

**Environmental Assessment for a Proposed Land Exchange
between the U.S. Fish and Wildlife Service and the South Dakota
Game, Fish and Parks Department**

July, 2010

Prepared by
U.S. Fish and Wildlife Service
Waubay National Wildlife Refuge Complex
44401 134A Street
Waubay, SD 57273
605/947-4521

Chapter 1 – Purpose of and Need for Action

The U.S. Fish and Wildlife Service (Service) is the principal Federal agency with the responsibility for conserving, protecting, and enhancing fish and wildlife and plants and their habitats for the continuing benefit of the American people. The Service manages the 150-million-acre National Wildlife Refuge System (System) which encompasses more than 552 national wildlife refuges, thousands of small wetlands and other special management areas. It also operates 70 national fish hatcheries, 64 fishery resource offices, and 78 ecological services field stations. The agency enforces Federal wildlife laws, administers the Endangered Species Act, manages migratory bird populations, restores nationally significant fisheries, conserves and restores wildlife habitat such as wetlands, and helps foreign governments with their conservation efforts. It also oversees the Federal Aid program that distributes hundreds of millions of dollars in excise taxes on fishing and hunting equipment to state fish and wildlife agencies.

National wildlife refuges are established for a particular purpose. Formal establishment is generally based upon a statute or executive order that specifies a purpose for that refuge. Waubay National Wildlife Refuge (NWR) was established for the following purposes:

"... as a refuge and breeding ground for migratory birds and other wildlife: ..." Executive Order 7245, dated Dec. 10, 1935.

Sand Lake NWR was established for the following purposes:

"... as a refuge and breeding ground for migratory birds and other wild life: ..." Executive Order 7169, dated Sept. 4, 1935

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

"... suitable for (1) incidental fish and wildlife-oriented recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species ..." 16 U.S.C. § 460k-1 "... the Secretary ... may accept and use ... real ... property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors ..." 16 U.S.C. § 460k-2 (Refuge Recreation Act (16 U.S.C. § 460k-460k-4), as amended).

"... for the development, advancement, management, conservation, and protection of fish and wildlife resources ..." 16 U.S.C. § 742f(a)(4) "... for the benefit of the United States Fish and Wildlife Service, in performing its activities and services. Such acceptance may be subject to the terms of any restrictive or affirmative covenant, or condition of servitude ..." 16 U.S.C. § 742f(b)(1) (Fish and Wildlife Act of 1956)

"... conservation, management, and ... restoration of the fish, wildlife, and plant resources and

their habitats ... for the benefit of present and future generations of Americans..." 16 U.S.C. § 668dd(a)(2) (National Wildlife Refuge System Administration Act)

When Congress amended the Duck Stamp Act in 1958, it authorized the (Service) to use money from the sale of the Federal Duck Stamp to begin buying small wetland areas to preserve waterfowl habitat. The first waterfowl production area (WPA) purchased with Duck Stamp money was the 160-acre McCarlson WPA in Day County, South Dakota. Since that humble start to the Small Wetlands Acquisition Program in 1959, the Service has acquired over 700,000 acres of Waterfowl Production Areas and another 2.5 million acres of easements protecting wetlands and grasslands in the Prairie Pothole Region of the Dakotas, Minnesota, and eastern Montana. Waterfowl Production Areas range in size from a few acres to over a thousand acres and were purchased with the goal to protect and enhance waterfowl breeding habitat. In northeast South Dakota, Sand Lake Wetland Management District (WMD) and Waubay Wetland Management District comprise the nation's two largest WMDs and manage collectively, 83,397 acres of WPAs, and 775,000 acres of easement lands.

Proposed Action

The Service is proposing to exchange approximately 3,736 acres of Waterfowl Production Areas to the State of South Dakota Game, Fish & Parks (SDGFP) for approximately 3,780 acres of Game Production Areas (GPA) in northeastern South Dakota. The proposed exchange would consolidate land holdings, maximize land management efficiency, and improve habitat conditions for waterfowl on land holdings for both federal and state wildlife land management agencies.

As the Service had increased its land holdings, there have been growth pains associated with staffing and budgets, and the desire to manage prime waterfowl habitat in an efficient manner. One proposal to increase management efficiency by saving personnel time, equipment usage and budgeted funding of both land management agencies has been to condense land holdings. The idea would be to trade small parcels of land to the bigger landowner where state/federal lands adjoin each other. About 25 Waterfowl Production Areas would be exchanged leaving a similar land base acreage, but with bigger units. Management efficiency could increase by:

- Decreasing per acre costs for management, enforcement and planning
- Decreasing per acre costs for management treatments (i.e. prescribed burning)
- Less boundary fences to maintain
- Less boundary signage to maintain
- Less hauling and set-up time for noxious weed control

Condensing public land holdings should decrease confusion for the visiting public faced with different boundary signs on areas they perceive as one unit of public land.

Management goals of the U.S. Fish and Wildlife Service and the South Dakota Game, Fish and Parks Department (SDGFP), in northeastern South Dakota, do not differ greatly. Service goals are to acquire and maintain prime habitat for trust species, including waterfowl, but SDGFP goals often include the desire to provide habitat for other game species including pheasants,

sharp-tailed grouse, and white-tailed deer. SDGFP management of grasslands is usually compatible with Service goals except for small areas planted to trees or food plots that benefit resident game species. These management techniques are a minor activity, especially in northeastern South Dakota. Most SDGFP acquisition in the northeastern part of the state has focused on preserving waterfowl habitat.

Lands targeted for exchange have been proposed based on their suitability as waterfowl habitat, from the Service’s viewpoint. Conversely, Service lands targeted for exchange to GFP have often been less desirable as waterfowl habitat, but may be excellent fish, deer, or pheasant habitat. For the most part, exchanges have been proposed based on increasing the efficiency of operations for both agencies.

The land exchange will be overseen by staff at the Sand Lake National Wildlife Refuge, headquartered in Columbia, South Dakota, and Waubay National Wildlife Refuge, headquartered in Waubay, South Dakota. The Sand Lake Wetland Acquisition Office, a realty branch of the Service, will also play a prominent role.

