

Chapter 1: Introduction and Background

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Introduction

This Comprehensive Conservation Plan (CCP) will guide the administration and management of Big Stone National Wildlife Refuge (NWR, Refuge) for the next 15 years. Comprehensive conservation plans are completed to ensure that refuges are managed in accordance with their purposes and the mission of the National Wildlife Refuge System (NWRS, Refuge System), which is part of the U.S. Fish and Wildlife Service (FWS, Service).

The Refuge is located along the Minnesota River in west-central Minnesota near Odessa and Ortonville and includes portions of the river and its floodplain (figure 1-1). Present Refuge management is focused on maintaining and restoring native prairie, wetland management, and providing a variety of wildlife-dependent recreation.

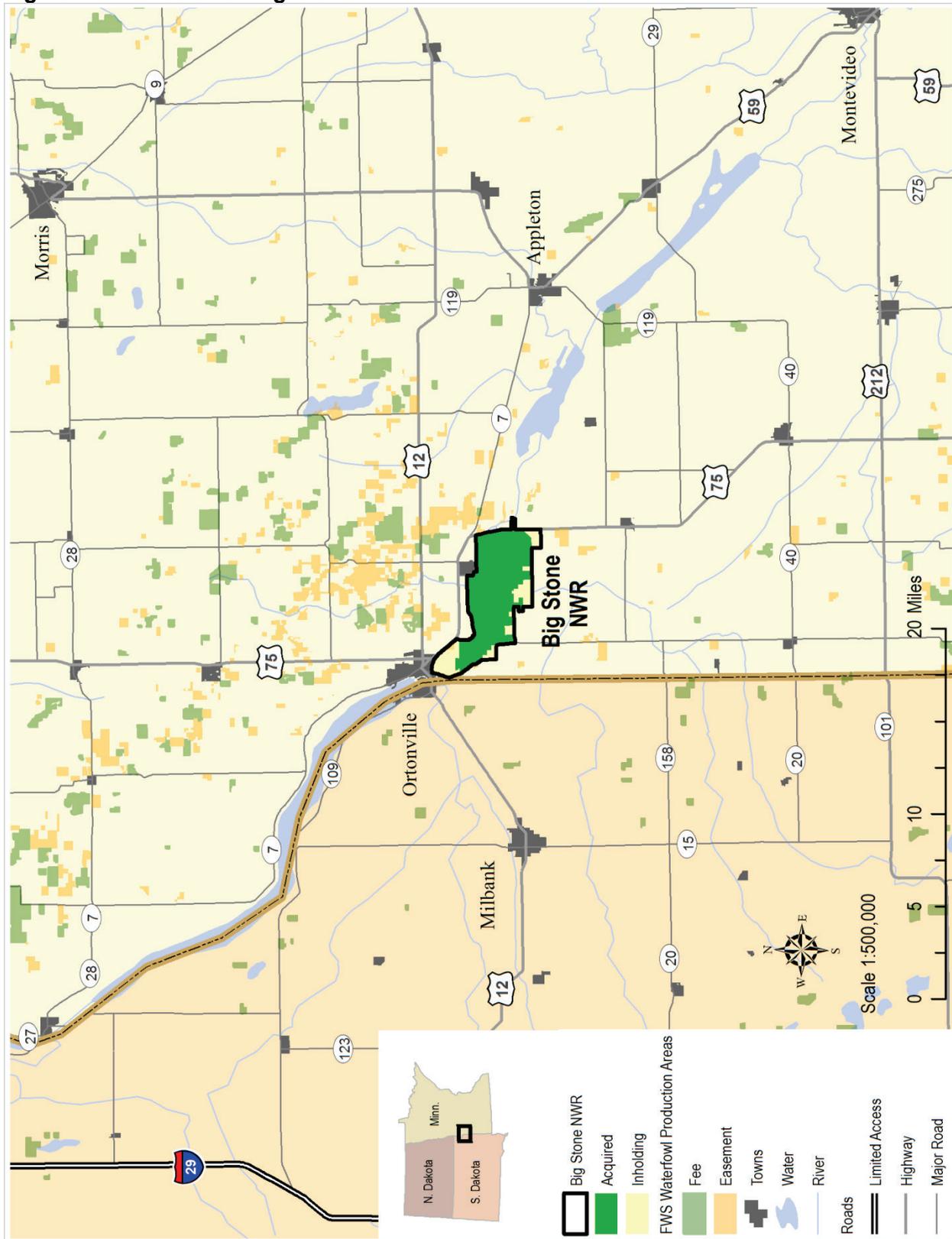
A unique visual and geological feature of the Refuge is the lichen covered granite outcrops for which the Refuge was named. Most of the granite outcrops are highly visible from the entrance to and along the Auto Tour Route near Ortonville, MN. Another unique feature is the ball cactus. The only known population of this cactus in Minnesota is located in the Minnesota River Valley of Big Stone and Lac qui Parle Counties. Big Stone NWR is primarily a grassland system with an interesting prairie-floodplain woodland transition. Riparian woodlands dominate along the Minnesota River corridor within the northwest portion of the Refuge as well as along the Yellow Bank River corridor, with scattered trees found in prairie coulees and surrounding wetlands. Beyond the river corridor, upland prairie is the dominant habitat.

