

Chapter 4: Management Direction

4.1. Refuge Management Direction: Goals, Objectives and Strategies

4.1.1 Development of Goals, Objectives and Strategies



Driving the development of management direction for the Refuge Complex was the CCP's purpose and need for action, the internal and external issues and concerns identified during the scoping and public involvement process (Chapter 1), the purpose(s) of each individual Refuge within the Refuge Complex, and the vision, mission, goals, core values, and guiding principles of the Refuge Complex. The planning team also paid close attention to relevant federal, state, and local landscape level plans and planning efforts (Chapter 1), and stakeholder expectations for the Service and the Refuge Complex (Chapter 1). Societal trends relevant to wildlife and habitat management and public use of the Illinois River Corridor also were considered.

The planning team made several assumptions that must hold true in order for the Refuge Complex to attain its wildlife, habitat, and people goals and objectives. They include:

- Habitats essential to the life cycle of Refuge Complex resources will not be adversely affected elsewhere, such as the destruction of essential wintering habitat for migratory birds that utilize the Refuge Complex for breeding.
- State laws will support fish and wildlife-dependent recreational activities and environmental health in a manner that conserves natural resources.
- The Refuge's budget will not decline appreciably in the next 10-15 years, and funding for designated projects will be allocated in a timely matter. Staffing levels will be maintained or slightly increase in keeping with government streamlining targets.
- As new land is acquired from willing sellers within the approved Refuge boundaries and land management responsibilities increase, Refuge Complex operations funding will also increase.
- Cooperation and collaboration with the state, local communities, private landowners, non-government organizations, business, and other federal agencies will be increasingly important in achieving Refuge goals.

- In keeping with the “wildlife first” mandate of the National Wildlife Refuge System, the demand for wildlife-dependent recreation will continue to increase on the Refuge.
- The public will be increasingly involved in management decisions on the Refuge.
- Funding and staff will be allocated to support monitoring programs to evaluate progress toward and accomplishment of Refuge goals, objectives, strategies, and projects.

The requirement that an activity or use of the Refuge Complex be compatible with the individual refuge purpose(s) governs whether or not an activity or use can be allowed on the Refuge Complex. “Compatible use” means a proposed or existing wildlife-dependent recreational use or any other use of the Refuge Complex that, in the sound professional judgment of the Refuge Manager, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the refuge.

All proposed management actions in this CCP are considered compatible based upon site-specific evaluations of the anticipated impacts with the Refuge purpose and Service policies.

4.1.2 Wildlife Management

Wildlife Management Goal:

Perpetuate listed species, waterfowl and other migratory birds, and native fish and mussels, within the Illinois River Corridor while restoring and conserving the biological integrity, diversity, and environmental health of the Refuge Complex.

4.1.2.1 Listed Species

Management Intent for listed species is to protect and maintain federally-listed species (Bald Eagle, decurrent false aster, and Indiana bat) occurring on Refuge Complex land and to contribute to their recovery. Populations of these species will be protected and maintained (as stable or increasing, if appropriate), in support of federal and state recovery efforts. Refuge Complex staff would continue to consult with the Service’s Ecological Services office, the State of Illinois, and others to ensure resource objectives and legal requirements are being met.

Objective 1. Protect Bald Eagles occurring on Refuge Complex land from human disturbance.

- Strategy 1.* Minimize human activities within 300 feet of Bald Eagle roosts.
- Strategy 2.* Enforce protective buffer zones around Bald Eagle nests in accordance with the “Northern States Bald Eagle Recovery Plan.”
- Strategy 3.* Continue to monitor Bald Eagle nesting success on Refuge Complex land.

Objective 2. Protect decurrent false aster populations occurring on Refuge Complex land from human disturbance, including constructing physical barriers to restrict vehicle and foot traffic (minimum 50-foot protective zone).

Strategy 1. Monitor decurrent false aster populations on Refuge Complex land to determine if they are self-sustaining.

Strategy 2. Evaluate the potential for enhancing existing populations and for establishment of additional decurrent false aster populations on Refuge Complex land. Implement the recommendations from the evaluation. The recommendations may include disturbance of a percentage of the site each year.

Strategy 3. Ensure the Refuge and private lands projects support the goals and objectives of the Recovery Plan for decurrent false aster.

Objective 3. If Indiana bats occur on the Refuge Complex, protect them from human disturbance

Strategy 1. Encourage partners to monitor for the presence of Indiana bats.

Objective 4. Encourage colonization of Indiana bats on Refuge Complex land through forest restoration (day roost and nursery habitat) on Emiquon NWR and Meredosia NWR throughout the life of this plan.

Strategy 1. Ensure that 20 percent of tree species (big nut and shell bark hickories) used in future forest restoration contribute to meeting the needs of Indiana bats (See Forest Habitat Restoration section 4.1.3.3 for additional strategies and projects).

Objective 5. By 2006, in cooperation with state and federal biologists, inventory and assess listed species and their habitats throughout the Illinois River Corridor and determine the extent to which the life cycle needs of listed species are being met within each habitat type. Evaluate the potential reintroduction of species suitable to the habitat of the Refuge Complex (e.g., Higgins eye pearlymussel; Least Tern).

Strategy 1. Enlist the support of the Service's Upper Mississippi River/Tallgrass Prairie Ecosystem Team in ascertaining an appropriate lead and in obtaining the funds necessary to complete the effort.

4.1.2.2 Native Fish and Mussels

Service management intent for native fish and mussels within the Illinois River Corridor is to protect the health of aquatic habitats, restore fish and other aquatic

resources, and provide opportunities to enjoy the benefits of healthy aquatic resources. The Service and its partners recognize that management and conservation of fish and other aquatic resources are shared responsibilities, and success is usually contingent on partnerships that cut across jurisdictions and link all stakeholders and partners. The Service will weigh potential actions by the strength of federal authority and responsibility, the extent to which our efforts will complement others in the fisheries and aquatic resource conservation community, the likelihood that our efforts will produce measurable resource results, the likelihood that our efforts will produce significant economic or social benefits, and the extent of partner support.

