

Chapter 4: Management Direction

Summary

Over the course of the next 15 years, management will focus on returning upland areas to pre-European settlement habitats, increasing flexibility in wetland management within impoundments, and increasing public use opportunities.

Boundary issues will be addressed with annual inspections, new surveying and installation of an automatic gate at the main entrance. The remaining 340 acres within the approved acquisition boundary and 12 acres outside the current boundary will be purchased as opportunities arise.

Prairie and oak savanna restoration will be a high priority. Increased efforts to control invasive species will be made using biological, mechanical, and chemical methods. Prescribed fire and mowing will be used to manage 11 prairie units totaling 435 acres. Half of the trees in the pine plantations will be removed through selective thinning.

Additional dikes and water control structures will be placed within existing impoundments. The C2 impoundment will be divided into three separate units to allow for moist soil management. The remaining three impoundments (Pools C1, D, and F) will reduce the size of Pool B to a manageable unit as well as create additional emergent habitat. Islands will be built in Pools A and B. Water level management in Pools A and E will continue on their present course. Rough fish, particularly carp, will be managed in specified pools using commercial fishing and water level management.

Researchers will be actively sought to conduct studies that will determine effects of management strategies. Grasslands, aquatic vegetation, and the extent of invasive plant species will be monitored.



Blazing star. USFWS

The deer hunt will continue as in the past, except harvest levels will be based on population and habitat monitoring. Furbearer trapping will continue and the number of beaver and muskrat taken will be determined based on annual monitoring of harvest and of dike damage and interference with water control structures.

Public use opportunities will be expanded. Environmental education programs will be promoted at local schools and to community groups and the general public. A multi-purpose room will be added to the office/visitor contact station to accommodate

larger groups and provide a place for orientation. Waterfowl hunting opportunities will be expanded by opening the area west of the Canadian National Railroad dike to a limited hunt. Ski trails will be maintained when conditions permit. Options to alleviate flooding of the entrance road to provide year-round access to the Refuge will be explored.

Use of volunteers will be expanded in all programs. A Trempealeau NWR Friends Group will be started. Outreach will be expanded to provide opportunities for awareness and understanding of Refuge management and the National Wildlife Refuge System. Traveling exhibits that bring the Refuge to the people will be developed.

The staff will include the addition of three seasonal positions, including a biological technician, a tractor operator, and a park ranger. Law enforcement duties will be covered by a new position shared with Winona District. A private lands biologist will also be shared with Winona District.

Goals, Objectives and Strategies

Goal 1 Landscape

We will strive to maintain and improve the scenic and wild character, and environmental health of the Refuge.

Figure 11 represents habitat and its management under this CCP and Figure 12 on page 55 represents visitor services. Figure 13 on page 56 represents a closer view of visitor services under this CCP.

Objective 1.1: Land Acquisition

By 2022, acquire from willing sellers the remaining 340 acres within the approved boundary as delineated in the 1983 Master Plan (USFWS 1983). The proposed acquisition includes 340 acres within the approved boundary of the Refuge and approximately 12 acres outside of the current approved boundary. These latter acres would be added under the Regional Director's authority. (See acquisition boundary Figure 2 on page 3.)

Rationale: Land acquisition can be a cost effective tool to ensure protection of important fish and wildlife habitat and to close gaps in the existing boundary. All of the properties in question are in the floodplain and subject to sporadic flooding. The system of dikes, constructed in the early 1900s to divert

the Trempealeau River and now part of the Refuge, tend to exacerbate flooding on adjacent properties. Acquiring these lands would alleviate conflicts with flooding on adjacent private property and allow the Trempealeau River to move more freely within its existing floodplain. Additionally, some of these lands are remnants of pre-lock and dam floodplain forest, a rare resource worthy of protection.

Strategies:

1. Maintain contact with landowners within approved boundary to keep them informed of the Refuge's interest in acquiring their property.
2. Keep Regional Realty Specialist informed of any changes to property status.
3. Seek Land and Water Conservation Fund appropriations (approximately \$510,000 at \$1,500 per acre)

Objective 1.2: Refuge Boundary

Maintain the integrity of the Refuge boundary by inspecting signs bi-annually, and by 2010 correct deficiencies in signage, and install an automatic gate at the main entrance.

Rationale: Maintaining and enforcing a boundary is one of the basic and critical components of Refuge management to ensure the integrity of an area over time. Without attention to this basic task, there is a tendency for adjacent development and use to creep onto Refuge lands and waters. This encroachment includes tree cutting, dumping, construction, storing equipment and materials, and mowing. In addition, there are a few boundaries that remain unclear creating confusion by the public using these lands especially for hunting and trapping.

Strategies:

1. Travel the boundary every other year to inspect signs and correct deficiencies.
2. Request a survey of the north boundary along Highway 35 between Marshland and River Bottoms Road. Correctly post.
3. Correctly post west boundary of River Bottoms property, surveying if necessary.
4. Install an automatic gate that will close and open at sunset and sunrise to protect facilities and discourage illegal, after-hours activities.