Refuge staff members also oversee land acquisition and management of the Big Stone Wetland Management District (WMD). WMDs are areas where the Service places increased attention on the conservation and restoration of small wetlands important to migratory birds. The Big Stone WMD encompasses Lyon and Lincoln Counties. The Refuge works with landowners within the WMD boundary to conserve or restore small wetlands and their surrounding uplands. These sites, widely distributed throughout the WMD, are called Waterfowl Production Areas (WPAs). The Service maintains WPAs in perpetuity through fee title acquisition and the purchase of easements where the land is protected but stays in private ownership. Although managed by the same staff, Big Stone WMD and Big Stone NWR are distinct units of the National Wildlife Refuge System.



Lichen covered granite and ball cactus

Figure 1-1: Location of Big Stone NWR



The CCP for Big Stone WMD was completed in 2003 and is available online at <http://www.fws.gov/midwest/Planning/>.

The Big Stone NWR Project Leader is also responsible for the coordination of the Northern Tallgrass Prairie NWR, which was established in 2000 with the goal of one day preserving 77,000 acres of native prairie and buffer lands at widespread locations within the historic range of the northern tallgrass region of Minnesota and northwest Iowa.

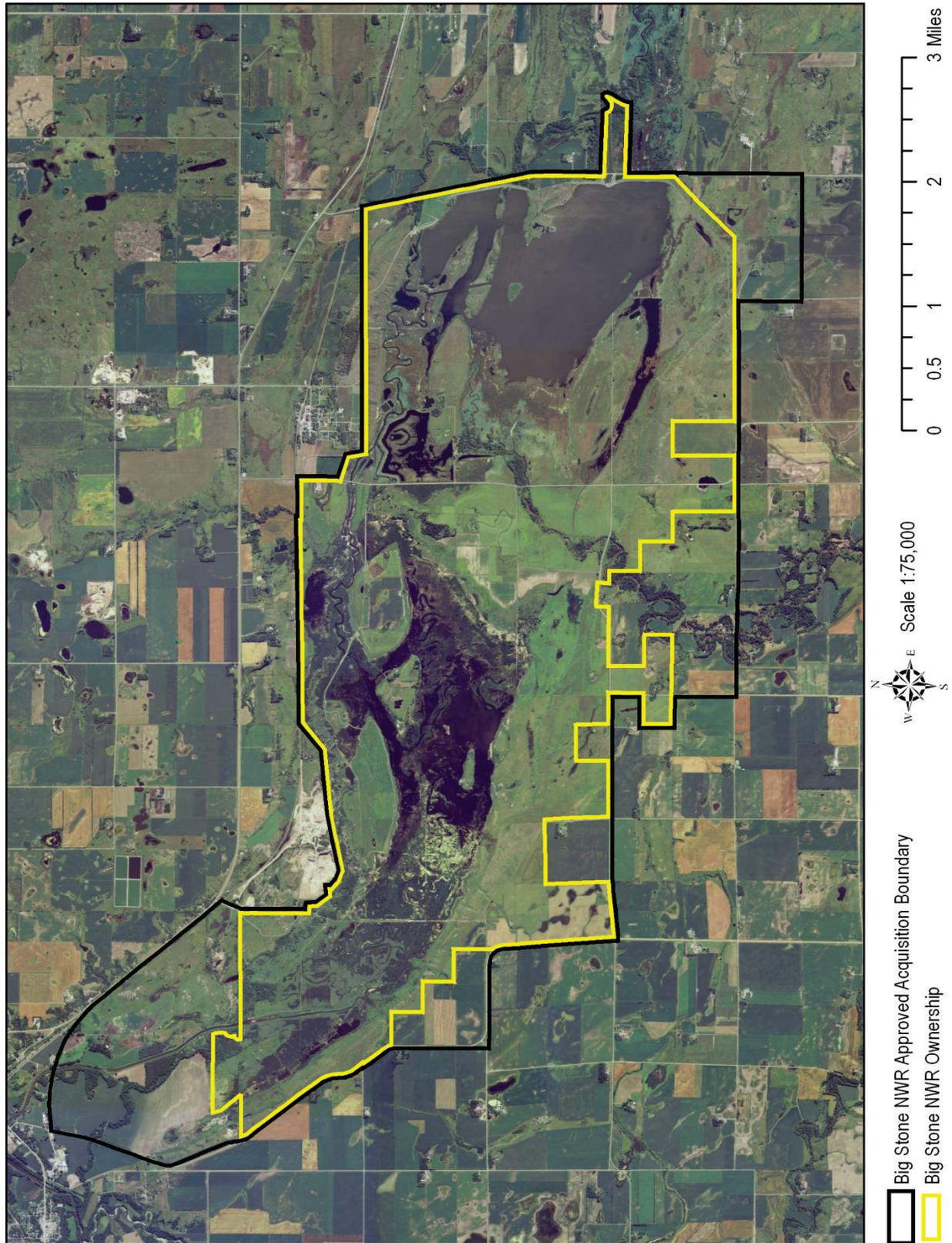
Brief History of Refuge Establishment and Acquisition

