the use will not be allowed anyway. Furthermore, because an exchange of easement rights requires the preparation of a Biological Analysis wherein the manager must ensure no impacts to critical habitat or special emphasis species (basically secondary or associated impacts), these impacts would preclude an exchange as well. These proposals must be denied. Section B-7 below has more information on Associated Impacts.

If a request passes all the previous filters and decision points, but is not compatible because it cannot meet the higher standard required of economic uses (shown as "29.1 criteria" on the flowchart, meaning related to the economic use discussion in 50 CFR 29.1), then an exchange may likely be the most logical choice.

H. If the proposal is determined to be compatible, then managers will issue a permit or a letter of authorization. In addition, a right-of-way permit from the Regional Office may be required. See Chapter XIII for guidance on ROW permits.

Requesters which are approved under this category will be required to replace the values of any resulting "below-threshold" level of impact which may result from authorizing the

activity. See the earlier discussion and flowchart on the replacement of lost values for more guidance.

6. Other Requests:

Other requests are those which do not fit logically within either the Health and Safety category, or the Public Service Request category. (Orange-colored Blocks of the Flowchart).

The Region 6 easement program has the unique opportunity to protect functioning grassland and wetland landscapes; mainly because these landscapes still exist at levels capable of supporting populations of migratory birds. Biologists have recognized that to conserve migratory bird populations, the protection of landscapes which attract breeding birds to a suitable breeding area is more effective than attempting to modify landscapes surrounding isolated habitat patches. This is an extremely important point which cannot be overstated. The Region 6 wetland and grassland easement programs protect ***landscapes*** in the Prairie Pothole Region (PPR) states. The protection of landscapes accomplishes the primary goal of the Small Wetlands Acquisition Program, which is to provide for the long-term viability of the breeding waterfowl population and production through the preservation of existing habitats.

The National Wildlife Refuge System Improvement Act (NWRSIA) provides clear direction to the Secretary, and thus to the Service, for administering the Refuge System, of which easements are a part. Specifically, the NWRSIA states "…the Secretary shall…(B) ensure that the ***biological integrity, diversity, and environmental health of the System*** are maintained…(C) plan and direct the ***continued growth of the System*** in a manner that is best designed to accomplish the mission of the System, to contribute to the ***conservation of the ecosystems*** of the United States, to complement efforts of the States and other Federal agencies to conserve fish and wildlife and their habitats, and to ***increase support for the System and participation from conservation partners and the public***…(E) ensure effective coordination, interaction, and cooperation with ***owners of land adjoining refuges*** and the fish and wildlife agency of the States in which the units of the System are located…" (emphasis added).

Biological Integrity, Diversity, and Environmental Health

The Biological Integrity, Diversity, and Environmental Health Policy (601 FW 3) describes the relationships among refuge purposes, System mission (both considered in determining compatibility of a proposed use), and maintaining biological integrity, diversity, and environmental health. Specifically, "Biological integrity, diversity, and environmental health can be described at various landscape scales from refuge to ecosystem, national, and international. Each landscape scale has a measure of biological integrity, diversity, and environmental health dependent on how the existing habitats, ecosystem processes, and wildlife populations have been altered in comparison to historic conditions. Levels of biological integrity, diversity, and environmental health vary among refuges, and often within refuges over time. Individual refuges contribute to biological integrity, diversity, and environmental health at

larger landscape scales, especially when they support populations and habitats that have been lost at an ecosystem, national, or even international scale. In pursuit of refuge purposes, ***individual refuges may at times compromise elements of biological integrity, diversity, and environmental health at the refuge scale in support of those components at larger landscape scales*** (emphasis added). When evaluating the appropriate management direction for refuges, refuge managers will consider their refuges' contribution to biological integrity, diversity, and environmental health at multiple landscape scales."

Continued Growth of the System

To date, the Service has protected approximately 2.7 million acres in the PPR of Region 6 with easements. The National Wildlife Refuge System Administration Act (NWRSAA), as amended in 1997, directs the Secretary to "plan and direct the continued growth of the System in a manner that is best designed to…contribute to the conservation of ***ecosystems***…" (emphasis added). To this end, the Service has identified a need to conserve an additional 10 million acres of grasslands and 1.8 million acres of wetlands in the PPR; the amount of ecosystem conservation needed to support current waterfowl population levels. The vehicle to deliver this conservation needs to be ecologically effective, socially acceptable, and economically feasible. Easements represent the only realistic option for achieving the conservation goals while satisfying these criteria.

The conservation of grassland/wetland ecosystems in the PPR requires an understanding that these habitats exist in a working landscape where the human economic environment is centered on farming and ranching. In addition to requiring the growth of the Refuge System in a manner best designed to conserve ecosystems, the NWRSAA calls on the Secretary to "…ensure effective coordination, interaction, and cooperation with owners of land adjoining refuges…" Since the Service only purchases easements from willing sellers, the continued growth of the Refuge System in order to achieve the conservation of the grassland ecosystem (as mandated by the Act) requires effective coordination, interaction, and cooperation with owners of land adjoining refuges. On easements, the coordination and cooperation takes place on lands where the Service has acquired a partial interest and the human economic environment is centered on farming and ranching. Landowners on working landscapes will have requests for uses that include development of easement lands for legitimate needs that support their farming and/or ranching livelihood. In limited cases, requests for development of easement lands related to on-going management of grassland resources need to be considered.

