

Chapter 1: Introduction and Background



Agassiz NWR. USFWS

Introduction

Some 10,000 years ago, the Ice Age was nearly spent. As the frigid grip of the Pleistocene Epoch weakened, the great continental glaciers that had blanketed the northern expanses of North America under thousands of feet of ice for the better part of two million years melted and receded. One of these glaciers spanned an area greater than that of the present-day five Great Lakes, and meltwater poured from it to form an enormous inland sea. One hundred centuries later, that prehistoric, glacial lake would be named in honor of the Swiss-American naturalist and geologist, Jean Louis Rodolphe Agassiz.

Agassiz National Wildlife Refuge (NWR), established in 1937 as Mud Lake Refuge, was re-named in 1961 for this vast, ancient body of water – Glacial Lake Agassiz – that produced the

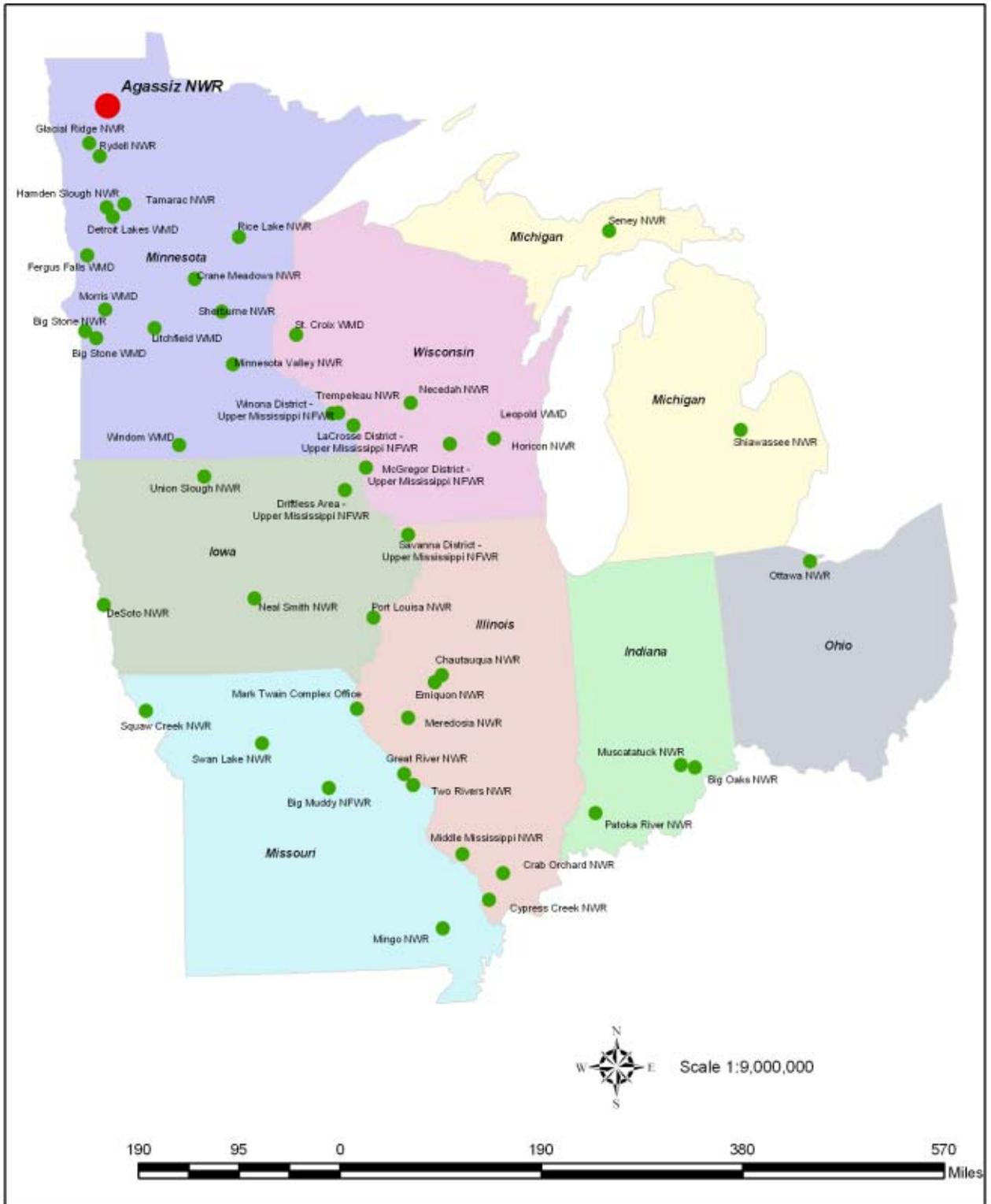
exceedingly flat terrain characterizing the area today. Located in northwestern Minnesota, the Refuge lies in the aspen parkland transitional zone between the coniferous or boreal forest to the north and east and the tallgrass prairie and prairie pothole provinces to the west and south (Figure 1). This diversity of habitats in turn supports a wide diversity of resident and migratory wildlife, including 287 species of birds, 49 species of mammals, 12 species of amphibians, and nine species of reptiles.

