

Draft Comprehensive Conservation Plan and Environmental Assessment

Long Lake National Wildlife Refuge Complex

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Acronyms and Abbreviations

BBS	North American Breeding Bird Survey
BLS	Bureau of Labor Statistics
Botulism	avian botulism
CCC	civilian conservation corps
CCP	comprehensive conservation plan
Complex	Long Lake NWR Complex
CRP	Conservation Reserve Program
CWD	chronic wasting disease
Delta	Delta Waterfowl Foundation
DFM	drainage facility maps
DNC	dense nesting cover
Duck Stamp Act	Migratory Bird Hunting and Conservation Stamp Act
DWG	Dakota Working Group
EA	environmental assessment
EVS	Education and Visitor Services
FmHA	Farmers Home Administration
FONSI	finding of no significant impact
GIBA	Globally Important Bird Area
HAPET	Habitat and Population Evaluation Team
HPAI	highly pathogenic avian influenza
Improvement Act	National Wildlife Refuge Improvement Act of 1997
IPM	integrated pest management
ISS	international shorebird survey
JAKES	Juniors Acquiring Knowledge Ethics and Sportsmanship
LWCF	Land and Water Conservation Fund
MBCF	Migratory Bird Conservation Fund
MMS	maintenance management system
MSL	mean sea level
NAWCA	North American Wetland Conservation Act
NAWMP	North American Waterfowl Management Plan
NDGF	North Dakota Game and Fish Department
NEPA	National Environmental Policy Act
NGO	nongovernmental organization
NPWRC	Northern Prairie Wildlife Research Center

NRCS	Natural Resources Conservation Service
NWI	national wetlands inventory
NWR or refuge	national wildlife refuge
Refuge System	national wildlife refuge system
PA	programmatic agreement
PPJV	prairie pothole joint venture
PPR	prairie pothole region
RLGIS	refuge lands geographic information system extension
RONs	refuge operations needs system
Service or USFWS	United States Fish and Wildlife Service
SHIPO	North Dakota state historic preservation office
State	state of North Dakota
SUP	special-use permit
SWAP	Small Wetlands Acquisition Program
TNC	The Nature Conservancy
USC	U.S. code of federal regulations
USGS	United States Geological Survey
VOR	visual obstruction reading
WCS	water control structures
WDA	wildlife development area
WHSRN	Western Hemisphere Shorebird Reserve Network
WMD	wetland management district, or district
WPA	waterfowl production area

Summary

Long Lake National Wildlife Refuge Complex (the complex) oversees management of three national wildlife refuges: Long Lake National Wildlife Refuge (NWR or refuge), Slade NWR, Florence Lake NWR, and a three-county wetland management district that consists of 79 waterfowl production areas in Burleigh, Emmons, and Kidder counties in south-central North Dakota, as well as conservation easements which protect approximately 147,000 acres. The districts continue to grow with the acquisition of additional easements annually.

Long Lake National Wildlife Refuge

Long Lake NWR was established on February 25, 1932, by President Herbert Hoover through Executive Order No. 5808 "... as a refuge and breeding ground for migratory birds and wild animals," and "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (Migratory Bird Conservation Act.)

The refuge is located in south-central North Dakota in an area famous for its wealth of waterfowl-producing prairie potholes. Long Lake NWR is 22,310 acres in size and consists of approximately 15,000 acres of brackish to saline marsh and lake, 1,000 acres of other wetlands, and about 6,000 acres of tame- and native grassland, woodland, and cropland. The refuge serves as an important staging area for migrating sandhill cranes, Canada geese and other waterfowl, shorebirds, and other migratory birds. Endangered whooping cranes often utilize refuge marshes during spring and fall migration periods.

Slade National Wildlife Refuge

Slade NWR was established "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

Slade NWR was established through a donation by Northern Pacific Railroad executive G.T. Slade, who originally began acquiring the area around Harker Lake in 1924 for the establishment of a private shooting club.

It is located in south-central Kidder County, approximately 20 miles northeast of the complex's headquarters and is adjacent to Lake Isabel Recreational Area. The refuge consists of 3,000 acres of gently rolling prairie dotted by lakes and marshes, which were formed by glacial action. Habitat centers around five semi-permanent and permanent wetlands and numerous other prairie potholes, which altogether total more than 900 wetland acres. Much of the upland acreage had been farmed prior to the donation. Current management targets restoring native grasses and forbs that are characteristic to this area.

Florence Lake National Wildlife Refuge

Florence Lake NWR was established on May 10, 1939, by President Franklin D. Roosevelt through Executive Order No. 8119 "... as a refuge and breeding ground for migratory birds and other wildlife" and "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (Migratory Bird Conservation Act.)

It is located in northern Burleigh County approximately 45 miles northwest of Long Lake NWR. The refuge consists of 1,468 acres of fee title and 420 acres of easement (132 acres of which is meandered lake). The fee portion of the refuge consists of 977 acres of native grassland, 202 acres of tamegrass, 111 acres of seeded native grass, 163 acres of wetland and 16 acres of woodland. The refuge serves as an important migratory bird production and migration area.

Long Lake Wetland Management District

The district was started as part of the Small Wetlands Acquisition Program in the 1950s to save wetlands from various threats, particularly drainage. The passage of Public Law 85-585 in August 1958 amended the Migratory Bird Hunting and Conservation Stamp Act of 1934, allowing for the acquisition of waterfowl production areas and easements for waterfowl production.

The Long Lake wetland management district contains 1,036 perpetual wetland easement contracts which protect 102,646 acres; 93 perpetual grassland contracts which protect 41,181 acres; 16 Farmers Home Administration perpetual easements which protect 669 wetland acres, and

2,759 acres of upland; one wildlife development area (Garrison diversion unit mitigation tract) totaling 794 acres; and 78 WPAs totaling 21,789 acres. Easement restrictions generally prohibit wetland drainage, grassland conversion and development, and require a special-use permit issued by the U.S. Fish and Wildlife Service for vegetative manipulation. The lands remain in private ownership. There continues to be an active acquisition program in the Long Lake wetland management district, which currently focuses on acquiring grassland and wetland easements.

Long Lake wetland management district was established "...to assure the long-term viability of the breeding waterfowl population and production through the acquisition and management of waterfowl production areas, while considering the needs of other migratory birds, threatened and endangered species, and other wildlife." (This purpose statement was developed for all region 6 wetland management districts in June 2004.)

Migratory Bird Hunting Stamp Act 16 U.S.C. 718(c) "...as waterfowl production areas subject to all provisions of the Migratory Bird Conservation Act ...except the inviolate sanctuary provisions..."

Migratory Bird Conservation Act 16 U.S.C. 715d "...for any other management purposes, for migratory birds."

Consolidated Farm and Rural Development Act 7 U.S.C. 1924 "... for conservation purposes"

Consolidated Farm and Rural Development Act 7 U.S.C. 2002 "...for conservation purposes"

Refuge Vision and Goals

The vision for each refuge is based on the establishing purposes of the refuge, resource conditions and potential, and their respective issues. Goals help the complex staff achieve the vision.

Refuge Vision

Vision for the Long Lake National Wildlife Refuge
The echo of the sandhill cranes through the rolling prairie hills of Long Lake invites today's visitors to follow in the footsteps of the plains Indians. The refuge lies along the west-central boundary of the prairie pothole region where the Missouri Coteau meets the Coteau Slope. Here an abundance of migratory birds and other wildlife flourish in the native mixed-grass prairie and a mosaic of

wetlands. The mixed hues and textures of wildflowers, grasses, mudflats, and water please the eye and soothe the soul. Refuge stewards work collaboratively to understand, restore, and protect biological communities. Expanded wildlife-dependent recreation and environmental education opportunities foster a greater understanding of the refuge's resources and the mission of the Refuge System.

Vision of the Florence Lake National Wildlife Refuge

A classic prairie-pothole landscape, Florence Lake NWR provides a unique perspective of pre-settlement prairie conditions. At this visual oasis of the prairie ecosystem, visitors enjoy solitude and excellent grassland bird viewing opportunities in a peaceful, protected environment that supports a wealth of migratory birds and other wildlife. Florence Lake serves as a reference area for northern prairie ecosystems with ongoing restoration, monitoring, and research.

Vision of Slade National Wildlife Refuge

Located within the central flyway, Slade NWR historically served as a foundation for the restoration of the nearly extirpated giant Canada goose population. Management strives to restore mixed-grass prairie and continues to provide quality migratory stopover and breeding habitat for birds of conservation concern. Enhanced wildlife-dependent recreation opportunities and interpretation foster a greater understanding and appreciation of conservation and restoration within an agricultural landscape.

Vision of the Long Lake Wetland Management District

Long Lake waterfowl production areas and all conservation easements provide a network of wetland and grassland habitats that preserve the integrity of the historic and vital nesting and breeding grounds of North America's migratory waterfowl resource. These conservation and management efforts support populations of nesting ducks and geese at, or above, historic levels. New and expanded habitats are provided for trust species including nongame migratory birds, threatened and endangered species, and resident wildlife. The public recognizes these wetlands and uplands as a beneficial and important component of a diverse, healthy, and productive prairie landscape. There is consumptive and nonconsumptive compatible recreational use of public lands. Landowners, sportsmen/sportswomen,

conservationists, and others actively support and encourage our habitat conservation programs. There are a wide variety of partners assisting the Service's efforts to educate the public on the value of habitat conservation and the benefit to current and future generations. These partnerships join us financially and physically to ensure a broad base of support so that the Service can conserve high-quality habitats.