Big Stone NWR was officially established May 21, 1975 when 10,540 acres of land purchased by the U.S. Army Corps of Engineers (USACE) were transferred to the Service. The USACE acquired the lands as part of the Big Stone Lake-Whetstone River Project authorized by the Flood Control Act of 1965. The purposes of the project were: to reduce sedimentation in Big Stone Lake by redirecting the Whetstone River into the Minnesota River, to provide flood control for lands downstream, and to provide habitat for migratory birds and other wildlife. The project included construction of the Highway 75 Dam, which the USACE completed in 1974. Originally, the intent was to have the Service manage the lands under a cooperative agreement, but the agreement was never finalized, and the lands were transferred to the Service, except for lands that hold the dam and related water control structures. The approved boundary for the Refuge encompasses 14,728 acres, of which 11,585 acres are currently acquired. (figure 1-2).

The original Big Stone Lake-Whetstone River project was undertaken by the State of Minnesota in the mid-1930s primarily as a measure to restore Big Stone Lake levels, which had receded because of drought. A water control structure was constructed just downstream of the outlet of the lake. In addition, the Whetstone River was diverted into Big Stone Lake to assist in maintaining the lake level. The original Whetstone River channel joined the Minnesota River about two miles downstream of the lake. The project was also planned to serve as flood control by storing surplus floodwaters in the lake and discharging regulated flows from the lake after flood conditions had subsided. However the State of Minnesota was unable to acquire necessary flowage rights on Big Stone Lake and was required to pay claims for damages brought about by the storage of flood flows in the lake. In 1947 the State stopped any attempts to regulate levels on Big Stone Lake. Local interests then claimed that the Big Stone Lake-Whetstone project had resulted in acceleration of silt deposition in the lower end of Big Stone Lake and with no operation of the stoplog control structure, still caused undesirably high lake levels without adequately providing for maintenance of lake levels during drought periods.

To alleviate this problem, the USACE was asked to conduct an investigation that verified the existence of several flood and related problems on Big Stone Lake and in the immediate vicinity. These problems included unsatisfactory fluctuations of water levels and excessive silting in the Big Stone Lake, both attributable to the diversion of the Whetstone River in the lake; and they included flooding in the Minnesota River Valley in the reach immediately below the lake, which was aggravated by prolonged periods of high discharges from the lake.