Agassiz NWR is a key breeding ground for 17 species of ducks and it is an important migration rest stop for waterfowl. It is also noted for two resident packs of gray wolves, moose, nesting Bald Eagles, and consistently hosting the largest Franklin’s Gull colony in the United States.

Agassiz NWR is comprised of the following habitats, in the approximate acreages shown:

- # 37,400 acres of wetland and shallow open water (“pools”);
- # 11,650 acres of shrubland;
- # 9,900 acres of woodland;
- # 1,710 acres of grassland;
- # 670 acres of developed land (roads, parking lots, and buildings); and
- # 170 acres of cropland managed for the benefit of wildlife

Figure 1: Location of Agassiz NWR and National Wildlife Refuges/Wetland Management Districts in Region 3 of the U.S. Fish & Wildlife Service



The Refuge area wasn't always this way. A century ago, settlers were lured by farming promoters into what was then a boggy wilderness, checkered with wetlands and ponds, hoping to convert it to farmland. It was called the Mud Lake area. In 1909, in an effort to make farming more feasible and productive, state, local and private interests, supported by loans from the federal government, undertook a large, expensive drainage project. This drainage system eventually became one of the largest public drainage projects ever undertaken in the United States.

“There was at first the land and the people who lived there: a land of wonderful, fertile game-producing bogs and oak and aspen forests. The bogs produced food for waterfowl which darkened the skies in flight; rivers that fish swam in; and a marvelous abundance of game just waiting to be caught: muskrat, beaver; mink, raccoon, and squirrel. In addition, there were the caribou, deer, moose and other wildlife.”

Betty Rantanen, 1976
Marshall County resident

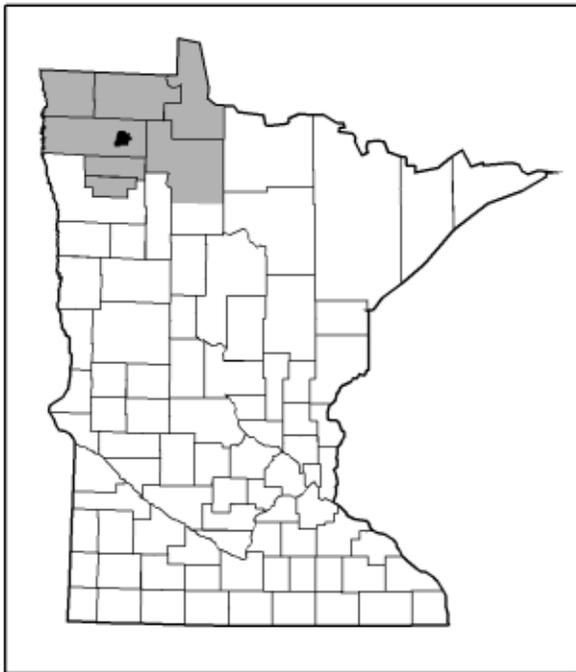
By 1933, a million dollars had been spent on the drainage system without the anticipated farming success. High tax assessments on drainage costs were a major financial burden on affected landowners, and ultimately the financial condition of Marshall County. To rescue the county from bankruptcy, the Minnesota Legislature passed a statute to absorb the drainage taxes and authorized the lands to be purchased for the development of the Mud Lake Migratory Waterfowl Refuge. President Franklin D. Roosevelt established the new refuge by Executive Order 7583 on March 23, 1937.