Long Lake National Wildlife Refuge Complex Goals

Wildlife and Habitat Management

Conserve, restore, and enhance the ecological diversity of the mixed-grass prairie ecosystem (including wetlands, grasslands, and native trees and shrubs) for migratory birds with an emphasis on waterfowl and other grassland and wetland-dependent species.

Research, Inventory and Monitoring

Use sound science, monitoring and applied research to advance the understanding of natural resource functions and management within the mixed-grass prairie pothole ecosystem.

Public Use, Education, and Interpretation

Provide a safe environment for visitors of all abilities to enjoy wildlife-compatible recreation while increasing their knowledge and appreciation of the mixed-grass prairie ecosystem and the mission of the National Wildlife Refuge System.

Cultural Resources

Identify, value, and preserve the cultural resources and history of the complex to connect staff, visitors, and the community to the area's past.

Refuge Operations

Through effective communication and innovative technology, secure and efficiently utilize funding, staffing partnerships, and volunteer programs for the benefit of all natural resources in support of the National Wildlife Refuge System mission.

Partnerships

Engage a wide array of partners to support outreach, research and management, promote awareness, and foster an appreciation of the mixed-grass prairie pothole ecosystem.

Decisions to be Made

Based on the analysis document in the environmental assessment, the Service's regional director for region 6 (Mountain-Prairie Region) will

choose the alternative to manage the complex for the next 15 years. The environmental assessment describes four alternatives for achieving the above goals.

Alternative A—Current Management (No Action):

This alternative promotes a continuation of all aspects of the complex's current management.

Alternative B—Natural Processes Management

This alternative focuses on a return to more natural wetland and upland habitats and habitat functions (e.g., removal of manmade water control structures) within the complex. Intensive management strategies (i.e., reseeding disturbed upland sites with native plant seed, chemical control of noxious weed species) may be used to achieve objectives and goals, but end results focus on minimal use of manmade infrastructure (e.g., water control structures) and a minimal number of non-natural areas (e.g., tamegrass fields). Additionally, public use and environmental education/interpretation objectives and goals are achieved through the use of minimal non-natural structures (e.g., signs, trails, kiosks, wildlife viewing structures) in order to promote a more natural (primitive) experience for the participating public. Changes in complex research and monitoring, staffing, operations, and infrastructure may be required to ultimately accomplish this alternative's objectives and goals. Furthermore, partnerships will focus on initiatives that help enhance and protect natural areas (e.g., easement acquisition, Partners for Wildlife projects, grassland restoration methods research, system sustainability research on Long Lake).

Alternative C—Single Wildlife Group-level Intensive Management

This alternative promotes intensive upland and wetland management (e.g., development of additional water control capability) throughout the complex. Management objectives for particular tracts (i.e., NWR, WPA) will be based on fulfilling the life needs of either one wildlife taxonomic group (i.e., family) or a small number of closely related wildlife taxonomic groups (e.g., shorebirds). Additionally, public use and environmental education/interpretation opportunities will be maximized to the extent compatible with other objectives (e.g., increased hunting and fishing opportunities, additional environmental learning facilities and programs, increased interpretive signage). Changes in complex research and monitoring, staffing, operations, and infrastructure may be required to ultimately accomplish this

alternative's objectives and goals. Partnerships will focus on projects, habitat acquisition, research, and monitoring related to specific wildlife taxonomic groups and their life requirements.

Alternative D— Target Species Group-level Modified Management (Proposed Action)

This alternative allows for intensive upland and wetland management, where warranted in the complex. Management objectives for particular tracts (i.e., NWR, WPA) will be based on fulfilling the life needs of a group of target (indicator) species, which may consist of members of various wildlife taxonomic groups (e.g., shorebirds, raptors, waterfowl, wading birds, native gallinaceous birds). Therefore, management objectives for a particular habitat type (e.g., developed wetlands) will be based on a compromised universal benefit concerning particular life needs of multiple wildlife groups. Additionally, public use and environmental education/interpretation opportunities will be maximized to the extent compatible with other objectives (e.g., increased hunting and fishing opportunities, additional environmental learning facilities and programs, increased interpretive signage). Changes in complex research and monitoring, staffing, operations, and infrastructure may be required to ultimately accomplish this alternative's objectives and goals. Furthermore, partnership opportunities will be maximized and will vary widely, spanning the following subject areas: habitat protection and enhancement, land acquisition, monitoring and research, education and outreach.

Chapter 1. Introduction

The U.S. Fish and Wildlife Service (Service) has developed this draft comprehensive conservation plan (CCP) to provide a foundation for the management and use of the Long Lake National Wildlife Refuge Complex (complex), which includes Long Lake NWR, Slade NWR, Florence Lake NWR, and the Long Lake Wetland Management District (WMD or district). The plan is intended to serve as a working guide for management programs and actions over the next 15 years.

The CCP was developed in compliance with the National Wildlife Refuge System Improvement Act of 1997 (Improvement Act) and Part 602 (National Wildlife Refuge System Planning) of the Service Manual. The actions described within this plan also meet the requirements of the National Environmental Policy Act of 1969 (NEPA). Compliance with NEPA is being achieved through the involvement of the public and the inclusion of an integrated environmental assessment (EA).

When fully implemented, this CCP will strive to achieve the program vision and the purposes of the complex. Fish and wildlife and their habitats are the first priority in management of Service lands, and public use (wildlife-dependent recreation) is allowed and encouraged as long as the activity has been determined to be compatible with the biological objectives outlined in this CCP.

A planning team comprised of representatives from various Service programs, including complex staff and the North Dakota Game and Fish Department (NDGF), prepared this CCP.

After reviewing a wide range of public comments and management needs, the planning team developed a proposed alternative. This alternative will attempt to address all significant issues while determining how best to achieve the intent and purposes of the complex. The proposed alternative is the Service's recommended course of action for the future management of these refuges and the district, and is embodied in this draft.

Purpose and Need for Plan

The purpose of this CCP is to identify the role that the complex will play in support of the mission of the National Wildlife Refuge System (Refuge System), and to provide long-term guidance to management programs and activities. The CCP is needed to:

- provide a clear statement of direction for the future management of the program;
- provide landowners, neighbors, visitors, and government officials with an understanding of the Service's management actions on and around these refuges and waterfowl production areas (WPAs);
- ensure that the Service's management actions are consistent with the mandates of the Improvement Act;
- ensure that the management of these refuges and WPAs is consistent with federal, state, and county plans, and;
- provide an outline for the development of budget requests for the programs operational, maintenance, and capital improvement needs.

Perhaps the greatest need of the Service is to build relationships with landowners and communicate with the public and other partners in efforts to carry out the mission of the Refuge System. Sustaining our nation's fish and wildlife resources is a task that can be accomplished only through the combined efforts of governments, businesses, and private citizens.

The U.S. Fish and Wildlife Service and the National Wildlife Refuge System

The U.S. Fish and Wildlife Service

"The mission of the U.S. Fish and Wildlife Service, working with others, is to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people."

Over 100 years ago, America's fish and wildlife resources were declining at an alarming rate. Concerned citizens, scientists, and hunting and angling groups joined together to restore and sustain our national wildlife heritage. This was the genesis of the Service.

Today, the Service enforces federal wildlife laws, manages migratory bird populations, restores nationally significant fisheries, conserves and restores vital wildlife habitat, protects and recovers endangered species, and helps other governments with conservation efforts. It also administers a federal aid program that distributes hundreds of millions of dollars to states for fish and wildlife restoration, boating access, hunter education, and related programs across America.

The Service manages the program along with the rest of Refuge System, thousands of WPAs, and other special management areas. It also operates 66 national fish hatcheries and 78 ecological services field stations.

Service Activities in North Dakota

Service activities in North Dakota (State) contribute to the State's economy, ecosystems, and education programs. The Service employs approximately 160 people and provides economic benefits that are a result of the fishing, hunting, and wildlife observation and photography activities in the complex. Although a figure has not been determined, most visitors from outside Burleigh, Kidder, and Emmons counties frequent motels, restaurants, and other businesses in Bismarck, Steele, Linton, and other surrounding communities, while visiting the complex.

The complex employs eight full-time equivalent employees, with a current budget of \$741,700. Long Lake NWR has 10,000 visitors annually, while approximately 60,000 visitors utilize WPAs for recreation annually. The budget includes funds for the fire program and management of one wildlife development area (WDA). WDAs are transfer lands acquired by the Bureau of Reclamation and then transferred to the Service. Their purpose is to mitigate project impacts associated with development of the Garrison Diversion Project. In addition, 997 volunteer hours are annually contributed to complex operations.

The North Dakota Federal Aid in Sport Fish and Wildlife Restoration program is a source of federal excise taxes paid by hunters, anglers, and boaters on fishing and hunting equipment. The monies generated from this tax have economic benefits to the State. In 1998 the economic impact of angler expenditures was \$206 million and hunters contributed \$176 million to the overall economy of the State.

The Service's Partners for Wildlife program contributes significantly to the rural economy of the State. Along with several partners, the Service has helped 3,318 landowners enhance wildlife habitat on 191,225 acres of private wetlands and uplands and 48 miles of riparian habitat since 1987. Over 233,354 acres of wetlands and associated uplands have been restored, enhanced, or protected in the State through funds from the North American Wetland Conservation Act (NAWCA). Substantial portions of the districts are part of the Chase Lake Prairie Project area which targets protection and development of migratory bird habitat on private lands.