Figure 11: Habitat and its Management Under the Comprehensive Conservation Plan

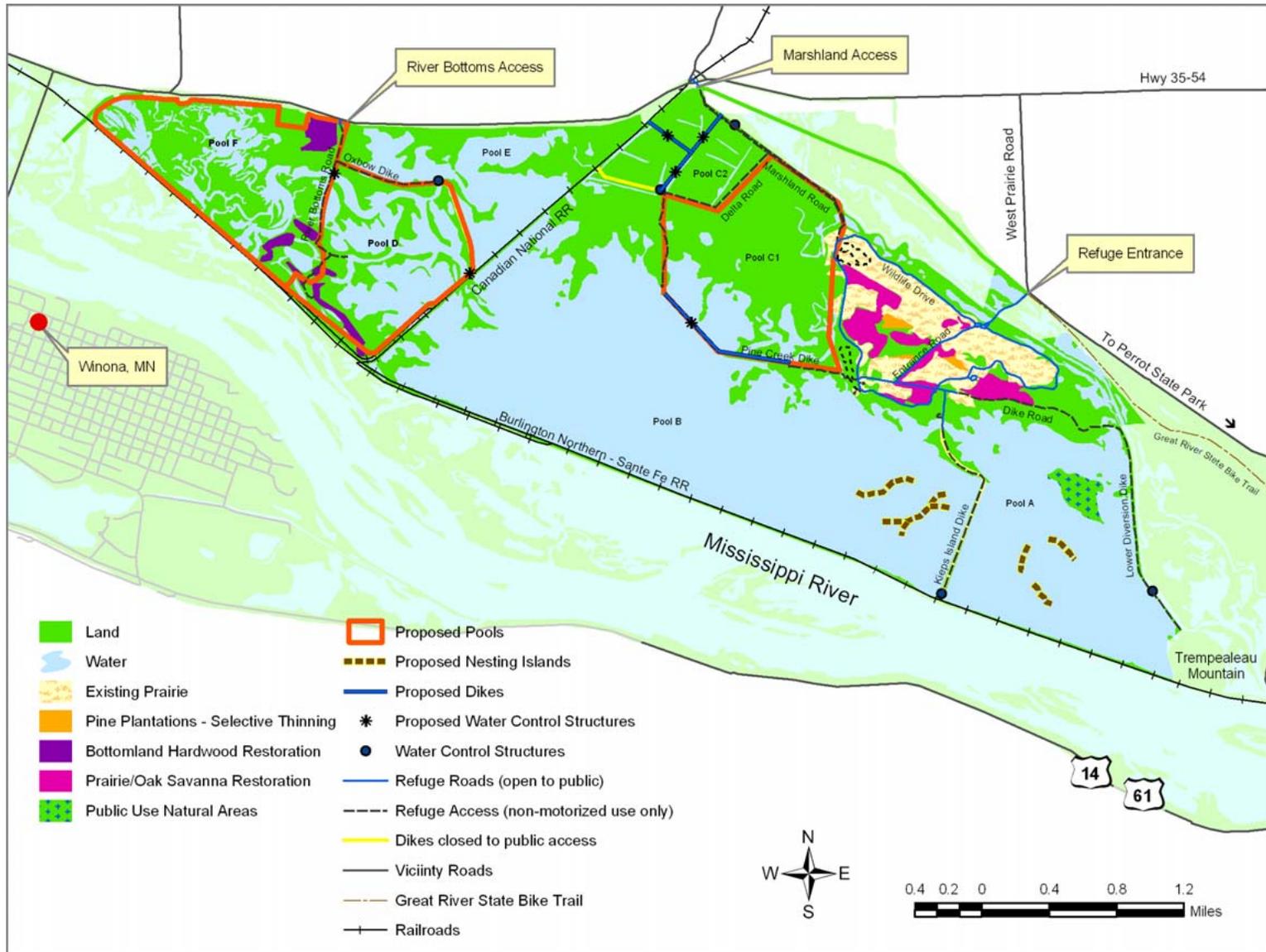


Figure 12: Visitor Services Under the Comprehensive Conservation Plan

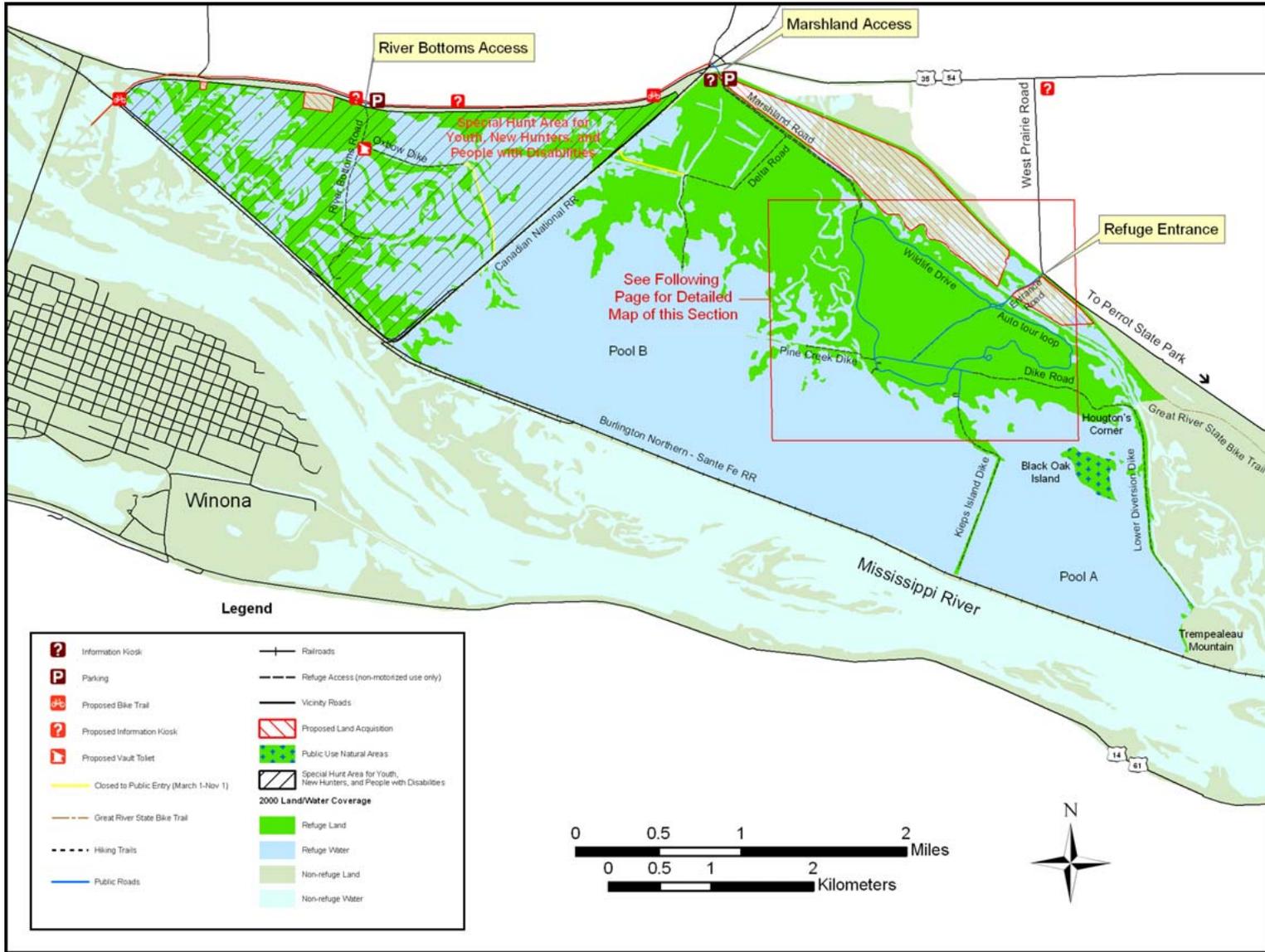


Figure 13: Visitor Services Close Up Under the Comprehensive Conservation Plan



Objective 1.3: Flood Protection

In 2008, implement the following flood management policy: “When the Mississippi River is in flood stage, do not allow water to enter Refuge pools through the lower diversion dike structure, the Marshland Road inlet or any other facilities.”

Rationale: The BNSFRR dike forms an integral part of the barrier dike system which impounds water within Trempealeau NWR. This dike was breached and over-topped in 1965 and was repaired by the railroad. During the near-record flood in the spring of 2001, floodwaters rose to the bottom of the rails at several points, but the dike held. Additional rock was added at several points. Railroad personnel were concerned about the large head of water against their dike and requested that the Service let water into the Refuge to equalize the pressure. In response, gates on the water control structure in the lower diversion dike near Trempealeau Mountain were opened, as well as gates on the Marshland Road inlet structure, allowing water from the Trempealeau River to enter the Refuge pools. Water elevations on the Trempealeau River were several feet lower than on the Mississippi River at points upstream where pressure on the dike was greatest. As a result, the quantity of water that could be let into the Refuge pools was insufficient to offer protection for the railroad dike at the critical locations.

Opening the gates and allowing floodwaters to enter the Refuge caused serious damage to biological resources and infrastructure as follows:

1. High inflows damaged the electric weir and one lift gate on the lower diversion dike water control structure.
2. Higher water levels in Refuge pools coupled with strong winds caused bank erosion.
3. Without the electric weir, carp and other rough fish entered the Refuge pools.
4. Floodwaters uprooted and destroyed beds of emergent wetland.
5. Interior Refuge roads and dikes suffered damage from high water.
6. Kiep’s Island spillway was damaged and required extensive repairs.

This incident clearly demonstrated that the water management infrastructure at Trempealeau NWR affords little opportunity for management actions that can reduce Mississippi River flood impacts on the BNSFRR dike. Letting flood waters into Pool A through the lower diversion structure damaged emergent vegetation, and may have accentuated bank erosion on the railroad and interior dikes while offering virtually no additional protection to the BNSFRR dike. Portions of the Mississippi River floodplain have been isolated from the main river by the construction of dikes and other structures that maintain the navigation channel. During floods, water can no longer spread across the floodplain as it once did. Rising water sometimes results in severe damage to structures and properties. Enhanced public information programs about the function and importance of floodplains would facilitate support for restoring connections between the main stem of the river and its backwaters.

Strategies:

1. Meet with BNSFRR officials to explain the policy and explore other alternatives to protect their dike.
2. Incorporate information on the importance of flood plains to the Mississippi River system into interpretive and educational programs.

Objective 1.4: Natural Area Management

By 2010 develop a management plan, including a habitat survey and archeological resource inventory and protection for Black Oak Island.

Rationale: The Refuge has done little in the way of monitoring or research of the existing Public Use Natural Area on Black Oak Island. Although the main goal of the area is the preservation of mature, eastern deciduous forest, preservation is a form of management. A management plan needs to be written to guide monitoring and research of current habitat conditions and changes since the area was designated 20 years ago. The plan would identify monitoring protocols; any habitat management needed to retain original biological values or address threats; address special public use considerations; and identify ways to foster public awareness and appreciation of these unique areas.

Strategies:

1. By 2010 develop a Management Plan for Black Oak Island.
2. Map vegetation on Black Oak Island.
3. Remove all invasive plants from Black Oak Island.
4. Solicit an archeologist to inventory and document archeological resources present on Black Oak Island.
5. Determine if further shoreline protection is needed to prevent erosion of artifacts from Black Oak Island.
6. Protect archeological resources on Black Oak Island by increasing law enforcement surveillance and closing the island to unsupervised public access.

Objective 1.5: Archeological Resources

By the end of 2008, improve protection of cultural resources by developing an Archeological Resource Protection Plan and implementing a variety of administrative changes to protect known sites.

Rationale: Federal laws, executive orders, and regulations, as well as policies and procedures of the Department of Interior and the Service protect cultural resources on federal lands. Trempealeau NWR has been described as one of the most important archeological sites in the Midwest. Human use of the area dates back 12,000 years. Dozens of sites and over 6,000 artifacts have been cataloged from various locations. However, the majority of the lands need baseline surveys to document the locations and extent of archeological resources. Habitat management activities involving soil disturbance are often delayed until archeological assessments can be completed. Additionally, protection of sites is difficult because of a lack of information about what resources are present. Trempealeau NWR has a history of looting and collectors are active in the area. While law enforcement efforts have been stepped-up over the years, problems persist. Opportunities to interpret the Refuge's cultural resources must be integrated with the need to protect them.

