
Executive Summary

The wetland complex we know today as Crane Meadows National Wildlife Refuge (NWR) has been important to wildlife and people for thousands of years. The Refuge is located in central Minnesota and falls within a transitional zone between tallgrass prairie and deciduous forest (Figure 1). The area of the Refuge is a mosaic of open water, wetlands, floodplain forest, wet prairie, dry prairie, savanna, upland conifer and deciduous forest. The diversity of habitat is matched by a diversity of wildlife.

Established in 1992, Crane Meadows NWR has acquired just over 1,800 acres of the approved 13,540-acre acquisition area. Approximately 900 acres are owned and managed by the state of Minnesota, and the remaining land is privately owned.

A Comprehensive Conservation Plan (CCP) has been prepared for the Refuge that will guide management decisions over the next 15 years. The CCP will ensure that the Refuge plays a role in fulfilling the mission of the U.S. Fish and Wildlife Service (Service) and the mission of the National Wildlife Refuge System (NWRS), as well as fulfill the established purposes of Crane Meadows NWR.

A 30-day public review and comment period for the Draft CCP provided an opportunity for everyone who cares about the Refuge and its future management – neighbors, local and state government, tribal government, non-governmental organizations, and outdoor enthusiasts – to see how the Service proposes to manage Crane Meadows NWR.

During the planning process, all factors of a refuge are discussed and evaluated by Service employees, partners, stakeholders, and the public with regard to species, habitats, visitor services, facilities, operations, and other relevant issues. A range of alternative management options are then defined and presented to partners, stakeholders, and the public during the planning process in order to identify and define the most suitable, or ‘preferred’ management plan for the Refuge. The CCP describes the results of that process and the details of the preferred alternative. In this document, the broad goals

Summary Figure 1: Location of Crane Meadows NWR



of the preferred alternative are defined and measurable objectives are identified to support each goal. Specific implementation strategies are also identified to meet these goals and objectives within the 15-year timeframe.

Three goals were identified for Crane Meadows NWR:

- *Goal 1: Habitat*
Conserve a diverse mosaic of habitats both on- and off-Refuge, particularly sedge meadow,



Crane Meadows NWR's 2008 Habitat Day. Photo Credit: FWS

shallow lake, oak savanna, prairie, and other declining endemic habitat types, to meet the needs of native plants and wildlife with emphasis on Service Regional Conservation Priority Species. Crane Meadows NWR will remain engaged in efforts to protect and enhance water quality and natural hydrology in the watershed.

■ *Goal 2: Wildlife*

Protect, restore, and maintain native wildlife species to ensure biological diversity and abundance, with special emphasis on Service Regional Conservation Priority Species.

■ *Goal 3: People*

As an active partner in collaborative conservation, the Refuge will provide quality wildlife-dependent recreation, environmental education, and outreach to a diverse audience. These activities will preserve cultural resources and promote understanding, appreciation, and support for Crane Meadows NWR, the National Wildlife Refuge System, and natural resource conservation.

Objectives

The objectives are designed to guide the Refuge toward the accomplishment of each goal. Additional information, including rationales and strategies and all tables and figures, can be found in Chapter 4 of this document.

The goals and objectives of this plan are the management framework that provides direction and continuity in Refuge programs over the next 15 years. Strategies and management activities are suggested in this plan as ways to achieve specific objectives. However, the planning process is an iterative and adaptive cycle, making this CCP a living document. A variety of different management applications may be adopted as technology improves, new information becomes available, and new approaches to natural resource conservation are created.

Habitat Goal

Objective 1.1: Wetlands

Maintain existing wetland habitat, and restore disturbed, altered, or degraded wetland areas where feasible within 5 years of acquisition.

Over the long term (100-plus years) within the full Refuge acquisition boundary, maintain existing and restore drained or degraded wetland habitats in suitable areas to the desired benchmark conditions to achieve a minimum of 8,000 acres (approximately 60 percent of the Refuge) in a mosaic of wetland habitats with the approximate desired acreages targets displayed in Table 1. (see Figure 2 on page IV of this Summary.)

Objective 1.2: Upland Prairie

Over the life of the plan:

Seed all newly acquired disturbed, altered, or degraded upland areas to prairie (as a transition step for southern dry savanna restoration) using local ecotype seed characteristic of savanna within 5 years of acquisition.

