

# Chapter 1: Introduction and Planning Background

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## 1.1 Introduction

Located about 20 miles east of Des Moines, Iowa (figure 1-1), Neal Smith National Wildlife Refuge (NWR, Refuge) was established in 1990 as Walnut Creek NWR. The name was changed by Congress in 1998 to honor Congressman Neal Smith, whose support was instrumental in establishment of the Refuge. The U.S. Fish and Wildlife Service (FWS, Service) is authorized to acquire 8,665 acres of land within the Walnut Creek watershed to reconstruct a piece of the tallgrass prairie ecosystem essentially “from scratch” on former farmland. About 5,580 acres have been acquired so far. Although the tallgrass prairie ecosystem once covered much of the central United States and Canada, it is now globally endangered. Less than one percent of this historic mosaic of prairie, savanna, and wetlands remains today. Many prairie-dependent wildlife species are declining range-wide.

**Figure 1-1: Location of Neal Smith NWR**



Refuge restoration efforts already have provided for a diversity of life on the Refuge including hundreds of native plant species, over 200 bird species, and dozens of mammals, reptiles, amphibians, and butterflies. Prescribed fire and grazing are used to emulate historic processes that maintained the diversity of the landscape.

Approximately 140,000 visitors come to the Refuge each year to enjoy the prairie environment, to learn about the Refuge and the tallgrass heritage of central Iowa, and to participate in wildlife-related outdoor activities. The Neal Smith National Wildlife Visitor Center is a major environmental education facility that includes exhibits, meeting rooms, theater, laboratory-classroom, bookstore, and research facilities.

## **1.2 Purpose and Need for Plan**

The purpose of this Comprehensive Conservation Plan (CCP) is to guide management and administration of the Refuge for the next 15 years and to help ensure that the Refuge meets the purposes for which it was established, contributes to the overall mission of the National Wildlife Refuge System (NWRS, Refuge System), and adheres to Service policies and other mandates. The CCP describes the desired future condition of the Refuge and provides guidance for management actions and decisions. It addresses identified issues of significance, sets goals and measurable objectives, and outlines strategies for reaching those objectives. The planning process informs and involves the general public, state and federal agencies, and non-government groups who have an interest, responsibility, or authority related to the Refuge.