North Dakota has approximately 30,000 family farms and ranches; South Dakota has nearly 35,000. More than 39 million acres in North Dakota, and nearly 44 million in South Dakota – approximately 90% of the states' total land area – are in farms and ranches. It is abundantly clear the Service can contribute to the conservation of the grassland/wetland ecosystem of the PPR by ensuring the continued growth of the Refuge System through effective coordination, interaction and cooperation with farmers and ranchers. However, the same cannot be said about

all categories of landowners. Residents in rural subdivisions, hobby farmers, or those who purchase/own lands primarily for recreational pursuits cannot collectively contribute to the conservation of the landscape as can the agriculture community. Therefore, requests for structural additions from other than an agriculture-related landowners do not meet the requirements set forth by 601 FW 3 ("…*individual refuges may at times compromise elements of biological integrity, diversity, and environmental health at the refuge scale in support of those components at larger landscape scales…").*

The NWRSAA, as amended, clearly allows the refuge manager to permit a use of easement lands, even though that use would otherwise violate the provisions of the easement, as long as the use does not materially interfere with or detract from the purpose of the easement or the mission of the System. The basis for this determination is the manager's sound professional judgment based on his experience and knowledge of the easement area and proximate landscape. Notwithstanding the fact that incompatible uses cannot be allowed, the NWRSAA requires the manager to strive for effective cooperation, coordination, and interaction with owners of easement properties; and uses that contribute to the biological integrity, diversity, and environmental health of the Prairie Pothole *landscape* may be considered even though they may compromise these same elements at the local scale. In other words, the only requests that can be considered to contribute to the biological integrity, diversity and environmental health of the landscape while compromising those same elements on the easement, are those that also ensure the continued growth of the System so that the prairie pothole ecosystem can be conserved.

A. Is the proposal in support of a working landscape management activity?

Specifically,

1. Does the proposal relate to the management/operation of the easement interest in a manner which supports the biological integrity, diversity, and environmental health of the easement?

AND

2. Does the proposal adhere to the spirit of cooperation and coordination with the owner of the land in a manner which supports biological integrity, diversity, and environmental health of the prairie pothole landscape by fostering continued broad support of the easement program?

In considering #1: For example, is the request for a facility on the easement which will improve the landowner's ability to better manage the habitat? Examples might include a calving shed on a grassland easement, or an equipment storage building to house spray equipment. Farmstead expansion may be considered if the expansion can be construed as

cooperation with the landowner in a manner which supports the accomplishment of the System's mission. Requests that are not related to the management of the easement lands for the benefit of migratory birds will not be allowed. Examples include the construction of hunting lodges, convenience stores, or houses where those structures are not directly tied to the management of the land.

In considering #2: In the foreseeable future working farms and ranches will continue to be where the Service adds to the habitat base. Therefore, it is only through effective cooperation, coordination, and interaction with these landowners that conservation of the prairie pothole landscape will be achieved. There are cases where uses requested by these landowners can only be met on habitat protected by conservation easements. Examples may include building a house for a son or daughter involved in the operation, building or enlarging a livestock facility or a grain handling operation. These types of requests are integral to working landscape management. Uses that contribute to the biological integrity, diversity, and environmental health of the prairie pothole *landscape* may be considered even though they may compromise these same elements at the local scale. Conversely, requests from landowners and prospective buyers that are not associated with the working agricultural landscape have more flexibility and options to for their development or use on land that is not encumbered by a Service easement. These types of development or use requests on Service easements do not contribute to fulfilling the easement program purpose and Refuge system mission and are not appropriate.

The Service has approached farmstead expansion types of requests in a variety of ways in the past. The 1992 and 1997 revised Administration and Enforcement Guidelines and Procedures for Perpetual Grassland Easements and 1998 Grassland Easement Administration - 5 Percent Rule memo authorized the development of 5% or 20 acres (whichever was less) per section on grassland easement tracts. This policy changed again with the release of the 2005 Administration and Enforcement Manual, which under certain conditions, authorized development of .4 acres of wetland not to exceed 25% of a basin, and/or 8 acres of easement protected upland.

If there is historical file documentation that authorizes an easement development request based on past policy, or a landowner is specific about their understanding that 5 % of a grassland easement could be developed on an easement that was purchased between 1992 and 2005, those requests should be honored.

Potentially-authorized impacts to wetlands must be necessary to implement an operational improvement or to accommodate a request in support of the owner's operation. Requests to impact protected wetlands strictly for the gain in crop production, etc. will obviously be denied.

B. Next, ascertain, and the requester must be able to demonstrate, that there are no **reasonable alternatives** off easement property which will accommodate the requestor's need. For example, can the activity be accomplished on non-easement property without causing undue economic hardship, or has there been a past precedent for an alternative being proposed and used? It is the responsibility of the wetland manager to determine if the request can be met on land where the Service does not have an easement interest. Alternatives must be thoroughly explored with the goal of developing an acceptable alternative that will not impact the Service's easement interest. If the landowner's needs can be met on non-easement property such as adjacent cropland, then filling of a protected wetland for a grain bin or digging up protected grassland to plant a food plot, while maybe preferable to a landowner, should not be authorized. As is the case with the other flowchart categories, the wetland manager should always try to determine if the requester can work around the easement interest. In some cases the project can be modified, the change is not significant, and the easement interest is not affected. If the development can take place on non-easement lands there is no need for further consultation.

As stated earlier, determining a reasonable alternative is a collaborative process with the requestor. Often, during this discussion cumulative impacts may be reduced, but not eliminated. For example, during discussions regarding a wind development site a manager may reduce the proposed miles of service roads and the number of towers on grassland easements, or during discussions on a pipeline project a manger may reduce the number of easement tract crossings or successfully route the line around individual easement wetlands. At a point in these discussions a manager can develop a feel for what may be a reasonable alternative. The reasonable alternative may include some easement impacts, but they have been reduced and minimized through discussion with a requestor. This discussion also helps the manager develop a feel for the nature of the request and whether it fits the category of essential need.

If there seems to be no reasonable alternative to the proposed action **on** easement property, then move down to the next block. If there are reasonable alternatives, then the proposal must be denied.

C. This area requires the proposal to be an **essential** need. Is it necessary to the operation of the farm, or an essential need for operational viability? Convenience requests are generally not essential. The proposal must meet a level of importance beyond mere convenience and be absolutely necessary or indispensable. If the proposal is deemed to be not essential or absolutely necessary, then it must be denied.

As an example, a landowner needing to build a vehicle and equipment crossing through a protected wetland to gain access to a previously inaccessible piece of property should be evaluated as follows: If the inaccessible land is 2 acres, then it probably not an essential need, but if it is 60 or 70 acres, then it may be essential that the landowner be able to access this land. Proposals related to the need to make substantial economic improvements in farm and ranch operations will likely be considered essential.