Objective 1. By 2017, restore and maintain native fish and mussel species diversity to 85 percent (fish) and 50 percent (mussel) of those that were historically present in the Illinois River System at the end of the 19th century. Presently there are approximately 102 species of fish, 37 species of mollusks, and 10 species of crustaceans found in the vicinity of the Refuge Complex (Appendix C). This objective would be accomplished in accordance with strategic planning efforts of the State of Illinois.

Strategy 1. Work with the Illinois DNR and Service fishery resource staff to develop a comprehensive aquatic resource step-down management plan for the Refuge Complex by 2006. Cooperate and coordinate with Illinois DNR, LTRM, and Service Fishery Biologist in managing the fishery in the north and south pools of Lake Chautauqua.

Strategy 2. Enhance aquatic nuisance species control throughout the Illinois River Corridor, including funding additional research on controlling carp in managed wetlands.

Strategy 3. Working with state and federal fishery staff, establish and maintain an annual fish and mussel monitoring program on Refuge Complex land by 2006.

Strategy 4. Evaluate the need for continued stocking of game fish populations in Lake Chautauqua's North Pool.

4.1.2.3 Biological Integrity, Diversity, and Environmental Health

Service management intent for biological integrity, diversity, and environmental health is to contribute to the protection, restoration and maintenance of high quality ecosystems characteristic of the Illinois River Corridor at the time of European settlement. Under this alternative, management would be focused on landscape-level processes and functions, the ecosystems contained within Refuge Complex Focus Areas, and the species they serve.

Objective 1. Safeguard management options and prevent further degradation of landscape processes by promoting diverse and productive plant and animal communities within the Refuge Complex that are appropriate to soil type, climate, and landform.

- Strategy 1.* Maintain and/or restore the ecological processes of nutrient cycling, energy flow, and hydrologic cycles on Refuge Complex land characteristic of the geo-climatic setting. Manage Refuge Complex land to mimic natural ecosystem processes (e.g., fire, flooding, succession) and provide connectivity to the matrix of land in which Refuge Complex land occurs. Use an integrated mix of restoration tools to repattern succession/disturbance regimes and achieve sustainable landscape conditions. Consolidate and coordinate activities where multiple needs can be addressed relative to landscape health (e.g., water quality, riparian processes and functions, forest health, recovery of succession/disturbance regimes, etc.).
- Strategy 2.* By 2010, convert all of the Refuge's non-native habitat to native habitat (i.e., convert cropland to wetland or bottomland).
- Strategy 3.* In cooperation with the State of Illinois, manage the deer population on Refuge Complex land through controlled hunts.
- Strategy 4.* Continue land acquisition within authorized boundaries of the Emiquon NWR and Meredosia NWR as funds become available. Presently, there are 9,009 acres of land within the authorized boundary at Emiquon NWR and 1,747 acres at Meredosia NWR to be acquired.

Objective 2. Safeguard management options and prevent further degradation of landscape processes by promoting diverse and productive plant and animal communities within Illinois River Focus Areas that are appropriate to soil type, climate, and landform.

- Strategy 1.* Provide connectivity to the matrix of land in which Refuge Complex land occurs.
- Strategy 2.* Accelerate the current status and trends effort toward restoration and conservation of biological diversity in the Illinois River Corridor through a comprehensive and coordinated system that complements existing authorities. Focus federal, state, and local agencies having related responsibility and/or expertise in this area to increase efficiency and develop consistency in natural resource conservation. Work with partners through the Midwest Natural Resources Group and the Service's Ecosystem Team to expand the focus on landscape management and planning. This would include identifying, protecting, and restoring important landscapes historically occurring within the Illinois River Corridor in a

manner so that their arrangement mimics the natural organization found prior to European settlement.

Strategy 3. Ensure private landowners within Refuge Complex Focus Areas have viable options for restoring and maintaining their land for the benefit of biological integrity, diversity, and environmental health. Provide technical assistance and financial incentives to landowners through the Refuge's Partners for Wildlife and Fish Program. Seek to intensify and concentrate other federal, state, and private programs in high priority areas.

Objective 3. Manage or eliminate exotic and invasive species on the Refuge Complex below present levels.

Strategy 1. Evaluate commercial fishing on Refuge land (on a case-by-case basis) as a tool for exotic species control and research.

Strategy 2. Control and eliminate (where feasible) all undesirable non-native species on Refuge Complex land throughout the life of this Plan. Maintain noxious-weed-free plant communities and restore plant communities with noxious weed infestations through the use of broad-scale, integrated management strategies.

Strategy 3. Aggressively control invasive shrubs and trees in grasslands.

Strategy 4. Minimize the impact exotic species have on Refuge forest land.

Strategy 5. Employ an integrated management system to control or contain pest plant species. These integrated management practices include the use of mechanical, chemical, and biological techniques for the control of weeds. Mechanical control involves the use of disking or plowing, chemical control involves the application of U.S. Fish and Wildlife Service approved herbicides, and biological control includes the use of approved biological agents such as rosette weevils on musk thistle. Any introduction of biological control agents will be done in consultation with state biologists.

4.1.3 Habitat Management

Habitat Management Goal:

Provide the most productive habitat possible within the Illinois River Corridor for the benefit of listed species, waterfowl and other migratory birds, native fish and mussels, and native biological diversity.

4.1.3.1 Native Grasslands

Service management intent for native grasslands within the Illinois River Corridor (e.g., dry-mesic, mesic, wet-mesic prairies, sand prairies and hill prairies) is to restore and conserve grassland habitat within Illinois River Focus Areas that is capable of providing high quality breeding habitat for listed species (e.g., Henslow's Sparrow), waterfowl (Mallard, Blue-winged Teal, Pintail) and other migratory birds (e.g., Bobolink, Dickcissel, Loggerhead Shrike, Grasshopper Sparrow), and contributing to the native biological diversity of the Illinois River Corridor. The desired future land cover for the Refuge Complex is displayed in Figures 21-23.