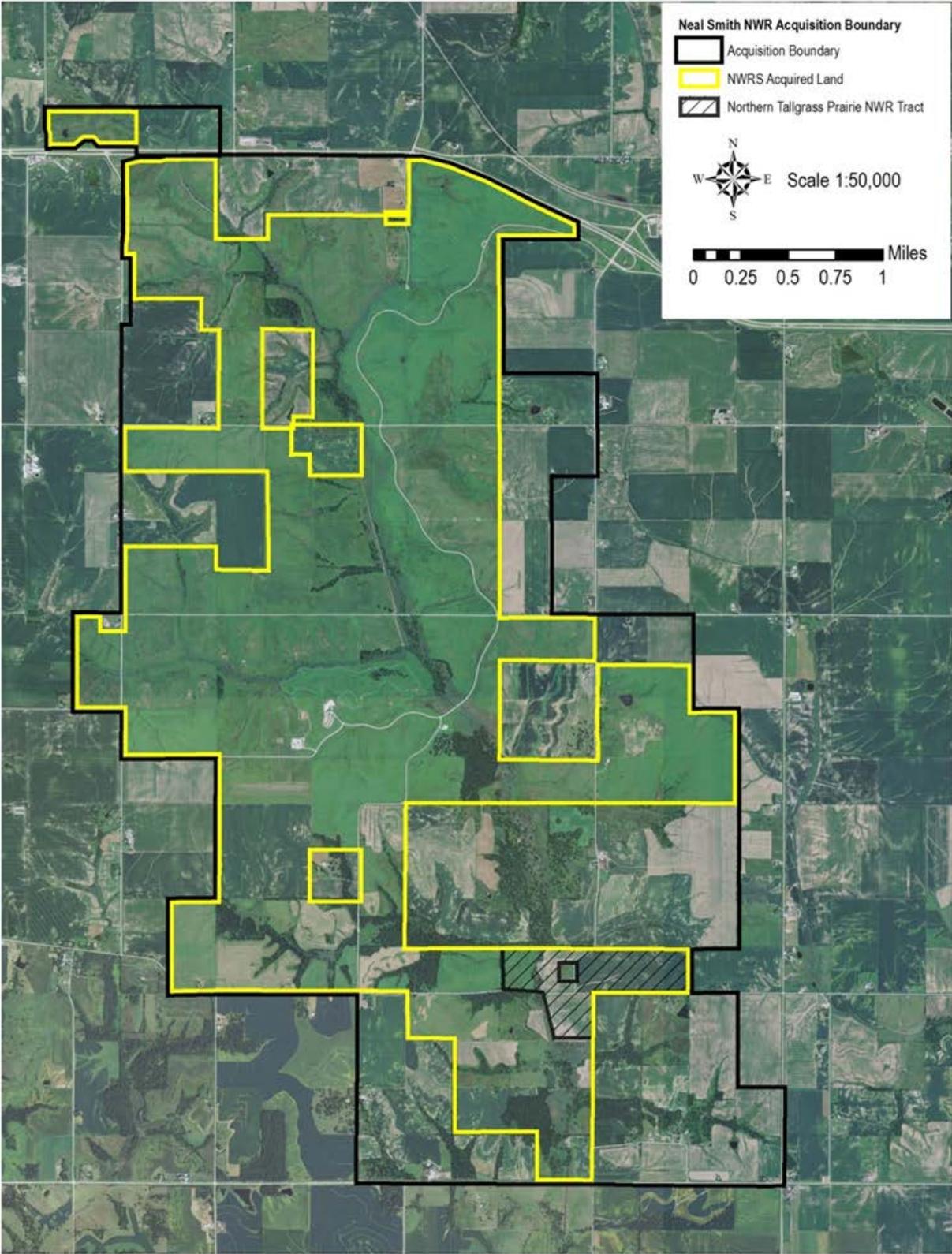
This CCP is needed to provide long-term management direction that reflects lessons learned since the last comprehensive plan (known as a Master Plan) was completed in 1992. Large-scale reconstruction of the tallgrass prairie ecosystem using local ecotype seed had never before been attempted. The Master Plan provided initial guidance for the newly established Refuge and recognized that management programs would need to adapt over time as experimental approaches were tested.

In addition, the landscape has undergone changes that affect habitat and wildlife, new threats to the Refuge are emerging, new laws and policies have been put in place, and new scientific information is available. Updated management guidance is needed that reflects these changes to help achieve Refuge goals for habitat, wildlife, and visitor services.

## **1.3 Refuge Establishment and Purposes**

Congress authorized the Refuge on May 25, 1990 by appropriating \$6 million for land acquisition through the Dire Emergency Supplemental Appropriations Act (Public Law 101-302). The first major parcel of land (about 3,600 acres) was purchased by the Service in April 1991 from the Redlands Corporation, a subsidiary of Iowa Power. Previously, this property had been targeted for a nuclear power generating station. A total of 8,655 acres of land south and west of Prairie City, Iowa, are included within the approved acquisition boundary. About 5,580 acres have been acquired so far (figure 1-2).