The Service's Ecological Services Program augments the Refuge System by assuming a primary role in endangered species consultation, tracking, recovery, and listing activities as well as monitoring development projects, which are federally funded for compliance with environmental laws, regulations, and policies.

The State contains two national fish hatcheries and one Fish and Wildlife Management Assistance Office. These programs augment and assist fishery programs on refuges and WPAs in the State.

The district continues to pursue an active acquisition program through funding provided by the Small Wetlands Acquisition Program (SWAP). Most activity focuses on protecting wetland and grassland habitat through the purchase of perpetual easements.

Substantial private organization funding augments the Service's habitat protection and development efforts. Ducks Unlimited, Inc., Delta Waterfowl Foundation (Delta), The Nature Conservancy (TNC), and the NDGF, along with others, are primary partners.

The National Wildlife Refuge System

In 1903 President Theodore Roosevelt designated the 5.5-acre Pelican Island in Florida as the nation's first wildlife refuge for the protection of brown pelicans and other native, nesting birds. This was the first time the federal government set aside land for the sake of wildlife. This small but significant designation was the beginning of the Refuge System. One hundred years later, this system has become the largest collection of lands in the world specifically managed for wildlife, encompassing over 96 million acres within 544 refuges and over 3,000 small areas for waterfowl breeding and

nesting. Today, there is at least one refuge in every state in the nation, as well as in Puerto Rico and the U.S. Virgin Islands.

In 1997 a clear mission was established for the Refuge System through the passage of the Improvement Act. That mission is "... to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans."

The Improvement Act further states that each refuge shall be managed to:

- fulfill the mission of the Refuge System;
- fulfill the individual purposes of each refuge;
- consider the needs of fish and wildlife first;
- develop a CCP for each unit of the Refuge System, and fully involve the public in the preparation of these plans;
- maintain the biological integrity, diversity, and environmental health of the Refuge System;
- recognize that wildlife-dependent recreation activities including hunting, fishing, wildlife observation, wildlife photography, and environmental education and interpretation, are legitimate and priority public uses, and;
- retain the authority of refuge managers to determine compatible public uses.

In addition to the overall mission for the Refuge System, the wildlife and habitat vision for each refuge stresses the following principles:

- Fish and wildlife come first.
- Ecosystems, biodiversity, and wilderness are vital concepts in refuge management.
- Refuges must be healthy.
- Growth of refuges must be strategic.
- The Refuge System serves as a model for habitat management with broad participation from others.

Following passage of the Improvement Act, the Service immediately began efforts to carry out the direction of the new legislation, including the preparation of CCPs for all refuges. The development of these plans is now ongoing nationally. Consistent with the Improvement Act, all refuge CCPs are being prepared in conjunction with public involvement, and each refuge is

required to complete its own CCP within the 15-year schedule (by 2012).

People and the National Wildlife Refuge System
America's fish and wildlife heritage contributes to the quality of our lives and is an integral part of our Nation's greatness. Wildlife and wild places have always given people special opportunities to have fun, relax, and appreciate our natural world.

Whether through bird watching, fishing, hunting, photography, or other wildlife pursuits, wildlife recreation also contributes millions of dollars to local economies. In 2002 approximately 35.5 million people visited a refuge, mostly to observe wildlife in their natural habitats. Visitors are most often accommodated through nature trails, auto tours, interpretive programs and hunting and fishing opportunities. Significant economic benefits are being generated to the local communities that surround the refuges. Economists have reported that refuge visitors contribute more than \$792 million annually to local economies.

The Service has made draft compatibility determinations for the complex (appendix A).

Ecosystem Descriptions and Threats

Central Flyway

The complex is located in the Central Flyway, which is one of four administrative flyways in North America (see figure 2, regional context map). The states and Canadian provinces included are: Colorado, Kansas, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Wyoming, Alberta and Saskatchewan. The Central Flyway Council is made up of federal, state, and provincial representatives, who meet regularly to coordinate population surveys, regulate and set hunting seasons, and plan for management of the migratory bird resource.

In 1986 Canada, the United States, and Mexico united to form the North American Waterfowl Management Plan (NAWMP), designed to restore diminishing continental waterfowl populations to the levels of the 1970s.

The NAWMP brought together federal, state/provincial agencies, private conservation organizations, private landowners, and business leaders from the three countries into "Joint Ventures." Joint Ventures are regionally based, self-directed partnerships that carry out science-

based conservation through a wide array of community participation. Joint Ventures strive to:

- build partnerships for conservation where participation is voluntary and programs are nonregulatory;
- work on public and private lands to protect, restore and enhance critical habitats for waterfowl, shorebirds, waterbirds, and land birds, and;
- build a scientific foundation through improvement of databases, scientific technologies, and monitoring that help partners target conservation efforts to where they will do the most good and make the best use of resources.

Prairie Pothole Joint Venture

The complex lies within the boundaries of the Prairie Pothole Joint Venture (PPJV). The PPJV was established in 1987, 1 year after the establishment of the NAWMP, and was one of the original six priority joint ventures under the plan. It serves to protect, restore, and enhance priority wetland and grassland habitats throughout one-third (100,000 square miles) of North America's prairie pothole region (PPR) The remaining two-thirds of the PPR is located in prairie Canada. The PPJV includes portions of North Dakota, South Dakota, Montana, Minnesota, and Iowa.

Habitats within the PPJV consist of some of the most productive wetland systems in the world. Millions of glacially derived depressional wetlands, commonly referred to as "prairie potholes", and their associated grasslands are tremendously productive and support a diversity of wildlife, especially migratory waterfowl. Although the PPR makes up only 10 percent of North America's total waterfowl breeding area, this region can produce greater than 50 percent of the continental duck population during wet years (Batt et al. 1989).

The PPJV is a dynamic partnership, involving state and federal agencies, private conservation organizations, landowners, universities, and others. It has been an unqualified success since its inception, due in large part to the fact that the above entities have realized that they can achieve more through collaboration than they can accomplish by acting alone.

Missouri River Mainstem Ecosystem Plan

The Service has adopted watersheds as the basic building blocks for implementing ecosystem conservation. The complex is found in the Missouri

River Mainstem Ecosystem. This vast area covers all of North Dakota and South Dakota and small portions of Nebraska, Wyoming, and Montana. The major threats identified for this ecosystem include conversion of prairie to cropland and invasive species. The complex contributes to the accomplishment of goals and objectives for this ecosystem through its Partners for Fish and Wildlife Program and the partnerships that exist throughout the complex.

Key legislation and policies can be found in appendix D.

National and Regional Mandates

The administration of the Refuge System is guided by a variety of international treaties, federal laws, and presidential Executive Orders (EOs). Management options under each refuge and district's establishing authority and Improvement Act (the legal and policy guidance for the operation of refuges) are contained in the documents and acts listed in appendix D.

The Improvement Act amends the Refuge System Administration Act by providing a unifying mission for the Refuge System, a new process for determining compatible public uses on refuges, and a requirement that each refuge will be managed under a CCP. The Improvement Act states that wildlife conservation is the priority of Refuge System lands and that the Secretary of the Interior will ensure that the biological integrity, diversity and environmental health of refuge lands are maintained. Each refuge must be managed to fulfill the Refuge System's mission and the specific purposes for which it was established. The Improvement Act requires the Service to monitor the status and trends of fish, wildlife, and plants in each refuge. A list of other laws and EOs that may affect the CCP or the Service's implementation of the CCP is provided in appendix D. Service policies providing guidance on planning and the day-to-day management of a refuge are contained within the Refuge System Manual and the Service Manual.

The Planning Process

This draft CCP and EA for the complex are intended to comply with the Improvement Act and NEPA and their implementing regulations. The Service issued a final refuge planning policy in 2000 that established requirements and guidance for Refuge System planning, including CCPs and step-down management plans, ensuring that planning efforts comply with the provisions of the

Improvement Act. The planning policy identified several steps of the CCP and EA process (see figure 1):

- Form a planning team and conduct pre-planning;
- Initiate public involvement and scoping;
- Draft vision statement and goals;
- Develop and analyze alternatives, including proposed action;
- Prepare draft CCP and EA;
- Prepare and adopt final CCP and EA and issue a Finding of No Significant Impact (FONSI) or determine if an environmental impact statement is needed;
- Implement plan, monitor and evaluate, and;
- Review plan (every 5 years) and revise (every 15 years).

The Service began the pre-planning process in November 2003 (see appendix E). A planning team comprised of Service personnel from the complex and the regional office, as well as from the NDGF (appendix C), was developed during the kickoff meeting in February 2004.

A notice of intent was published in the *Federal Register* on May 21, 2004. Notification of a public open house was distributed through press releases.

Draft issues and qualities lists were developed during a workshop held at the Service's Bismarck office in late September 2004. Over the course of pre-planning and scoping, the planning team collected available information about the resources of the complex and the surrounding areas. This information is summarized in chapter 4: Affected Environment.

This CCP provides long-term guidance for management decisions; sets forth goals, objectives, and strategies needed to accomplish refuge purposes; and identifies the Service's best estimate of future needs. This CCP details program planning levels that are sometimes substantially above current budget allocations and, as such, are primarily for Service strategic planning and program prioritization purposes. This CCP does not constitute a commitment for staffing increases, operational and maintenance increases, or funding for future land acquisition.