Objective 1. By 2017, the Refuge Complex will protect and manage 1,000 acres of high quality native grassland habitat for the benefit of listed species, waterfowl and other migratory birds, and native biological diversity (currently the Refuge has roughly 200 acres of high quality native grassland habitat).

Strategy 1. Create, restore, or enhance small (40-100 acres) and medium-sized (100-1,000 acres) blocks of grassland habitat comprised of short, medium, and tall height-density patches containing diverse structure (e.g., bare soil, stiff-stemmed forbs, sparse woody vegetation) with a 75 percent grass and 25 percent forbs mix with a minimum of six grass species and a minimum of 30 herb species. The Refuge will focus on creating blocks of grassland habitat that are structurally open and free of major linear woody edges. In most cases, woody cover will represent less than 5 percent of the grasslands habitat. Maintain Refuge grasslands through periodic burning and/or mowing / or light grazing with some grasslands (25-50 percent of the total grassland landscape) remaining free from burning, mowing, or grazing between 3 and 6 years to provide habitat for Henslow's Sparrow, Northern Bobwhite, Field Sparrow, and other species that prefer a well-developed duff layer and the presence of some shrubs. Some thicket areas and isolated trees (plum, cherries, sumac, crabs, hawthorns) should be allowed to persist to provide breeding habitat for Loggerhead Shrike, Bell's Vireo, Yellow-breasted Chat, and other species in some prairies and old-fields. Maintain hydrology in wet meadows.

Figure 21: Future Land Cover Within the Authorized Boundaries, Chautauqua NWR and Emiquon NWR

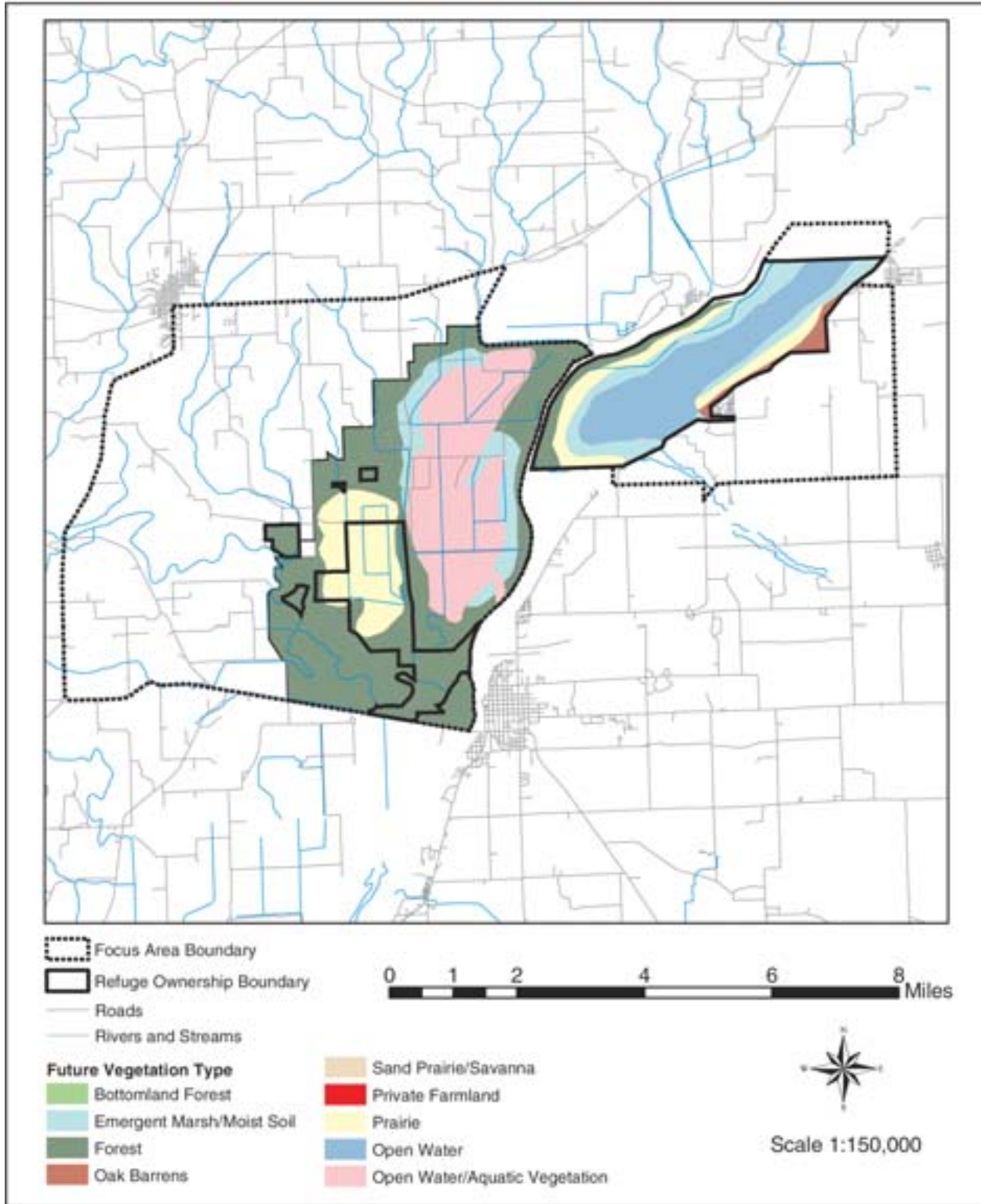


Figure 22: Future Land Cover Within the Authorized Boundaries, Cameron-Billsbach Unit of Chautauqua NWR