Figure 1-2: Aerial View of Big Stone NWR



Many plans were discussed to solve the problem. The plan selected included a new reservoir located immediately upstream of U.S. Highway 75 combined with modifying the Big Stone Lake outlet structure. Modifications included the replacement of the stoplog structure with a gated spillway, raising the silt barrier by one foot, channel improvements on the Minnesota River below the outlet structure, and constructing erosion control works on the Whetstone River. The dam would create a water storage area capable of holding runoff from the Minnesota River and thus, provide flood protection to lands further downstream. It would also help alleviate the siltation and pollution problems in the lake by allowing some of the runoff to go directly into the storage area.

Purpose of and Need for the Plan

The purpose of the plan is to describe the desired future conditions of the Refuge and to provide guidance and management direction for a 15-year period for the conservation of fish, wildlife, and plant resources and their related habitats, while providing opportunities for compatible wildlife-dependent recreational uses, which are defined as hunting, fishing, wildlife observation and photography, and environmental education and interpretation (FWS, 2000). The plan is needed to provide long-term management direction for the Refuge, to address management issues and opportunities, and to satisfy the legislative mandate of the National Wildlife Refuge System Improvement Act of 1997, which requires the preparation of a CCP for each national wildlife refuge. The CCP also helps:

- achieve Refuge purposes and the Refuge vision;
- fulfill the Refuge System mission;
- maintain and where appropriate, restore the ecological integrity of the Refuge;
- achieve the goals of the National Wilderness Preservation System (NWPS), and
- meet other mandates including the U.S. Department of the Interior (DOI) Secretarial Orders 3289 and 3226, which direct all DOI agencies to consider and analyze potential climate change impacts as part of any long-range planning effort.

The following sections expand on each of these items.

Refuge Purposes

Big Stone NWR is part of a national network of lands administered by the Service as the Refuge System. Each unit of the Refuge System has one or more purposes specified in or derived from the legal instrument that established, authorized, or expanded it. Our first obligation is to fulfill and carry out the purposes of each refuge (FWS, 2006). Big Stone NWR gets its purposes from five different legal authorities that collectively provide broad direction regarding conservation of fish and wildlife and their habitats with specific mention of migratory birds. The specific purposes follow:

. . . shall be administered by him [Secretary of Interior] directly or in accordance with cooperative agreements . . . and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon, . . . 6 16 U.S.C. I:1 664 (Fish and Wildlife Coordination 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 . . . 6 16 U.S.C. I:1 460k-1 0 . . . the Secretary . . . may accept and use . . . real . . . property. Such acceptance may be accomplished under the terms and conditions of restrictive covenants imposed by donors . . . 6 16 U.S.C. I:1 460k-2 (Refuge Recreation Act (16 U.S.C. I:1 460k-460k-4), as amended)

... the conservation of the wetlands of the Nation in order to maintain the public benefits they provide and to help fulfill international obligations contained in various migratory bird treaties and conventions . . . 6 16 U.S.C. I:1 3901 (b), 100 Stat. 3583 (Emergency Wetlands Resources Act of 1986)

... for the development, advancement, management, conservation, and protection of fish and wildlife resources . . . 6 16 U.S.C. I:1 742f(a)(4) 0 . . . 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 . . . 6 16 U.S.C. I:1 742f(b)(1) (Fish and Wildlife Act of 1956)

... for use as an inviolate sanctuary, or for any other management purpose, for migratory birds . . . 6 16 U.S.C. I:1 715d (Migratory Bird Conservation Act)

Refuge Vision

As part of the comprehensive conservation planning process the Refuge staff crafted a vision statement. The vision focuses on what will be different in the future and captures the essence of what we are trying to do and why.

The Refuge is a rich mosaic of native grasses and wildflowers, prairie wetlands, granite outcrops, and wooded river bottoms where wildlife abounds and visitors experience and treasure native tallgrass prairie heritage.

National Wildlife Refuge System

The Refuge System is a network of lands and waters established to conserve America's fish, wildlife and plants. The Refuge System is part of the U.S. Fish and Wildlife Service, the primary federal agency responsible for conserving, protecting, and enhancing the nation's fish and wildlife populations and their habitats. In addition to managing the Refuge System, the Service oversees the enforcement of federal wildlife laws, management and protection of migratory bird populations, restoration of nationally significant fisheries, administration of the Endangered Species Act, and the restoration of wildlife habitat such as wetlands.