Strategies:

1. Hire a permanent, full-time law enforcement officer (shared with Winona District) to increase law enforcement surveillance of known sites and suspicious activities.
2. Provide Archeological Resource Protection Act training for all staff.
3. Improve the relationship and coordination with the Mississippi Valley Archeology Center.
4. Inventory resources on shoreline and upland sites subject to disturbance
5. Restrict public access to the top of the road on Kiep's Island.
6. Work with Wisconsin DNR and Perrot State Park to close access to Trempealeau Mountain from the Refuge.
7. Close unsupervised access to Black Oak Island.
8. Develop an interpretive program about the ancient people of the area and the need to protect their historic sites.

Goal 2: Wildlife and Habitat

Our habitat management will support diverse and abundant native fish, wildlife, and plants.

Objective 2.1: Forest Management

By 2010 develop a Habitat Management Plan incorporating forest management. By 2015 enhance 50 acres of upland hardwood forest; and 500 acres of floodplain hardwood forest in three separate blocks. Remove all Scotch pine and selectively thin all pine plantings by 50 percent.

Rationale: Hardwood forests on the Refuge have been altered by a number of factors including invasion by exotic species, oak wilt, and agriculture. The forest canopy in many areas is dominated by black locust, and the native shrub component which should include species such as dogwoods, hazel, viburnums and others, has been replaced by European buckthorn, black locust, Siberian pea, and Tartarian honeysuckle. Bottomland forests are not regenerating and large nesting trees and cavities are becoming less abundant. A Habitat Management Plan is needed to integrate forest and wildlife objectives, and to identify management prescriptions such as harvest, planting, fire and invasive plant

control. This objective calls for an aggressive program to remove invasive plants and replant appropriate native trees.

Strategies:

1. Survey upland forest stands for archeological resources.
2. Continue restoration of River Bottoms Road sites by planting new age classes of swamp white oak seedlings every 3 years until natural regeneration is occurring.
3. At River Bottoms Road sites inter-plant other native seedlings as available, focusing on mast-producing species. Coordinate seed collection from local floodplain sites and seedling production with Army Corps of Engineers foresters.
4. Annually treat 5 acres each of upland and floodplain forest using mechanical and chemical means as appropriate, to remove black locust and European buckthorn. Black locust and European buckthorn will occupy <10 percent of the canopy in upland forest and <20 percent in floodplain forest.
5. Work with Army Corps of Engineers foresters to identify stands and prescriptions for timber sales. Permit commercial harvest of black locust and pine.
6. By 2010, clear down timber from burn units by permitting firewood cutting.
7. Protect swamp white oak in pool C2 by lowering water level during the growing season to avoid prolonged flooding.



*European buckthorn in understory, Trempealeau NWR.
USFWS*

8. With others, seek research on floodplain forest regeneration and restoration of forest habitats to benefit cavity dependent species.

Objective 2.2: Wetland Management

Working with others and through a more aggressive Refuge program, seek a continuous improvement in the quality of water flowing into and out of the Refuge in terms of long-term monitoring of dissolved oxygen, major plant nutrients, suspended material, turbidity, pH, temperature, sedimentation and contaminants. By 2022, develop and maintain infrastructure to allow management of 5,500 acres of wetlands as described below:

Two out of every 5 years, provide an average of 275 acres of moist soil/mudflat habitat primarily for shorebirds, waterfowl, and wading birds.

By 2022, provide an average of 2,750 acres of emergent marsh habitats on the Refuge. This habitat will be characterized by water depths ranging from 3 to 30 inches interspersed with stands of cattail, bulrush, phragmites, arrowhead, pickerelweed, water lily and American lotus. Submerged aquatic plants such as coontail and sago pondweed will usually be present. Emergent marsh habitat will be apportioned among the Refuge pools as follows:

- Pool A –250 acres
- Pool B – 1,050 acres
- Pool C1 –500 acres
- Pool C2– 150 acres
- Pool D –300 acres
- Pool E –300 acres
- Pool F – 200 acres

Continue to provide approximately 1,550 acres of deepwater marsh habitat among Refuge pools. This habitat will generally consist of open water greater than 30 inches in depth. Submerged vegetation such as coontail, sago pondweed, and wild celery is desired. These habitats will provide open water rafting areas for diving ducks and foraging habitat for pelicans, cormorants, Bald Eagles, and other fish-eating birds. Deepwater habitat would be distributed among Refuge pools roughly as follows:

- Pool A –350 acres
- Pool B – 1,000 acres



Swamp white oak tree planting area, Trempealeau NWR.
USFWS

- Pool D – 150 acres
- Pool F – 50 acres

Rationale: Trempealeau NWR includes 6,226 acres, of which about 5,500 acres, or 90 percent, are wetlands. These wetlands have benefited from many years of protection afforded by railroad and barrier dikes which exclude damaging floods so devastating to aquatic plants in adjacent Mississippi River backwaters. As a result, wild rice, cattail, and other plants important to marsh wildlife have flourished in many areas.

Construction of a series of locks and dams on the Mississippi River in the 1930s created a deeper, relatively stable water system, especially during the summer. Although flooding was not a serious problem at Trempealeau NWR because of barrier dikes, the low water cycle, so important to aquatic plants dependent on mud flats and sandbars for their reproduction, was virtually eliminated. With stable and higher water levels, wind and wave action gradually eliminated aquatic plant beds, particularly in the lower Refuge pools. Additionally, rough fish, primarily common carp, are present throughout the pool system. Carp have a major impact on aquatic plant growth by rooting out plants and suspending sediments while feeding.

Strategies:

1. By 2010, write a Habitat Management Plan that includes strategies for managing water levels in each impoundment.
2. Once every 5 years when funding for pumping is available, reduce water levels in Pool A by pumping to expose 50 percent (350

acres) of the bottom. Drawdown would begin in May, coinciding with shorebird migration, and continue through the fall until freeze-up. Low water conditions would create conditions for a partial kill of rough fish. Water levels would return to full pool over the winter through dike and groundwater seepage.

3. Once every 5 years when funding for pumping is available (alternating with Pool A), reduce water elevations in Pool E when wild rice has reached the floating leaf stage in late May or early June. Maintain water level as low as possible through late August, and then gradually restore levels to maximize food availability for waterfowl, rails, and wading birds.
4. Avoid prolonged flooding of swamp white oaks in Unit C2 by lowering water level below the root mass of these trees during the growing season.
5. Maintain stable or declining water levels in pools B and E, June through August to accommodate over-water nesting species, especially Black Terns.
6. Construct a dike with a spillway and water control structure between Delta Point and Pine Creek dike. Raise and widen Delta and Pine Creek roads to serve as dikes for a new sub-impoundment C1 totaling about 375 acres.
7. Construct a water control structure in the former "Green Bay culvert" thereby creating impoundment D, about 450 acres.
8. Construct a water control structure in River Bottoms Road dike to create impoundment F of about 450 acres. Raise and widen River Bottoms Road south of its junction with Oxbow dike.
9. Subdivide C2 into three manageable units.
10. When conditions allow, drawdown Pool B using gravity flow through Pool A into the Trempealeau River. Once every 7 years pump Pool B as low as possible with existing pumps to improve aquatic plant growth.
11. Hire one permanent seasonal tractor operator to perform annual maintenance of dikes, pumps and water control structures.

12. Hire a Private Lands Biologist (shared half time with Winona District) to fully implement the Partners for Wildlife Program in the Trempealeau and Buffalo River Watersheds to improve water quality entering the Refuge.
13. Construct five islands each, in the eastern portion of Pools A and B. Material for the islands would be dredged from within each pool or from the Mississippi River and pumped through the BNSFRR dike. In addition to providing nesting habitat for various species, islands would break wind and wave energy and decrease turbidity.
14. Continuously monitor water quality at six locations using dataloggers.
15. When feasible, use commercial fishing and winter drawdowns to reduce populations of rough fish in pools A and B.
16. Work with USGS and the National Weather Service to re-establish a permanent weather station.
17. Continue to stress the importance of water quality in public information and interpretation, and environmental education programs.

Objective 2.3: Grassland Management

Maintain existing 335 acres of prairie and by 2022 restore 100 acres of prairie /oak savanna habitat. Prairie component will have native cool and warm season grasses and wild flowers typical of undisturbed sand prairie in western Wisconsin. Oak savanna will comprise 20 to 40 percent of the prairie area with an open canopy of native, uneven aged oaks.