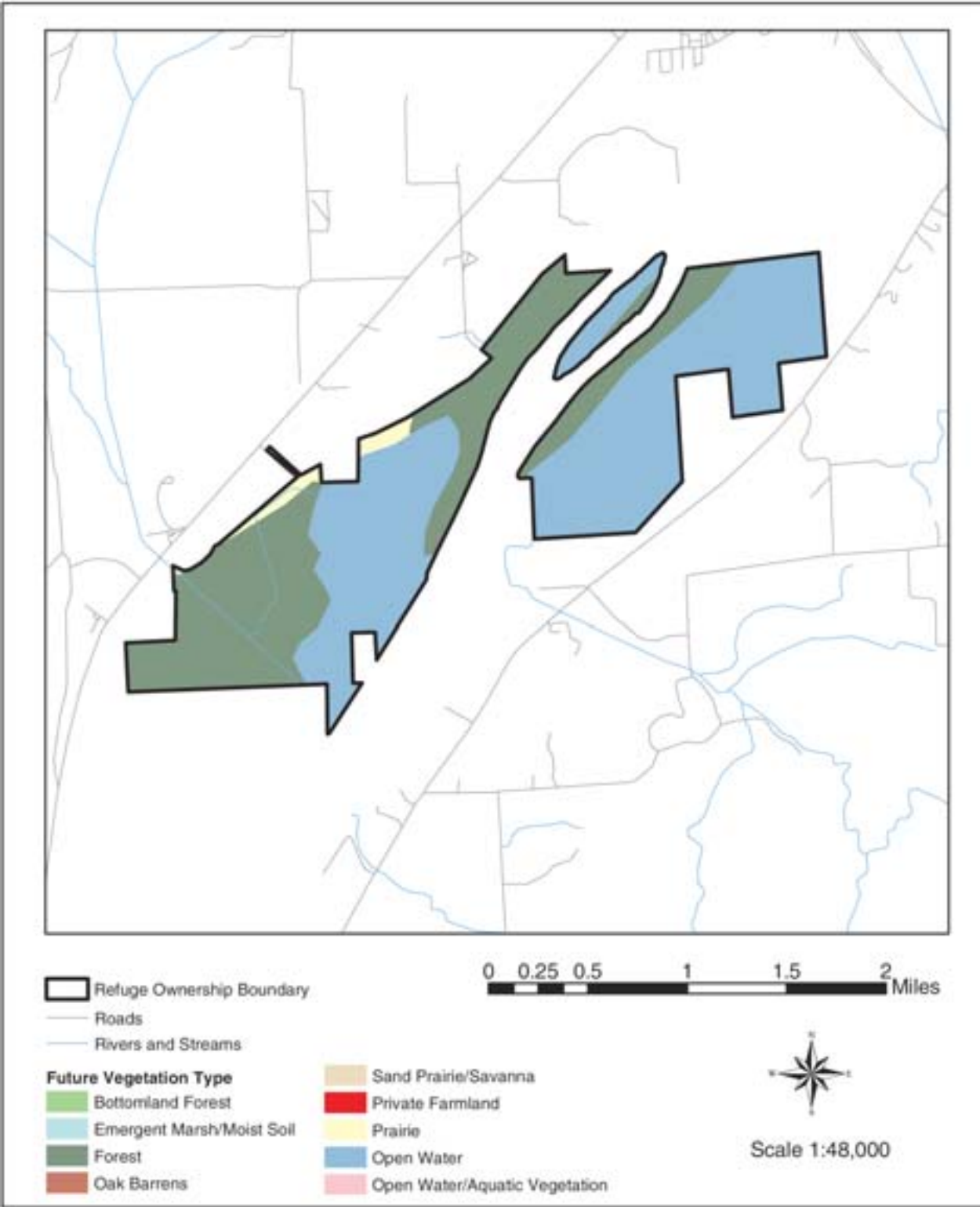
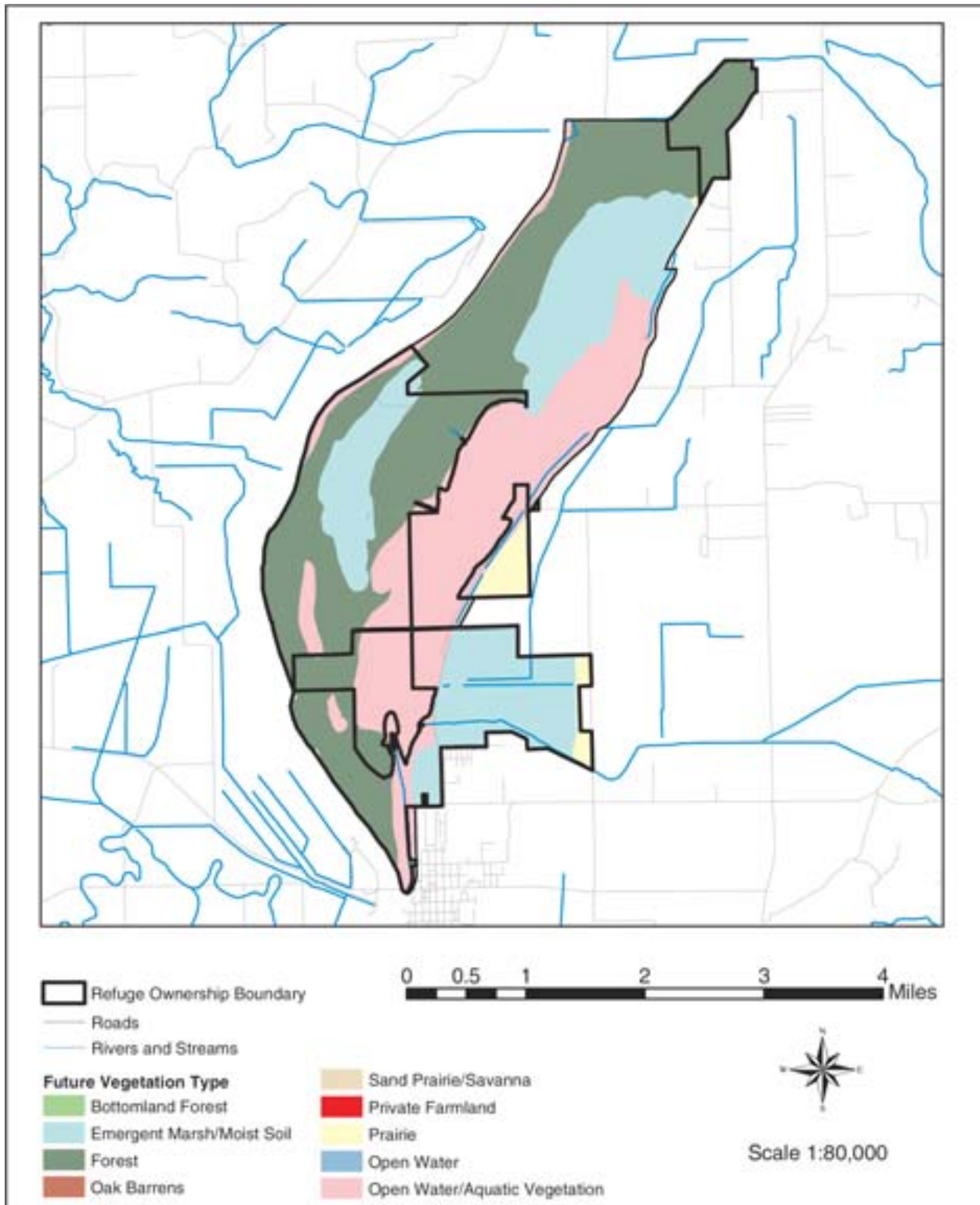