D. Can the proposal be accomplished with only temporary and minor impacts?

If the proposal can be accomplished with only a temporary impact to Service interests, then issue a Special Use Permit with needed stipulations and conditions. Managers will also need to address Appropriate Use, Compatibility, and NEPA Compliance. Examples of the NEPA Compliance Checklist are found in Exhibit II-8. Also consult your Regional Cultural Resources staff. Managers need to remember that if the activity qualifies as an "economic use," then the CD must be written to the higher standard of "contributing to the achievement of the mission and the purposes of the refuge area."

E. If the proposal will result in an impact that is not temporary and minor, then next consider whether the resulting impact can be completed within the designated threshold levels as described in Exhibits XII-4a and 4b.

F. If the resulting impacts are at or BELOW threshold levels, then managers must address Appropriate Use and Compatibility, with either a programmatic (if they apply) or with an individual CD. An individual CD will need to be approved at the regional level before proceeding with the request. Also consult the General NEPA guidance found in Chapter II to evaluate the proposal under these standards. Issue a Letter of Authorization.

If the proposal is determined to be not compatible because of secondary or associated impacts, then the request must be denied. It is expected that secondary or associated impacts will be evident much earlier in the process. Rarely will a proposal pass all the screens and filters, *and then* be denied at this level. When secondary impacts that will render a proposal not compatible are known, there is no need to proceed through the flowchart since the use will not be allowed anyway. Furthermore, because an exchange of easement rights requires the preparation of a Biological Analysis wherein the manager must ensure no impacts to critical habitat or special emphasis species (basically secondary or associated impacts), these impacts would preclude an exchange as well. These proposals must be denied. Section B-7 below has more information on Associated Impacts.

If a request passes all the previous filters and decision points, but is not compatible because it cannot meet the higher standard required of economic uses (shown as "29.1 criteria" on the flowchart, meaning related to the economic use discussion in 50 CFR 29.1), then an exchange may likely be the most logical choice.

In some cases, landowners may not be comfortable with just a Letter of Authorization from the wetlands manager. If the landowner will not accept a Letter of Authorization, and requests that the below-threshold impacted area be exchanged, then his request can be accommodated. However, he will have to wait until Realty can schedule a review of the involved properties, and he will have to pay for the released interests, or offer an exchange acceptable to the wetlands manager.

G. If the proposal meets all the criteria listed in the flowchart (an approved expansion or related to a bona-fide farm/ranch operation, no reasonable alternatives, is essential), and the level of impact is ABOVE the approved threshold levels, then the request can be

considered for an exchange. Follow the procedure outlined in Exhibit XV-1, including the "replacement of habitat value" concept. A biological analysis of the property to be exchanged must be completed as part of the exchange proposal.

Although a CD will not be required when an exchange of interests is used, compliance with NEPA must be addressed and a biological analysis of the property to be relinquished must be completed. See General Guidance in Chapter II for NEPA guidance.

7. <u>ASSOCIATED or SECONDARY IMPACTS</u>:

Associated Impacts are defined as impacts not directly caused by the proposed activity, but which may result because of the proposed activity. When managers evaluate potential impacts under the compatibility process, managers use their "sound professional judgment" to determine whether direct impacts are compatible or not. Managers must also evaluate whether allowing a proposed project to go forward will result in additional impacts occurring to resources intended to be protected under these preservation programs (See Exhibit II-3 for Easement Program Goals).

The 2000 Compatibility Policy states that managers must consider not only direct impacts of a use, but also the indirect impacts associated with the use and the cumulative impacts of the use when conducted in conjunction with other existing or planned uses of the refuge area. Some potential associated impacts can be resolved through stipulations; others may not be able to be resolved and will render the proposal "Not Authorized" if the documented associated impacts cannot be resolved with stipulations.

As the flowchart indicates, every effort should be made to resolve the issue/problem with temporary measures, whether an emergency action or not. If the issue cannot be resolved satisfactorily with temporary measures, and the resulting impact is above the threshold levels, then an exchange may be necessary. An exchange of rights is virtually the last option to consider. All other options to resolve the issue must be evaluated before an exchange is considered, including avoiding the easement property all together.

EA Appendix B

Public Scoping Report

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

Methods for Comment Collection and Analysis

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.

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.

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 8 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.

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
P.O. Box 25486, DFC
Denver, Colorado 80225
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
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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.