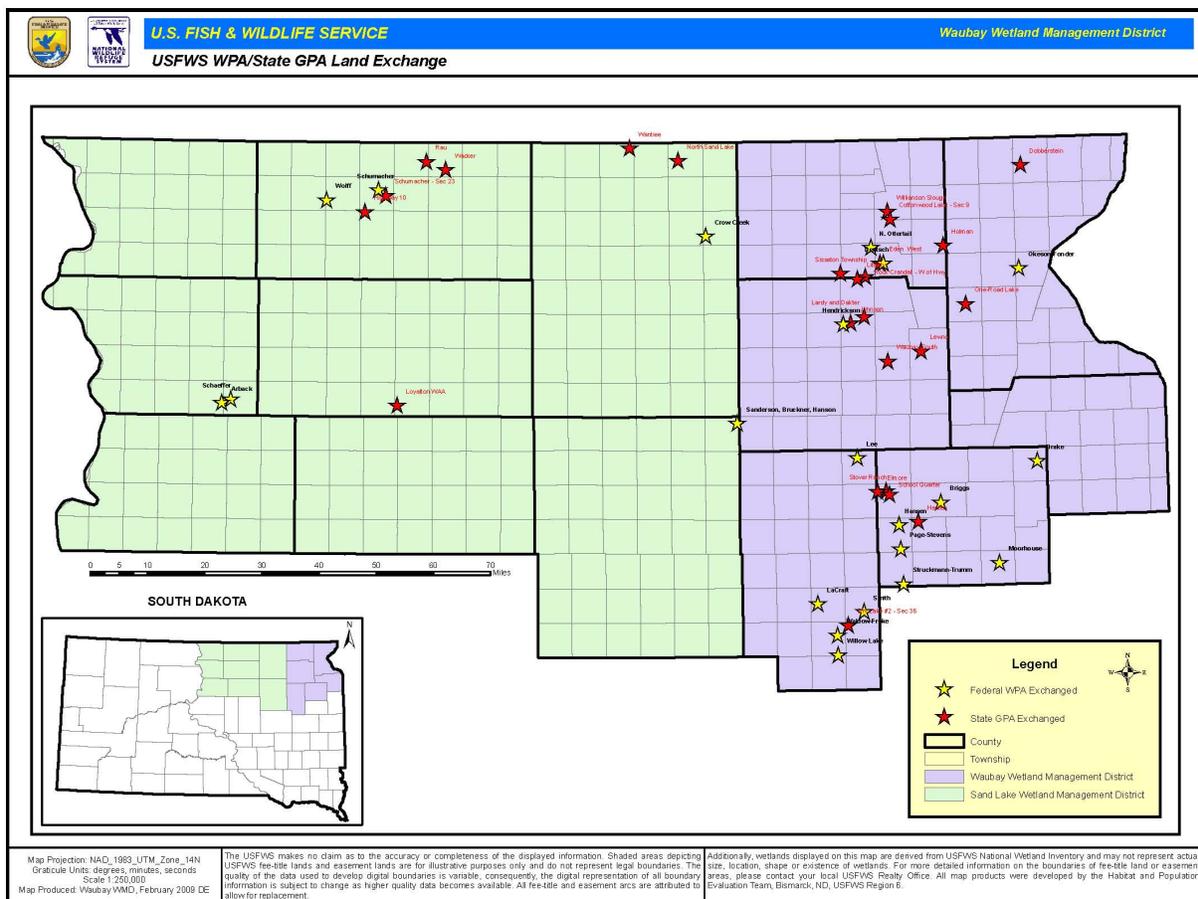


Figure 1. Proposed exchange areas.

Project Area

The project area includes five counties (Clark, Codington, Day, Marshall, and Roberts) of the six county Waubay Wetland Management District, as well as five counties (Brown, Edmunds, McPherson, Spink, and Walworth) of the 8 county Sand Lake Wetland Management District. Both Waubay WMD and Sand Lake WMD are field stations of the U.S. Fish and Wildlife Service, in northeastern South Dakota. (See Figure 1 for exchange locations, and appendix A for legal descriptions and county maps of the lands under consideration.)

Game Production Areas within the project area are primarily managed by the South Dakota Game, Fish and Parks Department regional office in Aberdeen, South Dakota; Walworth County GPA's are managed by the regional office in Pierre, South Dakota.

The project area is located within the Prairie Pothole Region, where over half of the North American continent's waterfowl is produced, in most years. Waterfowl Production Areas are part of the National Wildlife Refuge System, managed by the U.S. Fish and Wildlife Service.

Northeastern South Dakota once was dominated by native prairie vegetation. Tall grasses and associated plant allies thrive in wetter climates or on heavier soils that retain moisture better. Drier climates or coarser soils tend to favor short prairie grasses and their associated flora. In general, tallgrass prairie was the norm in the Minnesota River-Red River Lowland. Soils in the Dakota Lake Plain and James River Lowland were vegetated with mixed-tall grass transition prairie. Mixed grass prairie extended over most of the Coteau des Prairies and Missouri Coteau.

As European immigrant settlement of eastern South Dakota took place toward the middle of the nineteenth century, the mixed and tall grass prairies were replaced with small grains as more and more prairie sod was lost forever. Some wetlands were drained to further enhance agricultural production. Nearly 70 percent of the landscape has been converted to cropland or hay land, the remainder is wetlands or native prairie. The term native prairie is somewhat of a misnomer, since nearly all plant communities have been altered drastically since settlement. Smooth brome and Kentucky bluegrass have been introduced to the region and on most "native prairie" sites these invasives dominate the native plants. Poorly managed grazing systems and herbicide application have also made impacts. "Native prairie", as a descriptive term, usually means grasslands that have never been cultivated as cropland.

Even though drainage and other wetland-decimating factors have taken their toll, prairie wetlands are still a prominent feature of the landscape. These include ponds ranging in size from 0.1 acre with temporary water regimes, to large glacial lakes to major rivers and smaller tributaries.

Purpose of and Need for Proposed Action

The purpose of this project is to condense land holdings of the Service and SDGFP in order to increase management efficiency of both land management agencies. Anticipated benefits include increased efficiencies for management planning, habitat treatments (grazing, haying, prescribed burning), boundary fencing and signing, and weed control. Condensing public land

holdings should decrease confusion for the visiting public faced with different boundary signs on areas they perceive as one unit of public land.

Decisions to be Made

Based on the analysis in this Environmental Assessment (EA), the Service's Director of Region 6, with the concurrence of the Director of the U.S. Fish and Wildlife Service, will make two decisions.

- Determine whether the Service should exchange approximately 3,736 acres of Waterfowl Production Areas for approximately 3,780 acres of State of South Dakota Game Production Areas.
- If yes, determine whether the selected alternative would have a significant impact on the quality of the human environment. The National Environmental Policy Act (NEPA) of 1969 requires this decision. If the quality of the human environment would not be significantly affected, a finding of no significant impact (FONSI) will be signed and made available to the public. If the alternative would have a significant impact, completion of an environmental impact statement would be required to address further those impacts.

Issues Identified and Selected for Analysis

A news release was issued to the media, conservation interests, and the general public expressing the Services' request for comments concerning this exchange of lands prior to the meetings. Open houses were held at Sand Lake NWR in Aberdeen on April 8, 2010, South Dakota, and at Waubay NWR, Waubay, South Dakota on April 9, 2010. Public comments will be taken during the meeting to identify any additional issues of concern to be analyzed for this project. A copy of this draft EA was provided to interested publics.

The Service and SDGFP have met with county commissioners of each affected county, during their regularly scheduled monthly meetings, to inform these officials and the attending public about the proposed exchange. Comments from commissioners were generally positive about the exchange proposal.

There are two general categories of commonly expressed issues and concerns identified by federal and state personnel— biological and socioeconomic.

The biological issues include:

- the impact on ground nesting birds such as waterfowl, pheasants, and passerine birds
- differences in management styles of the two agencies (example, food plots and tree plantings on SDGFP lands)
- noxious weed control on both federal and state lands

The socioeconomic issues include:

- property tax issues associated with Service ownership of land (revenue sharing program)

- economic uses (grazing, haying) on public lands
- noxious weed control on both federal and state lands
- public use activities such as hunting, fishing, wildlife observation and photography

Biological Issues

White-tailed deer and pheasants are popular game species in northeastern South Dakota. There is concern that lands controlled by the Service will emphasize habitat management for waterfowl to the detriment of deer and pheasants. Deer and pheasants may benefit from tree plantings or cropland food plots, especially during lean winters. Current Service policy stresses development of grassland nesting habitat for waterfowl, with removal of non-native trees and wildlife food plots. Trees and wildlife food plots may benefit nest predators of waterfowl, as well as deer and pheasants although current research is finding tree planting less beneficial for pheasants than once thought (Homan et al. 2000, Schmitz et al. 1999). Deer and pheasants will also benefit from development of quality grassland habitat.

Socioeconomic Issues

There is concern that lands transferred to the U.S. Fish and Wildlife Service will be managed strictly for waterfowl habitat to the detriment of deer or pheasant populations. Smaller populations could lessen hunting opportunities for these two popular game species.

Economic uses of public lands include activities such as cattle grazing and haying of grasses for cattle feed. Land managers use these techniques to improve quality of grassland nesting habitat. Local landowners have differing opinions of the reliability of the Service or SDGFP to manage these economic uses by cattle ranchers.

Noxious weed control is a challenge for both land management agencies. Noxious weeds degrade wildlife habitat, present a threat to neighboring landowner agricultural operations, and require control under state law. Depending upon the locality, neighbors may have differing perceptions of the ability of the Service or SDGFP to control noxious weeds. Issues such as budgets, availability of personnel and equipment, and distance from crew base station to control areas all contribute as factors.

Issues Not Selected for Detailed Analysis

Historically, there has been concern about the loss of tax revenue experienced by local counties when land purchased as a Waterfowl Production Area is removed from private ownership. South Dakota Game, Fish and Parks Department Game Production Areas (GPAs) are taxed similar to private lands, while revenue sharing payments made by the Service to offset the loss of property tax revenue that occurs when private property is acquired by the federal government. However, a comparison of actual payments of property taxes on GPAs and revenue sharing payments on WPAs revealed similar acre-by-acre payments. Both sets of public lands have high density of wetlands that preclude high tax valuation generated by prime farm lands or residential areas.

