

Chapter 5: Plan Implementation

New and Existing Projects

This CCP outlines an ambitious course of action for the future management of Tamarac NWR and Wetland District. The ability to enhance wildlife habitats and to maintain existing and develop additional quality public use facilities will require a significant commitment of staff and funding from the Service. The Refuge and District will continually need appropriate operational and maintenance funding to implement the objectives in this plan.

This section provides a brief description of the highest priority Tamarac NWR and Wetland Management District projects as chosen by the Refuge staff.

Tamarac NWR Operating Needs and Visitor Facility Enhancement Projects

Enhance Environmental Education and Interpretive Capacity and Capability

Construction of an environmental education facility will serve more than 10 rural Minnesota communities where interaction with environmental science institutions is limited. Teachers, volunteers and Refuge staff are engaged and ready to expand the educational opportunities at Tamarac NWR, but need a facility for students to process their observations and include children of all learning and physical abilities.

Each year children from more than 10 rural school districts participate in environmental education and stewardship projects on the Refuge. As a partner with educational institutions, Tamarac NWR ensures these school programs adhere to national science standards and graduation standards as set forth by the Minnesota Department of Education. The programs have become so popular with local schools that capacity has been exceeded. The small visitor center on site can only host between 25 and 50 children and there are no facilities for conducting meaningful hands-on activities including laboratory projects or specimen examination. A typical school field trip includes 100-150 chil-



Installing a boat launch pad at Tamarac NWR. Photo Credit: FWS

dren or the whole grade at that school. The pavilion would be utilized in conjunction with the visitor center, 25 miles of trails and natural resources of the 43,000 acre Refuge to provide learning stations for the full grade of students at the school. A pavilion would provide the space for these investigative activities that bring a deeper understanding to the science they are exploring.

There is growing concern that members of the public will be unprepared for increasing environmental responsibilities in the coming years. As environmental issues and programs become more complex and pervasive we need to nurture our youth for the challenge. Connecting children and nature develops an environmentally literate community able to make decisions about the environment based on science and contribute as stewards of our federal lands. Additionally, research shows that children's learning capabilities are heightened when placed in an outdoor educational environment. The outdoor experiential learning environment stimulates creative thinking, promotes superior motor fitness, improves problem solving skills and increases self-esteem and happiness.

Estimated Cost - \$500,000. Strategy 3.5.7

Provide Public Safety, Security and Resource Protection Through Increased Law Enforcement Capability

Hire a full-time law enforcement officer to protect wildlife, lands, facilities, employees and the general public on the 43,000-acre Tamarac NWR. Currently the station has one dual function officer. Directors Order No. 155 requires the Service to reduce dependency on dual-function Refuge officers and progress towards a full-time officer workforce. A full-time officer would be able to do more regular and intensive law enforcement on the Refuge and Wetland Management District throughout the year. The Refuge is responsible for managing and monitoring easements throughout a five county District extending from Tamarac NWR north to the Canadian border, distance of approximately 175 miles. Tamarac NWR has experienced a steady increase in public use and recreation and is now exceeding 85,000 visitors annually. Hunting violations, off-road vehicle use, littering and traffic violations are increasing on Refuge lands. Additionally, the population growth in the surrounding communities is placing additional strain on wildlife habitats and trust resources. A full-time officer would be able to better build more cooperative relationships with neighboring enforcement agencies. Half of Tamarac NWR is within the original boundary of the White Earth Indian Reservation. This officer would include the enforcement of all fishing, hunting and non-consumptive use regulations as well as coordinating/enforcing leeching, ricing, and trapping rights exercised by members of the White Earth Indian Reservation. This would require close coordination with Tribal Conservation Officers and Police.