Figure 23: Future Land Cover Within the Authorized Boundaries, Meredosia NWR



- Strategy 2.* In cooperation with the state, selectively control medium-sized predators such as coyotes, skunks, fox, and raccoons in Refuge Complex grasslands until sufficiently sized blocks of grassland habitat are restored.
- Strategy 3.* Protect, restore, and manage an additional 300 acres of native grassland habitat on the North Globe Drainage District (within Emiquon NWR's boundary) once an adequate realty interest is acquired.
- Strategy 4.* Restore and manage 50 acres of native grassland habitat on the Wilder Tract (within Emiquon NWR's boundary).
- Strategy 5.* Restore and manage an additional 70 acres of native grassland habitat on the Shearl Tract (within Meredosia NWR's boundary).
- Strategy 6.* Protect, restore, and manage an additional 380 acres of native grassland habitat within Illinois River Refuge Complex Focus Areas through voluntary partnership agreements.

4.1.3.2 Native Savannas

Service management intent for native savanna within the Illinois River Corridor (e.g., oak and scrub savanna) is to restore and conserve high quality native savanna habitat within Illinois River Focus Areas that is capable of providing breeding habitat for migratory birds (e.g. Red-headed Woodpecker, Northern Flicker, Field Sparrow, Baltimore Oriole) and upland game species (e.g., Wild Turkeys) and contributing to the native biological diversity of the Illinois River Corridor.

Objective 1. By 2017, the Refuge Complex will protect, restore, and manage 200 acres of high quality native savanna habitat for listed species, waterfowl and other migratory birds, upland game species, and native biological diversity (currently the Refuge Complex protects or manages no savanna habitat).

- Strategy 1.* Create, restore, or enhance contiguous blocks of a savanna landscape dominated by old-growth oaks, black walnut, hickories, or other upland mast-producing trees with a canopy cover between 10 percent and 40 percent and an open understory dominated by native grasses and forbs with a shrub component for Northern Flicker, Red-headed Woodpecker, Black-billed Cuckoo, Yellow-billed Cuckoo, and other species. Plant mast-producing trees and shrubs typical of the historic Central Illinois savanna landscape and/or open up portions of the existing heavily forested landscape, especially on bluffs and areas of rolling topogra-

phy. Maintain an open understory through periodic burning, mowing, or light grazing activities. Maintain a mature oak component in select savanna restoration units to provide nesting cavities for Red-headed Woodpeckers. Enhance and maintain a warm-season grass component in select savanna restoration units to provide nesting cover for Field Sparrows. Maintain a mature oak-hickory-walnut component in savanna restoration units to provide nesting cavities for Red-headed Woodpeckers. Maintain a warm-season grass component in savanna restoration units to provide nesting cover for Field Sparrows.

Objective 2. Protect, restore, and maintain 200 acres of existing or restorable native savanna habitat within the Chautauqua-Emiquon Focus Area (approximately 15 acres per year) through voluntary partnership agreements.

Strategy 1. Complete restoration and protection through voluntary partnership agreements.

4.1.3.3 Native Forests

Service management intent for native forests within the Illinois River Corridor (e.g., dry-mesic and mesic upland forests) will be capable of providing high quality breeding habitat for listed species (e.g., Indiana bats), migratory birds (e.g. Cerulean Warbler, Red-shouldered Hawk, Yellow-billed Cuckoo), forest nesting waterfowl (e.g. Wood Ducks), an assortment of upland game species (e.g., Wild Turkey), and contributing to the native biological diversity within the Illinois River Corridor. Reforestation will be accomplished primarily by planting native, mast producing trees on newly acquired lands. Some reforestation will occur through natural regeneration.

Objective 1. By 2017, the Refuge Complex will protect and manage 6,000 acres of high quality native forest habitat (e.g., upland hardwood, bottomland hardwood) for listed species, waterfowl and other migratory birds, and upland game species (currently the Refuge protects and manages roughly 4,500 acres of forest habitat).