The mission of the Refuge System 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 goals of the Refuge System are:

- Conserve a diversity of fish, wildlife, and plants and their habitats, including species that are endangered or threatened with becoming endangered.

- Develop and maintain a network of habitats for migratory birds, anadromous and interjurisdictional fish, and marine mammal populations that is strategically distributed and carefully managed to meet important life history needs of these species across their ranges.
- Conserve those ecosystems, plant communities, wetlands of national or international significance, and landscapes and seascapes that are unique, rare, declining, or underrepresented in existing protection efforts.
- Provide and enhance opportunities to participate in compatible wildlife-dependent recreation (hunting, fishing, wildlife observation and photography, and environmental education and interpretation).
- Foster understanding and instill appreciation of the diversity and interconnectedness of fish, wildlife, and plants and their habitats.

Ecological Integrity

The National Wildlife Refuge System Improvement Act of 1997 directs the Service to ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans. In response to this direction, the Service, through a public process, developed policy that provides more specific guidance on the maintenance of biological integrity, diversity, and environmental health—collectively referred to as ecological integrity. The policy contains a process to evaluate each refuge and identify the best management direction to prevent degradation of environmental conditions; and where appropriate and in concert with refuge purposes and the Refuge System mission, restore lost or severely degraded components of ecological integrity as compared to those found under historic conditions (see definitions below).

The complete policy is available at <http://www.fws.gov/policy/601fw3.html>.

Biological Integrity—Biotic composition, structure, and functioning at genetic, organism, and community levels comparable with historic conditions, including the natural biological processes that shape genomes, organisms, and communities.

Biological Diversity—The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and communities and ecosystems in which they occur.

Environmental Health—Composition, structure, and functioning of soil, water, air, and other abiotic features comparable with historic conditions, including the natural abiotic processes that shape the environment.

Historic Conditions—Composition, structure, and functioning of ecosystems resulting from natural processes that we believe, based on sound professional judgment, were present prior to substantial human-related changes to the landscape.

National Wilderness Preservation System

NWPS is the network of federally owned areas designated by Congress as wilderness and managed by one of four federal agencies: the Service, Bureau of Land Management, U.S. National Park Service, or the U.S. Forest Service. The NWPS includes over 600 areas and more than 105 million acres. The Refuge System includes over 20 million acres of wilderness in

more than 60 refuges. Lands within the NWPS are devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use and are administered in such a manner as will leave them unimpaired for future use and enjoyment as wilderness.

Legal, Policy, and Administrative Guidelines

Laws, Executive Orders, and DOI and Service policies guide administration of refuges. A list of pertinent statutes and policy guidance can be found in Appendix G: Compliance Requirements.