Once established as a unit of the National Wildlife Refuge System, the Refuge's wildlife benefited greatly from active habitat management conducted by Refuge staff. Wetlands were restored through an extensive system of dikes and water control structures. Twenty-six pools/impoundments were developed ranging in size from 30 to 9,000 acres. Today water levels and flows are manipulated to create a variety of wetland types with a mix of emergent and submerged vegetation communities. This management of water is a vital tool used to benefit waterfowl and other water-dependent bird species at Agassiz NWR. In addition, prescribed fire and mowing are widely employed to manage habitats such as grasslands, shrublands, and sedge meadows to benefit nesting waterfowl, deer, moose, songbirds, and other native wildlife. Farming has been used to attract migrating waterfowl and to benefit resident wildlife. A variety of small grains have been planted including barley, oats, and wheat.

As a result of the 1985 Food Security Act-Farm Bill, Agassiz NWR became a Refuge Management District (RMD) in 1989. Staff duties expanded to include working with the National Resources Conservation Service (NRCS) and Farm Service Agency (FSA) on wetland determinations, Swampbuster responsibility, and the Conservation Reserve Program (CRP) across portions of seven counties in northwestern Minnesota. The RMD includes Red Lake, Pennington, Marshall, Kittson, Roseau, and Lake of the Woods counties in their entirety, and a part of Beltrami County (Figure 2). Currently, about 7,000 acres are managed under permanent easements.

Located in Mud Lake, East Valley, Eckvoll, Whiteford, Cedar and Agder townships of Marshall County, Agassiz NWR is about 25 miles northeast of Thief River Falls. Although off the beaten track, it offers wildlife-related experiences to thousands of visitors every year, including wildlife viewing, photography, hunting, environmental education, and interpretation.

Figure 2: Location of Agassiz NWR Management District



History and Establishment

Prior to the settlement of northwestern Minnesota by Euro-Americans and the vast ecological changes these pioneers wrought, what is now Agassiz NWR consisted largely of marshes, wetlands, and the Mud Lake basin. American Indians of the Eastern Dakota and Anishinaabe tribes inhabited the greater region. Like many natural areas, the Mud Lake basin was subject to considerable climatic variation and corresponding ecological changes on the ground. During dry years, the surface flow of the Thief River would dwindle to almost nothing, or stop altogether, while Mud Lake would shrink in area. Wildland fires swept periodically through vegetation communities, altering plant structure and composition and sometimes causing peat fires, which could create potholes. Flooding from the Thief River also occurred regularly. The swamps and marshes surrounding Mud Lake provided habitat for a rich array of wildlife, including ducks, geese, songbirds, black bear, elk, moose, wolves, muskrats, minks, bobcats, coyotes, weasels, and fish.

The Mud Lake area was the last part of Marshall County to be settled by Euro-Americans, who began homesteading there in the 1890s. Initially, the area's abundant wildlife was a crucial food source for these newcomers. By 1915, approximately 150-200 homesteads had sprung up in the area. In 1909, the massive, federally-supported land drainage project described earlier began, with the goal of converting the soggy swamps and marshes into productive, well-drained farmland. However, agricultural productivity never met expectations, and both drainage and drought continued to plague agriculture in the area. Thus, most of the farmers in the basin were unable to make payments on their drainage assessments, forcing Marshall County's bond payment into default. The county was reportedly on the verge of bankruptcy. The deteriorating financial circumstances of the county and the farmers were no doubt aggravated by the regional drought and nationwide economic

depression of the late 1920s and early 1930s. By 1933, approximately \$1 million had been spent on Judicial Ditch 11. The State Legislature appropriated \$750,000 to pay for delinquent drainage taxes on 90 percent of the area.