Strategy 1. Create, restore, enhance, and manage large contiguous blocks of native bottomland forests (aiming for a minimum of 500 contiguous acres) capable of providing high quality breeding habitat for forest species of concern (e.g. Cerulean Warbler, Wood Thrush, Veery, Yellow-billed Cuckoo, Pileated Woodpecker). Manage native forest land for structural and plant species diversity. Ensure healthy soil and water resources. Maintain large mature stands of oak forest with a diverse, dense understory component, to provide nesting habitat for Yellow-billed Cuckoos, Chestnut-sided Warblers, and Wood Thrush.

Strategy 2. Restore and manage an additional 200 acres of bottomland forest habitat within the Emiquon NWR (Wilder Tract).

Objective 2. Protect, restore, and manage an additional 1,300 acres of existing or restorable native forest habitat within the Meredosia Focus Area (approximately 100 acres per year).

Strategy 1. Complete restoration and protection through voluntary partnership agreements.

4.1.3.4 Wetlands

Service management intent for wetland habitats within the Illinois River Corridor (e.g., floodplain forests, marsh, fen, sedge meadow) is to restore and preserve wetland habitat that is capable of providing high quality resting, nesting, and feeding habitat for waterfowl and other migratory birds; spawning, nursery, and overwintering habitat for native fish and mussels; and contributing to the native biological diversity of the Illinois River Corridor.

Objective 1. By 2017, protect and manage 10,000 acres of high quality wetland habitat characteristic of the historic Illinois River Corridor (e.g., hemi-marshes, moist soil habitats, wet prairie, side channels, backwater lakes, tributary streams) (currently the Refuge has roughly 6,000 acres of wetlands).

Strategy 1. Maintain a mosaic of hemi-marsh habitat in permanent water bodies for waterfowl, Common Moorhen, Black Tern and shallow water marshes for teal and shorebirds on Emiquon NWR.

Strategy 2. Restore and maintain an additional 700 acres of hemi-marsh habitat at the South Globe Drainage District.

Strategy 3. Maintain an abundance of moist soil habitat on Refuge Complex land for waterfowl and shore birds.

Strategy 4. Restore and maintain 60 acres of moist soil habitat at Emiquon NWR (Proehl Tract).

Strategy 5. Restore and maintain 105 acres of moist soil/wet meadow habitat at Emiquon NWR (Wilder Tract).

Strategy 6. Restore and maintain 300 acres of moist soil habitat on the North Globe Drainage District (when an adequate interest in the land is purchased).

Strategy 7. Maintain wet prairie swales in grassland areas with standing water less than 3 inches deep to provide breeding habitat for King and Black Rail and additional habitat for shorebirds, herons,

egrets, and other rail species on Emiquon and Meredosia national wildlife refuges.

- Strategy 8.* Restore and maintain 53 acres of wet prairie habitat at Meredosia NWR (Klineschmidt Tract).
- Strategy 9.* Restore and maintain side channel and oxbow habitat for fish and mussels, including spawning, nursery, and overwintering habitat through active and passive management (e.g., selective dredging, bank stabilizations, wave control structures). Ensure adequate summer and winter thermal regulation within riparian and aquatic zones. Provide an amount and distribution of woody debris along shorelines and side channels characteristic of natural aquatic and riparian ecosystems for this area.
- Strategy 10.* Restore and maintain 3.5 miles of side channel habitat at the LaGrange Side Channel on Chautauqua NWR.
- Strategy 11.* Restore and maintain 80 acres of oxbow habitat at Emiquon NWR.
- Strategy 12.* Maintain diverse and productive vegetative communities in backwater lakes (e.g., functional litoral zones) for the benefit of waterfowl and native fish populations on the Refuge Complex.
- Strategy 13.* Protect, restore and maintain 100 acres of backwater lake habitat on Liverpool Lake on Chautauqua NWR.
- Strategy 14.* Construct and maintain five islands in the North Pool of Lake Chautauqua to enhance waterfowl nesting and reduce wave erosion (minimum 150 feet from shore). The aim of this project is to re-establish roughly 400 acres of litoral zone in the lake.
- Strategy 15.* Restore and maintain 360 acres of backwater lake habitat at Weis Lake through island construction, construction of sediment control structures, and selective dredging on the Cameron/Billsbach Unit.
- Strategy 16.* Restore and maintain 300 acres of backwater lake habitat at Billsbach Lake through selective dredging and repair of the natural levee.
- Strategy 17.* Protect, restore, and manage 700 acres of backwater lake habitat on Clear Lake through partnerships with the state and local landowners.

- Strategy 18.* In partnership with others, restore 20 miles of tributary stream habitat along Crow Creek and the Spoon River. Ensure private landowners in these areas have viable options to finance and complete the work. Continue to provide technical assistance and financial incentives to landowners through the Partners for Fish and Wildlife Program.
- Strategy 19.* Through the Midwest Natural Resources Group, the Navigation Study, the Ecosystem study, and the Comprehensive Plan for the Upper Mississippi River System and other planning efforts, coordinate interagency water management efforts on the Illinois River to establish a water management strategy in the Illinois River Corridor that enhances wetland functions and values.
- Strategy 20.* Participate in coordinating data acquisition and policy development for addressing impacts of non-point source pollution on the rivers aquatic resources.
- Strategy 21.* Through partnerships, maintain 50 Wood Duck boxes on Refuge land in a manner to achieve a 75 percent occupancy rate.

4.1.4 Visitor Services Management

Visitor Services Management Goal:

Provide the public with abundant and high-quality wildlife-dependent recreation opportunities on Refuge land including hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

4.1.4.1 Wildlife-dependent Recreation

Management intent for conducting public recreation programs on Refuge Complex land is to enhance the public's understanding and appreciation of the natural world. We believe that the wildlife-dependent recreation activities of hunting, fishing, wildlife observation and photography, and environmental education and interpretation increase understanding and appreciation of the natural world. To this end, the Refuge Complex will provide a wide variety of wildlife-dependent recreation and educational opportunities and participate in local events such as birding festivals. Participants in environmental education and interpretation programs will leave with a better understanding and appreciation of the Refuge, the National Wildlife Refuge System, and the ecosystems of the Illinois River Corridor, as well as learn the skills necessary to actively participate in their stewardship.