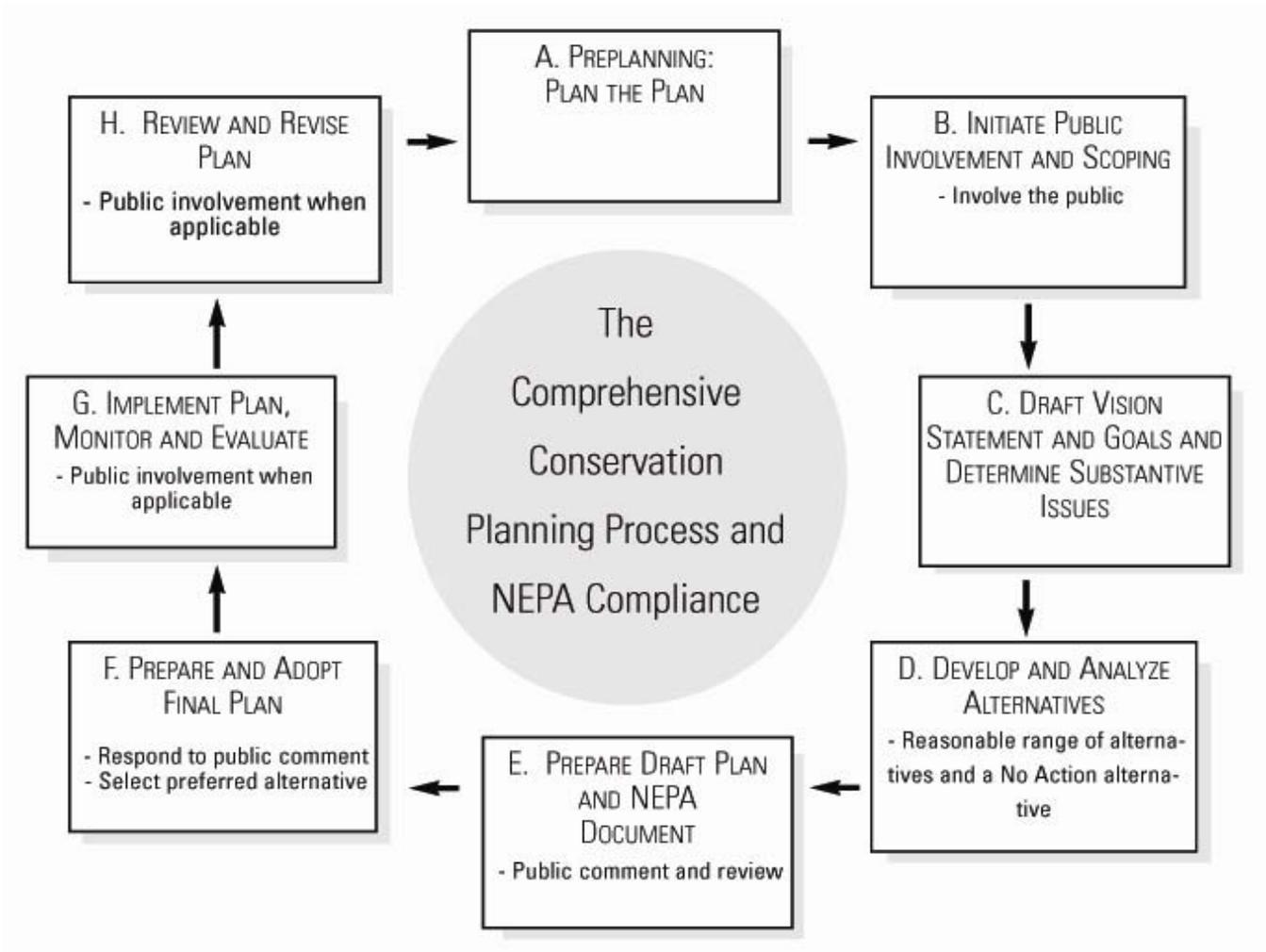


Figure 1. The steps in the CCP process

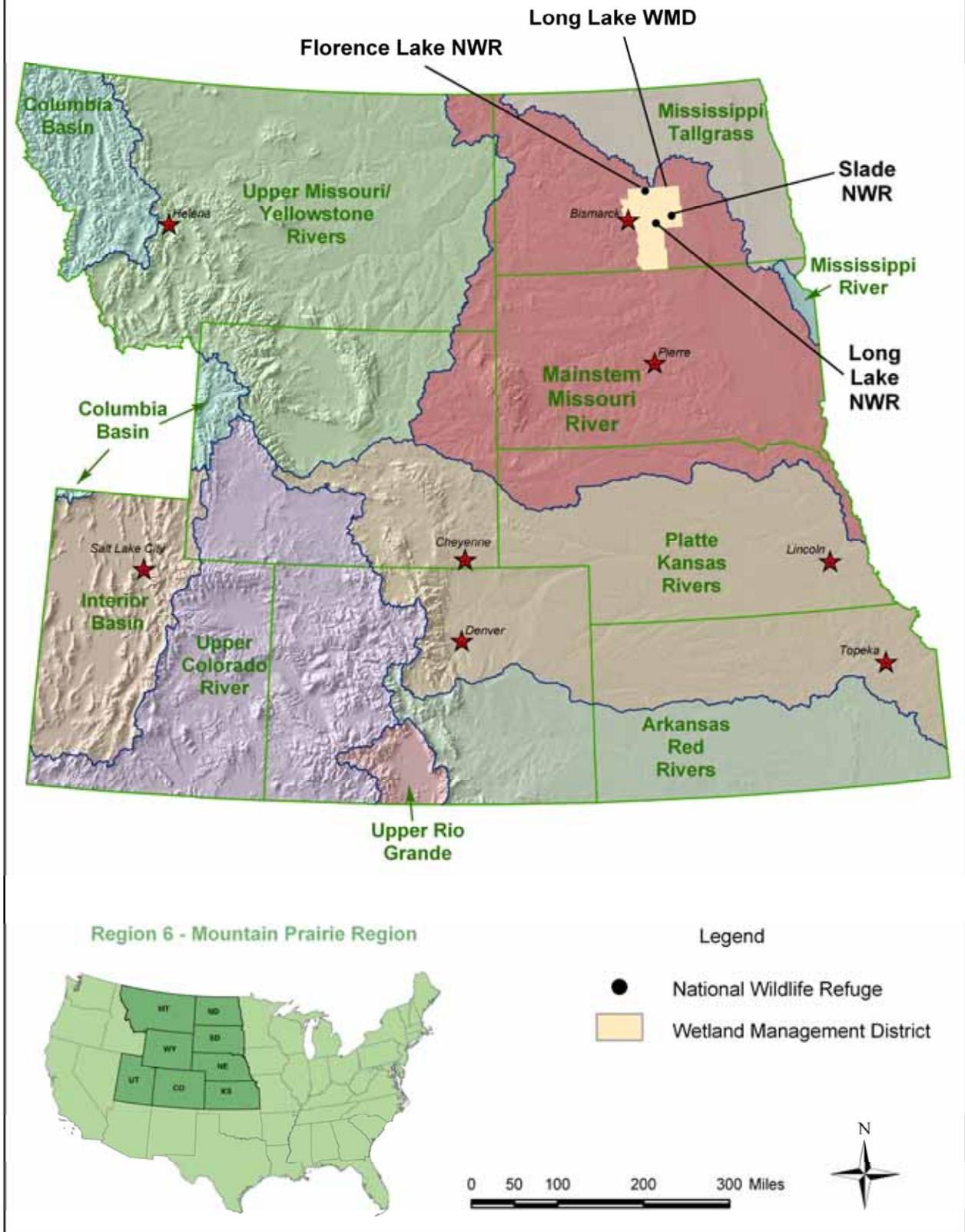


Figure 2: Regional context map

Chapter 2. Long Lake National Wildlife Refuge Complex

Establishment, Acquisition, and Management History

The complex oversees management of three national wildlife refuges: Long Lake National Wildlife Refuge (NWR), Slade NWR, Florence Lake NWR, and a three-county wetland management district (WMD or district) that consists of 79 waterfowl production areas (WPAs) in Burleigh, Emmons, and Kidder counties in the south-central portion of the State, as well as conservation easements which protect approximately 147,000 acres. The wetland management districts continue to grow with the acquisition of additional easements annually.

Long Lake NWR was established on February 25, 1932, by President Herbert Hoover through EO No. 5808 "... as a refuge and breeding ground for migratory birds and wild animals" and "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (Migratory Bird Conservation Act.)

The refuge is located in the south-central part of the State in an area famous for its wealth of waterfowl-producing prairie potholes. Long Lake NWR is 22,310 acres in size and consists of approximately 15,000 acres of brackish to saline marsh and lake, 1,000 acres of other wetlands, and about 6,000 acres of tame- and native grassland, woodland, and cropland (see figures 3 and 4, location map and Long Lake National Wildlife Refuge base map). The refuge serves as an important staging area for migrating sandhill cranes, Canada geese and other waterfowl, shorebirds, and other migratory birds. Endangered whooping cranes often utilize refuge marshes during spring and fall migration periods.

A primary resource goal is to prevent or at least manage avian botulism (hereafter, botulism), which has, on occasion, devastated migratory bird resources found in the complex. Throughout the history of the refuge outbreaks have been sporadic and have ranged from mild to severe.

The refuge provides a variety of habitats for resident wildlife and supports populations of white-

tailed deer, sharp-tailed grouse, and ring-necked pheasants during the fall and winter.