Figure 1-2: Aerial Photo of Neal Smith NWR



Each unit of the Refuge System has one or more purposes specified in or derived from the legal instruments that established, authorized, or expanded it. Chapter 601 FW 1 of the Service Manual provides guidance for determining refuge purposes and using them in administration and management of the Refuge System. The purposes of Neal Smith NWR (formerly known as Walnut Creek NWR) derive from three authorities:

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

" . . . 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 . . . " 16 U.S.C. § 3901(b) (*Emergency Wetlands Resources Act of 1986*)

" . . . conservation, management, and . . . restoration of the fish, wildlife, and plant resources and their habitats . . . for the benefit of present and future generations of Americans . . . " 16 U.S.C. § 668dd(a)(2) (*National Wildlife Refuge System Administration Act*)

Our first obligation is to fulfill these broad legislatively-based purposes. The vision, goals, and objectives contained in this CCP meet the purposes of Neal Smith NWR.

We also may manage the Refuge to achieve additional conservation objectives in a manner that first protects Refuge purposes. For example, Congressman Neal Smith of Iowa saw Walnut Creek NWR as "*an unusual opportunity for interpretive programs, wetlands, a habitat for some 300 species of indigenous and migratory birds, the regrowth of many acres of now scarce species of trees, buffalo and elk which were indigenous to the area, and the largest native prairie grass fields in Iowa,*" and a place where "*tens of thousands of school children*" could use the area for outdoor study. (Congressional Record, H2727)

The Master Plan developed for the new Refuge in 1992 incorporated and expanded upon the Congressman's vision and other early Refuge planning documents. The Master Plan provided ten-year guidance for the Refuge and recognized that changes would be needed as new information became available. Management priorities defined in the Master Plan were:

- Restore native tallgrass prairie, wetland, and woodland habitats for breeding and migratory waterfowl and resident wildlife;
- Serve as a major environmental education center providing opportunities for study;
- Provide outdoor recreation benefits to the public; and
- Provide assistance to local landowners to improve their lands for wildlife habitat.

Although not considered Refuge purposes in the legal sense, these conservation priorities have guided Refuge management activities since 1992. Understanding the original focus of Refuge management has been helpful in informing the goals and objectives of this CCP.

## 1.4 Refuge Vision and Goals

The vision is a descriptive picture of how the Refuge will look in the future and provides a sense of direction and purpose. From the vision flow broad goal statements, which in turn provide the framework to craft more detailed and measurable objectives which are the heart of the CCP. The vision and goals are important as reference points for keeping objectives and strategies meaningful, focused, and attainable.

### **1.4.1 Refuge Vision**

The Refuge is a vast expanse of wind-swept prairie punctuated by sheltering oak savannas. Walnut Creek and its tributaries, bordered by sedge meadows, meander through the Refuge providing clean water for aquatic wildlife. Bound and connected to natural systems to the north and south, the Refuge forms a sanctuary and corridor for prairie-dependent wildlife species. These ecosystems are alive with a wide diversity of plants and wildlife that are thriving again. The natural processes that contribute to a healthy ecosystem include fire, grazing, nutrient cycling, pollination, and water filtration. These processes are working to improve life for plants, wildlife, and people. The picture of a landscape that existed before European-American settlement is renewed.

Guided by sound biological information and ongoing research, this landscape continues to be rejuvenated through the dedicated work of staff, volunteers, and the support of the public and the many partners of the Refuge. People of all ages and abilities visit to experience the natural world using all of their senses and to contribute to the ongoing efforts. Visitors come to the Visitor Center to learn new concepts and to learn about and use new tools and methods to restore prairies. Visitors leave the Refuge with a sense of belonging coupled with new knowledge of these ecosystems, a connection to the natural history of the region, and a desire to be involved in conservation. The Refuge is an open laboratory where experts and laypersons alike share information to demonstrate how to restore and reconstruct tallgrass prairie, oak savanna, and sedge meadow.

### **1.4.2 Refuge Goals**

#### **Habitat**

The Refuge will actively protect, restore, reconstruct, and manage diverse native communities of tallgrass prairie, oak savanna, sedge meadow, and aquatic ecosystems and the natural processes essential to these ecosystems to enhance the vitality and health of the native prairie environment.