Rationale: The Fish and Wildlife Service is interested in maintaining and/or restoring ecological diversity to the lands managed in the National Wildlife Refuge System. The goal for many refuges is to restore habitats to pre-European settlement conditions, understanding that modern day circumstances or refuge purposes may preclude this in many areas. Native vegetation that was originally in place prior to various attempts at habitat improvement is likely the vegetation that will do best on the land. Historical records (1895-1976) and records from the U.S. General Land Office (1840s and 50s), indicate that prior to settlement, upland areas within the Refuge were predominantly prairie

and oak savanna (see Figure 14). Much of the upland area had been converted to agriculture before the Refuge purchased the property in 1936. Under Refuge management from the 1940s through 1960s, various pine species, Siberian and Chinese elms, black locust, Siberian pea, and honeysuckle were planted to reduce soil erosion and provide wildlife habitat in tune with the wildlife management practices of that era. In the 1970s, many of the oaks in the savanna were removed when oak wilt disease killed them.

Today the invasive nature of black locust and the addition of other invasives such as buckthorn, have created forested areas on the upland sections of the Refuge consisting primarily of non-native species. Three hundred acres of the original 700 acres of prairie/oak savanna remain on the Refuge today. The mature black locusts in the forested areas provide a continual seed source, resulting in a continuous invasion of black locusts on the prairie. Oak wilt disease is still present and has killed many of the mature oaks remaining in the uplands. Likewise, prairies and oak savannas on private lands are becoming scarce as land is rapidly developed. The remnant prairies on the Refuge may soon be the only examples in southern Wisconsin.

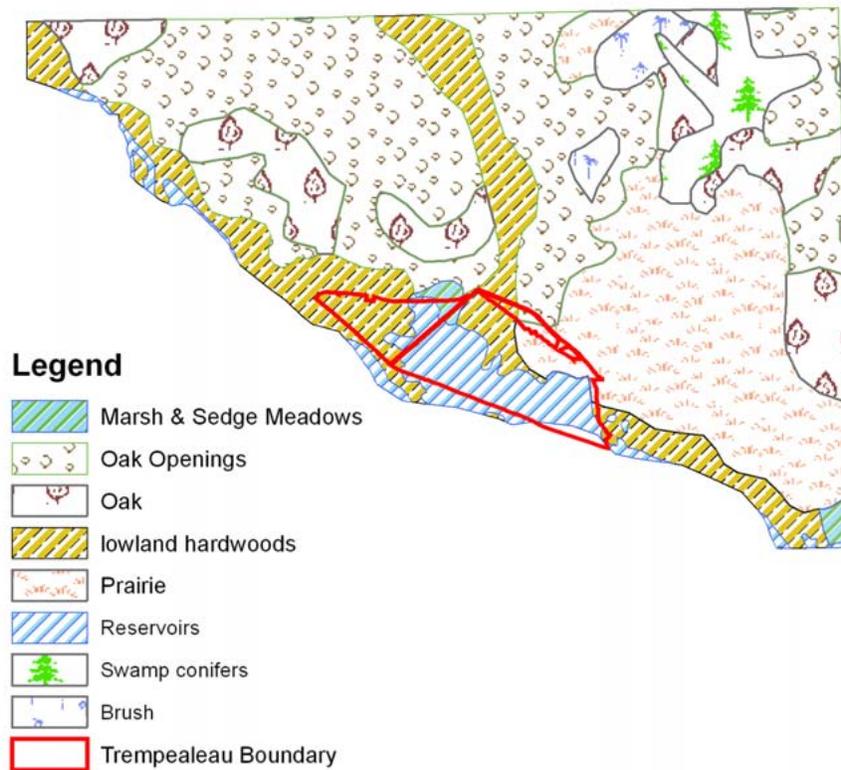
Prairie and oak savanna restoration in these areas will benefit many species listed as Regional Resource Conservation Priority (RRCP) species including Mallards, Blue-winged Teal, Grasshopper Sparrow, Orchard Oriole, Red-headed Woodpecker, and Eastern Meadowlark. Many species of birds, mammals, reptiles, and amphibians will forage in, and meet all or part of their life requirements in prairie and oak savanna habitats.

Strategies:

1. Use prescribed fire as described in the approved Fire Management Plan (USFWS, 2008) to control encroachment by cool season exotic grasses, forbs and woody shrubs. Modify existing firebreaks where necessary to incorporate timber stands targeted for restoration to oak savanna.
2. Expand flea beetle release program to reduce leafy spurge in all prairie/oak savanna habitats. Leafy spurge will occupy <10 percent of any prairie/oak savanna unit by 2022.

Figure 14: Pre-European Settlement Vegetation, Trempealeau NWR

The cover map is from Professor Robert Finley from the University of Wisconsin and represents original vegetation map of Wisconsin.



3. Annually, convert a minimum of 5 acres of black locust to prairie using mechanical and chemical means as appropriate. Use commercial harvest to remove merchantable trees where practical. If necessary plant native grasses and forbs to enhance restoration.
 4. Remove understory of invasive shrubs from oak savanna habitats. By 2022, invasive plants will occupy <10 percent of oak savannas.
 5. By 2022, plant at least 2 acres of oaks and other hardwood seedlings where natural regeneration is insufficient to restore oak savanna. Emphasize bur oaks over red and black oaks to minimize further losses from oak wilt.
 6. By 2022, decrease “edge” habitat by removing all pine plantings from within prairie units.
 7. Hire a permanent, full-time seasonal biological technician to oversee prairie/oak savanna restoration including monitoring and invasive plant control.
 8. Use volunteers and school groups to collect and redistribute native grass and wild-flower seed.
 9. Develop interpretive and education programs on prairies and invasive plants.
- Objective 2.4: Invasive Plants and Animals**
- Reduce abundance of invasive and non-indigenous plants as specified in Table 2. If conditions allow, once every 5 years prior to

Table 2: Management Strategies for Invasive and Non-indigenous Plant Species

Non-indigenous Plant Species	Prairie and Oak Savanna	Upland Forest	Floodplain Forest	Wetlands
Leafy Spurge	Expand flea beetle release program. Reduce infestation to 10% or less of prairie habitats by 2022.			
Black Locust	Convert a minimum of 5 acres of Black Locust to prairie using mechanical and chemical methods. Prevent any new spread into existing prairie areas.	Remove Black Locust from canopy and understory. Reduce occurrence to 10% or less of upland forest.		
European Buckthorn, Siberian Pea, Tartarian Honeysuckle	Remove understory of these species from oak stands targeted for oak savanna restoration using appropriate mechanical and chemical means. Reduce occurrence to 10% or less of oak savanna habitat by 2022.	Remove these species from understory using appropriate mechanical and chemical means. Reduce occurrence to 10% or less of understory by 2022.	Remove understory of European Buckthorn from stands using appropriate mechanical and chemical means. Treat 5 acres per year.	
Scotch Pine	Remove all trees.	Remove all trees.		
Red and White Pine	Remove all trees from prairie and oak savanna habitats.	Conduct selective thinning using commercial harvest where appropriate. Manage stands for natural appearance.		
Purple Loosestrife			Raise 200 pots of defoliating beetles annually for release at 5 new sites on the Refuge. Use volunteers when available.	Same as for Floodplain Forest.

drawdown of Pool A, remove invasive carp and other rough fish using commercial fishing.

Rationale: Invasive plants continue to pose a major threat to native plant communities on the Refuge and beyond. Invasive plants displace native species and often have little or no food or habitat value for wildlife. The result is a decline in the carrying capacity of the Refuge for native fish, wildlife and plants, and a resulting decline in the quality of wildlife-dependent recreation. This objective addresses invasive plants through mapping and monitoring, and through mechanical and biological control. Invasive plant control is labor intensive and potentially costly. New staff are proposed in addition to relying on volunteers and out-side funding. Invasive animals such as zebra mussels and

Asian carp pose a looming threat to native aquatic ecosystems. These species are not yet found on the Refuge, but careful monitoring, maintenance of the electric weir, installation of additional fish barriers and commercial fishing are tactics to slow down their introduction.

Strategies:

1. Conduct an inventory and prepare baseline maps of invasive plant infestations, and to undertake mechanical removal of invasive plants.
2. As part of a Habitat Management Plan, write an invasive plant control and management step-down plan (Integrated Pest Man-



Invasive black locust taking over prairie, Trempealeau NWR. USFWS

agement Plan) that identifies priority areas and methods of control. Emphasize mechanical and biological control.

3. Seek seasonal staff and funding to accelerate current control and applied research through interagency partnerships, volunteer programs, and public education.
4. Continue to work with the Department of Agriculture, other agencies, the state, and other refuges in securing insects for release on the Refuge and on private lands within the Trempealeau and Buffalo River watersheds.
5. Seek grants, cost-sharing, or special funding opportunities for invasive plant removal.
6. Conduct public information efforts including media, brochures, signs, and programs to increase awareness of the threats posed by invasive plants and what citizens can do to minimize the introduction or spread of invasive species.
7. Build a GIS database of invasive plants and update it every 3 years.
8. If conditions allow, permit commercial fishing for rough fish in Pool A prior to each drawdown.
9. Monitor all pools for invasive fish, aquatic plants and mollusks.
10. Investigate feasibility of implementing an exchange program for gardeners with loosestrife planted in ornamental gardens.