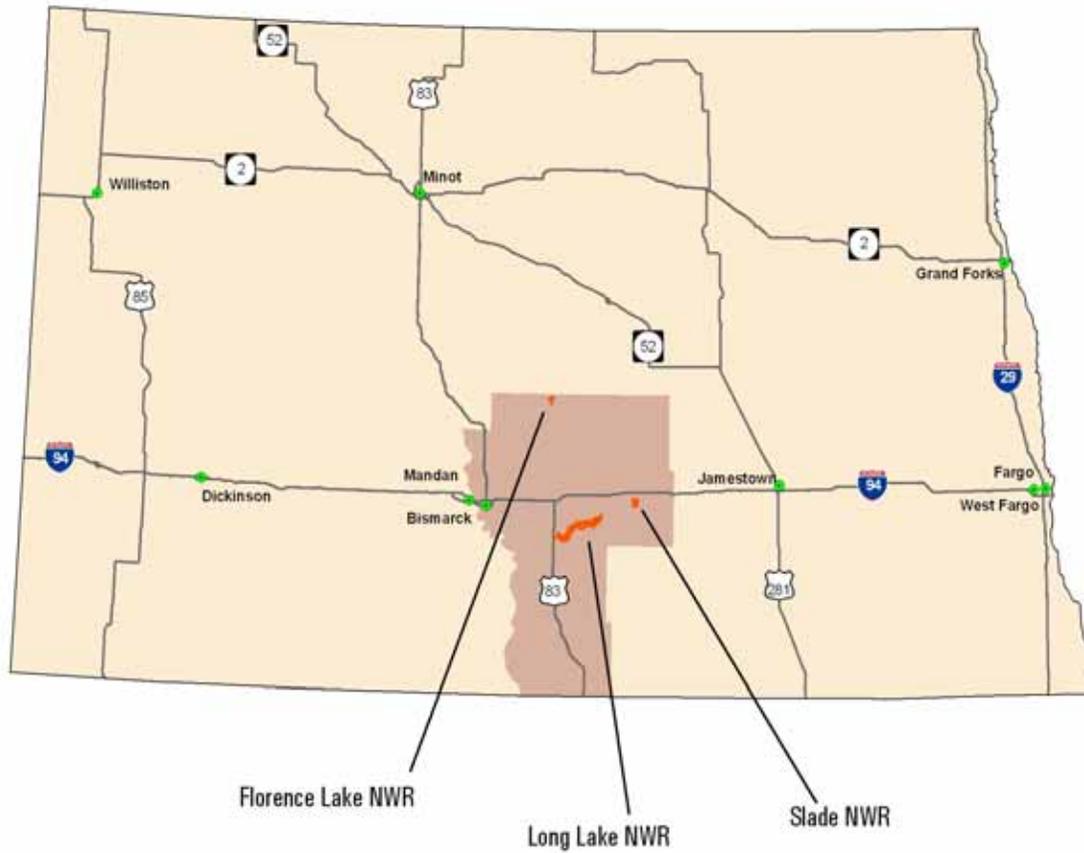
Slade NWR was established through donation by Northern Pacific Railroad executive G.T. Slade, who originally began acquiring the area around Harker Lake in 1924 for the establishment of a private shooting club. It is located in south-central Kidder County, approximately 20 miles northeast of the complex's headquarters and is adjacent to Lake Isabel Recreational Area. The refuge consists of 3,000 acres of gently rolling prairie dotted by lakes and marshes, which were formed by glacial action. Habitat centers around five semi-permanent and permanent wetlands and numerous other prairie potholes, which altogether total more than 900 wetland acres (see figure 5, Slade National Wildlife Refuge base map). Much of the upland acreage had been farmed prior to the donation. Current management targets restoring native grasses and forbs that are characteristic to this area.

Florence Lake NWR was established on May 10, 1939, by President Franklin D. Roosevelt through EO No. 8119 "... as a refuge and breeding ground for migratory birds and other wildlife" and "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (Migratory Bird Conservation Act.)

It is located in northern Burleigh County approximately 45 miles northwest of Long Lake NWR. The refuge consists of 1,468 acres of fee title and 420 acres of easement (132 acres of which is meandered lake). The fee portion of the refuge consists of 977 acres of native grassland, 202 acres of tamegrass, 111 acres of seeded native grass, 163 acres of wetland and 16 acres of woodland. The refuge serves as an important migratory bird production and migration area.

Long Lake Wetland Management District

The wetland management district was started as part of the Small Wetlands Acquisition Program



Region 6 - Mountain Prairie Region



Legend

- National Wildlife Refuge
- Long Lake Wetland Management District

Figure 3: Location Map

(SWAP) in the 1950s to save wetlands from various threats, particularly drainage. The passage of Public Law 85-585 in August 1958 amended the Migratory Bird Hunting and Conservation Stamp Act (Duck Stamp Act) of 1934, allowing for the acquisition of WPAs and easements for waterfowl production.

The Long Lake WMD contains 1,036 perpetual wetland easement contracts which protect 102,646 acres; 93 perpetual grassland contracts which protect 41,181 acres; 16 Farmers Home Administration (FmHA) perpetual easements which protect 669 wetland acres, and 2,759 acres of upland; one wildlife development area (WDA; Garrison diversion unit mitigation tract) totaling 794 acres; and 78 WPAs totaling 21,789 acres (see figures 6 and 7, Long Lake WMD fee title and easement land maps). Easement restrictions generally prohibit wetland drainage, grassland conversion and development, and require a special-use permit issued by the U.S. Fish and Wildlife Service (Service) for vegetative manipulation. The lands remain in private ownership. There continues to be an active acquisition program in the Long Lake WMD, which currently focuses on acquiring grassland and wetland easements.

Long Lake National Wildlife Refuge Complex Purposes

Long Lake National Wildlife Refuge was established "...as a refuge and breeding ground for migratory birds and wild animals..." (EO No. 5808, February 25, 1932) and "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (Migratory Bird Conservation Act.)

Florence Lake NWR was established "...as a refuge and breeding ground for migratory birds and wild animals..." EO No. 8119, May 10, 1939, "... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds." (Migratory Bird Conservation Act.)

Slade NWR was established through a donation to the Service in 1940 under the authority of the Migratory Bird Conservation Act "...for use as an inviolate sanctuary, or for any other management purpose, for migratory birds."

Long Lake WMD was established "...to assure the long-term viability of the breeding waterfowl population and production through the acquisition and management of waterfowl production areas,

while considering the needs of other migratory birds, threatened and endangered species and other wildlife." (The purpose statement was developed for all Region 6 WMDs in June 2004.)

Migratory Bird Hunting Stamp Act 16 U.S.C. 718(c) "...as Waterfowl Production Areas subject to all provisions of the Migratory Bird Conservation Act ...except the inviolate sanctuary provisions..."

Migratory Bird Conservation Act 16 U.S.C. 715d "...for any other management purposes, for migratory birds."

Consolidated Farm and Rural Development Act 7 U.S.C. 1924 "... for conservation purposes."

Consolidated Farm and Rural Development Act 7 U.S.C. 2002 "...for conservation purposes"

Vision and Goals

Vision for the Long Lake National Wildlife Refuge

The echo of the sandhill cranes though the rolling prairie hills of Long Lake invites today's visitors to follow in the footsteps of the plains Indians. The refuge lies along the west-central boundary of the PPR where the Missouri Coteau meets the Coteau Slope. An abundance of migratory birds and other wildlife flourish in the native mixed-grass prairie and a mosaic of wetlands. The mixed hues and textures of wildflowers, grasses, mudflats, and water please the eye and soothe the soul. Refuge stewards work collaboratively to understand, restore, and protect biological communities. Expanded wildlife-compatible recreation and environmental education opportunities foster a greater understanding and appreciation of the mixed-grass prairie ecosystem and the mission of the Refuge System.

Vision of Florence Lake National Wildlife Refuge

A classic prairie-pothole landscape, Florence Lake NWR provides a unique perspective of pre-settlement prairie conditions. At this visual oasis of the prairie ecosystem, visitors enjoy solitude and excellent grassland bird viewing opportunities in a peaceful, protected environment that supports a wealth of migratory birds and other wildlife. Florence Lake serves as a reference area for northern prairie ecosystems with ongoing restoration, monitoring, and research.

Vision of Slade National Wildlife Refuge

Located within the central flyway, Slade NWR historically served as a foundation for the restoration of the nearly extirpated giant Canada

goose population. Management strives to restore mixed-grass prairie and continues to provide quality migratory stopover and breeding habitat for Birds of Conservation Concern. Enhanced wildlife-dependent recreation opportunities and interpretation foster a greater understanding and appreciation of conservation and restoration within an agricultural landscape.

Vision of Long Lake Wetland Management District WPAs and all conservation easements provide a network of wetland and grassland habitats that preserve the integrity of the historic and vital nesting and breeding grounds of North America's migratory waterfowl resource. These conservation and management efforts support populations of nesting ducks and geese at or above historic levels. New and expanded habitats are provided for trust species including nongame migratory birds, threatened and endangered species, and resident wildlife. The public recognizes these wetlands and uplands as a beneficial and important component of a diverse, healthy, and productive prairie landscape. There is consumptive and nonconsumptive compatible recreational use of public lands. Landowners, sportsmen/sportswomen, conservationists, and others actively support and encourage the complex's habitat conservation programs. There are a wide variety of partners assisting the Service's efforts to educate the public on the value of habitat conservation and the benefit to current and future generations. These partnerships join us financially and physically to ensure a broad base of support, so that the Service conserves high-quality habitats.