Restore 20 percent (approximately 75 acres) of Service-owned upland prairie habitat to southern dry savanna.

Within 3 years of plan approval identify the highest quality Service-owned upland prairie habitat to retain (see Figure 3 on page V for a map of existing upland prairies on the Refuge). Work in these areas to improve vegetation structure and composition to desired benchmark habitat conditions and develop quality prairie seed source areas. Benchmark habitat conditions are described in Table 16 on page 83.

Summary Table 1: Habitat Vegetation: Current and Proposed, Crane Meadows NWR

Habitat Type	Habitat ^a	Service-owned Acres (1,800)		Total Acquisition Boundary Acres (13,540)	
		Current ^b	Approximate 15-Year Objective ^c	Current	Approximate Long-term Objective (100+ years)
Wetland	Open Water	18	18	150	150
Wetland	River/Stream	3 miles	3 miles	32 miles	32 miles
Wetland	Emergent Marsh	100	100	1,600	1,600
Wetland	Sedge Meadow	460	460	2,640	3,350
Wetland	Willow-Dogwood Shrub Swamp	410	410	2,500	2,500
Wetland	Southern Rich Conifer Swamp	0	0	0	100
Wetland	Northern Floodplain Forest	50	50	435	300
Upland	Prairie (Wet, Southern Mesic, and Southern Dry)	380	305	910	500
Upland	Southern Dry Savanna	5	210	185	4,700
Upland	Jack Pine Woodland	10	5	85	0
Upland	Oak Woodland	200	100	1,180	300
Upland	Oak-Aspen Woodland	65	33	670	0
Upland	Agriculture	10	0	2,940	0
Upland	Conifer Plantation	10	0	200	0

- a. *Refuge vegetation was identified and quantified during a 2006 aerial imagery project conducted by the Service. Habitat classes were later standardized using plant communities described in the Minnesota DNR's Field Guide to the Native Plant Communities; Eastern Broadleaf Forest Province (2005).*
- b. *Current habitat acreages for both existing fee-title and acquisition boundary are approximate and based on GIS area calculations.*
- c. *These numbers only account for land currently-owned by the Service, and will change with any new land acquisitions made by the Service over the 15-year planning period.*

Over the long term (100-plus years) within the full Refuge acquisition boundary, maintain a minimum of 4 percent (approximately 500 acres) upland prairie habitat at desired benchmark habitat conditions, transitioning the remaining 3 percent (approximately 400 acres) to southern dry savanna.