#### **Wildlife**

The Refuge will protect, restore, and maintain biologically diverse populations of native wildlife associated with healthy prairie, savanna, sedge meadow, and aquatic ecosystems, with an emphasis on grassland and savanna bird species including Greater Prairie-Chicken, Northern Bobwhite, Northern Harrier, Upland Sandpiper, Short-eared Owl, Red-headed Woodpecker, Northern Flicker, Loggerhead Shrike, Bell's Vireo, Sedge Wren, Eastern Bluebird, Eastern Towhee, Field Sparrow, Grasshopper Sparrow, Henslow's Sparrow, Le Conte's Sparrow, Smith's Longspur, Orchard Oriole, Dickcissel, Bobolink, Eastern Meadowlark, and Western Meadowlark.

#### **People**

The Refuge will provide a variety of wildlife-dependent recreational and educational opportunities for visitors to experience and develop an appreciation for the native tallgrass prairie heritage, ecological processes, and cultural resources while participating in ecological restoration efforts or enjoying other activities on the Refuge.

## 1.5 Legal and Policy Framework

Neal Smith NWR is managed and administered as part of the Refuge System within a framework of organizational setting, laws, and policy. Key aspects of the framework are outlined below. A list of other laws and executive orders that have guided preparation of the CCP and that guide future implementation are provided in Appendix L: Compliance Requirements.

### 1.5.1 U.S. Fish and Wildlife Service

The Refuge is administered by the U.S. Fish and Wildlife Service, Department of the Interior (DOI). The Service is the primary federal agency responsible for conserving and enhancing the nation's fish and wildlife populations and their habitats. Although the Service shares this responsibility with other federal, state, tribal, local, and private entities, the Service has specific responsibilities for migratory birds, threatened and endangered species, certain interjurisdictional fish and marine mammals, and the Refuge System. The mission of the Service is:

*“Working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.”*

### 1.5.2 The National Wildlife Refuge System

The National Wildlife Refuge System had its beginning in 1903 when President Theodore Roosevelt used an Executive Order to set aside tiny Pelican Island in Florida as a refuge and breeding ground for birds. From that small beginning, the Refuge System has become the world's largest collection of lands specifically set aside for wildlife conservation, including more than 550 national wildlife refuges covering over 150 million acres, plus 38 wetland management districts. The administration, management, and growth of the Refuge System are guided by the following goals:

- 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.

### 1.5.3 National Wildlife Refuge System Improvement Act of 1997 and Related Policy

The National Wildlife Refuge System Improvement Act of 1997 (Improvement Act) amended the National Wildlife Refuge System Administration Act of 1966 and became a true organic act for the

Refuge System by providing a mission, policy direction, and management standards. The Improvement Act's main components include:

- A strong and singular wildlife conservation mission for the Refuge System;
- A requirement that the Secretary of the Interior maintain the biological integrity, diversity, and environmental health of the Refuge System;
- A new process for determining compatible uses on refuges;
- A recognition that wildlife-dependent public uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation, when determined to be compatible, are legitimate and appropriate public uses of the Refuge System;
- That these compatible wildlife-dependent recreational uses are the priority general public uses of the Refuge System; and
- A requirement to prepare a Comprehensive Conservation Plan for each refuge.

### **Compatibility Policy**

No use that the Service has authority to regulate may be allowed on a unit of the Refuge System unless it is determined to be compatible (Service Manual, 603 FW 2). A compatible use is a use that, in the sound professional judgment of the Refuge Manager, will not materially interfere with or detract from the fulfillment of the Refuge System mission or the purposes of the national wildlife refuge. Managers must complete a written compatibility determination for each use, or collection of like-uses, that is signed by the manager and the Regional Chief, National Wildlife Refuge System in the respective Service region.

### **Biological Integrity, Diversity, and Environmental Health Policy**

The Service is directed by the Improvement Act to “ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained for the benefit of present and future generations of Americans . . .” The biological integrity policy (Service Manual, 601 FW 3) helps define and clarify this directive by providing guidance on what conditions constitute biological integrity, diversity, and environmental health; guidelines for maintaining existing levels; guidelines for determining how and when it is appropriate to restore lost elements; and guidelines in dealing with external threats to biological integrity, diversity, and environmental health.