Estimated Cost – \$150,000. Strategies 3.1.11(Refuge) and 3.2.2 (District)

Develop Strategic Forest Management Program

Hire a full-time Forest Ecologist to develop a forestry program that is ecologically, economically, and socially responsible as a means of sustaining the integrity of Tamarac NWR's forest ecosystems and the human communities dependent upon them. This individual would develop management plans to ensure the restoration, preservation, protection and enhancement of the Refuge forest resources. The individual would perform systematic forest surveys and inventories, conduct site evaluations, and oversee forest regeneration activities. In the early 1890s loggers harvested most of the area's giant red and white pines. Settlers followed the loggers. Attempts to farm met with little success due to marginal soils, many wetlands and dense forests. These activities dramatically changed the landscape. This is a key position to ensuring the biological integrity of Tamarac NWR's forest resources.

Estimated Cost - \$120,000. Strategy 2.5.1

Develop a New Audiovisual Program at Tamarac NWR Visitor Center

Develop a new audiovisual program for use as an interpretive tool in the visitor center auditorium using state of the art equipment and technical expertise. The Refuge's current audiovisual program is nearly 25 years old and does not accurately depict Service or Refuge information including its biological programs. The audiovisual program is unquestionably the highlight of the Visitor Center experience and serves as an extremely important interpretive and education tool. Approximately 85,000 people visit the Refuge each year to enjoy the scenic beauty and abundant wildlife including Trumpeter Swans, Bald Eagles and wolves.

Estimated Cost - \$120,000. Strategy 3.4.7

Update Visitor Center Exhibits

Enhance the overall message of the visitor center to reflect the biology of the Refuge including the latest research activities. The current visitor center exhibits highlight Tamarac NWR's wildlife species and their habitats but do not interpret the management, research and ongoing programs associated with them. Through the collection and display of video and interactive exhibits incorporating the latest technology, visitors will gain a better understanding and appreciation of Tamarac NWR's role in fulfilling the mission of the Service. Annually Tamarac NWR's visitation exceeds 85,000. The Refuge is situated at the convergence of three continental biomes – tall grass prairie, eastern deciduous and boreal forests, offering tremendous opportunity to view a diversity of wildlife and habitats. Visitors are attracted not only locally, but from North Dakota-Minnesota metropolitan communities of Fargo and Moorhead located 50 miles west. The estimated metropolitan population is 200,000.

Estimated Cost - \$60,000. Strategy 3.4.8

Hydrological Geomorphic (HGM) Assessment of Tamarac NWR Lakes and Rivers

Conduct a comprehensive hydro-geomorphic assessment of the lakes and streams of Tamarac NWR. Since Refuge establishment in 1938, the aquatic ecosystems within the Refuge have been altered through water control structures, dikes and road construction. This assessment would evaluate ecosystem restoration and management options by comparing historic conditions to present-day conditions. Through this assessment the structure, function and ecological processes that are needed to restore the wetland communities would be identified, as well as the limitations of restoration management. Tamarac NWR sits at the top of two watersheds that flow into the Red River of the

North. This information would also provide valuable data for use in the Red River Valley Flood Management planning efforts.

Estimated cost - \$80,000. Strategy 2.12.4

Aquatic Resources and Water Quality Investigation

Hire a seasonal biological technician. Tamarac NWR is situated at or near the top of two major watersheds (Buffalo and Ottertail) within Minnesota; therefore, most people presume that water quality remains in pristine condition. However, a baseline water quality survey conducted by the Minnesota Pollution Control Agency recommended that several lakes be included on the “impaired waters” list (303d list), although further data would be needed to complete an assessment of the lakes. There are 21 natural lakes and three rivers within the Refuge, yet little is known about the ecology and water quality of these habitats, nor how these aspects affect trust resources. The project would support multiple studies, surveys and investigations that would collect information on biotic and abiotic resources of these systems, including aquatic vegetation, invertebrates, fish, waterbirds and water quality, all of which would be used to measure long term changes in aquatic systems.