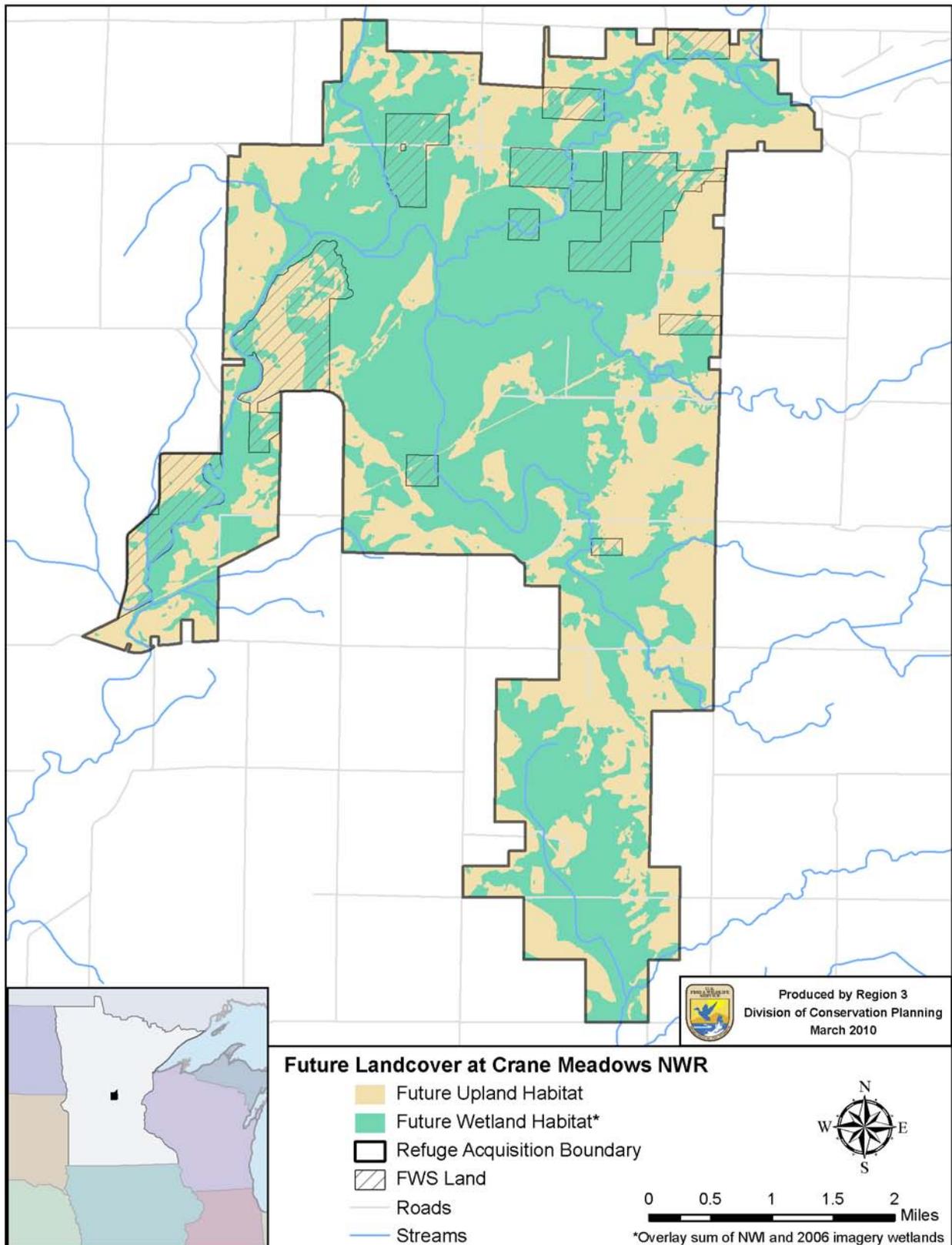
Objective 1.3: Southern Dry Savanna (Oak and Jack Pine)

Over the life of the plan, begin restoring southern dry savanna habitat to desired benchmark conditions (see Table 16 on page 83) on 30 percent (approximately 210 acres) of the total Service-owned land. This acreage will come from suitable existing upland prairie (approximately