In the meantime, the Izaak Walton League (a national conservation organization) and other sport hunters had begun to urge the creation of a national migratory bird sanctuary in the vicinity. As a result of the State Legislature's rescue of Marshall County from bankruptcy, the Minnesota Conservation Department had the right to use lands in the drainage district for conservation purposes. Eventually, this agency, with funds provided by the U.S. Resettlement Administration, acquired properties totaling 55,170 acres by condemnation, and in 1937 transferred them to the federal Bureau of Sport Fisheries and Wildlife (now known as the U.S. Fish & Wildlife Service) for the establishment of Mud Lake NWR. In the six and a half decades since, Agassiz NWR has expanded to 61,500 acres.

Legal Context

In addition to the executive order establishing the Refuge, and the National Wildlife Refuge System Improvement Act of 1997, several federal laws, executive orders, and regulations govern administration of Agassiz NWR. Appendix E contains a partial list of the legal mandates that guided the preparation of this plan and those that pertain to refuge management activities.

The U.S. Fish and Wildlife Service

Working with others to conserve, protect, and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people. Mission of the U.S. Fish and Wildlife Service



Agassiz NWR and the seven-county Refuge Management District are administered by the U.S. Fish and Wildlife Service. The Service is the primary federal agency responsible for conserving, protecting, and enhancing the nation's fish and wildlife populations and their habitats. It 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 Service also manages the National Wildlife Refuge System.

The National Wildlife Refuge System

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. Mission of the National Wildlife Refuge System

Agassiz NWR is part of the National Wildlife Refuge System, which was founded in 1903 when President Theodore Roosevelt designated Pelican Island in Florida as a sanctuary for Brown Pelicans. Today, the system is a network of about 545 refuges and wetland management districts covering about 95 million acres of public lands and waters. Most of these lands (82 percent) are in Alaska, with approximately 16 million acres located in the lower 48 states and several island territories.

The National Wildlife Refuge System is the world's largest collection of lands specifically managed for fish and wildlife. Overall, it provides habitat for more than 5,000 species of birds, mammals, fish, amphibians, reptiles, and insects. As a result of international treaties for migratory bird conservation and other legislation, such as the Migratory Bird Conservation Act of 1929, many refuges have been established to protect migratory waterfowl and their migratory flyways, from their northern nesting grounds to southern wintering areas. Agassiz NWR serves a dual purpose both as a critical nesting ground and as an important link in the Mississippi Flyway network of refuges that serve as rest stops and feeding stations for migrating ducks and geese.

Refuges also play a crucial role in preserving endangered and threatened species. Among the most notable are Aransas National Wildlife Refuge in Texas, which provides winter habitat for the highly endangered Whooping Crane. Likewise, the Florida Panther Refuge protects one of the nation's most endangered predators. Refuges also provide unique recreational and educational opportunities for people. They are places where people can enjoy wildlife-dependent recreation such as hunting, fishing, wildlife observation, photography, environmental education, and environmental interpretation. Many refuges have visitor centers, wildlife trails, automobile tours, and environmental education programs. Nationwide, approximately 30 million people visited national wildlife refuges in 1997.

The National Wildlife Refuge System Improvement Act of 1997 established several important mandates aimed at making the management of national wildlife refuges more cohesive. The preparation of CCPs is one of those mandates. The legislation directs the Secretary of the Interior to ensure that the mission of the National Wildlife Refuge System and purposes of the individual refuges are carried out. It also requires the Secretary to maintain the biological integrity, diversity, and environmental health of the National Wildlife Refuge System.