11. Secure outside funding to set up rearing cages on private lands and begin distribution of beetles to landowners within the Trempealeau and Buffalo River Watersheds.
12. Continue to serve as a source of flea beetles for other agencies and landowners who have infestations of leafy spurge.
13. Explore the installation of fish barriers at all water control structures.
14. Determine the distribution of reed canary grass and phragmites and investigate methods of control.

Objective 2.5: Monitor and Investigate Fish, Wildlife and Plants and their Habitats

By 2010 update the Wildlife Inventory Plan to include all federal and state listed species, species of regional conservation concern, furbearers, and deer. Increase partnerships with agencies and universities and encourage applied research on the Refuge.

Rationale: Monitoring is essential to understanding the status and trends of selected species groups and habitats. This in turn provides some indication of overall biological integrity, diversity, and environmental health of the Refuge, and is critical in planning habitat management and public use programs. This objective represents a more aggressive biological program on the Refuge and will help meet directives in the Refuge Improvement Act requiring monitoring the status of fish, wildlife, and plant species. Better biological information is also critical to making sound and integrated resources and public use management decisions. The Refuge would continue to support, use, and contribute to monitoring done by the state, U.S. Geological Survey, the Army Corps of Engineers, neighboring refuges and others to help fill the gaps in status and trends information for fish, reptiles, amphibians, birds, invasive plants, invertebrates, land cover and other environmental factors like water quality.

Strategies:

1. Engage other experts and partners to develop and implement a Wildlife Inventory Plan that includes all federal and state listed species, regional conservation species, furbearers, and deer. Also include

- “species of greatest conservation need” as identified in the Wisconsin Comprehensive Wildlife Conservation Plan.
2. Work with partners, volunteers, students and staff to store, summarize and, as appropriate, analyze survey data annually.
 3. Continue to work with universities, states, USGS, and the COE to share data on species and habitats.
 4. Participate in formal coordination meetings with USGS to share biological data, monitoring and monitoring expertise.
 5. Work with the Upper Mississippi NWFR GIS biologist and the Winona District biologist to coordinate equipment, staff, survey schedules, and data analysis.
 6. Foster partnerships with colleges and universities to encourage graduate research projects.
 7. Continue to use volunteers to complete certain surveys like waterbird counts, and deer surveys.
 8. By 2010, complete a Habitat Management Plan that integrates monitoring results with habitat management actions.
 9. Working with partners, develop a Herptile Management Plan by 2010.
2. Continue to consult with the Service’s Ecological Services Office on all actions which may affect listed species.
 3. In the Wildlife Inventory Plan address monitoring for all listed or candidate species, and other species of management concern to help preclude listing.
 4. In the Habitat Management Plan, identify steps needed to ensure populations of listed or candidate species are sustained in support of delisting or to preclude listing.
 5. Continue to monitor Bald Eagle nesting and success.
 6. Close 100 meter radius around active Bald Eagle nests to public entry February 1 to July 1.
 7. Where feasible, protect large nest trees from prolonged flooding and erosion.
 8. Work with Wisconsin DNR to assess the potential for reintroduction of Massassagua rattlesnakes.
 9. Increase education and outreach targeting threatened and endangered species and their needs.
 10. Work with partners to assess the potential for reintroduction of Karner blue butterflies.

Objective 2.6: Threatened and Endangered Species Management

Continue to monitor Bald Eagle use of the Refuge. Complete an evaluation of state-listed species using the Refuge.

Rationale: It is Service policy to give priority consideration to the protection, enhancement, and recovery of threatened and endangered species on national wildlife refuges. This objective represents a more aggressive approach to achieving this policy, and also reflects the high public interest in these species. Currently there are no federally listed species occurring on the Refuge. Efforts would be expanded to determine the status of Massasagua rattlesnakes (candidate) and appropriate state listed species.

Strategies:

1. Consider the needs of threatened, endangered, and candidate species in all habitat and public use management decisions.

Objective 2.7: Deer Management

By 2010, update the Wildlife Inventory Plan and Habitat Management Plan to include management and monitoring of white-tailed deer and related browse impacts. Base harvest levels of deer on annual population monitoring and evaluation of habitat quality.

Rationale: In general, Refuge management practices emphasize the protection of plants and wildlife to ensure a diversity of species that naturally or historically occurred. White-tailed deer present a special situation in that harvest and the vast expanses of agricultural lands around the Refuge greatly influence population levels and resulting vegetation impacts. Deer tend to move on and off the Refuge in response to hunting pressure and food availability on surrounding lands. Browse impacts have been severe on the Refuge especially prior to the 1980s after which expanded Refuge hunts were implemented to reduce deer and allow the vegetation to recover. Deer numbers are unnaturally



White-tailed deer. © Sandra Lines

high in surrounding lands and the State of Wisconsin has been in an active herd reduction program since the discovery of chronic wasting disease (CWD) in 2003. The special interests of the State in the management of resident big game animals are recognized and management actions are coordinated with State objectives where possible. Harvest on surrounding lands would be hampered if coincident pressure does not occur on the Refuge. This objective represents a balanced approach to limiting overbrowsing and assisting the State in managing the distribution of hunting pressure and harvest rates.

Strategies:

1. Update Wildlife Inventory Plan to include white-tailed deer monitoring, including fawn counts.
2. Include monitoring of browse impacts in Habitat Management Plan.
3. With partners, investigate the most current, efficient and appropriate technologies and protocols to monitor browse and herd size.
4. Investigate funding mechanisms and partnerships to contract aerial, forward looking infra-red (FLIR) surveys to count deer once every 5 years.
5. Model percent change in browse impacts over time.

6. Encourage research by universities and partner agencies on deer-habitat interactions including implications to invasive plant abundance.
7. Work closely with Wisconsin DNR to coordinate information exchange, planning, and management of CWD on nearby lands.
8. Continue to use a managed public hunt of white-tailed deer to maintain acceptable levels of browse.
9. Update the Hunt Plan to include white-tailed deer hunting.
10. Seek expert advice to model white-tailed deer population dynamics to determine appropriate harvest levels.
11. Base sex and age ratio of harvest requirements on population modeling and advice from Wisconsin DNR.
12. Update Visitor Service Plan to improve safety and require all pedestrians to wear blaze orange during the gun hunt.
13. Investigate options for closing the Refuge to non-hunting visitors during key hunting times.
14. Improve signage and develop a Refuge-specific hunting safety brochure.
15. Continue issuing over-the-counter permits for late season archery.
16. Continue to operate a check station on opening weekend.
17. Require mandatory reporting of hunter success or loss of 1 year hunting privileges.
18. Continue to follow Wisconsin guidelines for season dates and times.

Objective 2.8: Furbearer Management

Update the Furbearer Management Plan by 2009 and continue to manage muskrat, beaver, and raccoon populations at levels where damage to dikes and interference with water management and bird banding operations is limited.

Rationale: A furbearer trapping program is in place for muskrat, mink, raccoon, opossum, and beaver. The Refuge is divided into 15 muskrat and four beaver units. Trapping units are awarded to the highest bidder at an auction held in October. The entire Refuge is open to trap-

ping with the exception of an area inside and immediately adjacent to the wildlife drive. Harvest of muskrats by trappers helps reduce damage to Refuge dikes from tunneling and den building. Beaver trapping reduces plugging of culverts and water control structures and prevents excessive damage to desirable trees adjacent to wetlands. The trapping plan needs to be updated to include proper harvest reporting procedures and to clarify unclear boundary descriptions and procedures for using data to regulate harvest.

Strategies:

1. Work with public to update Furbearer Management Plan by 2009.
2. Update Wildlife Inventory Plan to include muskrats, beavers, and otters.
3. Use harvest data to determine appropriate harvest levels to minimize damage to dikes and structures.
4. As needed adjust trapping activities to avoid conflicts with other hunts or Refuge management.
5. Remove problem animals from banding sites as needed to meet banding objectives.
6. Work with Wisconsin Trapping Association to provide training for all trappers using the Refuge. Encourage communication and cooperation among trappers.

Goal 3: Public Use

We will manage public use programs and facilities to ensure sustainable, quality, hunting, fishing, wildlife observation, wildlife photography, interpretation, and environmental education opportunities for a broad cross-section of the public; and provide opportunities for the public to use and enjoy the Refuge for traditional and appropriate non-wildlife dependent uses that are compatible with the purposes for which the Refuge was established and the mission of the Refuge System.