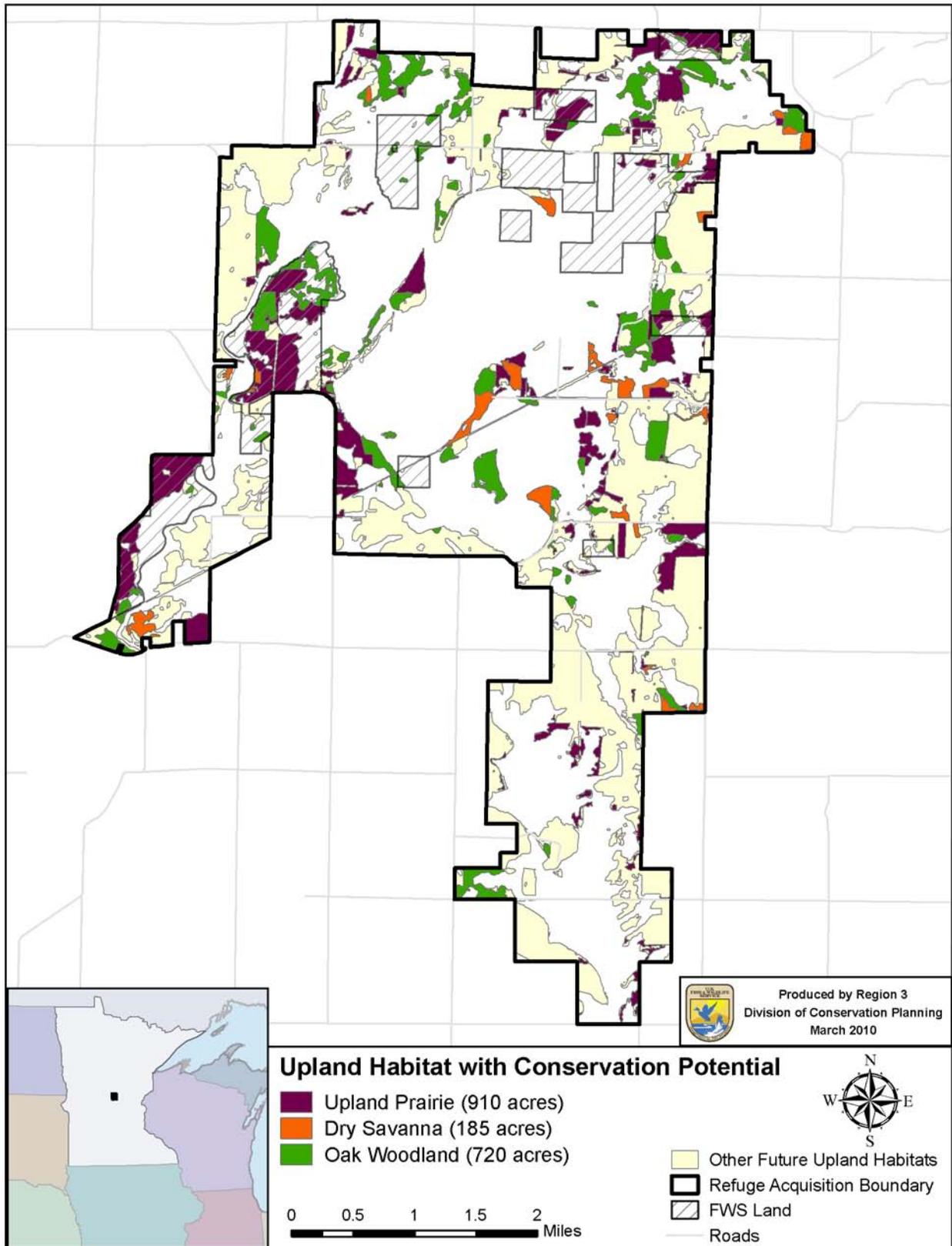
75 acres) and oak woodland (approximately 135 acres) habitats.

Over the long term (100-plus years) within the full Refuge acquisition boundary, establish and maintain a minimum of 35 percent (approximately 4,700 acres) southern dry savanna habitat (see Figure 3 on page V). Existing oak savanna will be retained (~200 acres), and restoration will occur on existing upland prairies (~400 acres), oak woodlands (~1,550 acres), conifer forests and plantations (~300 acres), and agricultural areas (~2,250 acres).

Summary Figure 2: Desired Future Land Cover, Crane Meadows NWR



Summary Figure 3: Existing Upland Habitat Source Areas, Crane Meadows NWR



Objective 1.4: Oak Woodland

Within 3 years of plan approval identify the highest quality Service-owned oak woodland habitat to retain (see Figure 3 on page V for a map of existing oak woodlands). Begin thinning 50 percent of those stands outside the highest quality oak woodlands selected to be retained to the desired basal area (ranging from 5 to 50 square feet/acre) and species composition for southern dry savanna habitat.

Over the long term (100-plus years) within the full Refuge acquisition boundary, reduce coverage of oak woodland to 2 percent (approximately 300 acres), transitioning approximately 1,550 acres to southern dry savanna. See Appendix L for a complete description of the desired habitat.

Objective 1.5: Water Resource Monitoring, Management, and Watershed Conservation

Within 5 years of plan approval, begin regular monitoring of the five major streams passing through the Refuge acquisition boundary. Work with partners to improve water quality with the long-term goal of removing all Refuge waters from state impaired waters lists.

Objective 1.6: Prescribed Fire

Implement and monitor a rotational prescribed burn program over the life of the plan, according to historic guidelines, that supports fire-dependent vegetation communities on the Refuge and reduces hazardous fuel loads.

Objective 1.7: Land Acquisition

Within 3 years of plan approval, update the land acquisition priority map created for the environmental assessment that established the Refuge. Over the life of the plan, increase efforts to make land acquisitions from willing landowners in high priority areas.