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, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. Waterfowl Production Areas are units of the Refuge System and are subject to all applicable legislation, policies, executive orders, and regulations.

Goals of the Refuge System

Specific goals of the Refuge System include:

- Fulfill our statutory duty to achieve refuge purpose(s) and further the Refuge System mission
- Conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.
- Perpetuate migratory bird, inter-jurisdictional fish, and marine mammal populations.
- Conserve a diversity of fish, wildlife, and plants.
- Conserve and restore, where appropriate, representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.
- Foster understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation.

Guiding Principles of Refuge System

In addition to the goals outlined above, four guiding principles for the management and general public use of the Refuge System have been established:

- **Habitat** - Fish and wildlife will not prosper without high quality habitat, and without fish and wildlife, traditional uses of refuges cannot be sustained. The Refuge System will continue to conserve and enhance the quality and diversity of fish and wildlife habitat within refuges.
- **Public Use** - The Refuge System provides important opportunities for compatible wildlife-dependent recreational activities involving hunting, fishing, wildlife observation, wildlife photography, environmental education, and interpretation.
- **Partnerships** - America's sportsmen and women were the first partners who insisted on protecting valuable wildlife habitat within wildlife refuges. Conservation partnerships with other federal agencies, state agencies, tribes, organizations, industry, and the general public can make significant contributions to the growth and management of the Refuge System.

- Public Involvement - The public should be given a full and open opportunity to participate in decisions regarding acquisition and management of our national wildlife refuges.

The conservation and protection of the project area would continue to be consistent with the following policies and management plans:

- Migratory Bird Treaty Act (1918)
- Endangered Species Act (1973)
- North American Waterfowl Management Plan (1994)
- Prairie Pothole Joint Venture Implementation Plan (1994)
- Migratory non-game Birds of Management Concern in the U.S. (2002)

Related Actions and Activities

Waubay NWR is working with other public, private, and tribal entities to maintain wildlife habitat and protect wildlife values within the vicinity of the project area and throughout Northeast South Dakota.

Growth of the Service's Small Wetland Acquisition Program has been mirrored by acquisition of GPAs by the State of South Dakota's Game, Fish and Parks Department. Over 90,000 acres of GPAs have been acquired in northeastern South Dakota, many with the goal to preserve and enhance waterfowl breeding habitat. In many cases GPAs border WPAs, where both agencies saw the need to preserve larger blocks of wildlife habitat, with little regard to which agency owned the land. Often, land acquisition funds of one agency would not be available when a prime piece of habitat became available, necessitating that the sister agency pick up the shortcoming. The result, after 50 years of federal and state acquisition, is a mosaic of public lands.

The Acquisition Process

Because the acquisition process involves an exchange between the State of South Dakota and the Service, no federal source of funding will be needed to acquire the property. Future costs may include staff time to post/sign the refuge land, and staff time for developing land management plans. No new additional refuge staff will be added to manage this acquisition. Currently, there are grazing permittees using some of these areas. It is anticipated that the permittees will continue to graze the same units as they did after the land is exchanged.

Chapter 2 - Alternatives including the Proposed Action

This chapter describes the two alternatives identified for this project:

- no action alternative

- proposed action, giving the Service the authority to exchange approximately 3,736 acres of Waterfowl Production Areas for approximately 3,780 acres of State Game Production Areas.

Alternative A (no action)

Currently, the Service manages 83,397 acres of Waterfowl Production Areas in Sand Lake and Waubay WMDs. Under the no action alternative, the Service would not exchange lands with SDGFP and would maintain their current land holdings. Under this alternative the Service and State would continue to manage their respective lands according to each agency's goals and objectives and will result in no savings of personnel time, equipment usage and budgeted funding for both land management agencies

Alternative B (proposed action)

The Service is proposing to exchange approximately 3,736 acres of Waterfowl Production Areas for approximately 3,780 acres of state Game Production Areas in northeastern South Dakota in order to consolidate land holdings, maximize land management efficiency, and improve habitat conditions for waterfowl on land holdings of both wildlife land management agencies.

Each exchanged unit would be reposted with signs representative of the appropriate land management agency. Boundary fences may be removed or erected to take advantage of the larger land holding. In some cases, management techniques may shift to take advantage of larger land holdings. For example, a larger unit may be more suitable for prescribed grazing since a larger tract is more attractive to grazing cooperators. Prescribed burning may take place more frequently with larger units since costs-per-acre go down with increases in burn unit size.

Noxious weed control efforts should improve with increased unit size since fewer units need to be visited to monitor for weed infestations. Less time spent in travel and loading should translate into more time controlling weeds and more acres treated, in a more effective manner.

Chapter 3 -Affected Environment

This chapter describes the biological, cultural, and socioeconomic resources most likely affected by exchanging Service Waterfowl Production Areas with SDGFP Game Production Areas in northeastern South Dakota.

Biological Environment

Northeastern South Dakota is within the Central Lowlands Province, a major physiographic province (Westin and Malo 1978). Prairie potholes, the major land feature, were formed between 12,000 and 40,000 years ago during Pleistocene glaciations. The first ice sheet covering eastern South Dakota was the Nebraskan, followed by the Kansan, Illinoian, and Wisconsin ice sheets. The Wisconsin ice sheet had four separate advances. Five distinct

physiographic regions cover the project area from east to west: Minnesota River-Red River Lowlands, Coteau Des Prairies, Lake Dakota Plain, James River Lowland, and the Missouri Coteau.

The climate is typically continental, characterized by cold winters and hot summers. Winter and summer temperatures can vary from extremes of -43⁰F to 104⁰F; more common temperatures range from -26⁰F to 95⁰F. Average annual precipitation is 20.9 inches and is normally heaviest in late spring and early summer. Intense thunderstorms are normal occurrences in summer. Frequent spells of dry years often alternate with years that are wetter than average. Wetland levels can fluctuate widely with these precipitation changes. The average seasonal snowfall is 30 to 35 inches. Combined snow and high winds often produce blizzard conditions in the area. Prevailing winds are from the northwest. Wind speeds average 13 miles per hour, but can often be much higher, especially in the spring. The growing season varies from 109 to 112 days.

Habitats

The project area can be split into two broad ecological types. These types include upland and wetland habitats. Appraised values of parcels proposed for exchange are almost identical along with total acres to be exchanged. A total of 2,165 wetland acres will transfer from the Service to SDGFP while a total of 2,061 wetland acres will be transferred from SDGFP to the Service. Wetland acres were derived from the National Wetlands Inventory (NWI) database. A total of 1,571 upland acres will transfer from the Service to SDGFP while a total of 1,699 upland acres will be transferred from SDGFP to the Service. A brief description of each region habitat type and the dominant plant communities is given below.

Habitat/Land Use	NWR WPAs		SDGFP GPAs		Overall	
	Acres	%	Acres	%	Acres	%
Upland Acres Exchanged	1,571	20.9%	1,699	22.6%	3,270	43.5%
Wetland Acres Exchanged	2,165	28.8%	2,081	27.7%	4,246	56.5%
Total	3,736	49.7%	3,780	50.3%	7,516	100.0%

Uplands

The following upland native plant ecoregions, as developed by The Nature Conservancy (Anderson et al. 1998) and used by State Natural Heritage Programs, can be found in the project area.

Northern Tallgrass Prairie

The tallgrass prairie is the wettest prairie ecosystem in South Dakota. The dominant plants of tallgrass prairies are big bluestem, little bluestem, switchgrass, Indiangrass, prairie sandreed, prairie cordgrass, pasque flower, goldenrod, purple coneflower, and prairie clover.

Dakota Mixed Grass Prairie

The mixed grass prairie is the intermediate ecosystem between the shortgrass and tallgrass prairie, and as such, is found in the central part of the state. The dominant plants of the South Dakota mixed grass prairie are western wheatgrass, green needlegrass, needle-and-thread, blue grama, side-oats grama, Indian ricegrass, scarlet globemallow, bracted spiderwort, Indian breadroot, dotted gayfeather, and prairie coneflower.