Objective 3.1: Wildlife Observation and Photography

Provide year-round opportunities to observe and photograph wildlife and habitat by improving and maintaining two existing hiking trails, a 4.5-mile auto tour route, and the existing observation deck. Develop a new hiking trail, a new canoe trail and a cross-country skiing trail system. Promote wildlife photography by working with local photographers to develop at least 1 annual



Bird banding, Trempealeau NWR. USFWS

workshop and assist with Upper Mississippi River NWFR photo contest.

Rationale: Wildlife observation and photography are priority public uses of the Refuge System and are to be encouraged when compatible with the purposes of the refuge. The Refuge provides outstanding wildlife observation opportunities. Improving, maintaining, and enhancing accessibility of existing facilities will increase opportunities for all people to view wildlife throughout the year. Opportunities for wildlife photography are abundant without special facilities, but working with area photographers will foster more interest and allow the staff to develop targeted programming for this user group. Finally, an entrance fee may help to provide resources for improving visitor services, but careful consideration must be given to the cost and benefits for both the Refuge and visitors.

Strategies:

1. Develop a Visitor Services Plan by 2009.
2. Provide a general brochure with maps and information for all trails.
3. Update and design new signing at trail-heads and along trails.
4. Enhance website information for compatible, wildlife-dependent recreational opportunities.
5. Maintain and enhance the 4.5-mile auto tour loop – upgrade and enhance signage; re-design booklet per Service standards.

6. Designate and enhance specific observation points along hiking trails conducive to wild-life observation and investigate installation of benches.
7. Monitor and maintain existing Woods Trail – update existing trail panels as habitat changes and new developments arise along the trail.
8. Update Prairie View Trail as a universally accessible trail according to Service standards for trail surface, signage and other required details and enhancements.
9. Upgrade and re-design current parking area at Prairie View Trail.
10. Redesign and landscape the existing native plant garden; create a living guide by adding interpretive panels and identification markers for plants.
11. Explore the potential of connecting the Prairie View trail to the Civilian Conservation Corps (CCC) historic site (off the wild-life drive), and develop an interpretive site with signs at CCC location.
12. Develop a *Birding by Ear* trail, designed for birders with visual impairments; install sound activated trail panels
13. Develop a birding by ear audio tape/CD to accompany the trail users.
14. Establish a three-quarter-mile Marsh Discovery Trail linking with existing trails to connect three major habitats as one trail system.
15. Establish an un-groomed Winter Wonders Cross-country Ski Trail on fire breaks and trails and develop a simple one-page trail map with guidelines.
16. Seek funding to purchase 30 pairs of snowshoes for use by the public.
17. Continue to prohibit all ATVs and snowmobiles from Refuge lands.
18. Contact and establish a relationship with local photographers – seek input on needs and facilities.
19. Offer wildlife and outdoor photography workshops at special Refuge events such as the Bird Festival in May and the Refuge Week Celebration in October.

20. Continue to work with Upper Mississippi River NW&FR to promote a photo contest.
21. Investigate the cost/benefit ratio of implementing an entrance fee program.

Objective 3.2: Great River State Trail (Bicycling)

By 2010 improve the Great River State Trail by adding a variety of visitor services, including bike racks, potable water source, restrooms, and interpretive signs and brochures. By 2008, work with the Wisconsin DNR and partners to facilitate extension of bike trail to Winona.

Rationale: The Great River State Trail is a popular bike trail and is likely to become more popular as the public eye turns more toward health and fitness activities. Bicycling is a low impact way of experiencing nature and this objective reflects an improvement in facilities and interpretation to encourage more visitors to consider traveling by bike.

Strategies:

1. Work closely with the Wisconsin DNR and any advisory committee to facilitate extension of the bike trail to Winona, while minimizing impacts to Refuge lands.
2. Improve directional signs and install “watch for bikes” signs along the auto tour route.
3. Improve the Great River State Trail by adding bike racks at the Marshland and main entrances, near the kiosk at the entrance to the auto tour route, and at the observation deck.
4. Add a year-round restroom facility at either the new shop or the office location.
5. Add a potable water source at the new shop.
6. Develop interpretive signs specifically for bikers along the Marshland Road portion of the trail.
7. Develop a brochure with map specific to bikers and what they may see along the trail.
8. Investigate providing a “Blue Goose Bike Program” to encourage visitors to park autos and ride Refuge bikes.

Objective 3.3: Interpretation

At 3-year intervals, random surveys indicate at least 90 percent of visitors report they felt welcome and enjoyed their visit, that they have an understanding of the Refuge as a place where wildlife comes first and appreciate the role of the Refuge System in preserving our Nation's wildlife heritage.

Rationale: Interpretive programming is the looking glass through which visitors experience the Refuge. It is also a priority public use of the Refuge System, to be encouraged when compatible with the purposes of the refuge. Interpreting the resources and challenges of the Refuge to the general public is important to influencing the future well-being of the Refuge and the natural world. Only through understanding and appreciation will people be moved to personal and collective action to ensure a healthy Refuge for the future. Interpretation is also key to changing attitudes and behavior which affect the Refuge through off-Refuge land use decisions and on-Refuge conduct and use. This objective reflects an improvement in the quality and availability of interpretive materials and programs, and reflects the importance of these programs in an integrated resource management alternative. It provides for the basic needs necessary to inform and educate visitors, and help them make the most of their Refuge visit while protecting sensitive resources. The facilities and programs proposed are detailed in the strategies.

Strategies:

1. By 2009, include interpretation in the Visitor Services Plan and develop procedures for conducting visitor surveys.
2. Design and install updated kiosks at all Refuge entry areas (main entrance, Marshland, and River Bottoms), boat landing, the observation deck, Hwy. 35 scenic overlook, and the West Prairie Road wayside park.
3. Improve agency identity by including on each kiosk, an interpretive panel on the U.S. Fish and Wildlife Service and the National Wildlife Refuge System.
4. Include Refuge regulations on all kiosks.
5. Update signs on all trails and along the wildlife drive auto tour.
6. Improve directional signs and interpretive materials for bicyclists.
7. Update and reprint to Service standards a self-guided booklet that corresponds with auto tour route stops. Explore the possibility of enhancing some stops by adding a "sound post" with digital recordings of common wildlife sounds, calls, songs, and their sources.
8. Update all brochures in accordance with Service standards. Develop a "series" of brochures for the Refuge relating to the big six priority public uses.
9. Develop and publish a list of interpretive events and environmental education opportunities annually.
10. Produce the following brochures: plant list, invasive plant management, winter wildlife, hiking guide with trail maps, biking guide.
11. Develop a traveling pop-up exhibit for use at special events to highlight the Refuge mission and key resources including Refuge history and recreational opportunities.
12. Update and maintain current events on the Refuge website quarterly. Include current events, trail information, and seasonal bird sightings.
13. Investigate an internet link to a bird cam (eagle cam).
14. Publish a seasonal interpretive schedule.



Interpretation book reading at a local library. USFWS

15. Continue to hold an annual birding festival each spring; participate in the Mississippi Valley Birding Festival sponsored by Audubon.
16. Develop at least three ranger-led interpretive programs for visitors – some would be year-round and others seasonal in nature. At least one cultural or historical interpretation program would be offered.
17. Hire a permanent, seasonal park ranger to develop and lead interpretive programs and assist with other aspects of the public use program.
18. Purchase 30 pairs of binoculars and field guides, and provide an annual budget for interpretive supplies.
19. Explore opportunities to develop volunteer-led interpretive programs by involving volunteers in program development and training them as docents.
20. Establish a Junior Ranger program.
21. Continue to issue news releases on special events or temporary changes to regulations.
22. Investigate developing a Master Naturalist program.
23. Participate in local area expos, sportsman shows, and other outdoor events to promote the Refuge.
24. Prepare a bi-annual column for area newspapers highlighting Refuge news, events and wildlife sightings.
25. Work closely with local community groups, like chamber of commerce, tourism board, library, Great River Road Committee, and Perrot State Park to share resources and coordinate programming.
26. Construct a dividable, multi-purpose classroom addition to the office building, (1,000 square feet), to conduct year-round interpretive programs and special events.

Objective 3.4: Environmental Education

Improve delivery of environmental education programs, and by 2010 have in place a comprehensive environmental education program that includes the following elements:

- A grade-specific curriculum that meets local, state and national guidelines.

- A Refuge Educator's Guide.
- A 900-square-foot outdoor learning shelter, with restrooms.
- Special annual programs, lending library, and educational partnerships as noted in the following strategies.