-FWS-

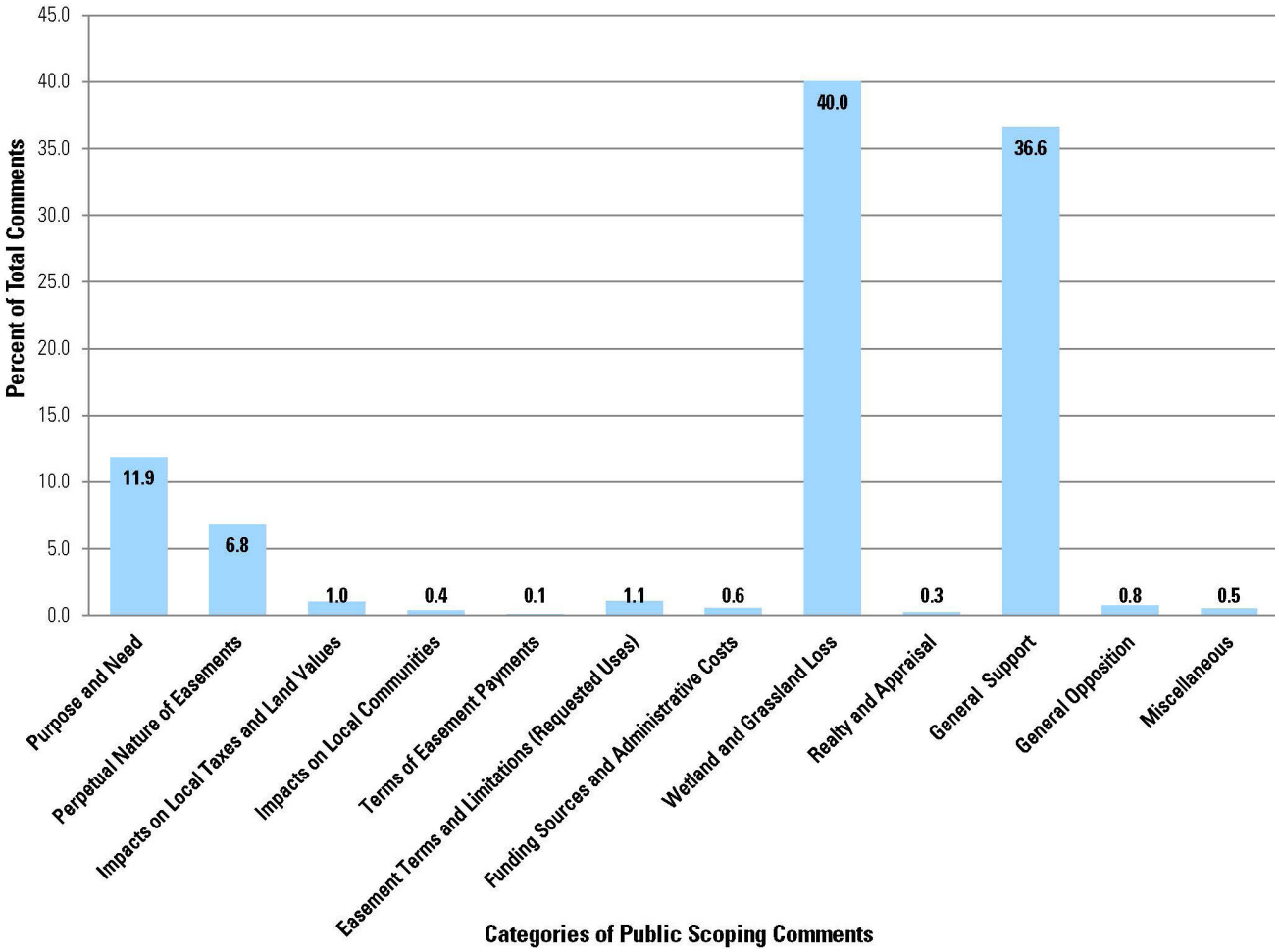

Figure 8. Graph of percentage of public scoping comments, by category, about the proposed Dakota Grassland Conservation Area.

- 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.
- 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

Summary of Future Actions

Although the formal scoping period is complete, another opportunity for official public involvement will be available during the 30-day public comment period on this EA and the associated draft LPP. At any time during the NEPA process, the Service welcomes comments from the public, which can be directed to the following:

- Project email: dgca_comments@fws.gov

- Nick Kaczor, Planning Team Leader
  Attn: Proposed DGCA
  Division of Refuge Planning
  U.S. Fish and Wildlife Service
  134 Union Boulevard, Suite 300
  Lakewood, Colorado 80228
  Phone: 303/236 4387
  Fax: 303/236 4792

- Lloyd Jones, Refuge Manager
  Attn: Proposed DGCA
  Audubon National Wildlife Refuge Complex
  3275 11th Street Northwest
  Coleharbor, North Dakota 58531
  Phone: 701/442 5474
  Fax: 701/442 5546

EA Appendix C

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Barry Williams	Archeologist	USFWS, Region 6, National Wildlife Refuge System, Bismarck, North Dakota

EA Appendix D

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*

COMMON NAME	SCIENTIFIC NAME
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*

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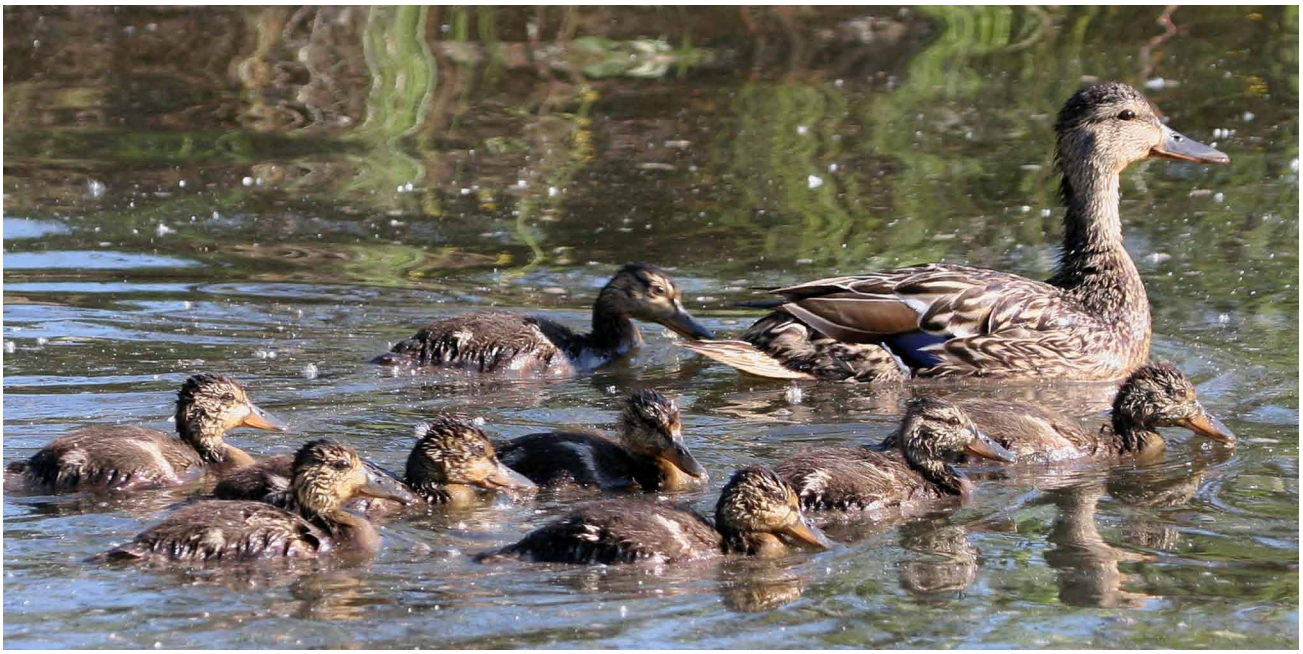
Draft LPP Chapter 1—Introduction and Project Description



Donna Dewhurst / USFWS

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

This draft LPP (land protection plan) provides a description of the operations and management of the proposed DGCA (Dakota Grassland Conservation Area)—a conservation easement program—as outlined in the proposed action of the EA (environmental assessment) in the first part of this volume. The Service (U.S. Fish and Wildlife Service) developed the draft LPP during the planning process to provide a general understanding of the proposed project to local landowners, governmental agencies, and the interested public. The purpose of the draft LPP is to present an overview of the Service's proposed management approach to wildlife and associated habitats, public uses, interagency coordination, public outreach, and other operational needs.