Objective 1. Refuge stakeholders will appreciate the high quality recreational opportunities afforded by the Refuge Complex such that the

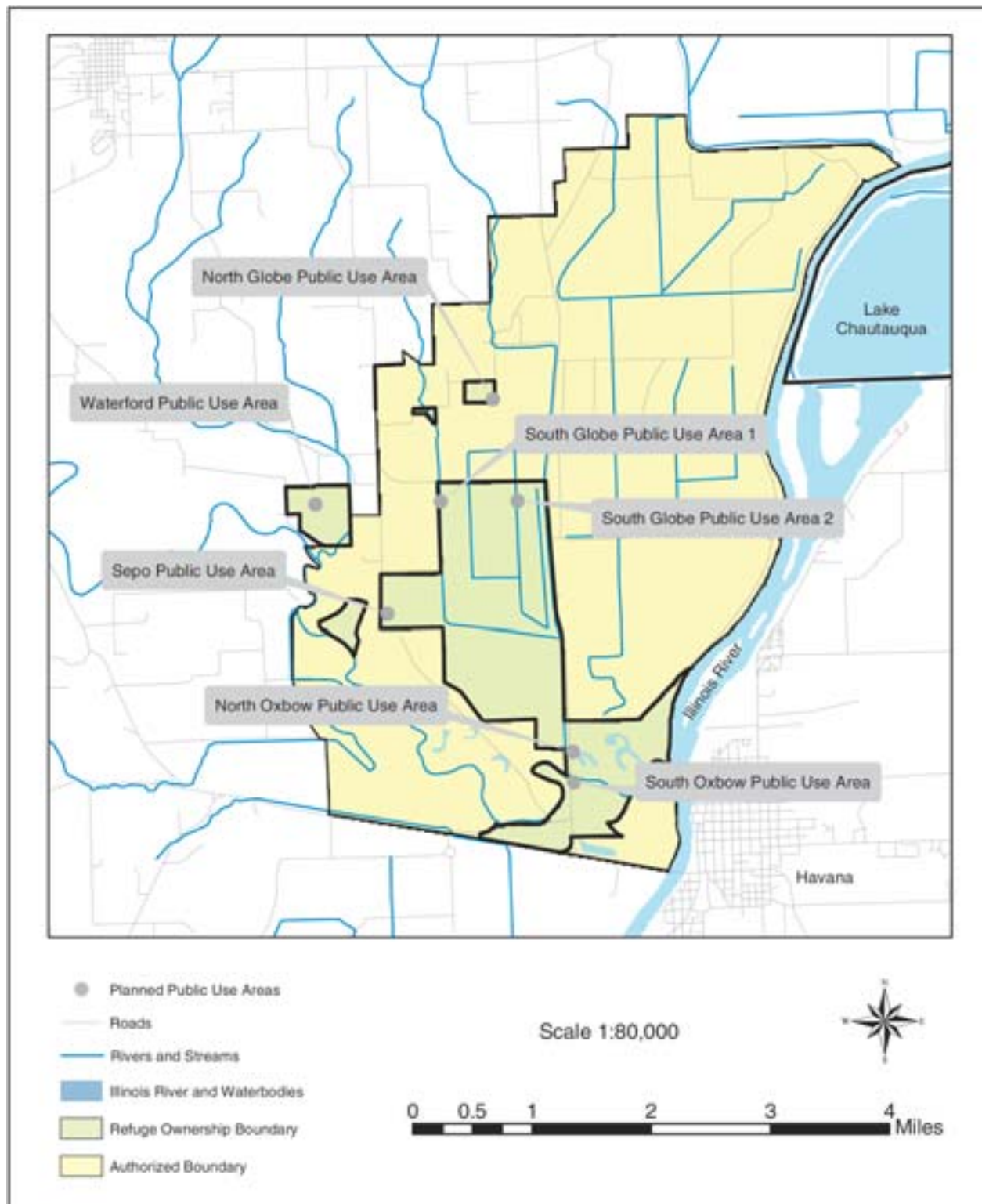
Refuge Complex becomes recognized as a premier destination to participate in natural resource based recreation.

- Strategy 1.* Expand auto-tour route interpretive elements and access times during peak migrations and throughout the summer months.
- Strategy 2.* Create additional viewing opportunities along Chautauqua dike system, including an auto tour route with a minimum of five pull-offs for observation and interpretive/educational opportunities, and a primitive access site off the auto tour route to the Illinois River (Old Levee Access).
- Strategy 3.* Develop a pull-off area at the Globe Drainage District area at Emiquon NWR. Future facility development at Emiquon NWR is depicted in Figure 24.
- Strategy 4.* Amend the hunting plan to include big game hunting on Liverpool Lake and Meredosia Island.
- Strategy 5.* Open and provide access for public hunting and other wildlife dependent recreational uses at Emiquon NWR.
- Strategy 6.* Evaluate new hunting opportunities on existing and newly acquired lands. In 15 years, an estimated 4,000 additional acres could be opened to public hunting for waterfowl, deer and small game.
- Strategy 7.* Open the east side of the North Pool of Lake Chautauqua to accessible bank fishing year-round.
- Strategy 8.* Develop five new parking lots at Emiquon NWR to accommodate deer and waterfowl hunters.
- Strategy 9.* Provide accessible facilities (hunt blinds) for waterfowl and deer hunting on Emiquon NWR.
- Strategy 10.* Promote National Fishing Day events in coordination with Illinois DNR and other partners.
- Strategy 11.* Develop a visitor services step-down management plan by April 2005 that evaluates existing public use facilities, identifies additional facilities needed to provide high quality compatible wildlife-dependent recreation, and sources of funding for development and maintenance of facilities.