Goals of the Long Lake National Wildlife Refuge Complex

1. Wildlife and Habitat Management

Conserve, restore, and enhance the ecological diversity of the mixed-grass prairie ecosystem (including wetlands, grasslands, and native trees and shrubs) for migratory birds with an emphasis on waterfowl and other grassland- and wetland-dependent species.

2. Research, Inventory, and Monitoring

Use sound science, monitoring and applied research to advance the understanding of natural resource functions and management within the mixed-grass prairie pothole ecosystem.

3. Public Use, Education, and Interpretation

Provide a safe environment for visitors of all abilities to enjoy wildlife-compatible recreation while increasing their knowledge and appreciation of the mixed-grass prairie ecosystem and the mission of the Refuge System.

4. Cultural Resources

Identify, value, and preserve the cultural resources and history of the complex to connect staff, visitors, and the community to the area's past.

5. Refuge Operations

Through effective communication and innovative technology, secure and efficiently utilize funding, staffing partnerships, and volunteer programs for the benefit of all natural resources in support of the Refuge System mission.

6. Partnerships

Engage a wide array of partners to support outreach, research and management, promote awareness, and foster an appreciation of the mixed-grass prairie pothole ecosystem.

Special Values

The planning team and public identified special values and qualities that make the complex valuable for wildlife and for the American people. The complex has the following attributes:

- It comprises a diverse natural environment of mixed-grass prairie with an abundance of paulestrine and alkali wetlands.
- The complex staff operates in cooperation with landowners and partners to acquire easements (wetland and grassland) and establish WPAs to protect and manage lands for wildlife.
- It is home to, and attracts, a wide diversity of birds. Multiple areas within its boundaries have been designated as globally significant.
- Wildlife is abundant and highly visible because of varied habitat types and relatively low disturbance levels.
- Visitors can still find wide-open spaces that remain relatively undisturbed.

Planning Issues

Prior to writing the draft CCP, complex staff and other planning team members met to identify significant issues that should be addressed in the plan. The team hosted five public open houses, issued news releases in the local and regional press, as well as an announcement in the *Federal Register*,

and conducted numerous mailings to find out what issues were important to the public. The following are the most significant issues the team identified.

Upland Habitat Management

The complex's primary purpose is to provide optimal habitat conditions for the needs of a suite of migratory birds, and, to a lesser extent native, resident wildlife. To achieve goals and objectives, aggressive upland habitat management must be conducted. The complex include uplands, which were previously farmed and have since been restored to various mixes of tame and native grasses interspersed with native uplands, the bulk of which have the native vegetation character but are compromised by invading species. For the purpose of this CCP, native upland habitat is considered previously unbroken (virgin) sod. Soil composition is generally intact, although the vegetative community is often altered substantially due to a host of environmental factors. Vegetation typically has a native component, but often has become invaded by nonnative plant species.

Primary invasive weed species include leafy spurge, Canada thistle, and absinth wormwood. Kentucky bluegrass and smooth brome are primary invasive grass species. Western snowberry and silverberry are native shrubs which have greatly expanded their coverage in some areas where natural regimes of fire and grazing have been altered.

These nonnative grasses and forbs and potentially invasive native woody species substantially diminish the quality and suitability of upland habitat for many native wildlife species. Invasives have been an issue throughout the complex for many years. A large portion of the refuge's resources are directed at control of leafy spurge and other invasive species. Integrated pest management (IPM) strategies currently used include: prescribed burning, grazing, mowing, herbicides, insects, interseeding, and farming in combination to provide control.

New invasive species (i.e., salt cedar or purple loosestrife) pose additional threats to complex lands. Generally, an immediate control response to new invasive species is most effective in the long-term; however, due to the scattered nature of land holdings in the complex, early detection is a primary issue but is often unachievable.

Tamegrass (i.e., nonnative grass species) fields persist, providing sources of seed that invade and

degrade adjacent native uplands. These fields need to be restored to native grass.

Public Use

Hunting, fishing, wildlife observation and photography, and environmental education and interpretation are all uses currently authorized on lands administered by the complex. A growing demand for public recreation in the area makes the six priority public uses a primary issue of interest.

Water Management

A small number of the complex's wetlands are impounded by earthen dams, many with water control structures (WCSs) that can be used to either create deep and stable water levels or mimic natural wet and dry cycles.

The water management capability at Long Lake NWR is limited and primarily targets single-issue management (i.e., managing water levels to deter botulism outbreaks). The limitations are exacerbated by the "hard sill" elevation of the outlet which limits drawdown capability and subjects water management to interpool regulation of water levels only when nature allows.

Wildlife Disease

The complex administers migratory bird programs and has the lead role in addressing wildlife and in particular avian disease issues. There are 21 sites in the wetland management district that have a history of botulism outbreaks.

Success in combating botulism, especially on Long Lake NWR occurs at the expense of other resources. There exists an ongoing issue of striking a balance between providing optimal habitat, maintaining other complex programs, and managing botulism.

Severe disease years consume substantial staff time, reducing the complex's capacity to attain other goals and objectives.

Disease issues are increasing. Historically, the only disease issue was botulism; however, recently Newcastle, West Nile virus, chronic-wasting disease, chlymidiosis, and avian influenza have created additional issues and concerns.

Long Lake Hydrology and Water Quality

Development of dikes and water control structures to manage waters at increased levels in order to combat botulism has altered the hydrology of Long

Lake and its associated marshes. During the era of refuge development, the area was experiencing severe drought conditions and development of water management facilities focused on conservation of water. This strategy failed to recognize a need to periodically lower and de-water refuge units and thus the capability to do so was never developed. This has severely limited the refuge's ability to manage water effectively.

There are questions regarding the altered hydrology and long-term ability of Long Lake NWR to provide beneficial wildlife habitat. The developments have reduced the ability to "flush" the system and have created hypotheses that this situation has accelerated salinification of refuge wetlands, reducing the sustainability of wetland habitats. This creates an obvious need to examine historical data related to past water-quality parameters and to develop a monitoring program to compare and track Long Lake NWR waters in order to prescribe viable alternatives to address and avoid potential productivity declines of refuge marshes and/or catastrophic collapse of the system.

Predator Management

Despite substantial investment in land protection and habitat management, recruitment rates which are not high enough to sustain and/or increase populations of bird trust species have been documented on Service areas within the complex. Predation rates, which are unacceptable, must be addressed through management of predator populations.

Additionally, protection provided by refuges in the complex allow predators which hunt domestic livestock (i.e., coyotes) adjacent to the refuges to continue to grow unchecked, perpetuating depredation problems and economic losses to refuge neighbors in localized areas surrounding the refuges.

Lake Isabel Recreation Area

The Lake Isabel Recreation Area, which is adjacent to Slade NWR, provides the only public access for Lake Isabel. The recreation area has been managed over the years by Kidder County and while most of the nontraditional uses occur off-refuge, facilities on the refuge promote the uses, which are not allowed on refuge lands (e.g., swimming, jet-skiing). Recently the facilities have been minimized and converted to promote more traditional and acceptable refuge public uses (fishing).

Habitat Protection and Acquisition

Urbanization, development, and conversion of native uplands for agricultural crop production continue to threaten native grassland habitat and the support capability for native wildlife. The Service needs to protect additional grassland and wetland habitat in order to achieve its goals and objectives.

The majority of the wetlands on complex fee lands are natural prairie potholes, which function through dynamic prairie weather cycles. Wetlands continue to be lost annually to agricultural drainage and impacts of development.

Over 60 percent of native grassland in the complex remains intact; however, it is in degraded condition due to annual use for livestock production. Native grasslands are also continuously threatened by development and other uses.

While various regulations and programs have provided some temporary relief from broad-scale destruction, the only permanent protection for grassland and wetland habitat is afforded through purchase of perpetual easements by the Service. While these programs afford protection of the habitats, additional issues persist as economic pressure on these private lands provides less than optimum habitat for trust resources, especially those with narrow habitat requirements (e.g., marbled godwit, chestnut collared longspur).

Budget and Staffing

Budget and staffing is not sufficient to fulfill the purposes and goals of the complex. Identifying priorities and directing resources efficiently will always be an issue for the complex. Service staff needs to identify and articulate unfunded needs so that they will be able to compete effectively for additional funds from both within The Service and from partners and other sources.

Monitoring

Monitoring wildlife populations is an essential element in achieving the primary goals and objectives of the complex. Basic data related to recruitment, mortality, and habitat use for a representative group of species must be collected and analyzed on a regular basis in order to make appropriate decisions that will affect the habitats upon which these species depend. Decision making in the absence of resource information is a primary issue for the complex.

Threatened and Endangered Species

Breeding piping plovers occur in small numbers on numerous alkali wetlands, which are characteristic to the complex.

The complex holds habitat, which when enhanced, or restored may be suitable for Dakota skippers (a candidate species). Small, isolated populations may exist on certain WPAs, which retain remnant native prairie vegetation. Surveys are planned to determine the status of this species in these areas.

Endangered whooping cranes are regularly observed on the marshes of Long Lake NWR. Throughout the complex several observations are documented during each spring and fall migration.

The primary issues related to these and other species of concern center on: monitoring their populations; monitoring habitat use; identifying, securing, and maintaining essential habitat; and developing habitat conditions in areas which hold potential for these species and which will promote increased recruitment or population protection to secure and increase their populations.

Threatened and Endangered Species

The Biological Integrity, Diversity, and Environmental Health Policy (published January 16, 2001, effective April 16, 2001) (<http://policy.fws.gov/library/01fr3809.pdf>) guides Refuge System personnel in maintaining the “biological integrity, diversity, and environmental health” of the Refuge System. This policy further guides the Service to consider restoring lost or severely degraded components of the system “where appropriate and in concert with refuge purposes and the Refuge System mission.”