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 HAPET (Habitat and Population Evaluation Team), located in Bismarck, North Dakota, developed the Service's "Conservation Strategy" using landscape computer modeling combined with decades of biological information from scientific studies of the spatial and temporal needs of nesting ducks in the PPR (Prairie Pothole Region). 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 to support the current levels of breeding ducks. The proposed DGCA project represents an element of the Conservation Strategy.

The proposed DGCA would cover an expanse of wetland and grassland in North Dakota and South Dakota that lies north and east of the Missouri River, but would not include the existing Dakota Tallgrass Prairie Wildlife Management Area, a grassland easement program approved in 2000 (figure A). However, the proposed DGCA would include the existing North Dakota Wildlife Management Area. The total area within the proposed DGCA boundary is 29.6 million acres or 46,267 square miles.

The Service would carry out this proposal similar to the Service's SWAP (Small Wetlands Acquisition Program), using monies from the sale of Federal Duck Stamps, the North American Wetlands Conservation Act, and donations from conservation groups. In addition, the Service would use money from the LWCF (Land and Water Conservation Fund) to acquire wetland and grassland easements from willing sellers. The Service would identify potential easements in the proposed project area by using the SWAP evaluation criteria for wetland and grassland, as described in LPP chapter 2.

Priorities and Objectives

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 A, 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 proposed 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 proposed 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.

Based on anticipated levels of landowner participation, the objectives of the proposed DGCA project are to protect 240,000 acres of wetland and 1.7 million acres of critical grassland habitat. The Service plans to buy or receive donated wetland and grassland easements on these identified areas within the proposed project boundaries. These wetland and grassland conservation easements would connect and expand existing lands under conservation protection.

Ecosystem Management and Landscape Conservation

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

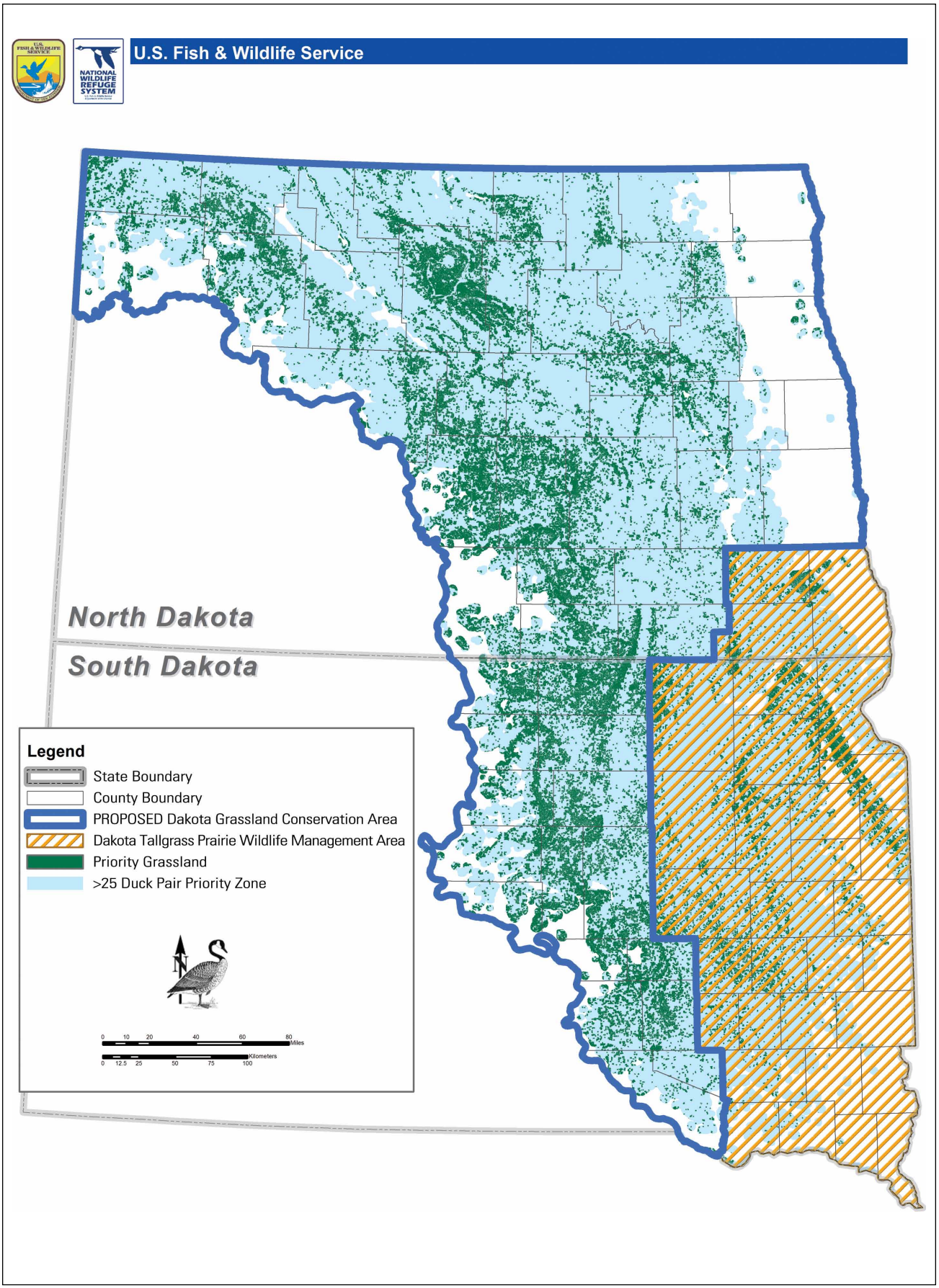


Figure A. Map of the boundary of the proposed Dakota Grassland Conservation Area.