### **Wildlife-Dependent Recreation Policy (Service Manual, 605 FW 1)**

The Improvement Act identifies six priority wildlife-dependent recreational uses; hunting, fishing, wildlife observation and photography, and environmental education and interpretation. Congress directed the Service to grant these six wildlife-dependent public uses special consideration in the planning, management, establishment, and expansion of Refuges. In addition, if determined compatible on a refuge, these six uses assume priority status over any other uses proposed or occurring on a refuge. The Service is to facilitate priority wildlife-dependent public use opportunities when they do not interfere with the ability to fulfill refuge purposes or the mission of the Refuge System.

### **1.5.4 Wilderness Review**

Refuge planning policy mandates that wilderness reviews be conducted through the comprehensive conservation planning process. The criteria are size, naturalness, opportunities for solitude or primitive recreation, and supplemental values. No lands within Neal Smith NWR met the criteria for wilderness established by Congress and described in Service policy (Service Manual, 605

FW1). Neal Smith NWR does not contain 5,000 contiguous acres of roadless, natural lands, nor does the Refuge possess any units of sufficient size to make their preservation practicable as wilderness. Refuge lands and waters have been substantially altered by humans, especially by agriculture, dam construction, river channel modifications, and road building.

## **1.6 Other Conservation Initiatives**

The Service works closely with other government agencies and conservation organizations in developing a variety of regional, national, and international conservation plans and initiatives. Several of these efforts relevant to Neal Smith NWR are described below; their recommendations and priorities were reviewed and integrated where appropriate into this CCP.

### **1.6.1 Iowa Wildlife Action Plan**

Congress mandated that all state fish and wildlife agencies develop a comprehensive wildlife conservation plan by October 1, 2005 as a condition of receiving federal funds through the State Wildlife Grant Program. These plans address the needs of a wide array of wildlife, including fish and many invertebrates, but focus primarily on species of greatest conservation need (SGCN) and their habitats. The Iowa Wildlife Action Plan includes priorities for protecting and enhancing existing habitats that benefit SGCN, and developing new 3,000–5,000 acre habitat blocks connected by travel corridors for wildlife. The plan recognizes that no single entity can implement all needed conservation actions and emphasizes the importance of partnerships. Neal Smith NWR and other nearby conservation areas are identified as high-priority areas for cooperative conservation partnerships.

### **1.6.2 Migratory Bird Conservation Initiatives**

*Partners in Flight (PIF)* was launched in 1990 in response to growing concerns about declines in the populations of many landbird species. The North American Landbird Conservation Plan includes priorities and objectives to guide national and international conservation efforts. PIF also has developed regional bird conservation plans based on physiographic areas. Neal Smith NWR lies within Physiographic Area 32, the Dissected Till Plains. The *Partners in Flight Bird Conservation Plan for the Dissected Till Plains (Physiographic Area 32)*, completed in 2000, identifies priority bird species for grassland, savanna, riparian forest, and big river vegetation communities. Priority PIF species that also are of concern to Neal Smith NWR include Greater Prairie-Chicken, Northern Bobwhite, Northern Harrier, Short-eared Owl, Red-headed Woodpecker, Field Sparrow, Grasshopper Sparrow, Henslow's Sparrow, Dickcissel, and Bobolink. The plan describes population and habitat objectives, research and monitoring needs, conservation opportunities, and outreach priorities.