Goals and Objectives for other Landscape Level Plans

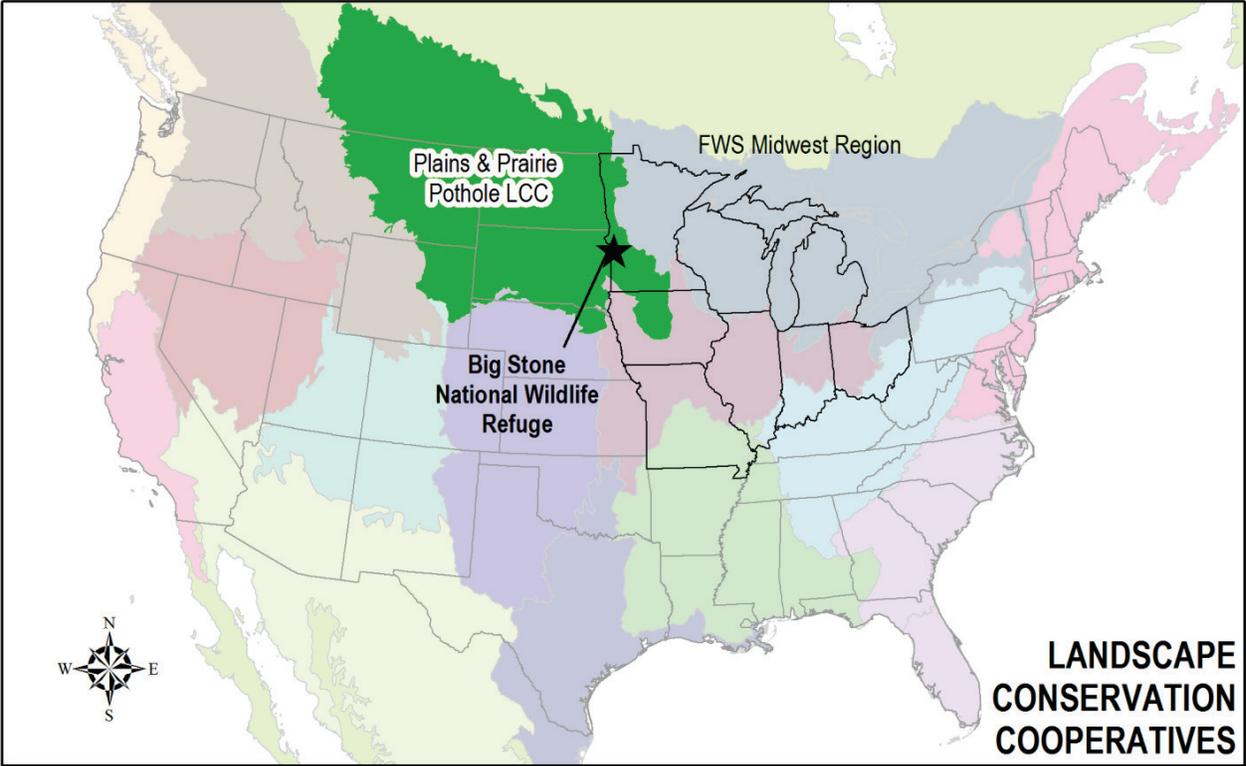
Plains and Prairie Potholes Landscape Conservation Cooperative

The Service, with support and cooperation from the U.S. Geological Survey, has developed a national geographic framework for “putting science in the right places” to conserve our nation’s fish and wildlife resources. Just as flyways provided an effective spatial frame of reference to build capacity and partnerships for international, national, state, and local waterfowl conservation, the national geographic framework provides a continental platform upon which the Service can work with state and other partners to connect project- and site-specific efforts to larger biological goals and outcomes. By providing visual context for conservation at “landscape” scales—the entire range of a priority species or suite of species—the framework helps ensure that resource managers have the information and decisionmaking tools they need to conserve fish, wildlife, plants and their habitats in the most efficient and effective way possible.

The Service is using the framework as a basis for locating Landscape Conservation Cooperatives (LCCs). Facilitated by the DOI as part of its collaborative, science-based response to climate change, LCCs complement and build upon existing science and conservation efforts—such as fish habitat partnerships and migratory bird joint ventures—as well as water resources, land, and cultural partnerships. Big Stone NWR is within the boundary of the Plains and Prairie Potholes LCC, which is one of a network of partnerships working in unison to ensure the sustainability of America’s land, water, wildlife, and cultural resources.

The Plains and Prairie Potholes LCC is dedicated to the conservation of a landscape unparalleled in importance to a vast array of unique species whose populations are in steep decline. The LCC boundary transcends existing Service regional boundaries and the international border with Canada (figure 1-3). Currently, the Service and our partners are working to develop and apply the scientific tools necessary to determine how climate change—coupled with existing stressors such as the conversion of native prairie for agricultural purposes—may affect the health and productivity of shared natural resources in this landscape. The actions of the Plains and Prairie Potholes LCC will support and supplement state Wildlife Action Plans and enhance protection for fish and wildlife resources in the region.

Figure 1-3: Plains and Prairie Potholes LCC



Migratory Bird Conservation Initiatives

Several migratory bird conservation plans have been published over the last decade that can be used to help guide management decisions on refuges. Bird conservation planning efforts have evolved from a largely local, site-based orientation to a more regional, even inter-continental, landscape-oriented perspective. Several transnational migratory bird conservation initiatives have emerged to help guide the planning and implementation process. Each of the bird conservation initiatives has a process for designating priority species, modeled to a large extent on the Partners in Flight method of computing scores based on independent assessments of global relative abundance, breeding and wintering distribution, vulnerability to threats, area importance, and population trends. These scores are often used by agencies in developing lists of priority bird species. The Prairie Pothole Joint Venture implementation plan draws on the information from the larger conservation initiatives and contains direction relevant to Big Stone NWR.