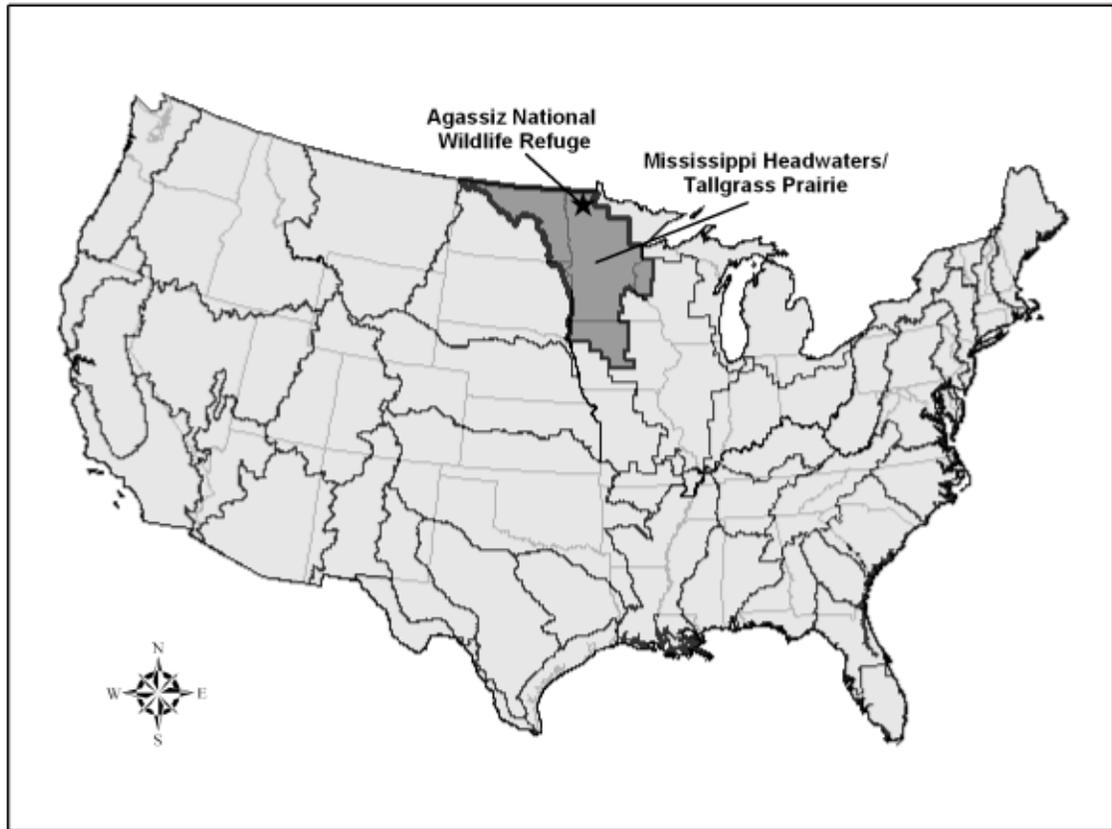
The goals of the National Wildlife Refuge System are to:

- # Fulfill our statutory duty to achieve refuge purpose(s) and further the 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 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 and photography, and environmental education and interpretation.

The Mississippi Headwaters/Tallgrass Prairie Ecosystem

The Service has adopted an ecosystem approach to conservation because we cannot look just at an individual animal, species, or fragment of land in isolation from all that surrounds it. We recognize that we are not going to achieve conservation within the boundaries of a national wildlife refuge, or restore aquatic resources with a national fish hatchery, and that listing an endangered species is not going to conserve the system on which it depends. The ecosystem approach thus strives to be comprehensive. It is based on all of the biological resources within a watershed (the total land area from which water drains into a single stream, lake, or ocean) and it considers the economic health of communities within that watershed landscape. An ecosystem approach to fish and wildlife

Figure 3: Mississippi Headwaters/Tallgrass Prairie Ecosystem



conservation means protecting or restoring the function, structure, and species composition of an ecosystem while providing for its sustainable socioeconomic use.

Agassiz NWR and its Management District are located in the Mississippi Headwaters/Tallgrass Prairie Ecosystem as currently defined by the U.S. Fish and Wildlife Service (Figure 3). This ecosystem is primarily located in Minnesota and North Dakota with small portions extending into Wisconsin and Iowa. It falls within the Prairie Pothole Region of North America. The Prairie Pothole Region produces 20 percent of the continental waterfowl populations annually. This portion of North America was subject to periodic glaciation and consequently, glacial meltwaters were instrumental in forming the five major river systems located or partly located within this ecosystem. These river systems are the Mississippi River, St. Croix River, Red River of the North, Missouri River, and the Minnesota River. Likewise, glacial moraines and other deposits resulted in a myriad of lakes and wetlands that are common throughout this area. Significant variation in the topography and soils of the area attests to its dynamic glacial history.