Estimated cost - \$88,000. Strategy 2.12.4

Climate Change Adaptations for Biodiversity Conservation at Tamarac NWR

Tamarac NWR’s location at the convergence of three major biomes (boreal forest, eastern deciduous forest and tall grass prairie) make it well suited for studying the impacts of climate change and identifying options for land managers to mitigate negative impacts. Implement a long-term, adaptive management driven monitoring program of upland and wetland plant communities, as well as the fauna of these communities. Habitat management activities will be tailored to adaptation actions such as resistance, resilience and facilitation strategies promoting native plant communities in the face of a changing climate. Emphasis will be placed on, but not limited to, the long-term viability of upland conifers and wild rice wetland systems. Additionally, interpretive programs will be developed for delivery on the Refuge showcasing the significance of climate change on Refuge resources. Interpretive signs and/or other medium such as brochures will be developed.

Estimated costs: \$100,000 Strategy 2.2.5

Wetland Management District Operating Needs Projects

Enhance Wetland Management District

Hire one full-time wetland district manager to plan, organize, and implement management actions and provide oversight on 45 conservation easements within the Refuge’s five-county Management District. This position would engage, coordinate, and partner with state and local government officials and conservation interest groups to further the Service’s conservation mission, including future acquisitions of fee title and easements. Oversight of a vigorous and successful Partners for Fish and Wildlife Program, including supervision of the private lands biologist, would also be the responsibility of this position. There is currently no staffing on the five-county – 6,500,000 acre management district and active management and partnership development has been limited. Natural resource deterioration, habitat fragmentation, and lost community partnership opportunities will continue to occur without active management involvement.

Estimated cost: \$120,000. WMD Strategy 1.3.1

Survey FSA Easements

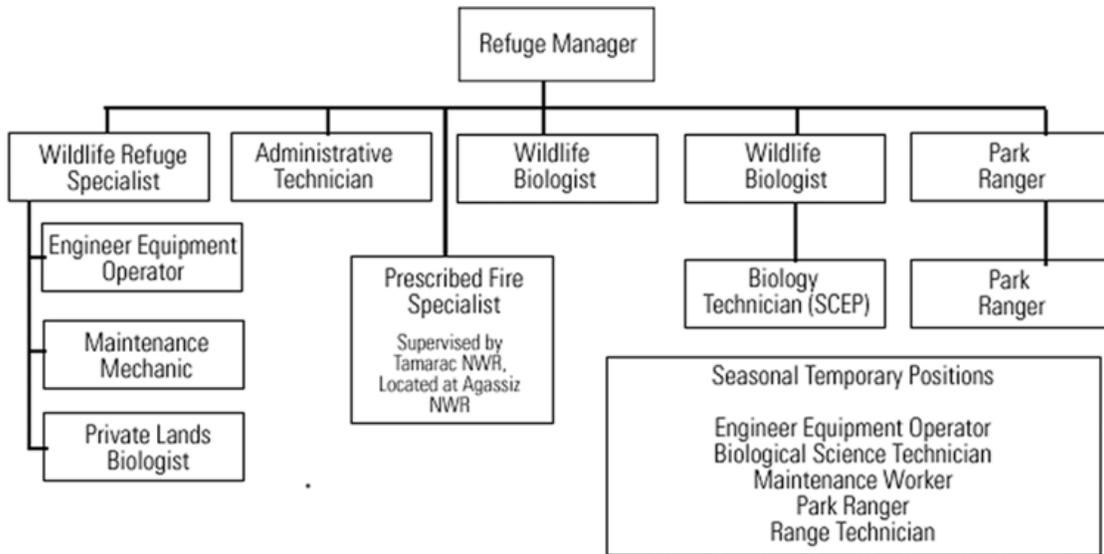
Survey the boundaries of the 14 FSA (formerly FmHA) easements on Tamarac WMD. Most of the FSA easements were not sufficiently surveyed when the Service acquired the management responsibilities and are in need of resurvey. In addition, some easements were not surveyed at all. Consequently, law enforcement operations are jeopardized and valuable habitats threatened. Landowners do not have accurate knowledge of the boundaries of these easements and in many cases are altering the protected habitats. Without clear documentation of the easement boundary, law enforcement does not have a defensible case in court.