Wetlands

Wetlands are lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface (Cowardin et al. 1979). It is estimated that the contiguous United States contained 221 million acres of wetlands just 200 years ago (Dahl 1990). By the mid-1970s, only 46 percent of the original acreage remained (Tiner 1984). Wetlands now cover about 5 percent of the landscape of the lower 48 states. Wetlands are extremely productive and important to both migratory and resident wildlife. They serve as breeding and nesting areas for many migratory birds and as wintering habitat for many species of resident wildlife. Humans also benefit from wetlands, which can improve water quality and quantity, reduce flooding effects, and provide sites for recreation. Economically, wetlands provide places to hunt, fish, trap, or bird-watch for millions of Americans. In the 1996 Survey of Fishing, Hunting and Wildlife Associated Recreation, about 40 percent of U.S. residents 16 years or older participated in wildlife related activities. More than \$100 billion was spent in pursuit of these activities, most of which depend on productive wetlands (USFWS 1996).

Wetlands can be classified by vegetation, water regimes (the length of time water occupies a specific area), and water chemistry. More specifically, prairie potholes are described using the following non-tidal water regime modifiers from Cowardin et al. (1979).

Temporarily flooded - surface water is present for brief periods during the growing season. The water table usually lies below the soil surface most of the season, so plants that grow in both uplands and wetlands are characteristic.

Seasonally flooded - surface water is present for extended periods especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the surface.

Semi-permanently flooded - surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.

Permanently flooded - water covers the land throughout the year in all years. Vegetation is composed of obligate hydrophytes, such as cattails.

In the James and Minnesota-Red River lowlands, temporarily and seasonally flooded basins are more predominant while semi-permanently and permanently flooded wetlands are most abundant on the Prairie and Missouri Coteau. The average size of wetlands in eastern South Dakota is only .4 acre; 72.9 percent of wetlands are < 1 acre and 92.1 percent are < 5 (Johnson and Higgins 1997).

Wildlife

The project area supports a wide variety of animal life, see appendix B for examples. There are assemblages of amphibians and reptiles, mammals, and birds within the project area. In the Big Sioux and James rivers, and glacial lakes of the Prairie and Missouri Coteaus, a host of fish species are present.

Amphibians and Reptiles

Thirty-three species of reptiles occur in South Dakota. Ten are known, and 20 of these species potentially, occur within the project area. Broad reptile groups include turtles, skinks, and snakes. There are 16 species of amphibians that occur in South Dakota. Eleven could potentially occur on Service lands (Fischer et al. 1999). These species consist of salamanders, toads, and frogs.

Mammals

The uplands and lowlands provide habitat for many small mammals including shrews, mice, voles, and ground squirrels. Small mammals provide important food resources for raptors including red-tailed hawk, Swainson's hawk, and northern harrier. Examples of omnivores include coyote, red fox, and striped skunk. Eastern fox squirrels are common in the wooded areas.

Wetlands provide cover and food for several terrestrial or semi-aquatic mammals including muskrat, mink, beaver, and raccoon. No federally listed mammals are present in the project area. White-tailed deer are the most common big game mammal within the project area.

Birds

Over 250 bird species are recorded as regularly occurring within the project area (USFWS 1988). About 109 of these species nest within the area.

Waterfowl and Other Water Birds

The project area lies within the Prairie Pothole Region of North America. This area is of prime importance for producing many of the nation's ducks. In addition, as part of the Central Flyway, other waterfowl species use the area as important stopover sites on migrational routes. The tundra swan is the only species of swan to occur within the project. They are most often seen during fall migration. Canada geese, white-fronted geese, and snow geese pass through in the spring and fall. Canada geese and snow geese are the most abundant species. Canada geese are also common nesters in the area. Duck species that nest in the project area are: mallard, gadwall, northern pintail, green-winged teal, blue-winged teal, American wigeon, northern shoveler, wood duck, redhead, canvasback, lesser scaup, ring-necked duck, and ruddy duck. Common goldeneye, bufflehead, hooded merganser, common merganser, and red-breasted mergansers

migrate through the region.

The diversity of wetlands associated with uplands on Service lands attracts a great variety of shorebirds, wading birds, and passerines. Many shorebirds use the mudflats and shallows along wetland edges or as water levels recede during their migrations in the spring and fall. Wetlands provide breeding habitat for a number of species of marsh and water birds including eared, horned, red-necked, western, and pied-billed grebes, great blue herons; black-crowned night herons; American bitterns, Virginia rails, soras, American coots, killdeer, upland sandpipers, willets, American avocets, Wilson's phalarope, Franklin's gulls, Forster's, common, and black terns. Red-winged and yellow-headed blackbirds are quite common in and around wetlands as are marsh and sedge wrens.

Grassland Birds

Since South Dakota is in the Northern Great Plains, grassland birds are the predominant bird life. Grassland bird species are of particular concern since they have shown consistent population declines over the past 30 years (Sauer et al. 1997). Some passerines that depend upon grasslands include bobolink, dickcissel, savannah, grasshopper, vesper, and clay-colored sparrows, and western meadowlark. Sharp-tailed grouse are common upland species that nest within the project area. The greater prairie chicken historically nested in the region, and a small breeding population exists in Clark County and another in northeastern Brown County.

Other Migratory Birds

Raptors including eagles, hawks, falcons, and owls are found on the project area. The most common are the red-tailed hawk, northern harrier, and Swainson's hawk. Smaller hawks, such as Cooper's and sharp-shinned hawks, and American kestrels have been documented as nesting in the project area. The most common owl is the great horned owl. Other species that might be seen during migrations include osprey, northern goshawk, broad-winged hawk, short-eared owl, and prairie falcon.

Woodlands and area coulees provide habitat for many migrating warblers including palm, Tennessee, orange-crowned, yellow-rumped, mourning, blackpoll, and black-and-white warblers. They also provide habitat for yellow warblers, red-eyed and warbling vireos, rose-breasted grosbeaks, hairy, downy, and pileated woodpeckers, black-capped chickadees, and numerous other woodland species.

Fish

Over 100 species of freshwater fish inhabit South Dakota waters and waterways. Thirty-nine are known, and 68 of these species have the potential, to occur in lakes and wetlands on the project area. The fishery associated with Service lands is classified as warm-water with low numbers of game fish and high numbers of minnows, carp, and suckers. Due to the shallow nature of lakes and wetlands, there is a high probability of fish winterkill. Some wetlands have supported fisheries of northern pike, walleye, and yellow perch.

Threatened and Endangered Species (Appendix C)

The Western prairie fringed orchid is the only known federally threatened plant species that may be present in the project area. Historical locations have included sites in the Big Sioux River valley in the southeastern part of South Dakota. It occurs in moist, tallgrass prairies and sedge meadows, both of which can be found on GPAs and WPAs. It appears to have been extirpated from South Dakota, but remote populations may have been overlooked as it does occur in adjacent counties of Minnesota, North Dakota, Iowa, and Nebraska.

Piping plovers, a federally threatened species in South Dakota, are a locally common resident albeit primarily in the Missouri River valley. They are generally an uncommon migrant elsewhere in the State and have nested in Day and Codington counties only rarely (South Dakota Ornithologists' Union 1991). The last known nesting attempt in Day County occurred in 1985 between North and South Waubay lakes (SDGFP 1994). Losses of breeding and wintering habitat are its biggest threats. It needs open sand and gravel beaches with sparse vegetation for nesting and is a common breeding associate with the interior least tern.

The whooping crane, a federally listed endangered species, is a rare migrant through most of the project area, with most sightings closer to the Missouri River. The Eskimo curlew, endangered, is nearly extinct. Historically they passed through the Great Plains on their migrations and can potentially occur in wet meadows within the project area. The interior least tern, endangered, nests along the Missouri River in central South Dakota and is known to occur in Walworth County. It is an uncommon migrant further east.

The Topeka shiner is the only federally listed endangered fish species that may occur in the project area. Although it was believed to be missing from much of its historic locations in South Dakota, recent surveys found healthy populations in many of the tributaries of the James, Vermillion and Big Sioux Rivers. As an indicator of stream health, finding the Topeka shiner suggest these systems are still relatively intact.

The pallid sturgeon is federally endangered and historically occurred throughout the Missouri River. There is a Natural Heritage record for Walworth County but it is now considered extirpated (NatureServe 2009).