Objective 1.8: Partners Program and FSA Easements

Over the life of the plan, conduct a minimum of 100 habitat improvement projects through the Partners program within Morrison County, specifically targeting areas within, and up-watershed of the Refuge acquisition boundary. Ensure compliance of all properties with FSA easements (annual monitoring) and Partners program volunteer agreements (5-year monitoring cycle).

Wildlife Goal**Objective 2.1: Federal and State Threatened and Endangered Species and/or Regional Species of Conservation Priority**

Participate in larger state and federal wildlife population monitoring efforts for species of conservation concern. Within 5 years of plan approval, develop and implement monitoring programs for the Bald Eagle and Blanding's turtle.

Objective 2.2: Migratory Birds

Participate in larger state and federal wildlife population monitoring efforts. Over the life of the plan, conduct periodic monitoring of marsh birds, songbirds, and other migratory bird species.

Objective 2.3: Native Plant Species

Within 5 years of plan approval, collaborate with the Minnesota DNR and other partners to conduct baseline inventories of plant species on the Refuge.

Objective 2.4: Invasive and Exotic Plant Species

Within 5 years of plan approval, conduct a comprehensive survey to assess the extent of invasive plant species on Service-owned Refuge lands. Within 10 years no more than 10 percent of acquired Refuge lands will be affected by invasive plant species.

Objective 2.5: Wild Rice

Keep informed of the wild rice trends in the wetland complex and assist with monitoring and documenting wild rice trends through routine Service aerial imagery vegetation surveys.

People Goal**Objective 3.1: Welcoming and Orienting Visitors**

Bring all Refuge literature, web resources, kiosks, and directional signage into compliance with Service standards within 10 years of plan approval, and expand welcoming and orienting facilities at locations described in Table 2 on page VIII and illustrated in Figure 4 on page VII.