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 would 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 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 (strategic habitat conservation) to ensure effective conservation. SHC entails strategic biological planning and conservation design, integrated conservation delivery, monitoring, and research at ecoregional scales (figure B). Some elements of SHC have been addressed in migratory bird management plans in the PPR.

Strategic Biological Planning

The PPJV (Prairie Pothole Joint Venture), Partners in Flight, and The Nature Conservancy have identified priority species for the PPR (table A): 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 proposed 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 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

The Service would use the grassland flowchart, along with the wetland flowchart (refer to chapter 2, "Wetland and Grassland Easements") from the "Administrative and Enforcement Procedures of Easements within the Prairie Pothole States Manual" (Easement Manual) (USFWS 2011a). The criteria in these flowcharts would help Service staff prioritize areas for protection based on spatial models for waterfowl, threatened and endangered species, grassland birds, shorebirds, and other waterbirds (USFWS 2011a).

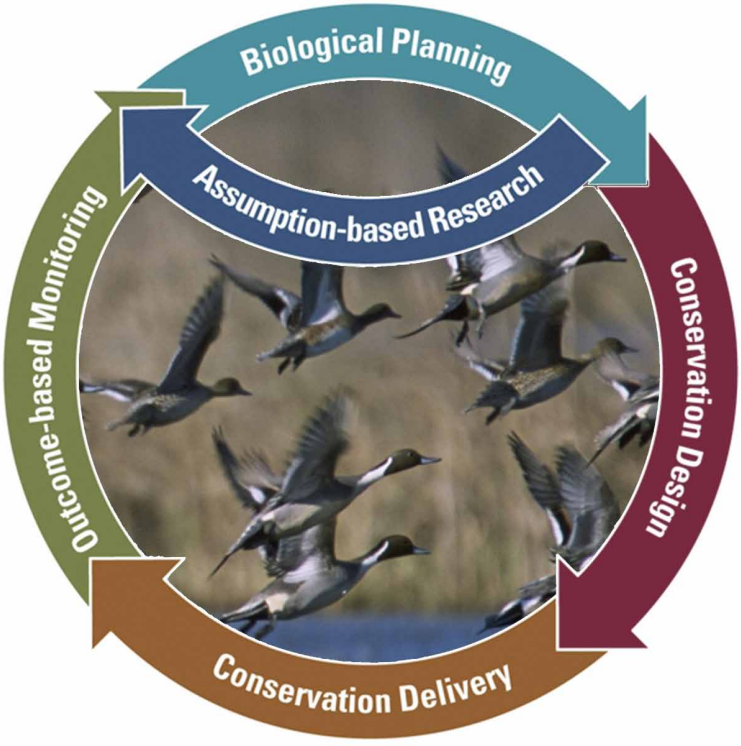


Figure B. Graphic of the elements of strategic habitat conservation.

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.

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

Table A. 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 A. 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).*

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.

The detailed EA and draft LPP provide 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 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 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.

Threats to and Status of the Resources

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 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 proposed 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 proposed 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.

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 proposed DGCA project would 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 proposed 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 proposed DGCA. At current grassland conversion rates, one-half of the remaining native prairie would be destroyed in only 34 years.

Draft LPP Chapter 2—Proposed Action and Alternatives

The Service would establish 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 LPP chapter 1, figure A). Within the proposed project boundary, the Service would strategically identify and acquire from willing sellers the identified wetland and grassland conservation easements on privately owned lands. Proposed project objectives would call for protection of up to 240,000 acres of wetland and 1.7 million acres of grassland.

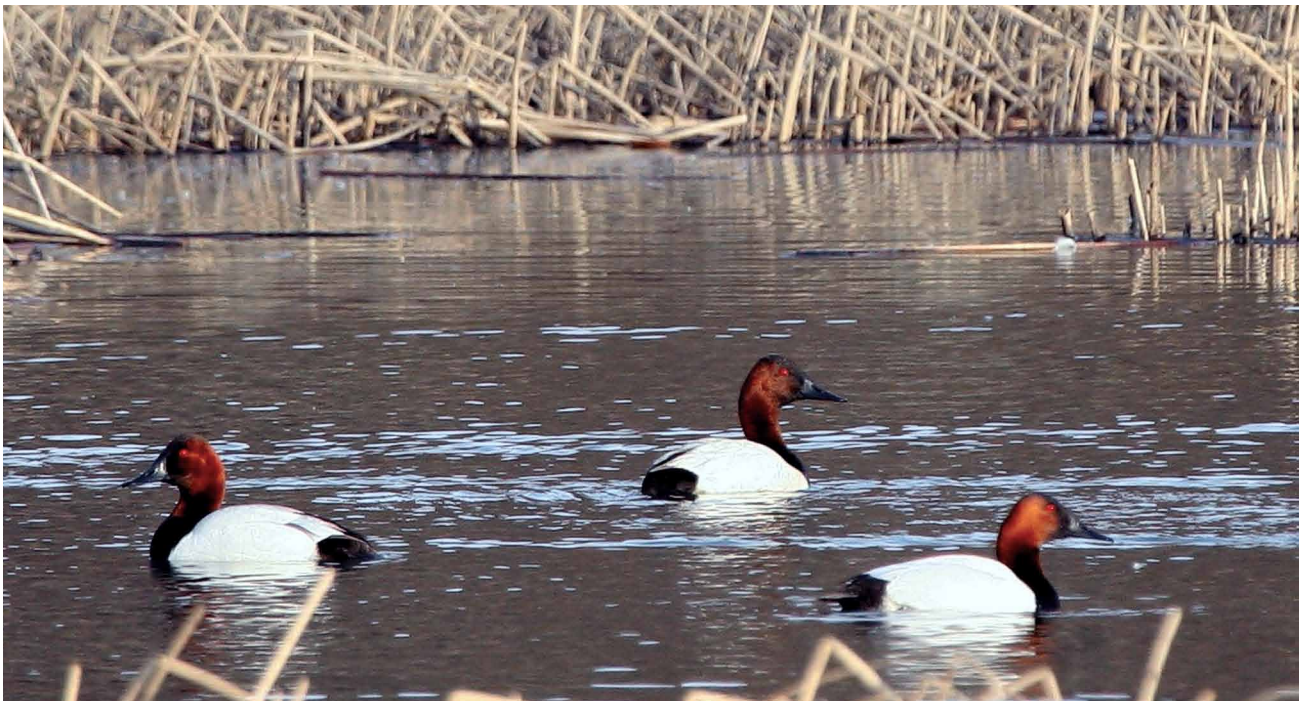
This proposal would allow the purchase of critical wetland and grassland easements using LWCF money as an alternative funding source. In addition, the Service would continue to use Federal Duck Stamp money as appropriate and available.