Waterfowl in flight

Region 3 Fish and Wildlife Conservation Priorities

Every species is important; however, the number of species in need of attention exceeds the resources of the Service. To focus effort effectively, Region 3 (Midwest Region) of the Service compiled a list of Resource Conservation Priorities. The list includes:

- All federally listed threatened and endangered species and proposed and candidate species that occur in the Region.
- Migratory bird species derived from Service-wide and international conservation planning efforts.
- Rare and declining terrestrial and aquatic plants and animals that represent an abbreviation of the Endangered Species program's preliminary draft "Species of Concern" list for the Region.

Minnesota Comprehensive Wildlife Strategy

In 2005, Minnesota completed the Comprehensive Wildlife Conservation Strategy, a strategic plan to better manage populations of "species in greatest conservation need" in Minnesota. The plan was developed with the support of funding from the State Wildlife Grant Program created by Congress in 2001. The heart of the strategic plan is for a partnership of conservation organizations across Minnesota to work together to sustain the populations of the identified species. Members of the partnership include the Minnesota Department of Natural Resources, the Service, The Nature Conservancy, Audubon Minnesota, and the University of Minnesota, as well as many other agencies and conservation organizations. The plan outlines priority conservation actions that might be undertaken by partners.

Existing Partnerships

Working with others via intra- and interagency partnerships is important in accomplishing the mission of the Service as well as assisting the Refuge in meeting its objectives. Partnerships with other federal and state agencies and with a diversity of other public and private organizations are increasingly important. Other agencies can provide invaluable assistance in research and maintenance. Private groups and non-profit organizations greatly enhance public involvement in the Refuge, building enthusiasm and support for its mission.

Besides the partnerships that the Service holds on a national level, the Refuge maintains informal partnerships with several organizations:

- U.S. Army Corps of Engineers
- Natural Resources Conservation Service
- Ducks Unlimited
- Upper Minnesota River Watershed District
- Pheasants Forever
- The Nature Conservancy

Other Recreation and Conservation Lands in the Area

Fish and Wildlife Areas

Big Stone NWR serves essentially as a “hub” within a dynamic four-county area including Big Stone and Lac qui Parle Counties in Minnesota and Grant and Robert Counties in South Dakota (figure 1-4). This four-county area has an abundance of state- and federal-owned and managed natural resource lands, most being opened to the public and provide hunting and other wildlife-oriented recreational opportunities. All areas combined complement each other in terms of waterfowl production and migration needs as well as providing a wide variety of recreational opportunities, within a variety of different habitats, and all within reasonable travel distances from each other.

Within the two Minnesota counties there are 84 state-owned Wildlife Management Areas containing 14,366 acres and 76 Federal Waterfowl Production Areas containing 15,811 acres. Most notable is the Lac qui Parle Wildlife Management Area complex managed by the MN DNR, which contains 24,274 acres of additional fish and wildlife habitat most of which is open to the public. This WMA is directly downstream of the Refuge and includes Marsh Lake and Lac qui Parle Lake.

In the two adjoining South Dakota counties, there are 41 state-managed Game Production Areas containing 7675 acres and 52 Federal Waterfowl Production Areas containing 10,425 acres of wildlife habitat open to the public.

Other Recreation and Conservation Lands

In addition to wildlife-oriented recreational areas there are several state parks within this four-county area (figure 1-4). They include: Lac qui Parle State Park and Big Stone State Park in Minnesota and Hartford Beach State Park in South Dakota. They all offer camping facilities, swimming, hiking trails, historic and prehistoric points of interest, and wildlife observation opportunities.

A fourth park known as Big Island is a 100 acre undeveloped island in Big Stone Lake within South Dakota. There are no facilities available there, and it is accessible only by boat. Hiking, fishing and wildlife observation opportunities exist there.

Figure 1-4 Conservation Lands in the Area of Big Stone NWR