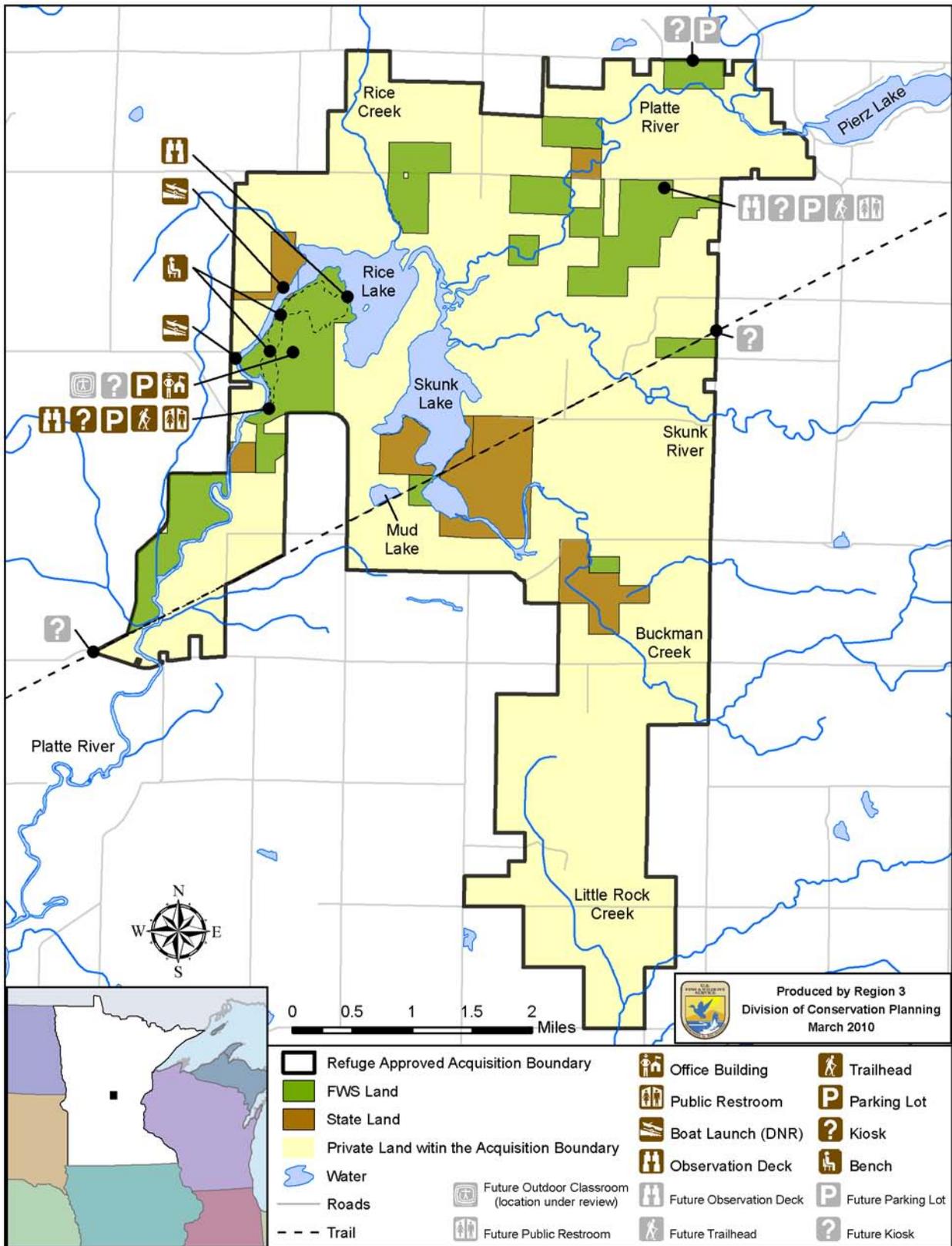
Objective 3.2: Hunting

Within 5 years of plan approval, work with partners to open managed white-tailed deer and turkey hunts on specified Refuge units for hunters with disabilities and for youth hunters.

Objective 3.3: Fishing

Within 3 years, evaluate the potential to establish seasonal bank fishing opportunities on the Platte River West Unit; over the life of the plan

Summary Figure 4: Future Visitor Facilities, Crane Meadows NWR



Summary Table 2: Visitor Services Facilities Needs

Unit	Additional Facilities	Timeframe
Headquarters	Kiosk (near office), outdoor classroom	5 years
Highway 27	Directional signage, kiosk, parking area	10 years
Soo Line East ^a	Kiosk	15 years
Platte River West	Kiosk	15 years
Sedge Meadow	Kiosk, observation platform, trail/boardwalk, parking area, restroom	15 years

a. The facilities at these locations will require partnerships with Morrison County Trail Association, Minnesota DNR, and private landowners.

evaluate the potential for new bank fishing opportunities as additional properties are acquired.

Objective 3.4: Wildlife Observation and Photography

Over the life of the plan, maintain existing wildlife observation and photography infrastructure and opportunities, and expand and promote opportunities along the Soo Line Trail corridor and on the Sedge Meadow Unit to correspond to a 20 percent increase in Refuge visitation from 2009 levels (see Table 2).

Objective 3.5: Environmental Education and Interpretation

Increase Refuge environmental education and interpretation provision from 2009 levels, specifically:

Increasing participation in programs by 20 percent within 15 years.

Establishing new interpretive displays that convey key habitat, wildlife, and other natural resource messages to visitors on the following



Habitat Day, Crane Meadows NWR. Photo credit: FWS

Refuge units: Highway 27, Sedge Meadow, Platte River West, and Soo Line East (see Table 2).

Objective 3.6: Outreach and Partnerships

Maintain relationships with current partners and existing outreach activities, and identify and participate in at least 10 new outreach opportunities or community activities over the life of the plan to increase collaboration, improve the public understanding of Crane Meadows NWR and the Refuge System, and reinforce the importance of natural resource conservation.

Objective 3.7: Cultural Resource Management

Over the life of the plan, work to protect all cultural, historic, and archaeological resources on the Refuge.

Objective 3.8: Volunteers and Friends Group

Over the life of the plan, increase Friends group membership by 10 percent, increase the 3-year moving average of annual service hours contributed by volunteers an average of 1 percent per year, and increase volunteer opportunities related to resource monitoring, environmental education, partnership development, land protection, and visitor services.

Objective 3.9: Law Enforcement

Work with local police authorities, state conservation officers, and law enforcement officers from other national wildlife refuges to ensure visitor safety and resource protection. Work to minimize the potential for incidents, violations, and other illegal activities on the Refuge.

Objective 3.10: Staffing

Increase staffing from the existing two positions to the four positions projected by the 2008

Region 3 staffing model to accomplish the work set forth by the CCP.