The American burying beetle is a federally endangered insect. It is known to be extant in Rhode Island, Oklahoma, Nebraska, South Dakota, Arkansas, Texas and Kansas (USFWS 2008). In South Dakota, specimens deposited at South Dakota State University insect collection indicate that the species may have ranged from Brookings and Union counties in the east to Haakon County in the west. Currently there is a large population ranging from southwestern Gregory, southern Tripp and Todd counties. In more than ten years of study, the range and abundance of the beetle in South Dakota has remained unchanged (Marrone 2006).

Cultural Resources

The Service has a trust responsibility to American Indian tribes that includes protection of the tribal sovereignty and preservation of tribal culture and other trust resources. Currently, the Service does not propose any project, activity, or program that would result in changes in the character of, or adversely affect, any historical cultural resource or archaeological site within the project area. If and when such undertakings are considered, the Service will take all necessary steps to comply with section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The Service pursues compliance with section 110 of the NHPA to survey, inventory, and evaluate cultural resources. Consultation was completed in USFWS project #06.SD.WBY.001, South Dakota State Historic Preservation Office (SHPO) #080418009

Socioeconomic Environment

The 10 counties comprising the project area have an estimated 2006 population of 103,845 (U.S. Census Bureau), out of a total South Dakota population of 781,919. All counties are mostly rural with farming and ranching dominating land use activities and lifestyles. Recreational hunting, particularly for pheasants and waterfowl, is popular and generates revenue for local businesses. The largest communities are Aberdeen and Watertown, both regional centers of commerce.

The Sisseton-Wahpeton Sioux Reservation occupies parts of Day, Marshall, and Roberts Counties with 10,174 enrolled members. Tribal headquarters is at Old Agency, in Roberts County.

Landownership

Landowners adjacent to exchanged land are expected to notice little difference in management styles with a change in agency. However, there may be an adjustment period if a change in management personnel takes place, especially where cooperative agreements, such as haying or grazing are common. Both agencies will most likely continue these agreements and the units will be larger and under one management making it easier to coordinate with landowners.

Public Use and Wildlife-dependent Recreational Activities

The majority of outdoor recreational uses in northeast South Dakota are centered around fishing and hunting. Waterfowl Production Areas and Game Production Areas provide extensive opportunities for hunting, especially for waterfowl, ring-necked pheasant and white-tailed deer. The area offers some of South Dakota's finest waterfowl and pheasant hunting and attracts hunters from all parts of the United States. Other outdoor activities include photography and bird watching, especially during spring and fall migration periods.

Chapter 4 - Environmental Consequences

This chapter assesses the environmental impacts expected to occur from the implementation of alternatives A or B, as described in chapter 2. Environmental impacts are analyzed by issues for each alternative and appear in the same order as discussed in Chapter 2.

Effects on the Biological Environment

This section describes the estimated effects on wildlife habitat of carrying out alternatives A and B.

Wildlife Habitat

The effects on wildlife habitat are described below.

Alternative A (no action)

If the Service does not exchange lands with SDGFP, it is likely that habitat management activities will not reach their full potential on parcels proposed to be exchanged. Grassland nesting habitat, currently in fair to poor condition, will stay in that condition, which would subject ground nesting birds such as waterfowl, pheasants, and passerine birds to more predation by red fox, raccoons, skunk, and other nest predators. Poor condition nesting habitat on public lands may induce more birds to nest in other areas, such as road sides, wetland edges, and small grassland patches where nest predation likely will be higher than in a large block of tall, dense cover (Horn, et al., 2005). Poor nesting success will result in a corresponding smaller recruitment rate from these breeding birds.

Less active land management on the proposed exchange parcels will likely result in less aggressive noxious weed control. Grassland stands with an abundance of noxious weeds will not achieve their highest potential as wildlife habitat.

Alternative B (proposed action)

If the Service exchanges lands with SDGFP, it is anticipated that habitat management and noxious weed control on all state and federal lands will improve due to the improved efficiencies of the action. Increased attention to planning, management treatments, and monitoring of effects should bring about an improvement of habitat. Diverse, tall, dense habitat should bring a positive response to populations of breeding waterfowl, pheasants, passerines, and other ground nesting birds.

More active land management should result in more aggressive noxious weed control. Grassland stands, with low density of noxious weeds, should optimize their potential as wildlife habitat.

Effects on the Socioeconomic Environment

This section describes the estimated effects of alternatives A and B on landownership, land use, and public use.

Public Use

The effects on public use are described below.

Alternative A (no action)

The Service would not exchange lands with SDGFP. Current public use, dominated by hunting, likely would not change significantly.

Alternative B (proposed action)

If the Service exchanges lands with GFP, public use, mostly hunting, may increase with higher populations of game species (waterfowl, pheasants, and deer) responding to better wildlife habitat.

This alternative will also lessen the public's confusion regarding ownership and perceived differences in hunting regulations.

Property Taxes

South Dakota Game, Fish and Parks Department Game Production Areas (GPAs) are taxed similarly to private lands, while revenue sharing payments made by the Service to offset the loss of property tax revenue that occurs when private property is acquired by the federal government for Waterfowl Production Areas (WPAs). A comparison of actual payments of property taxes of GPAs and revenue sharing payments of WPAs revealed similar acre-by-acre payments. Both sets of public lands have high density of wetlands that preclude high tax valuation generated by prime farm lands or residential areas. No county is expected to shoulder a hardship by a shortfall in taxes.

Unavoidable Adverse Impacts

Irreversible and Irretrievable Commitments of Resources

Any commitments of resources that may be irreversible or irretrievable as a result of carrying out alternatives A and B are described below.

Alternative A (no action)

There would be no additional commitment of resources by the Service if no action is taken.

Alternative B (proposed action)

There would be no irreversible or irretrievable commitments of resources associated with the expansion of the acquisition boundary. Once an exchange is accomplished, no additional resources would be required to manage the shift of land. However, it is anticipated that resources would be used in a more productive manner.

Cumulative Impacts

This section describes the cumulative impacts that may result from the combination of expected actions in alternatives A or B, together with other biological and socioeconomic conditions, events, and developments.

Alternative A (no action)

If the exchange does not occur, the current state of fragmented land holdings would continue. Loss of productivity of staff time dedicated to habitat management and noxious weed control would continue long term.

Alternative B (proposed action)

If the land exchange does occur, the anticipated increase in staff productivity dedicated toward habitat management and noxious weed control should have a long term positive cumulative impact. For instance, creation of a 320-acre unit, from two tracts of 160-acres, should increase the likelihood that the unit would be managed with periodic prescribed burns. Larger units are higher on the priority lists for prescribed burns, due to the current state of limited fire crew resources. Once a unit's habitat is improved to good or excellent condition, it's easier to keep it that way with periodic management. Projects to erect and maintain fencing to facilitate prescribed grazing management should work in the same manner. Once a unit is improved to good condition, personnel can move on to other units to create a cumulative effect for Waterfowl Production Areas across northeastern South Dakota. Increased productivity should result for Game, Fish and Parks Department personnel, as well. Wildlife will not care if the signs are green and white, with canvasbacks, or yellow, with pheasants. Quality cover will bring about a positive response by wildlife.

Chapter 5 - Coordination and Environmental Review

Agency Coordination

The proposal to exchange lands with the South Dakota Game, Fish and Parks Department has been discussed with landowners, conservation organizations, federal, state and county governments, and other interested groups and individuals. The Service held two public meetings to provide information and discuss the proposal with landowners and other interested citizens. Staff from Waubay National Wildlife Refuge, Sand Lake National Wildlife Refuge, and South Dakota Game, Fish and Parks has presented the project proposal to the commissioners of the 10 counties impacted by the project. Sisseton-Wahpeton Sioux Tribe officials were consulted concerning potential cultural impacts.

Contaminants and Hazardous Materials

The Service is required to invest in healthy lands. Prior to acquiring Game, Fish and Parks Department lands, a level 1 contaminant survey will be conducted by Service personnel. Discussions with the SDGFP indicate no contaminant issues.

National Environmental Policy Act

As a federal agency, the Service must comply with provisions of the NEPA. NEPA requires the involvement of the public to evaluate reasonable alternatives that will meet stated objectives and to assess the possible impacts to the human environment. The Environmental Assessment (EA) serves as the basis for determining whether implementation of the proposed action would constitute a major federal action significantly affecting the quality of the human environment. The analysis for, and development of this EA, facilitated the involvement of government agencies.