Rationale: Young people, like adults, learn best when they are actively engaged in the learning process and when they are having a good time. They are naturally curious and when invited outdoors become explorers and questioners, artists and poets. Refuge environmental education programs help people develop important skills they can use throughout their lives, such as asking meaningful questions, making careful observations, finding ways to test their ideas, and sharing their thoughts and observations with others. The goal of environmental education is to encourage curiosity and concern about the natural world and to provide experiences from which people gain an understanding of the way natural systems function. What people learn and how much they care will affect the Refuge through changes in attitudes and behaviors both on and off Refuge lands. This alternative represents a marked increase in environmental education programming and associated facility development. Since environmental education is curriculum-based and labor intensive, efforts will be focused on training teachers, volunteers and other experts to use the Refuge and its facilities.

Strategies:

1. Work with local teachers to develop grade-specific environmental education curricula that meet local, state and national education standards.
2. Construct an outdoor environmental education learning shelter (roughly 900 square feet) at a site to be determined by elevation surveys. The three-season shelter would have restrooms capable of handling small groups, electricity, and running water.
3. Continue to offer River Education Days (RED) targeting 5th grade students from surrounding Wisconsin and Minnesota schools.
4. Develop specific education programs for trappers and hunters using the Refuge.

5. Develop environmental educational opportunities for people with special needs, like birding for visually impaired people or waterfowl hunting for youth and new hunters.
6. Promote collaboration and partnerships with area teachers, schools, colleges, other wildlife agencies, and natural resource and conservation groups to increase environmental education opportunities focused on Refuge and river corridor ecosystems
7. Offer environmental education workshops for teachers.
8. Train volunteers to provide environmental education programs for school groups.
9. Contact schools annually notifying them of the Refuge's facilities, resources and educational opportunities by means of fliers or letters to principals and individual teachers.
10. Develop a lending library of videos, books, and educational trunks available for teachers to accompany their environmental education subject matter.
11. Update the Trempealeau NWR Educators Guide by 2010.
12. Encourage additional partnerships with high school science or biology classes to assist with research, wildlife surveys, or bird banding.
13. Encourage high schools and universities to utilize the Refuge facilities for curriculum based programs.

Objective 3.5: Waterfowl Hunting

By 2009, amend the Refuge Hunt Plan to include a managed waterfowl hunt west of the Canadian Pacific Railroad dike that assures high quality hunting opportunities for people with disabilities, youth, and other hunters new to the sport.

Rationale: Urbanization, changing lifestyles, and shifting cultural priorities have contributed to a steady decline in the number of people who hunt. The opportunities, skills, and traditions of the hunter are slowly being replaced by other interests, demands, and pursuits. Evidence suggests that recruitment of hunters may be a problem as there has been a decline in participation by younger age groups and declines in the number of hunter education graduates

(Enck et al. 2000). The ability to recruit and retain hunters has serious implications for fish and wildlife conservation. A strong argument can be made that an expected outcome of providing and nurturing waterfowl hunting opportunities should be a waterfowl hunting community with a strong sense of stewardship for not only a sustained waterfowl harvest, but for the associated ecosystem as well (Case 2004). This objective reflects the need to recruit new hunters, promote long-term hunter participation and encourage land stewardship. In addition, the Refuge would continue to provide opportunities for hunters who would otherwise be excluded from hunting because of limited mobility.

The Refuge looked at several options for providing a sustainable, quality hunting program.

The FWS Manual (parts 600-699) defines "quality" wildlife-dependent recreation as having the following 11 characteristics:

- Promotes safety of participants, other visitors, and facilities;
- Promotes compliance with applicable laws and regulations and responsible behavior;
- Minimizes or eliminates conflict with fish and wildlife population or habitat goals or objectives in an approved plan;
- Minimizes or eliminates conflicts with other compatible wildlife-dependent recreation;
- Minimizes conflicts with neighboring landowners;
- Promotes accessibility and availability to a broad spectrum of the American people;
- Promotes resource stewardship and conservation;
- Promotes public understanding and increases public appreciation of America's natural resources and our role in managing and protecting these resources;
- Provides reliable and reasonable opportunities to experience wildlife;
- Uses facilities that are accessible and blend into the natural setting; and
- Uses visitor satisfaction to help define and evaluate programs.

The "quality" criteria are factors to consider when developing wildlife-dependent recreational use programs. They are guidelines for refuge managers to use when starting, analyz-

ing, or evaluating a wildlife-dependent recreational use. Nothing in the policy requires that any of the wildlife-dependent recreational uses meet all of the goals listed under the “quality” definition. The term “quality” is used as a standard we strive to achieve in our wildlife-dependent recreational use programs. This objective reflects the need and opportunity to consider these guidelines to ensure that a new hunt program on the Refuge is indeed a “quality” program that develops and promotes a strong sense of stewardship within an expanding community of new hunters.

Strategies:

1. Allow ample time for public review, and comment on any changes to hunting programs.
2. With partners conduct an annual “learn to hunt” program. Participate in the state “youth” hunting program.
3. Investigate opportunities to partner with the state’s “Becoming an Outdoorswoman” program.
4. Investigate options for developing a “learning to hunt” program.
5. Expand and improve the hunt for people with disabilities by providing more hunting opportunities and accessible facilities.
6. Publish a Refuge Hunting brochure that informs the public of hunting opportunities and Refuge-specific regulations.
7. Annually review Refuge hunting regulations to ensure clarity and to address emerging issues or concerns, and to give the public an opportunity to review and comment on any changes.
8. Improve the general hunting experience by continuing to improve habitat quality and enforcement of regulations.
9. Clearly sign boundaries of areas closed to hunting.

Objective 3.6: Fishing

Continue to provide fishing opportunities on the Refuge and by 2010 enhance the existing fishing platform and boat launch facilities. By 2022, construct one new fishing platform along the Trempealeau River and work with partners to improve the county boat launch.



Waterfowl hunt for people with disabilities at Trempealeau NWR. USFWS

Rationale: Fishing is one of the priority uses of the National Wildlife Refuge System and is to be encouraged when compatible with refuge purposes. The demand for fishing at Trempealeau is small because the sport fishery is mainly comprised of bullheads and excellent fishing can be found just off the Refuge on the Mississippi River. Rough fish and management of shallow water impoundments precludes the development of a viable sport fishery in the interior units. However, the Trempealeau River offers better fishing opportunities and this objective would promote fishing by adding additional facilities along the river. Fishing in general would be promoted through interpretive materials, educational programs, as well as assisting with fishing events on the Mississippi River.

Strategies:

1. Consult with the La Crosse Fishery Resource Office to update the Fishery Management Plan by 2010.
2. By 2009, develop a Visitor Services Plan that includes fishing.
3. Improve existing boat ramp, parking and fishing platform at Kiep’s Island.
4. Remove sediment and milfoil from around existing fishing platform to improve habitat for fish.
5. Coordinate with Trempealeau County to improve their boat launch on the Trempealeau River.
6. All new and existing facilities would conform to Service standards for accessibility.
7. Install a new fishing platform along the Trempealeau River, upstream from the entrance road.

8. Install new information panels on fishing at boat landing and two fishing platforms.
9. Promote fishing through interpretive posters and exhibits.
10. Include fish biology and management in environmental education events and curriculums.
11. Work with staff of Upper Mississippi NWR to provide an annual fishing event for young people.

See Objective 2.4, Invasive Plant and Animals, for additional fishery management objectives.

Goal 4: Neighboring Landowners and Communities

We will communicate openly and work cooperatively with our neighbors and local communities to help all benefit from the aesthetic and economic values of the Refuge.

Objective 4.1: Community Outreach

Beginning in 2008, increase opportunities for positive interaction with local community groups by implementing the following strategies.

Rationale: Rebuilding society's connection with their environment is an important component of long-term resource protection and citizen support is critical to a successful resource management program. This objective reflects an emphasis on building connections between the Refuge and the community by promoting active involvement by Refuge staff in local events and community development organizations.

Strategies:

1. Participate in two local expos, three community festivals, at least one career fair, and one sportsman show or outdoor event.
2. Join the Trempealeau County Tourism Council and Trempealeau Chamber of Commerce and attend meetings.
3. Attend meetings of the Great River Road Promotion Committee, Mississippi River Parkway Commission and Scenic Byways Commission.
4. Develop relationships with Galesville, Trempealeau, and Ettrick libraries to hold evening programs and set up seasonal exhibits.

5. Continue to issue news releases to local newspapers, radio and television stations for public events, environmental education programs, changes to Refuge regulations, management activities of interest to the public and special wildlife viewing opportunities.
6. As opportunities arise, work with Western Wisconsin Cable Television to produce programs about the Refuge and its resources for public access TV.
7. Develop an "It's your backyard" program for local landowners and citizens, inviting them to the Refuge for a special day of programs and events tailored to their interests as Refuge "neighbors." Ensure opportunities for communication between staff and citizens.

Objective 4.2: Friends Group

By the end of 2008 help establish a "Friends of Trempealeau Refuge" group to provide an independent citizen voice for the protection, conservation, and enhancement of Refuge resources.