The Service would base 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.

Easement Terms and Requirements

Easements bought under the authority of the DGCA, as well as those acquired to date, would be administered according to policy and procedures in chapter 12 of the Easement Manual, which is in appendix A of the EA (USFWS 2011a). Following the policy and procedures in the manual, the Service would evaluate and administer all requests for uses or activities restricted by an easement (for example, agricultural, utility, commercial, or industrial uses). 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.

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.



Donna Dewhurst/USFWS

Canvasback drakes rest in a prairie wetland.

The easement contract would 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 would be prohibited. 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.

USFWS

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

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 in any way, and haying would be permitted after July 15 each year.

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.

Project Costs

The per-acre cost for the wetland and grassland easements in the proposed DGCA would 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

- 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 would be about $588 million. The entire proposed 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 would be divided among existing resources and would 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 proposed project are expected to be minimal because enforcement procedures would be similar and performed in concert with other administrative efforts.

Protection Alternatives

The Service considered the following eight alternatives when developing the proposed DGCA for wetland and grassland conservation easements:

- No action
- Voluntary landowner zoning
- County zoning
- Acquisition or management by others
- Short-term easements
- Expansion of the project
- Fee-title acquisition
- Wetland and grassland easements (proposed action)

No Action

Habitat protection would continue at current levels under SWAP, with monies from 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 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 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. The Service found the consequences of inaction unacceptable, which led to development of the below proposed action to establish the DGCA conservation easement program.

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).

- 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) to protect and conserve 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 program 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 chapter 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.

Wetland and Grassland Easements (Proposed Action)

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 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 proposal would allow the purchase of critical wetland and grassland easements using LWCF as an alternative 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 Service's proposal to conserve up to 240,000 acres of wetlands and 1.7 million acres of grassland would augment the efforts of other conservation agencies and groups.

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 would 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 proposed 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 proposed project area:

USFWS

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

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 proposed 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 proposed 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. Similarly, HAPET has identified critical habitat for endangered species. When models for several species are combined and overlapped, it results in a useful tool for prioritization. Biologists and realty specialists use this modeling tool 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 C and D 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.

Acquisition Funding Alternatives

The Service proposes to acquire wetland and grassland easements in the proposed DGCA principally with LWCF money, although money from several sources could be used for the acquisition and management of wetland and grassland easements.

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 would use the process in place for acquiring easements with Federal Duck Stamp money.

SWAP

The Service would continue SWAP acquisitions and use Federal Duck Stamp and NAWCA monies as appropriate and available. However, interest in easements within the proposed project area far exceeds the money available. There is an urgent need for the proposed DGCA due to the imminent and ongoing