Distribution and Availability

Copies of the EA were sent to federal and state legislative delegations, agencies, interested landowners and other private groups. Additional copies of the document are available from the following offices and websites.

U.S. Fish and Wildlife Service
Waubay National Wildlife Refuge Complex
44401 134A Street
Waubay, SD 57273
605/947-4521
<http://waubay.fws.gov/>

U.S. Fish and Wildlife Service
Sand Lake National Wildlife Refuge Complex
39650 Sand Lake Drive
Columbia, SD 57433
605/885-6320
<http://sandlake.fws.gov/>

U.S. Fish and Wildlife Service
Region 6, Division of Refuge Planning
Branch of Land Protection Planning
P.O. Box 25486–DFC
Denver, CO 80225
303/236 4345
303/236 4792 fax
<http://mountain-prairie.fws.gov/planning/lpp.htm>

Bibliography

- Anderson, M., P. Bourgeron, M.T. Bryer, R. Crawford, L. Engelking, D. Faber-Langendoen, M. Gallyoun, K. Goodin, D.H. Grossman, S. Landaal, K. Metzler, K.D. Patterson, M. Pyne, M. Reid, L. Sneddon, and A.S. Weakley. 1998. International classification of ecological communities: terrestrial vegetation of the United States. Volume II. The National Vegetation Classification System: list of types. The Nature Conservancy, Arlington, VA.
- Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, FWS/OBS-79/31. Washington, D.C. 131 pp.
- Dahl, T.E. 1990. Wetlands losses in the United States 1780's to 1980's. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. 13 pp.
- Fischer, T.D., D.C. Backlund, K.F. Higgins, and D.E. Naugle. 1999. Field guide to South Dakota amphibians. SDAES Bulletin 733. South Dakota State Univ., Brookings. 52 pp
- Homan, H.J., G.M. Linz, and W.J. Bleier. 2000. Winter Habitat Use and Survival of Female ring-necked Pheasants (*Phasianus colchicus*) in Southeastern North Dakota. *Am. Midl. Nat.* 143:463-480.
- Marrone, G. 2006. American burying beetle monitoring Tripp County, South Dakota. Unpubl. Rep. Ft. Pierre, SD. 6 pp.
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: June 19, 2009).
- Sauer, J. R., Hines, J. E., Gough, G., Thomas, I., and B.G. Peterjohn. 1997. The North American breeding bird survey results and analysis. Version 96.3 Patuxent Wildlife Research Center, Laurel, MD.
- Schmitz, R.A., W.R. Clark, and T.R. Bogenschutz. 1999. Site selection and nest success of ring-necked pheasants as a function of location in Iowa landscapes. *J. Wildl. Manage.* Vol. 63, no. 3.
- South Dakota Department of Game, Fish, and Parks. 1994. Natural Heritage Database for Day County. Pierre, SD. 4 pp.
- South Dakota Ornithologists' Union, 1991. The Birds of South Dakota, 2nd Edition. NSU Press, Aberdeen, SD. 411 pp.
- Tiner, R.W. 1984. Wetlands of the United States: Current status and recent trends. U.S. Fish and Wildlife Service. U.S. Government. Printing Office, Washington D.C. 59 pp.
- U.S. Fish and Wildlife Service. 1988. Birds of Waubay. Pamphlet.

U.S. Fish and Wildlife Service. 1996. Quick Facts from the 1996 National Survey of Fishing, Hunting, and Wildlife. Associated Recreation Pamphlet.

U.S. Fish and Wildlife Service. 2007. Pallid sturgeon (*Scaphirhynchus albus*) 5-year review summary and evaluation U.S. Fish and Wildlife Service, Pallid Sturgeon Recovery Coordinator, Billings, Montana.

U.S. Fish and Wildlife Service 2008. American Burying Beetle (*Nicrophorus americanus*) – 5 year Review: Summary and Evaluation. New England Field Office. Concord, NH.

Westin, F.C., and D.D. Malo. 1978. Soils of South Dakota. Agriculture Experiment Station, SDSU, Bulletin 656.

Appendix A

Legal Descriptions of State and Federal Lands to be Exchanged

South Dakota Game, Fish and Parks Department lands to be transferred to the U.S. Fish and Wildlife Service

BROWN COUNTY

North Sand Lake GPA 159.23 acres
T. 128 N., R. 61 W., 5th P.M.
Sec. 20, N 15 chains of N1/2
21, N 15 chains of lot 1 in NW1/4

Wanttie GPA 80 acres
T. 128 N., R. 63 W., 5th P.M.
Sec. 1, S1/2SW1/4

CLARK COUNTY

Dry Lake #2 GPA (Pleasant, Foxton, Merton Twps) 1,052.45 acres
T. 114 N., R. 56 W., 5th P.M.
Sec. 5, Govt Lot 3, SE1/4NW1/4, SW1/4
6, Govt Lots 2, 3, 4, 5, 6 & 7, SW1/4NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4
7, Gov't Lots 1 & 2, NE1/4NW1/4

T. 115 N., R. 56 W., 5th P.M.
Sec. 31, W1/2W1/2W1/2W1/2SW1/4, W 34 rods NW1/4NE1/4, W 34 rods of N 35 rods SW1/4NE1/4

T. 115 N., R. 57 W., 5th P.M.
Sec. 36, E1/2SE1/4

CODINGTON COUNTY

Hanten Lake GPA 40 acres
T. 117 N., R. 54 W., 5th P.M.
Sec. 5, NW1/4SW1/4

Stover Ranch GPA 80 acres
T. 118 N., R. 55 W., 5th P.M.
Sec. 8, W1/2NE1/4

Elmore GPA 120.16 acres
T. 118 N., R. 55 W., 5th P.M.
Sec. 7, Govt Lots 1 & 2, SE1/4NW1/4

School Quarter GPA 160 acres
T. 118 N., R 55 W., 5th P.M.
Sec. 9, SW1/4

DAY COUNTY

Liberty GPA 74.24 acres
T. 124 N., R 56 W., 5th P.M.
Sec. 3, Gov't Lots 7 & 8
4, Gov't Lot 5

Johnson GPA 120 acres
T. 123 N., R. 56 W., 5th P.M.
Sec. 8, S1/2SE1/4, NE1/4SE1/4

Lardy-Dakter GPA 160 acres
T. 123 N., R 56 W., 5th P.M.
Sec. 2, N1/2SW1/4, SE1/4NW1/4
10, NW1/4NE1/4

Lewno GPA 148.12 acres
T. 122 N., R 54 W., 5th P.M.
Sec. 4, Govt Lot 2, SW1/4SW1/4
Sec 5, SW1/4SE1/4 and the south forty acres of Gov't lot 4

South Waubay Lake GPA 61.8 acres
T. 122 N., R 55 W., 5th P.M.
Sec. 16, Govt Lot 1, NW1/4SW1/4

EDMUNDS COUNTY

Loyalton GPA (Molstad) 36.63 acres
T. 121 N., R 69 W., 5th P.M.
Sec. 19, Lot 1 of SW1/4

MARSHALL COUNTY

Holman GPA 380 acres
T. 126 N., R. 53 W., 5th P.M.
Sec. 25, NW1/4, W1/2SE1/4, NE1/4SE1/4, W1/2SE1/4SE1/4, E1/2SW1/4

Sisseton Township GPA 40 acres
T. 125 N., R 57 W., 5th P.M.
Sec. 36, NE1/4NE1/4

Rock Crandell GPA 47.9 acres
T. 125 N., R 56 W., 5th P.M.
Sec. 35, NW1/4SW1/4 lying west of road right of way, SE1/4SW1/4 lying west of road right of way

Willianson GPA 363.24 acres
T. 126 N., R. 55 W., 5th P.M.
Sec. 4, Govt Lots 2, 3, & 4, S1/2NW1/4, N1/2SW1/4, SW1/4SW1/4, NW1/4SE1/4

Cottonwood GPA 83.55 acres
T. 126N., R. 55 W., 5th P.M.
Sec 9, Govt Lots 3 & 4
15, Govt Lot 1
16, Govt Lot 1