Rationale: The Refuge staff is tasked with managing resources within the laws, policies, guidelines and goals set forth for the Refuge. Citizens who have concerns about issues impacting the Refuge are free to voice their opinions and are often in a better position to do so when they come together as a Friends group. Friends groups also provide support by volunteering, fund raising, and educating the public. Friends can be an effective voice for the Refuge within the community. This objective focuses on assisting local citizens in forming an effective Friends group for the Refuge.

Strategies:

1. Invite key individuals to coordinate establishment of a Friends group by setting goals, writing bylaws and establishing 501C3 tax exempt status.
2. Assist new members with mentoring and applications for start-up grants with the National Fish and Wildlife Foundation.
3. Suggest a list of membership and team building projects that would benefit the Refuge.
4. Assist Friends with contacts and introduction to state and federal legislative staffs.

5. Assist Friends group with inventory, set up, and operation of a Refuge bookstore.

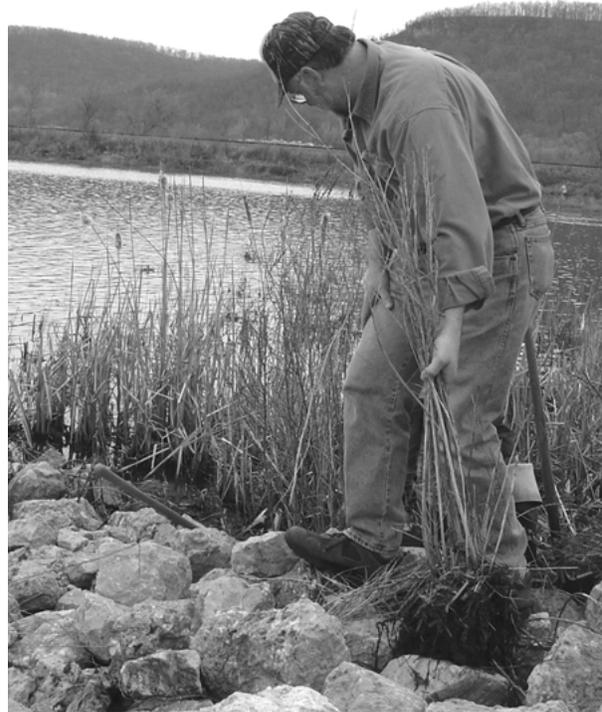
Objective 4.3: Volunteers

Continue to support an active volunteer program and increase volunteer hours and number of volunteers by an average of 5 percent per year through 2022. Recruit volunteers from a variety of backgrounds. Keep volunteers active in all Refuge programs.

Rationale: Volunteers are a valuable asset providing thousands of hours of labor completing tasks that would otherwise go undone. The Refuge has a corps of dedicated volunteers that is committed to protecting and enhancing the Refuge. Staff is unlikely to increase in the future and volunteers may be called upon to perform more of the surveys or maintenance tasks that the staff can not accomplish. This objective reflects an increase in recruiting, retaining and rewarding volunteers.

Strategies:

1. Keep volunteer contact information current. Contact each volunteer at least once annually whether they participated that year or not.
2. Have clear expectations and instructions for each volunteer and each task.
3. Train volunteers to effectively conduct educational and interpretive programs, biological surveys, and maintenance operations. Ensure that volunteers receive the same safety training as paid staff.
4. Provide an identity for volunteers with uniforms and standard nametags.
5. Recruit volunteers with a diversity of backgrounds and skills, matching them with tasks that complement their interests and abilities.
6. Keep volunteers active in all programs: administration, biology, maintenance, and public use.
7. Recognize and thank volunteers for their efforts. Ensure that they feel they are a contributing part of the staff team.
8. Hold an annual volunteer appreciation banquet.
9. Keep a current volunteer news and recognition bulletin board in the office building.



Trempealeau NWR volunteer collecting plants for purple loostrike beetle rearing. USFWS

Objective 4.4: Partnerships

By 2010, hire a private lands biologist (shared with Winona District) to work on reducing erosion on private land in Buffalo and Trempealeau Counties. At least annually meet with area universities, local sportsman and conservation groups, and Perrot State Park.

Rationale: Opportunities for upper watershed improvements in northern Trempealeau and Buffalo Counties are abundant. These projects are important to reducing sediments flowing into the Trempealeau and Buffalo Rivers, and ultimately the Mississippi River. Landowners are supportive and many are on a waiting list of projects. Adding a shared position to focus on private land projects would improve the ability to complete more projects and provide assistance on other land management issues like control of invasive plants. The objective also would focus on better communication and coordination with partners that would result in sharing expertise, labor, funds, and equipment.

Strategies:

1. Share a new permanent full-time private lands biologist with Winona District. Biologist would work on Upper Mississippi River tributary headwaters in Buffalo and Trempealeau Counties to reduce sediment inputs.
2. Meet twice a year with Perrot State Park staff to coordinate land management, and public use issues.
3. Develop partnerships with University of Wisconsin and the University of Minnesota and other local colleges to share resources and to implement graduate level, adaptive management research.
4. Improve coordination and communication with local sportsman and conservation groups.
5. Develop a program for invasive plant control, especially purple loosestrife, on private lands.
6. Monitor three conservation easements annually for compliance and to assess habitat management needs.

Goal 5: Administration and Operations

We will seek adequate funding, staffing, and facilities; and improve public awareness and support to carry out the purposes, vision, goals, and objectives of the Refuge.

Objective 5.1: Entrance Road Flooding

By 2015 replace existing road with a bridge that can accommodate at least a 10-year flood event.

Rationale: Options for alleviating the access road flooding problems have been thoroughly investigated over past years. The decision to construct a new bridge to span the section of the road that floods was arrived at after careful consideration and input from engineers, consultants, citizens, and community leaders. Potential designs for the new bridge are under consideration and have been distributed for review by nearby landowners. This objective represents a continued pursuit of funds and support for constructing a bridge at the entrance road.

Strategies:

1. Continue with design work on a bridge that meets all state and federal regulations, and will accommodate at least a 10-year flood.

2. Contact all adjacent landowners to discuss potential impacts to their lands.
3. Seek Department of Transportation Act Road Enhancement funding
4. Keep Congressional staffers apprised of progress.
5. Communicate and coordinate with Trempealeau County.

Objective 5.2: Facilities

By 2009, replace the existing shop with a similar-sized building, and by 2015 construct a 1,500-foot office addition.

Rationale: This objective represents a balanced approach to replacing the 70-year-old shop building and expanding office facilities to accommodate new volunteers, biological technicians, and increased visitor services.

Strategies:

1. Replace existing shop with a similar sized facility that includes a tornado shelter, fully accessible rest room, lockers for staff, storage, office, workshop, and vehicle maintenance facilities.
2. Add a 1,500-foot addition to the office building to provide space for five offices for new staff, a volunteer workspace, expanded storage and utility room, and additional space for office equipment.
3. Ensure that Refuge office and maintenance needs are reflected in budget needs databases.
4. Continue to maintain Service-owned facilities using annual maintenance budget allocations.

Objective 5.3: Staffing

By 2022, add three seasonal and two shared staff in a range of disciplines to benefit the wildlife and habitat management, and public use objectives in this alternative (see Appendix H, Figure 1 on page 288 for a proposed staffing chart).

Rationale: This objective reflects a balanced approach to Refuge management by providing operations and maintenance staff deemed necessary to meet the goals and objectives of this alternative. Like all land management, Refuge management is labor intensive and labor costs represent over 95 percent of the base

operations funding received each year. As public demand for educational programs, biological information, and resource protection increases adequate staffing becomes more critical. These staffing needs are documented in the strategies for various objectives in this alternative.

Strategies:

1. Ensure that staffing needs are incorporated in budget needs databases.
2. Hire a permanent-seasonal park ranger, biological technician, and tractor operator.
3. Share a new permanent full-time law enforcement position and a private lands biologist position with the Winona District of the Upper Mississippi NWFR.

Objective 5.4: Operations and Maintenance Needs

Complete annual review of Refuge Operations Needs (RONS) and Service Assessment and Maintenance Management System (SAMMS) databases to ensure they reflect needs of the integrated public use and wildlife focus alternative.

Rationale: The RONS and SAMMS databases are the chief mechanisms for documenting ongoing and special needs for operating and maintaining a national wildlife refuge. These databases are part of the information used in the formulation of budgets at the Washington and Regional levels, and for the allocation of funding to the field. It is important that the

databases be updated periodically to reflect the needs of the Refuge, and in particular the objectives and strategies elsewhere in this alternative.

Strategies:

1. Update databases as needed or at least once annually.



*Equipment and facilities maintenance, Trempealeau NWR.
USFWS*