The three major ecological communities within this ecosystem are the tallgrass prairie (which includes oak savanna and barrens), the northern boreal forest, and the eastern deciduous forest. Grasses common to the tallgrass prairie include big bluestem, little bluestem, Indian grass, sideoats grama, and switch grass. Native prairie also supports numerous ecologically important forbs such as prairie coneflower, purple prairie clover, and blazing star. The northern boreal forest is dominated by a variety of coniferous species such as jack pine, balsam fir, and spruce. Common tree species in the

eastern deciduous forest include maple, basswood, red oak, white oak, and ash. Current land uses range from tourism, timber harvest and mineral extraction in the northern forests to intensive agriculture in the tallgrass prairie. Of the three major ecological communities, the tallgrass prairie is by far the most threatened, with more than 99 percent of it having been converted to agricultural uses.

Due to its ecological and vegetative diversity, the Mississippi Headwaters/Tallgrass Prairie Ecosystem supports at least 121 species of neotropical migrants and other migratory birds. It provides breeding and migration habitat for significant populations of waterfowl plus a variety of other waterbirds. The ecosystem supports several species of candidate and federally-listed threatened and endangered species including the Bald Eagle, Piping Plover, Higgins eye pearly mussel, Karner blue butterfly, prairie bush clover, Leedy's roseroot, dwarf trout lily, and the western prairie fringed orchid. The increasingly rare paddlefish and lake sturgeon are also found in portions of this ecosystem.

Like all parts of the nation, the Mississippi Headwaters/Tallgrass Prairie Ecosystem is confronted with an invasion of non-native and nuisance species. Most of these "exotic" species are plants, but animals are counted among the invaders as well. Some were brought to the region or country deliberately, and then escaped their confines or intended environment. Others arrived by accident. They can cause extensive and expensive ecological and economic damage throughout the region and the nation as their infestations spread. The primary nuisance species the Service has identified in the Mississippi Headwaters/Tallgrass Prairie Ecosystem are purple loosestrife, Eurasian watermilfoil, spotted knapweed, leafy spurge and the zebra mussel. Reed canary grass, Canada thistle, and hybrid cattail are particularly invasive at Agassiz NWR.

Refuge Purpose

President Franklin D. Roosevelt established Mud Lake Migratory Waterfowl Refuge by Executive Order 7583 on March 23, 1937. Its primary purpose was to be "a refuge and breeding ground for migratory birds and other wildlife." While the Refuge was renamed Agassiz NWR in 1961, its fundamental purpose remained unchanged. Although its original focus was on waterfowl (ducks and geese), over the years, other water-dependent birds, other migratory birds such as neotropical migrants, and "other wildlife" – including mammals such as moose, deer, and wolves – have received increasing emphasis on the part of Refuge managers.



Franklin's Gull. Jim Mattsson, USFWS

In 1976, Congress designated 4,000 acres in the north-central portion of the Refuge as Wilderness (Public Law 94-557). Section 6 of P.L. 94-557 directs that the Agassiz Wilderness Area be administered in accordance with the provisions of the Wilderness Act. The purposes of the Wilderness Act are to secure an enduring resource of wilderness; to protect and preserve the wilderness character of areas within the National Wilderness Preservation System (NWPS); and to administer the NWPS for the use of enjoyment of the American people in a way that will leave these areas unimpaired for future use and enjoyment as wilderness. Wilderness purposes are "within and supplemental" to refuge establishing purposes. They become additional purposes of the area within the Refuge designated as wilderness.