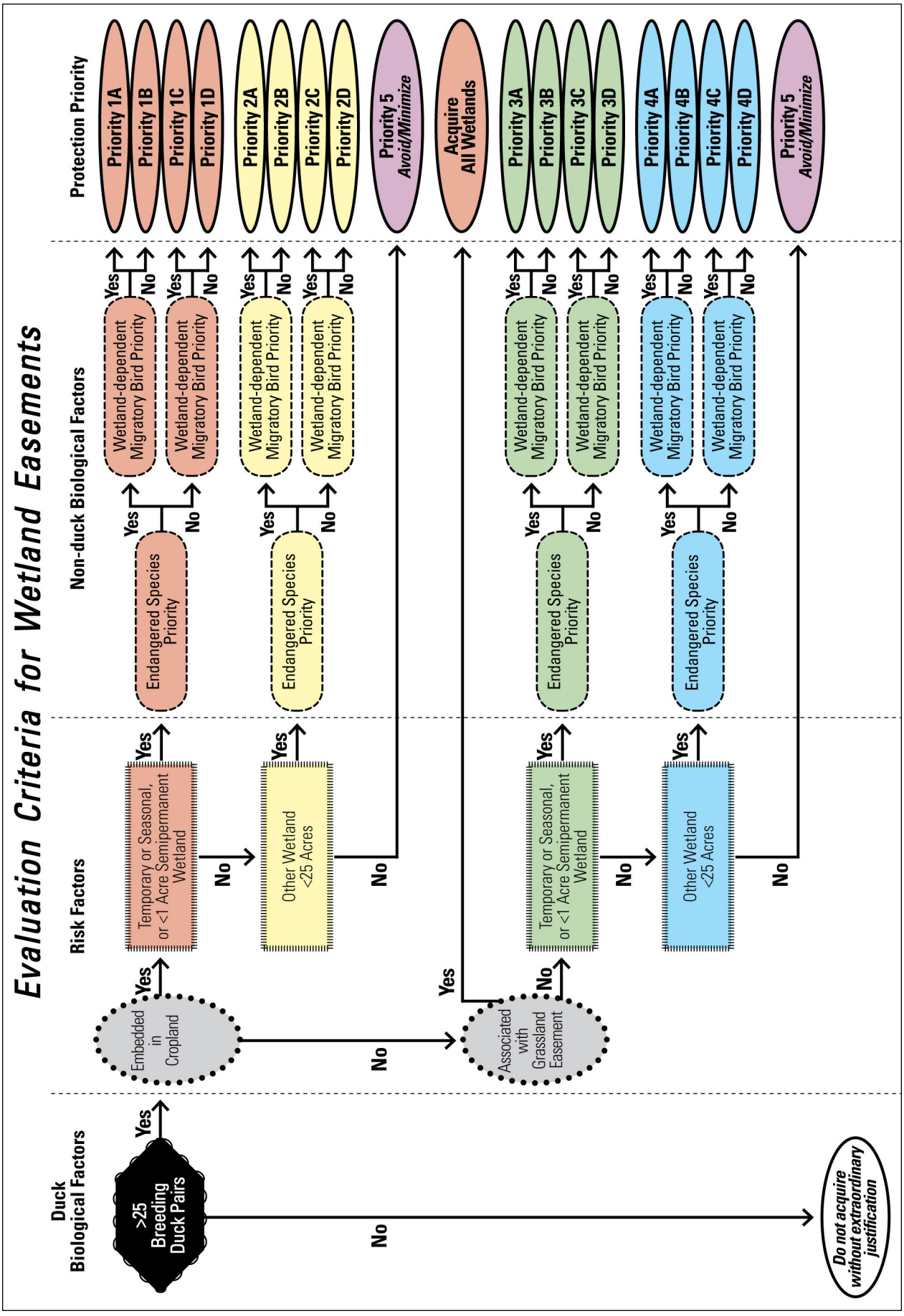


Figure C. Chart of evaluation criteria for acquiring wetland conservation easements.

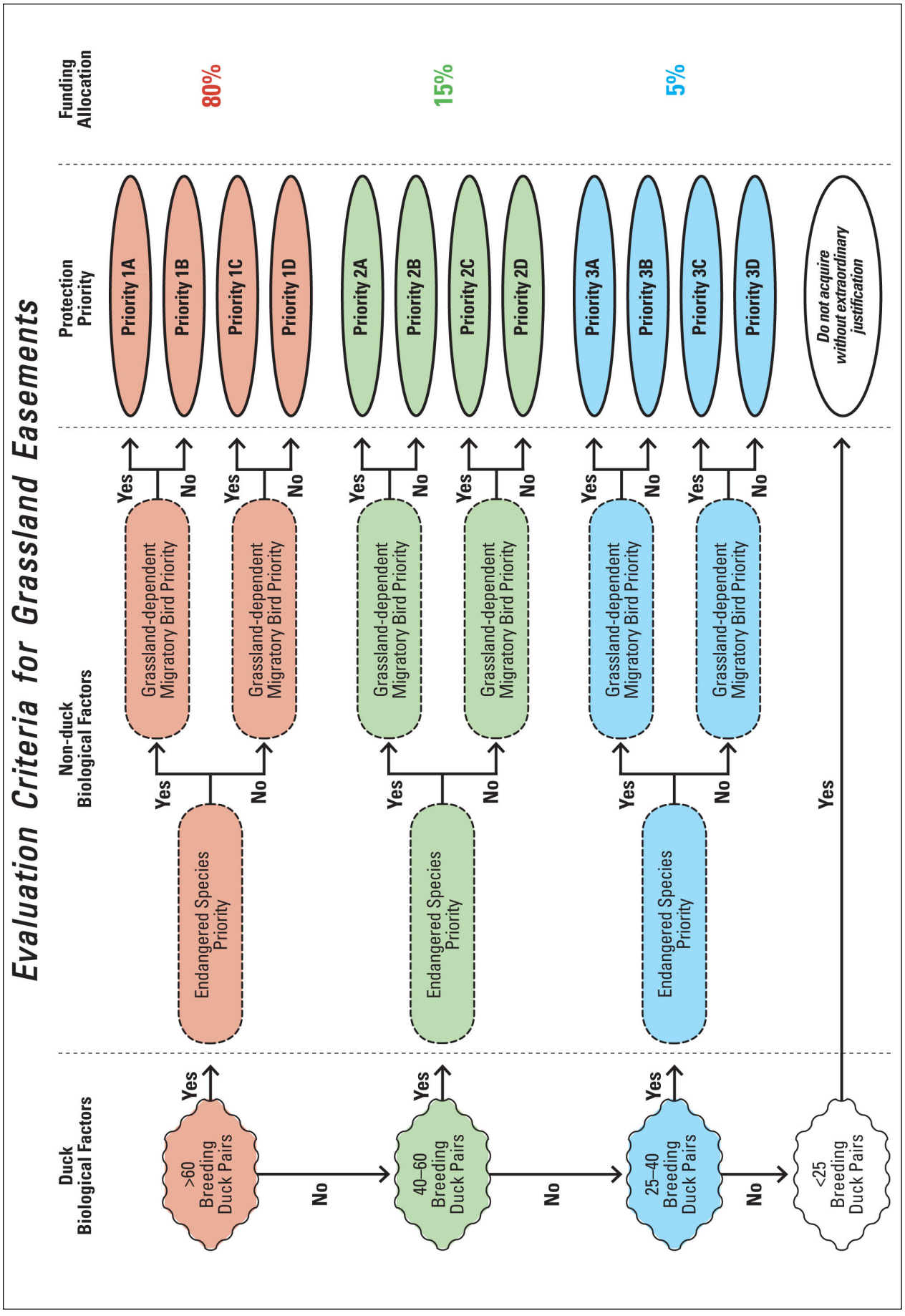


Figure D. Chart of evaluation criteria for acquiring grassland conservation easements.

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 proposed 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 would consider accepting voluntary donations of easements.

Draft LPP Chapter 3—Coordination

The proposal and associated EA addresses the Service's protection of wetland and grassland habitats—primarily through acquisition of wetland and grassland conservation easements—for management as part of the National Wildlife Refuge System. The Service has spent time discussing this proposed DGCA project with landowners; conservation organizations; Federal, State and county governments; 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 has contacted local government officials, other public agencies, sportsmen and women's groups, and conservation groups. The Service will be inviting its partners and the public to additional public meetings after the release of the EA and this draft LPP.

James C. Leupold / USFWS

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

Sociocultural Considerations

The human population is generally sparse and towns are widely scattered in the proposed 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 proposed 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 proposed project is an easement program, the land would remain in private ownership; therefore, taxes paid to a county by the landowner would not be affected. Over the short-term, money paid by the Service for the wetland or grassland easement would become another source of income for the landowner and, logically, a part of those dollars likely would 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 proposed project area but, rather, would 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.