Environmental Assessment

The comprehensive conservation planning process as guided by the National Environmental Policy Act (NEPA), calls for the consideration of alternative management scenarios. Three management alternatives were developed as a part of the Environmental Assessment included in the Draft CCP (see <http://www.fws.gov/midwest/planning/CraneMeadows>).

The first alternative for the future management of Crane Meadows NWR, Alternative A, depicts a continuation of current Refuge management, or a 'no action' scenario, as required by NEPA. In the case of Crane Meadows NWR, land acquisition is minimal, conservation work on private lands is extensive, and both occur opportunistically. As land is acquired quality habitats are maintained in their current state, degraded habitats are improved or restored, and all habitats are considered to have relatively equal priority. There is an active prescribed fire program, and little involvement with local water resources which are under the jurisdiction of the state. Wildlife management is minimal, and monitoring efforts follow existing, broader state and federal efforts. Visitor use is concentrated on a single Refuge property, the Headquarters Unit, and consists of wildlife observation, photography, hiking, cross-country skiing, and snowshoeing as seasons and trail conditions allow. No hunting or fishing is permitted. There are half a dozen annual programs, supported by an active Refuge Friends Group and local volunteers. Staff is limited to two positions: refuge wildlife specialist and maintenance.

The second alternative, Alternative B, portrays a long-term vision for habitat restoration to near-historic benchmark conditions and increases recreation opportunities for visitors over the 15-year planning horizon. Historic and other ecological data is used to identify desired quantities of individual habitat types for the entire Refuge acquisition boundary. A diversity of wetland and savanna habitats is favored to reinforce historic conditions, while prairie and woodland are reduced over the long-term. This alternative includes active participation in monitoring and improving the upstream water resources that affect the Refuge, and calls for adherence to a well-developed prescribed fire plan. Land acquisition and work on private lands increases, and targets high priority areas. Biological inventory and monitoring increase for wildlife species of concern, guilds of birds, native plants, and invasive species. Visitor services are offered at a greater number of locations. In addition to increasing facilities on the Headquarters Unit, new opportunities are provided

along Highway 27 on the northern boundary of the Refuge, along the county-maintained Soo Line Recreational Trail, and on the Sedge Meadow Unit. Specific, managed hunts are offered, and opportunities for quality fishing experiences will be evaluated as new lands are acquired. It is projected that these changes and new opportunities will result in increased visitation to the Refuge, increased attendance in Refuge programs and events, and increased participation in Friends Group and volunteer roles. This alternative also calls for full staffing at Crane Meadows NWR, including four positions: refuge wildlife specialist, biologist, administrative assistant, and maintenance.

The third alternative, Alternative C, retains many of the concepts and objectives from Alternative B, but increases the emphasis given to water resources both on-Refuge and in the watershed upstream of the wetland complex. This alternative more directly addresses the principal establishing purpose of the Refuge, for '... the conservation of the wetlands of the Nation...', and seeks to maximize efforts to understand, protect, and conserve the water resources that affect the Refuge's rare and unique wetland complex. Using Alternative B as a base, Alternative C restores additional wetland and upland acres up-watershed of the Refuge, expands water resource monitoring and improvement activities throughout the east half of the Platte-Spunk watershed, targets a limited quantity of additional lands with critical water resource value adjacent to the existing Refuge boundary for acquisition, increases and directs private lands work to priority aquatic and riparian areas upstream of the Refuge, emphasizes fishing as a primary recreation opportunity, directs additional education and interpretation efforts to water resource topics, and highlights partnerships, outreach opportunities, and volunteerism that occur within, or directly affect the Refuge's watershed.



*Aerial view of the Platte River 40 Unit, Crane Meadows NWR.
Photo credit: FWS*

Alternative B was selected as the preferred management option, and used to draft this CCP. The CCP based on this alternative presents the most viable combination of goals, objectives, and strategies that we believe will best achieve the Refuge vision, contribute to the NWRS mission, fulfill Refuge purposes and legal mandates, address key issues, incorporate sound principles of natural resource management, and serve the American public now and into the future. The CCP will guide management decisions and actions on the Refuge over the next 15 years and will be used as a tool to help natural resource agencies, conservation partners, local communities, and the public understand our priorities.