Eden West GPA 40 acres
T. 125 N., R. 55 W., 5th P.M.
Sec. 19, SE1/4NE1/4

McPHERSON COUNTY

Rau GPA 80acres
T. 128 N., R. 69 W., 5th P.M.
Sec. 24, W1/2NE1/4

Wacker GPA 210 acres
T. 128 N., R. 68 W., 5th P.M.
Sec. 27, SE1/4SW1/4, N1/2SW1/4, S1/2S1/2SW1/4NW1/4
28, N1/2SE1/4

Schumacher GPA 45.53 acres
T. 127 N., R. 70 W., 5th P.M.
Sec. 23, Lot 1 of NW1/4NW1/4, Outlot 1 of Govt Lot 4, Outlot 1 of Govt Lot 5, Outlot 1 of Govt Lot 3

Highway 10 GPA 40.49 acres
T. 126 N., R. 70 W., 5th P.M.
Sec. 6, Govt Lot 1 (NE1/4NE1/4)

ROBERTS COUNTY

One Road GPA 77.19 acres
T. 124 N., R. 52 W., 5th P.M.
Sec. 15, Govt Lots 2 & 4
16, Govt Lots 1 & 6

Dobberstein GPA 80 acres
T. 128 N., R. 50 W., 5th P.M.
Sec. 17, E1/2SW1/4

U.S. Fish and Wildlife Service Waterfowl Production Areas to be transferred to the South Dakota Game, Fish and Parks Department

BROWN COUNTY

Sanderson WPA
Tract 280 61.02 acres
T. 126 N., R. 60 W., 5th P.M.

Sec. 30, the W 1,004' of the NE1/4

Hinrichs WPA

Tract 265,a 219.7 acres

T. 126 N., R. 60 W., 5th P.M.

Sec. 30, Gov't Lots 1 & 2, E1/2NW1/4, and the W 13 chains of the W1/2SE1/4

CLARK COUNTY

Smith WPA

Tract 477 141.48 acres

T. 115 N., R. 56 W., 5th P.M.

Sec. 27, W1/2NW1/4, SE1/4NW1/4, Parcel Two (2) of the Record Plat "Clark County W.A. No. 15", filed December 5, 1989, as Plat 112A, Clark County Records

Smith WPA

Tract 478 41.86 acres

T. 115 N., R. 56 W., 5th P.M.

Sec. 27, A portion of the West Half Northeast Quarter (W1/2NE1/4) more particularly described as Parcel two (2) of the Record Plat "Clark County W.A. No. 16," filed December 5, 1989, as Plat 111B, Clark County Records

Ness WPA

Tract 372 160 acres

T. 114 N., R. 57 W., 5th P.M.

Sec. 11, N1/2SE1/4, SE1/4SE1/4
12, SW1/4SW1/4

Waldo WPA

Tract 374 167.06 acres

T. 114 N., R. 57 W., 5th P.M.

Sec. 14, Parcel 2 of the record plat "Clark County W.A. No. 14" filed May 2, 1979 in Book F, Page 98, Clark County Records, and the West Half Southwest Quarter (W1/2SW1/4), containing 167.06 acres, more or less

Froke WPA

Tract 373 240.45 acres

T. 114 N., R. 57 W., 5th P.M.

Sec. 14, Parcel 2 of the record plat "Clark County W.A. No. 13" filed May 2, 1979, in Book F, Page 97, Clark County Records, and the North East Quarter North East Quarter (NE1/4NE1/4) and the South Half North Half (S1/2N1/2) 240.45 acres more or less

Lee WPA

Tract 315 122 acres

T. 119 N., R. 56 W., 5th P.M.

Sec. 9, S1/2NE1/4, S1/2N1/2NE1/4, the east 2.0 chains of NE1/4NE1/4NE1/4

LaCraft WPA

Tract 329 160 acres

T. 115 N., R. 57 W., 5th P.M.

Sec. 17, SW1/4

Kannegieter WPA

Tract 18 73.18 acres

T. 114 N., R. 57 W., 5th P.M.

Sec. 35, That part of SE1/4 more particularly described as Parcel 2 of the record plat Clark County W.A. # 1 filed October 5, 1966 in Plat Book F, Page 39, Clark County Records containing 73.18 acres more or less

CODINGTON COUNTY

Struckman WPA

Tract 30 140 acres

T. 116 N., R. 55 W., 5th P.M.

Sec. 35, N1/2NW1/4, E1/2SW1/4NW1/4, SE1/4NW1/4

Moorhouse WPA

Tract 36 42.58 acres

T. 116 N., R. 52 W., 5th P.M.

Sec. 15, That part of the N1/2NW1/4 described as Parcel two (2) of the record plat "Codington County W.A. No. 4," filed June 7, 1967, in Plat Book "G" pages 33, 34 and 35, Codington County Records containing 42.58 acres more or less

Trumm WPA

Tract 67 121.38 acres

T. 116 N., R. 55 W., 5th P.M.

Sec. 35, That part of the S1/2 more particularly described as Parcel two (2) of the record plat "Codington County W.A. No. 5," filed October 17, 1972 in Plat Book I, pages 143-145, Codington County Records, containing 121.38 acres, more or less

Hanson WPA

Tract 82 45.35 acres

T. 117 N., R. 55 W., 5th P.M.

Sec. 10, That part of the N1/2NE1/4 more particularly described as parcel 1 of the record plat "Codington County W.A. No. 9," filed June 8, 1977, in Plat Book K, pages 307, 308 and 309, Codington County Records, containing 45.35 acres, more or less

Geiger WPA

Tract 89 80 acres

T. 117 N., R. 55 W., 5th P.M.

Sec. 34, E1/2NE1/4

Stevens WPA

Tract 91 40 acres

T. 117 N., R. 55 W., 5th P.M.

Sec. 35, NW1/4SW1/4

Page WPA

Tract 92 24.92 acres

T. 117 N., R. 55 W., 5th P.M.

Sec. 35, The West 900.00 feet of the south 1139.30 feet of the Southwest Quarter Northwest Quarter (SW1/4NW1/4), and the South 145.00 feet of the Southwest Quarter Northwest Quarter (SW1/4NW1/4) lying easterly of said west 900.00 feet, containing 24.92 acres, more or less

Briggs WPA

Tract 130 80 acres

T. 118 N., R. 54 W., 5th P.M.

Sec. 24, W1/2NW1/4

Drake WPA
Tract 160 20 acres
T. 119 N., R. 51 W., 5th P.M.
Sec. 14, That part of Lot #1 lying north and west of the Burlington Northern, Inc., right of way, containing 20 acres,
more or less

DAY COUNTY

Hendrickson WPA
Tract 55 120 acres
T. 123 N., R. 56 W., 5th P.M.
Sec. 7, SE1/4SW1/4, SW1/4SE1/4
18, NE1/4NW1/4

MARSHALL COUNTY

Schlekewy WPA Complex
Tract 47 30 acres
T. 125 N., R. 55 W., 5th P.M.
Sec. 17, SW1/4NE1/4SE1/4, W1/2SE1/4SE1/4

Schlekewy WPA Complex
Tract 108 25 acres
T. 125 N., R. 55 W., 5th P.M.
Sec. 20, W 430' of SE1/4

Schlekewy WPA Complex
Tract 108a-c 120 acres
T. 125 N., R. 55 W., 5th P.M.
Sec. 17, SE1/4SW1/4
Sec 20, SW1/4NE1/4, SE1/4SW1/4

Schlekewy WPA Complex
Tract 214,a 120 acres
T. 125 N., R. 55 W., 5th P.M.
Sec. 20, NW1/4NE1/4, N1/2SW1/4

North Ottertail WPA
Tract 214D 80 acres
T. 125 N., R. 56 W., 5th P.M.
Sec. 1, N1/2SW1/4

Schlekewy WPA Complex
Tract 220,a 35.76 acres
T. 125 N., R. 55 W., 5th P.M.
Sec. 20, Parcels 2 and 3 of the record plat "Marshall County W.A. No. 5," filed in Book 3, Page 121, Marshall
County Records, containing 35.76 acres, more or less

McPHERSON COUNTY

Schumacher WPA
Tract 251 160 acres
T. 127 N., R. 70 W., 5th P.M.