The complex staff reviewed all threatened and endangered species with historical ranges on or near the refuge to determine if additional actions could be taken to restore or enhance habitat for endangered species. Only the piping plover was determined to be appropriate for restoration actions.

Although the status of the Dakota skipper has not warranted listing, the complex staff has consulted with ecological services staff and evaluated habitats as to their present and future potential to support this species. The complex has adopted interim guidelines targeting management for Dakota skippers resulting from those consultations.

Predators

Predators on the complex are diverse, ranging from coyotes and short-tailed weasels to bald eagles and American kestrels. This array of predators helps maintain the “biological integrity, diversity, and environmental health” of Service lands. Several species, including red fox, coyotes, striped skunks, Franklin’s ground squirrels, mink, badger, and raccoons, are found at higher than historical levels due to modifications of habitat and other factors. These species can impact migratory bird populations and reduce the likelihood of reaching wildlife population goals and objectives outlined for the complex, primarily by preying upon the nests of numerous grassland-nesting bird species.

Prioritization of Complex Lands

The complex staff is charged with managing habitat and protecting trust resources (i.e., migratory birds, threatened and endangered species) on 82 different tracts of fee-title land that is scattered throughout a three-county area that spans 7,490 square miles. Limited staff, budgets, and other resources require that lands are prioritized and those with the greatest management potential and/or most vulnerable resources are recognized. Therefore, complex staff used a number of important criteria to classify all fee-title lands in the complex as either HIGH, MODERATE, or LOW priority. The criteria include 1.) breeding duck pair density, with a minimum upland acreage, 2.) total tract size, with a minimum upland acreage, 3.) native prairie acreage, 4.) proximity to Grassland Bird Conservation Areas (Type I), with a minimum upland acreage, and resource of special concern designation (e.g., Piping Plover Critical Habitat). Based on these criteria, high priority tracts may be classified as such based on their management potential (e.g., native prairie) or their habitat support potential for priority wildlife populations (e.g., Dakota skippers). Based on the above criteria, all three fee-title refuges qualify as high priority, along with 36 WPAs. Twenty WPAs are classified as moderate priority and 23 WPAs are classified as low priority. Appendix F lists, by priority class, all fee-title lands and their qualifying criteria.

Additionally, due to the high visibility and attraction of the three fee-title Refuges to the public, these lands receive staff attention, which extends beyond managing habitat and protecting trust resources, with increased focus on these lands for compatible uses described in the Improvement Act (e.g., hunting, wildlife photography,

environmental education). Similar priority public use opportunities may be used in the future to help prioritize WPAs because of their location (e.g., close proximity to cities/towns and/or Interstate 94) and

ability to provide enhanced opportunities for priority public uses, irrespective of an overall tract rating based on habitat or wildlife management potential and/or priority resource criteria.