Refuge Management District

As a result of the 1985 Food Security Act, Agassiz NWR assumed additional responsibilities for a seven-county management district. To date nearly 7,000 acres of permanent easement have been acquired on 40 properties through the Farmers Home Administration (FmHA) and Farm Service Agency (FSA) review process. Refuge staff provide leadership and technical assistance in wetland delineation, preservation, and restoration. The Refuge is involved in habitat restoration projects for both uplands and wetlands on private and CRP lands throughout its Refuge Management District.

Beltrami Island Land Utilization Project Lands

Beltrami Island Land Utilization Project Lands consist of 81,695.5 acres owned by the federal government in scattered parcels throughout the Beltrami Island State Forest and Red Lake Wildlife Management Area in Lake of the Woods, Roseau, and Beltrami counties. The purpose of the Land Utilization Project lands as stated in Executive Order 9091, is that: “such lands be reserved as a refuge and breeding ground for native birds and other wildlife.” The U.S. Fish and Wildlife Service administers these lands, which have been managed by the Minnesota Department of Natural Resources Division of Wildlife under a lease agreement since 1940. Agassiz NWR is the first point of contact for all Land Utilization Project management issues.

Refuge Vision

Agassiz NWR lies within the shallow depressional lake plains formed by the pre-historic Glacial Lake Agassiz. The refuge is located within the aspen parkland transitional zone between the tallgrass prairie to the west and northern forest to the east. Agassiz NWR comprises a diversity of plant and animal species, typical of ecotonal communities. Since the beginning of the 20th century, the lands within this area have been manipulated for agricultural purposes, which highly modified natural landscapes and ecosystem functions. Since its establishment, the refuge has been intensively managed for the benefit of migratory birds and other wildlife through the construction of dikes and water control structures.

Agassiz NWR and the surrounding area will be the premier natural resource of Marshall County and northwestern Minnesota. The Refuge and its seven-county management district, working with partners, will take a landscape approach to promote functional watersheds and connect natural areas. Refuge management programs and activities will emulate natural functions and processes of the different native habitats for optimal wildlife use. The resulting benefits will be showcased to demonstrate the compatibility of biological diversity, integrity, natural ecological processes and sustainable agriculture.

People will be attracted to the Refuge and northwestern Minnesota to view and enjoy the wonders of natural ecosystems. Visitors will have quality, wildlife-dependent experiences that provide personal and societal benefits, such as a sense of peace and tranquility and support of a strong conservation ethic. Refuge staff, visitors and the community will understand and appreciate a well-functioning landscape and the cultural history of the area. This vision will be the catalyst to further strengthen a positive community-refuge relationship.

Purpose and Need for Plan

This draft CCP articulates the management direction for Agassiz NWR and its Management District for the next 15 years. It does not address Land Utilization Project lands. Through the development of goals, objectives, and strategies, this draft CCP describes how the Refuge and District also contribute to the overall mission of the National Wildlife Refuge System. Several legislative mandates within the National Wildlife Refuge System Improvement Act of 1997, and principles identified in “Fulfilling the Promise” (a strategic vision document for the Refuge System) have guided the development of this plan. These mandates and principles include:

- # Wildlife has first priority in the management of refuges.
- # Wildlife-dependent recreation activities, namely hunting, fishing, wildlife observation, wildlife photography, environmental education and interpretation are priority public uses of refuges. We will facilitate these activities when they do not interfere with our ability to fulfill the Refuge’s purpose or the mission of the Refuge System.
- # Other uses of the refuge will only be allowed when determined appropriate and compatible with Refuge purposes and mission of the Refuge System.

The plan will guide the management of Agassiz NWR and the RMD by:

- # Providing a clear statement of direction for the future management of the Refuge and the District.
- # Making a strong connection between Refuge activities and those activities that occur off-Refuge in the District.
- # Providing Refuge and District neighbors, users, and the general public with an understanding of the Service’s land acquisition and management actions on and around the Refuge.
- # Ensuring the Refuge and District management actions and programs are consistent with the mandates of the National Wildlife Refuge System.
- # Ensuring that Refuge and District management considers federal, state, and county plans.
- # Establishing long-term continuity in Refuge and District management.
- # Providing a basis for the development of budget requests on the Refuge’s and District’s operational, maintenance, and capital improvement needs.