Sec. 15, NW1/4

Wolff WPA
Tract 131 397.61 acres
T. 127 N., R. 71 W., 5th P.M.
Sec. 19, Gov't Lots 3 & 4, E1/2SW1/4
30, Gov't Lots 1 & 2, E1/2NW1/4
T. 127 N., R. 72 W., 5th P.M.
Sec. 25, E1/2NE1/4

ROBERTS COUNTY

Okeson WPA
Tract 285 159.60 acres
T. 125 N., R. 50 W., 5th P.M.
Sec. 18, Gov't Lots 2, 3, SE1/4NW1/4, NE1/4SW1/4

Fonder WPA
Tract 134,a,b 240 acres
T. 125 N., R. 50 W., 5th P.M.
Sec. 18, S1/2NE1/4, W1/2SE1/4
20, SW1/4NW1/4, SW1/4SW1/4

SPINK COUNTY

Sanderson WPA
Tract 29,a 13 acres
T. 120 N., R. 60 W., 5th P.M.
Sec. 12, N 10 chains of the W 13 chains in the NW1/4NE1/4

WALWORTH COUNTY

Arbach WPA
Tract 85 174 acres
T. 121 N., R. 75 W., 5th P.M.
Sec. 24, Gov't Lot 3, E1/2SE1/4, SW1/4SE1/4

Weibel WPA
Tract 59 80 acres
T. 121 N., R. 74 W., 5th P.M.
Sec. 20, N1/2NW1/4

Appendix B – List of Plants and Animals Mentioned in the Text

Plants

Alfalfa	<i>Medicago sativa</i>
American elm	<i>Ulmus americana</i>
Asters	<i>Symphotrichum spp.</i>
Big bluestem	<i>Andropogon gerardii</i>
Box elder	<i>Acer negundo</i>
Bur oak	<i>Quercus macrocarpa</i>
Choke cherry	<i>Prunus virginiana</i>
Cottonwood	<i>Populus deltoides</i>
Crested wheatgrass	<i>Agropyron cristatum</i>
Dotted gayfeather	<i>Liatris punctata</i>
Eastern red cedar	<i>Juniperus virginiana</i>
Gramas	<i>Bouteloua spp.</i>
Green ash	<i>Fraxinus pennsylvanica</i>
Hackberry	<i>Celtis occidentalis</i>
Hemp dogbane	<i>Apocynum cannabinum</i>
Field pepperwort	<i>Lepidium campestre</i>
Milkweeds	<i>Asclepias spp.</i>
Peach-leaved willow	<i>Salix amygdaloides</i>
Pennycress	<i>Thlaspi arvense</i>
Russian olive	<i>Elaegnus angustifolia</i>
Sandbar willow	<i>Salix exigua</i>
Scouring rushes	<i>Equisetum spp.</i>
Sedges	<i>Carex spp.</i>
Silver buffaloberry	<i>Shepherdia argentea</i>
Smooth brome	<i>Bromus inermis</i>
Smooth sumac	<i>Rhus glabra</i>
Snowberry	<i>Symphoricarpos occidentalis</i>
Soft goldenrod	<i>Solidago mollis</i>
Stinging nettle	<i>Urtica dioica</i>
Switchgrass	<i>Panicum virgatum</i>
Wild rose	<i>Rosa woodsii</i>
White sweet clover	<i>Melilotus albus</i>
Yellow sweet clover	<i>Melilotus officinalis</i>
Yucca	<i>Yucca glauca</i>

Amphibians and Reptiles

Mammals

Beaver	<i>Castor canadensis</i>
Coyote	<i>Canis lutrans</i>
Eastern cottontail	<i>Sylvilagus floridanus</i>
Eastern spotted skunk	<i>Spilogale putorius</i>
Eastern fox squirrel	<i>Sciurus niger</i>
Elk	<i>Cervus elaphus</i>
Mice	<i>Onychomys spp., Peromyscus spp.</i>
Mink	<i>Mustela vison</i>

Mule deer
Muskrat
Raccoon
Red fox
Shrews
Striped skunk
Thirteen-lined ground squirrel
Virginia opossum
Voles
White-tailed deer
White-tailed jack rabbit

Odocoileus hemionus
Ondatra zibethicus
Procyon lotor
Vulpes vulpes
Sorex spp.
Mephitis mephitis
Spermophilus tridecemlineatus
Didelphis virginiana
Microtus spp.
Odocoileus virginianus
Lepus californicus

Birds

Bald eagle
Bank swallow
Bell's vireo
Belted kingfisher
Bobolink
Canada geese
Dickcissel
Ferruginous hawk
Grasshopper sparrow
Great horned owl
Interior least tern
Mallard
Mourning dove
Northern harrier
Olive-sided flycatcher
Osprey
Piping plover
Red-headed woodpecker
Red-tailed hawk
Ring-necked Pheasant
Swainson's hawk
Wild Turkey
Yellow-billed cuckoo

Haliaeetus leucocephalus
Riparia riparia
Vireo bellii
Ceryle alcyon
Dolichonyx oryzivorus
Branta canadensis
Spiza americana
Buteo regalis
Ammodramus savannarum
Bubo virginianus
Sterna antillarum athalassos
Anas platyrhynchos
Zenaida macroura
Circus cyaneus
Contopus borealis
Pandion haliaetus
Charadrius melodus
Melanerpes erythrocephalus
Buteo jamaicensis
Phasianus colchicus
Buteo swainsoni
Meleagris gallopavo
Coccyzus americanus

Fish

Crappie
Gizzard shad
White bass
Sauger
Gars
Goldeye
Common Carp
Walleye
Channel catfish
Pallid sturgeon

Pomoxis spp.
Dorosoma cepedianum
Morone chrysops
Stizostedion canadense
Lepisosteus spp.
Hiodon alosoides
Cyprinus carpio
Stizostedion vitreum
Ictalurus punctatus
Scaphirhynchus platyrhynchus

Appendix C – Endangered and Threatened Species

Birds

Piping plover	<i>Charadrius melodus</i> (T)
Interior least tern	<i>Sterna antillarum athalassos</i> (E)
Whooping crane	<i>Grus americana</i> (E)
Eskimo curlew	<i>Numenius borealis</i> (E)

Fish

Pallid Sturgeon	<i>Scaphirhynchus platyrhynchus</i> (E)
Topeka shiner	<i>Notropis topeka</i> (E)

Insects

American burying beetle	<i>Nicrophorus americanus</i> (E)
-------------------------	-----------------------------------

Plants

Western prairie fringed orchid	<i>Platanthera praeclara</i> (T)
--------------------------------	----------------------------------

Key

(E) Endangered – listed in the Federal Register as being in danger of extinction

(T) Threatened – listed in the Federal Register as likely to become endangered within the foreseeable future

Appendix D List of Preparers and Reviewers

<i>Author's Name</i>	<i>Position</i>	<i>Work Unit</i>
Mary Clawson	Regional habitat manager	South Dakota Game, Fish and Parks, Aberdeen, SD
Drew Ellis	Assistant refuge manager	USFWS, Waubay National Wildlife Refuge, Waubay, SD
Mark Ely	Geographic information systems (GIS) specialist	USFWS, Region 6, Planning Division, Lakewood, CO
Laura Hubers	Wildlife biologist	USFWS, Waubay National Wildlife Refuge, Waubay, SD
Brad Johnson	Assistant refuge manager	USFWS, Waubay National Wildlife Refuge, Waubay, SD
Bill Kurtenbach	Realty specialist	USFWS, Region 6, Realty Division, Aberdeen, SD
Doug Leschisin	Refuge manager	USFWS, Lostwood Wetland Management District
Brant Loffin	Archeologist	USFWS, D.C. Booth Historic National Fish Hatchery, Spearfish, SD
David Lucas	Chief of planning	USFWS, Region 6, Planning Division, Lakewood, CO
Larry Martin	Project leader	USFWS, Waubay National Wildlife Refuge, Waubay, SD
Jay Peterson	District Manager	USFWS, Sand Lake Wetland Management District, Columbia, SD
Sue Oliveira	Chief of realty	USFWS, Region 6, Realty Division, Lakewood, CO
Bob Severson	Realty specialist	USFWS, Region 6, Realty Division, Aberdeen, SD
Amy Thornburg	Wildlife refuge specialist	USFWS, Region 6, Branch of Land Protection Planning, Lakewood, CO
Meg VanNess	Regional historic preservation officer	USFWS, Region 6, Refuges, Lakewood, CO