The *North American Waterfowl Management Plan (NAWMP)* began in 1986 as a partnership effort to restore waterfowl populations to historic levels through habitat conservation but has since expanded its focus to include other taxonomic groups. The plan is international in scope but is implemented through regional partnerships called "joint ventures." The U.S. Shorebird Conservation Plan provides a scientific framework to determine shorebird species, sites, and habitats that most urgently need conservation action. The Upland Sandpiper is a shorebird of high concern in the Upper Mississippi Valley/Great Lakes region, which includes Neal Smith NWR. The North American Waterbird Conservation Plan provides a continental framework for conserving wading birds, marsh birds, gulls, terns, pelicans, and sea birds and their habitats.

The *North American Bird Conservation Initiative (NABCI)* is a continental effort to integrate all migratory bird conservation programs under one umbrella. The goal is to facilitate bird conservation through regionally-based, biologically-driven, landscape-oriented partnerships. NABCI has defined Bird Conservation Regions (BCR) as its planning units. BCRs are becoming increasingly common as the unit of choice for regional bird conservation efforts. Neal Smith lies within BCR 22, the Eastern Tallgrass Prairie. High priority grassland birds in BCR 22 include Greater Prairie-Chicken and Henslow's Sparrow. Red-headed Woodpecker leads the list of savanna specialists.

*Birds of Conservation Concern 2008* (FWS, 2008a) was developed by the Service to identify migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the Service's highest conservation priorities. The list encompasses three distinct geographic scales—NABCI Bird Conservation Regions, FWS Regions, and National—and uses assessment scores from three bird conservation plans: the North American Landbird Conservation Plan, the U.S. Shorebird Conservation Plan, and the North American Waterbird Conservation Plan. The assessment scores are based on several parameters including population trend, threats, distribution, abundance, and the importance of an area to a species. Eleven species of the tallgrass prairie ecosystem are considered Birds of Conservation Concern for the area that includes the Refuge: Upland Sandpiper, Short-eared Owl, Red-headed Woodpecker, Northern Flicker, Loggerhead Shrike, Bell's Vireo, Field Sparrow, Grasshopper Sparrow, Henslow's Sparrow, Smith's Longspur, and Dickcissel.

### **1.6.3 Partners for Fish and Wildlife Program**

The Service established the Partners for Fish and Wildlife Program (Partners Program) in 1987 to work beyond the boundaries of refuges with landowners and other partners to improve habitat on private lands for fish and wildlife. The program is voluntary, relies heavily on a partnership approach, and leverages both ideas and funding from a variety of sources. Cost sharing agreements and technical assistance are important components.

The overall goal of Partners Program projects is to return a site to the ecological condition that likely existed prior to loss or degradation. Priority ranking is given to proposed projects that meet these conditions:

- Improve habitat for migratory birds, threatened and endangered species, interjurisdictional fish, marine mammals, and other declining species.
- Complement activities on Refuge System lands, or contribute to the resolution of problems on refuges that are caused by off-refuge practices.
- Address species and habitat priorities that have been identified through Service planning teams (with our partners), or in collaboration with state fish and wildlife agencies.
- Reduce habitat fragmentation or serve as buffers for federal or state conservation lands.
- Result in self-sustaining systems that are not dependent on artificial structures.