Estimated cost - \$126,000. WMD Strategy 1.2.3

Future Staffing Requirements

Implementing the vision set forth in this CCP will require changes in the organizational structure of the Refuge and District. Existing staff will direct their time and energy in new directions and new staff members will be added to assist in these areas. The following are organizational charts and tables of the current staff of the Refuge and District, Fiscal Year 2010, as well as staff needed to fully implement this plan by Fiscal Year 2025 (Figure 18 and Table 6 on page 84).

Figure 18: Current Staffing Chart (2010), Tamarac NWR and WMD



Step-down Management Plans

Step-down management plans describe specific actions that support the accomplishment of Refuge and District objectives. The management plans identified in Table 7 will be reviewed, revised, or developed as necessary to achieve the results anticipated in this draft CCP.

Partnership Opportunities

Partnerships have become an essential element for the successful accomplishment of Tamarac NWR and WMD goals, objectives, and strategies. The objectives outlined in this draft CCP need the support and the partnerships of federal, state and local agencies, non-governmental organizations and individual citizens. This broad-based approach to managing fish and wildlife resources extends beyond social and political boundaries and requires a foundation of support from many. Tamarac NWR and WMD will continue to seek creative partnership opportunities to achieve its vision for the future.

Notable existing partners include the Tamarac Interpretive Association, Minnesota Department of Natural Resources, University of Minnesota, Natural Innovations, RMB Laboratories, and Ducks Unlimited.

Table 6: New Staff Required to Fully Implement the CCP by 2025, Tamarac NWR and WMD

Position	FTEs
Law Enforcement Officer	1.0
Forest Ecologist	1.0
Wetland Management District Manager	1.0
Total	3.0

Wilderness Review

We reviewed Refuge lands outside of the designated wilderness area for suitability as additional wilderness. This evaluation is presented within Chapter 3. No additional lands were found suitable for designation as wilderness as defined in the Wilderness Act of 1964.

Monitoring and Evaluation

The direction set forth in this CCP and specifically identified strategies and projects will be monitored throughout the life of this plan. On a periodic basis, the Regional Office will assemble a station review team whose purpose will be to visit Tamarac NWR and the Wetland Management District and

Table 7: Step-down Management Plan Schedule, Tamarac NWR

Step-down Management Plan	Plan Completed/ Updated	Anticipated Revision
Wilderness Management Plan	1987	2012
Visitor Services Plan	X	2012
Hunting Plan	1990	2013
Law Enforcement Plan	1984	2012
Furbearer Management & Trapping Plans	1994	2011 Tamarac Habitat Management Plan
Marsh & Water Management Plan	1992	
Forest Management Plan	1994	
Grassland Management Plan	1990	
Wildlife Inventory Plan	1992	
Fisheries Management Plan	1991	
Fire Management Plan	2001	2010
Cultural Resources Management Plan	X	2016
Safety Plan	2009	2012
Disease Control Plan	1987	2017

evaluate current Refuge activities in light of this plan. The team will review all aspects of Refuge management, including direction, accomplishments and funding. The goals and objectives presented in this CCP will provide the baseline from which this field station will be evaluated.

Plan Review and Revision

The CCP for Tamarac NWR and the Wetland Management District is meant to provide guidance to Refuge managers and staff over the next 15 years. However, the CCP is also a dynamic and flexible document and several of these strategies contained in this plan are subject to such things as drought, floods, windstorms and other uncontrollable events. Likewise, many of the strategies are dependent upon Service funding for staff and projects. Because of all these factors, the recommendations in the CCP will be reviewed periodically and, if necessary, revised to meet new circumstances.