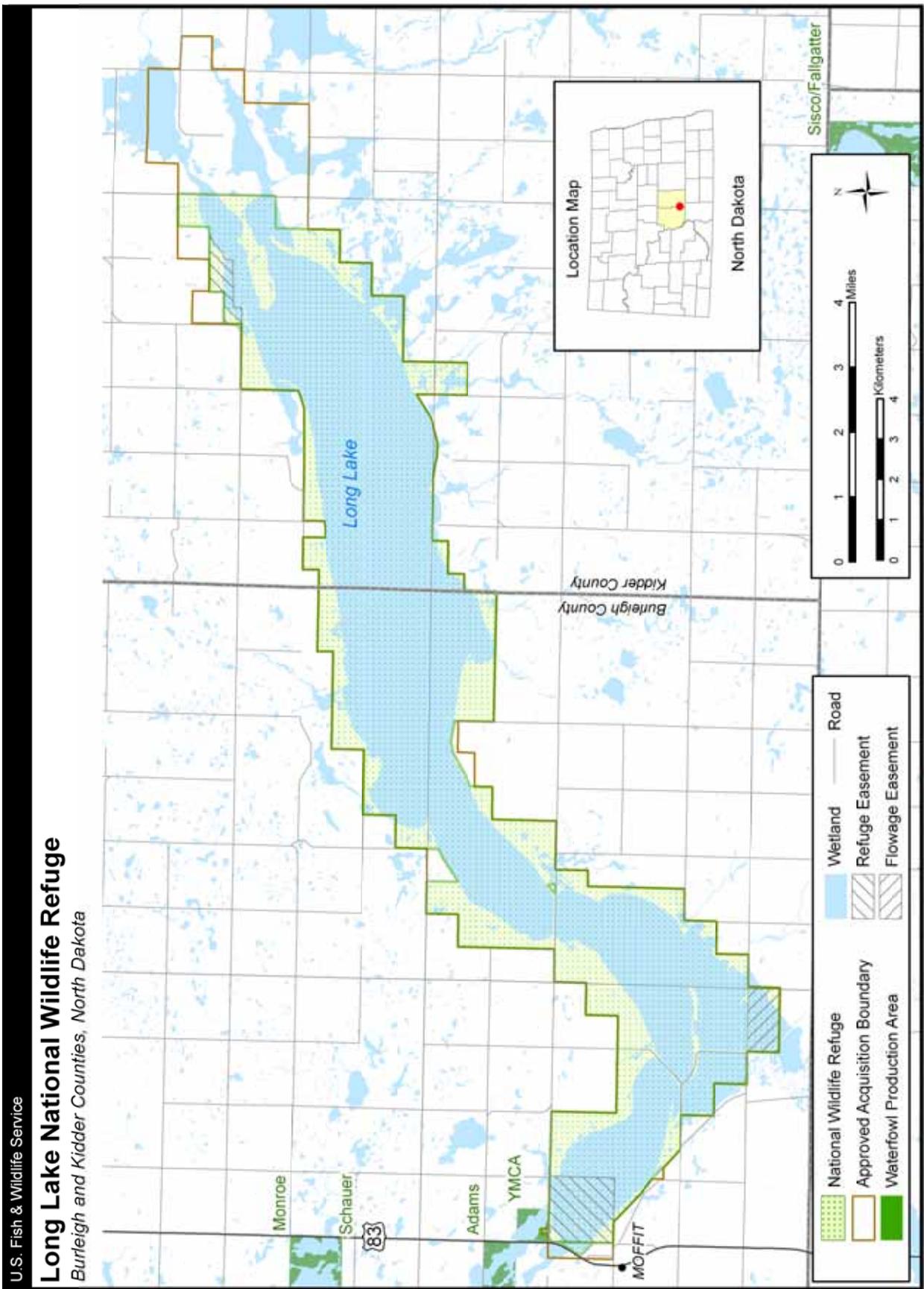


Figure 4: Long Lake National Wildlife Refuge Base Map

Slade National Wildlife Refuge

Kidder County, North Dakota

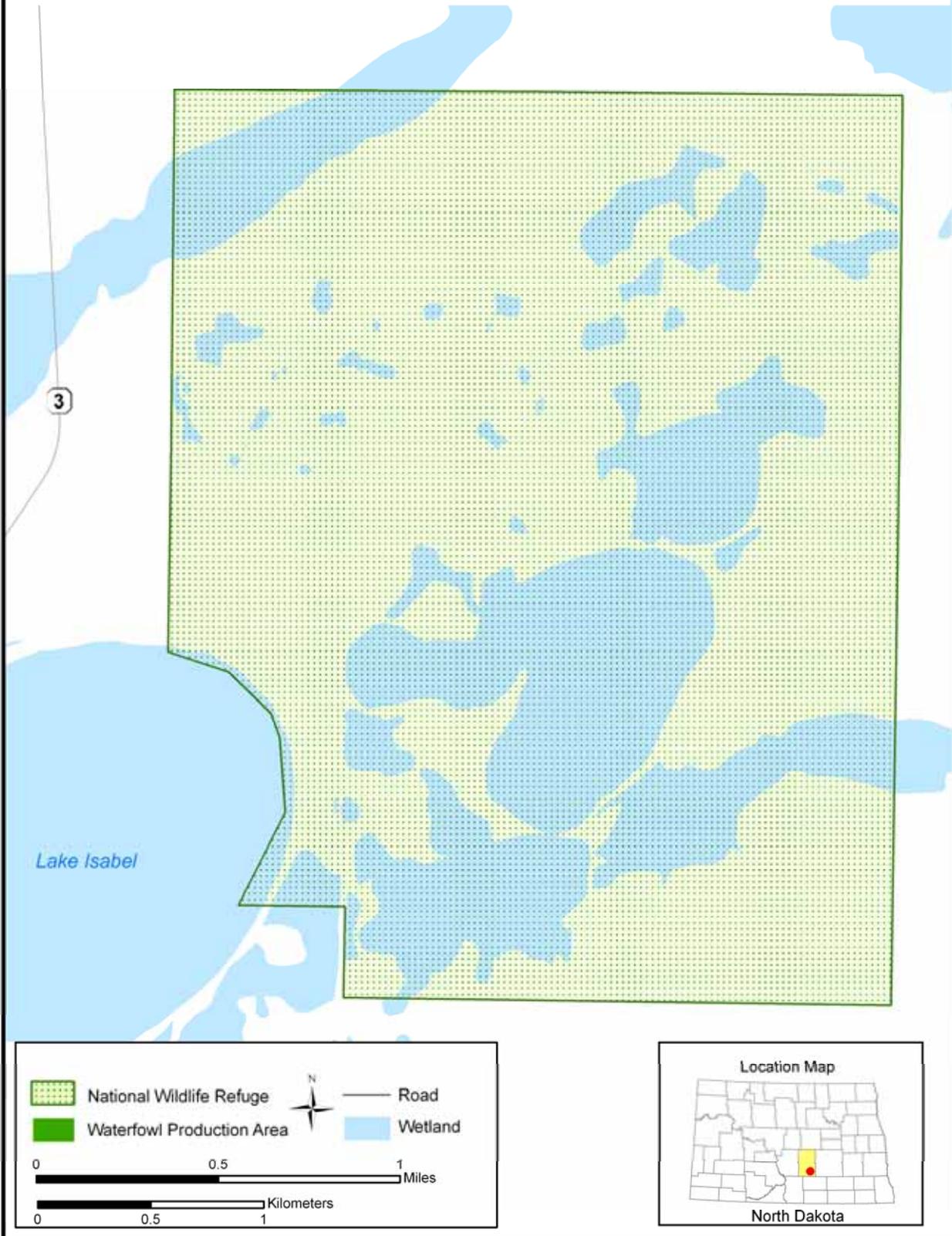


Figure 5: Slade National Wildlife Refuge Base Map

Long Lake Wetland Management District

Burleigh, Emmons, Kidder Counties, North Dakota

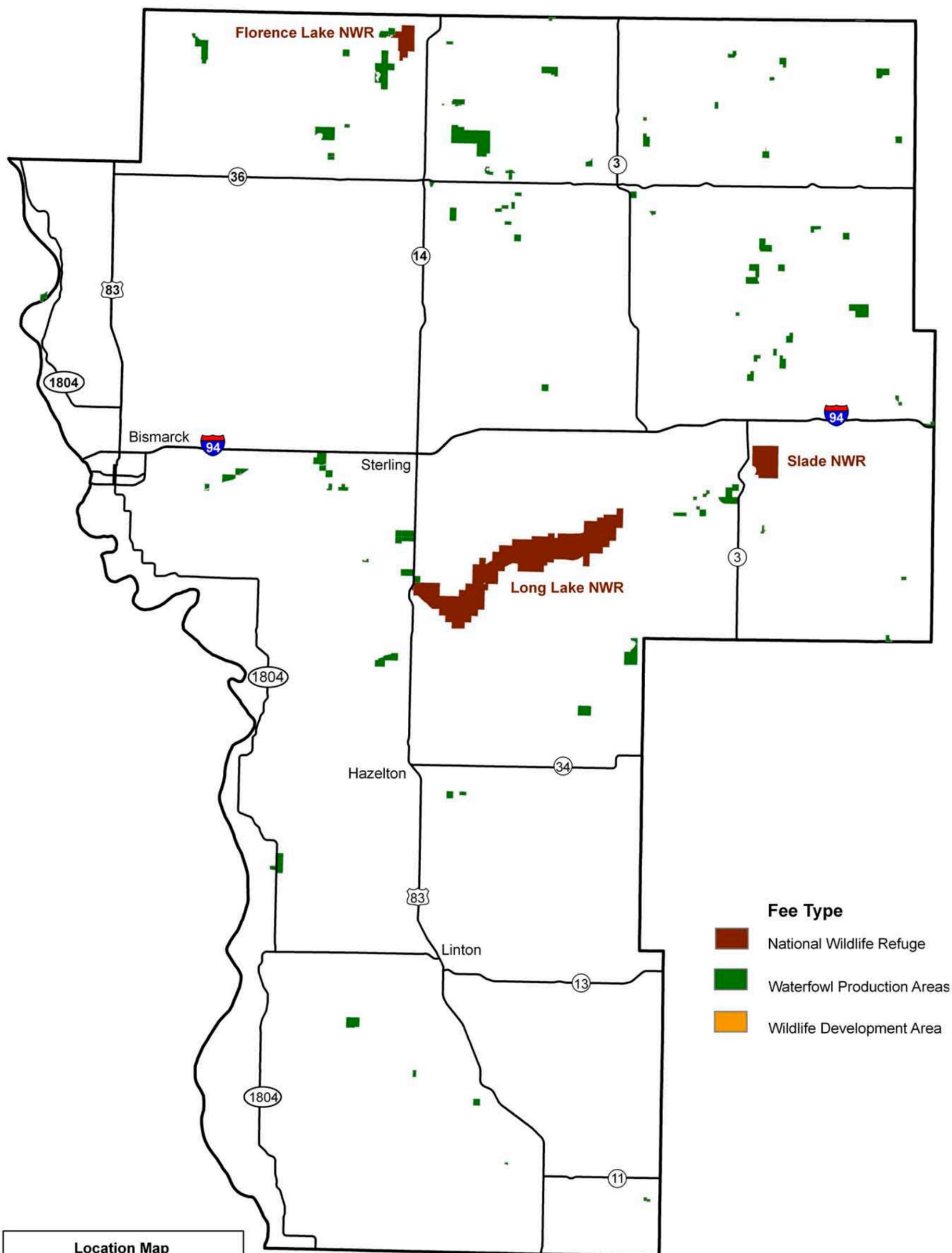


Figure 6: Long Lake Wetland Management District Fee Title Lands

Long Lake Wetland Management District

Burleigh, Emmons, Kidder Counties, North Dakota

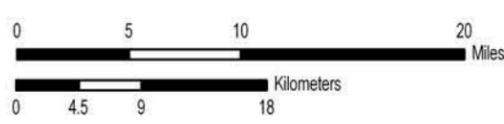
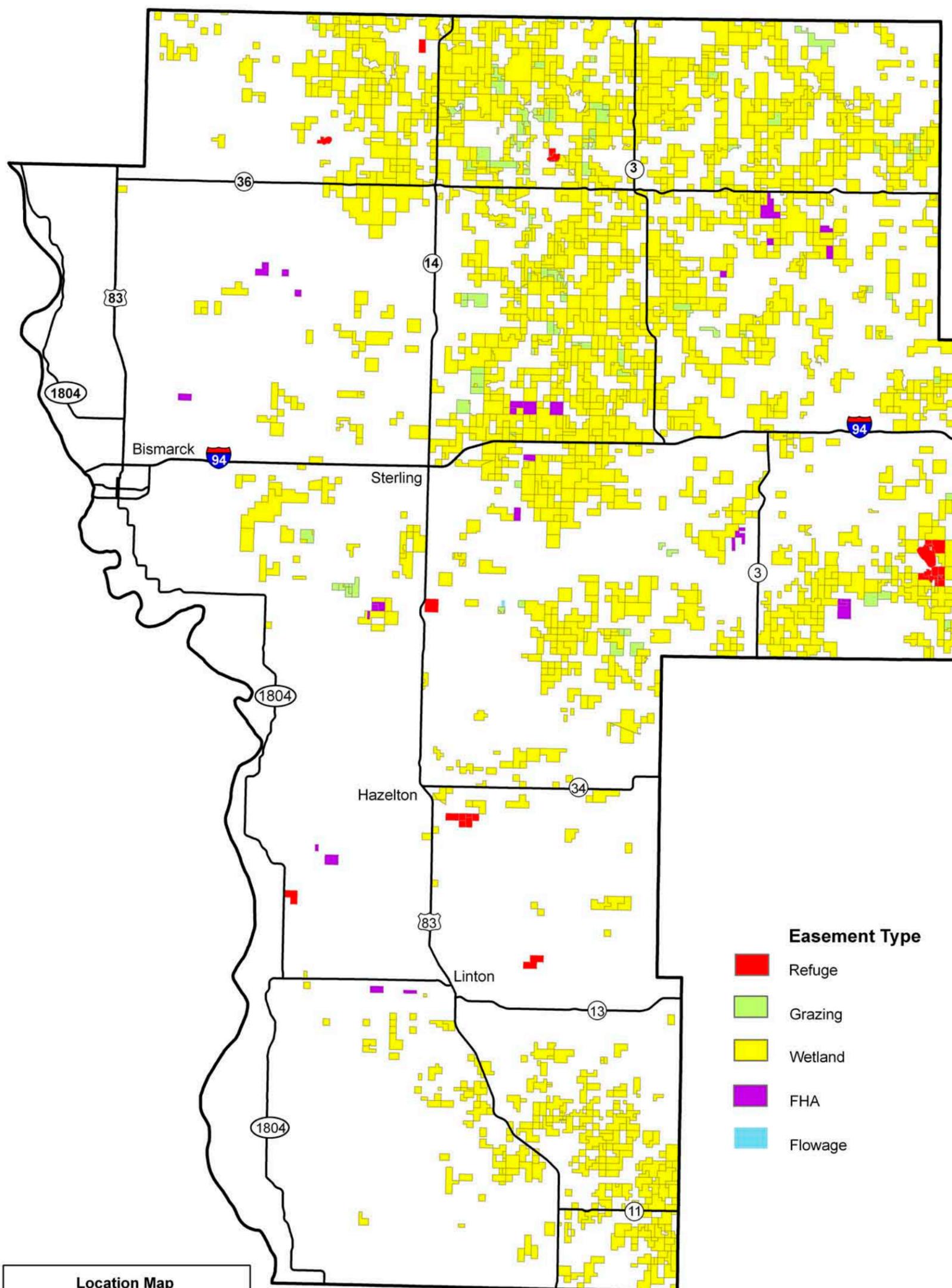


Figure 7: Long Lake Wetland Management District Easement Lands