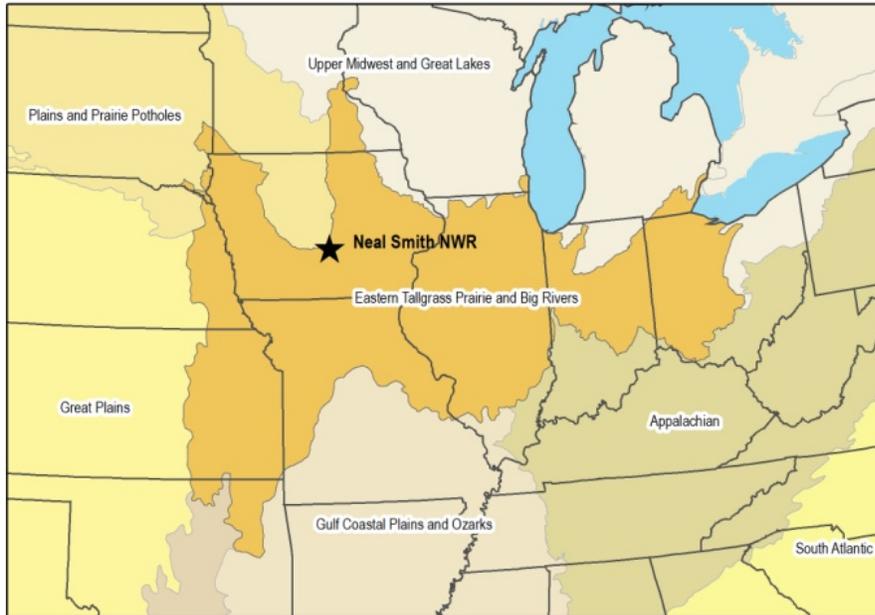
Service biologists work one-on-one with landowners to plan, implement, and monitor their projects. This level of personal attention and follow-through is a significant strength of the Program. Through the Partners Program, the Service has restored 8,200 acres of wetland and 30,000 acres of upland on private lands in Iowa between 1987 and 2008.

Neal Smith NWR lies within the Lower Des Moines River Corridor, a primary focus area of the Partners Program in Iowa. This focus area was established to help address connectivity of Iowa’s major habitat units. Program activities in the corridor are centered on restoration and enhancement of floodplain forest, riparian wetland, oak savanna, and tallgrass prairie. The primary goal is to increase connectivity of habitat for songbirds and waterfowl migrating between the Mississippi River and the Prairie Pothole Region. Other benefits include improved habitat for resident wildlife, enhanced water quality in the river, and increased resilience to environmental stressors such as climate change.

#### 1.6.4 Landscape Conservation Cooperatives

The Service and the DOI have begun developing a national network of Landscape Conservation Cooperatives (LCCs). LCCs are management-science partnerships between the Service and other federal agencies, states, tribes, non-governmental organizations, universities, and other stakeholders. LCCs will inform management decisions to address landscape-scale stressors such as habitat fragmentation, genetic isolation, spread of invasive species, and water scarcity, all of which are magnified by accelerating climate change. LCCs will connect site-specific protection, restoration, and management effort to larger goals supporting fish and wildlife populations and the natural systems that sustain them. They are intended to provide a strong link between science and conservation delivery without duplicating existing partnerships. By functioning as a network of interdependent units, LCC partnerships can accomplish a conservation mission no single agency can accomplish alone. Each LCC will focus on a defined geographic area. Neal Smith NWR falls within the boundary of the Eastern Tallgrass Prairie and Big Rivers LCC (figure 1-3).

**Figure 1-3: Landscape Conservation Cooperatives**



### 1.6.5 FWS Climate Change Strategic Plan

The Service’s strategic plan for responding to climate change (FWS, 2010) establishes a basic framework for efforts to ensure the sustainability of fish, wildlife, and habitats. It includes three key elements:

**Adaptation:** Minimizing the impact of climate change on fish and wildlife through the application of cutting-edge science in managing species and habitats.

**Mitigation:** Reducing levels of greenhouse gases in the Earth’s atmosphere.

**Engagement:** Joining forces with others to seek solutions to the challenges and threats to fish and wildlife conservation posed by climate change.

The plan recognizes the role of healthy ecosystems in helping fish and wildlife populations adapt to a changing climate. It also allows resource managers to be responsive as science, technology, and experience evolve over time, as explained in the plan:

*“We will increase our adaptation efforts significantly in the near term as we respond to increasing climate change impacts. Our initial emphasis will be on reactive adaptation, as we work to build resilience in ecosystems through our management efforts and, in some cases, to buy additional time to increase our certainty regarding future landscape conditions. . . Over the long term, however, we will work with partners to assemble the technical and institutional capability to increase anticipatory adaptation efforts, particularly as the impacts of climate change become more certain.”*