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Figure 24: Future Facility Development, Emiquon NWR



- Strategy 12.* Provide two accessible bank fishing facilities for visitors on the Chautauqua NWR North Pool and at Meredosia NWR.
- Strategy 13.* Construct an accessible boat ramp at Goofy Ridge to accommodate access to upper Lake Chautauqua and the Illinois River via Goofy Ridge ditch.
- Strategy 14.* Develop an interpretive loop trail at Meredosia NWR incorporating the existing trail.

Objective 2. Provide structured on-site environmental education programs to 2,500 students annually.

- Strategy 1.* Coordinate with existing organizations (i.e. Dickson Mounds, Western Illinois University, Environmental Education Association of Illinois) to develop teacher workshops that orient teachers to the Refuge resources and environmental education materials. Work with local school superintendents to arrange on-site visits. Coordinate with Dickson Mounds, City of Havana, Illinois DNR with relevant/related programs and projects (i.e. link with Illinois River Valley Project). Enhance the Refuge’s ability to accommodate large group visits (i.e. tour buses, school groups). Coordinate with resource agency staff (i.e. NRCS, IDNR) to develop a full-day Conservation/Natural Resource day for area grade school students.
- Strategy 2.* Recruit and hire one Park Ranger to coordinate Visitor Services program.
- Strategy 3.* Develop three site-specific learning trunks and resource materials for local educators and youth leaders.
- Strategy 4.* In partnerships with local teachers, county naturalists, and youth organizations, investigate and adapt curriculum and monitoring programs focusing on Refuge water quality and watershed issues.
- Strategy 5.* Update the general brochure to include Refuge management, themes, and natural highlights.
- Strategy 6.* Develop interpretive signage and Refuge orientation message on five kiosks throughout Illinois River Refuges (2 existing at Chautauqua, 1- Meredosia, 1-Emiquon, 1- Cross dike).
- Strategy 7.* Develop a portable interpretive display that highlights Illinois River management, themes, and natural resource highlights (similar to that of Harvesting the River).

- Strategy 8.* Develop permitted/prohibited signage for five kiosks throughout Illinois River National Wildlife and Fish Refuges Complex.
- Strategy 9.* Develop interpretive signage for five stops along Chautauqua Lake auto tour.
- Strategy 10.* Develop a kiosk at the cross dike parking area that interprets messages about wetlands and water management.
- Strategy 11.* Develop restroom facilities at the headquarters to handle groups and individual visitors.
- Strategy 12.* Convert the existing headquarters maintenance shop to a visitor contact station (which includes exhibits/multi-purpose space, and sales outlet) when the new maintenance shop is constructed.
- Strategy 13.* Develop interpretive materials and programs that incorporate Refuge themes, issues, history, and management programs. Utilize area resource professionals and develop a series of public programs highlighting Refuge Complex themes (Bird Migration, Illinois River/Wetland Function/Hydrology, Heritage/Human-Wildlife Interactions).
- Strategy 14.* Continue to work with the Heartland Water Resource Planning Committee to develop an educational wing at the proposed Illinois River Museum in Peoria.
- Strategy 15.* Conduct a feasibility study/site design for a Illinois River National Wildlife and Fish Refuge Complex Visitor Center near Dickson Mounds Museum.

4.1.4.3 Outreach

Management intent for outreach at the Refuge Complex is to foster improved communication and collaboration between Service programs, the states, non-government organizations, and other federal agencies over the life of this Plan.

Objective 1. Refuge stakeholders will feel connected to the Refuge and will actively participate in the stewardship of the Refuge, the National Wildlife Refuge System, and the ecosystems within the Illinois River Corridor.

- Strategy 1.* Develop a comprehensive communication strategy for the Refuge Complex (outreach step-down plan) by 2006.
- Strategy 2.* In partnership with Emiquon Audubon, the Friends of Illinois River, and The Nature Conservancy, promote Chautauqua NWR and Emiquon NWR as international wildlife viewing destinations.

- Strategy 3.* Build cooperative relationship with local media and submit 12 news releases per year to area papers that highlight management activities and wildlife happenings on the Refuge Complex. Advertise special events that promote wildlife viewing opportunities throughout the Refuges (e.g., Migratory Bird Day, Eagle Days, National Wildlife Refuge Week, National Fishing Week).
- Strategy 4.* Maintain the Illinois River NWR Complex website and highlight Refuge Complex activities monthly.
- Strategy 5.* Explore technology to develop real-time video of Lake Chautauqua.
- Strategy 6.* Provide four Refuge tours throughout the year for special guests (city/agency officials).
- Strategy 7.* Promote special public programs through the Chamber of Commerce Calendar of Events.
- Strategy 8.* Promote a “Refuge happenings” show on Radio Station WDUK.
- Strategy 9.* Continue to support stewardship efforts of the Friends of the Illinois River and the Emiquon Audubon Society.
- Strategy 10.* Explore Cooperating Associating Agreement with Emiquon Audubon.
- Strategy 11.* Develop projects that foster community ownership and directly benefit the Illinois River Refuges.
- Strategy 12.* Promote citizen involvement and increase community ownership in the Refuge through stewardship work days.
- Strategy 13.* Coordinate volunteer efforts with The Nature Conservancy and the Illinois DNR EcoWatch program.
- Strategy 14.* Continue the internship program or coordinate with the Western Illinois University Peace Corps Fellowship program.
- Strategy 15.* Coordinate with Illinois DNR in conducting volunteer monitoring of Refuge resources (i.e. frog and toad surveys).
- Strategy 16.* Provide information that orients and informs visitors of recreational opportunities on the Refuge Complex and surrounding areas.

Objective 2. Land owners within Refuge Focus Areas will have a greater awareness of conservation and restoration potential on their lands.

Strategy 1. Work with Natural Resources Conservation Service and other organizations to disseminate information to land owners.

Strategy 2. Initiate Partners for Fish & Wildlife Program efforts in the Focus Areas.

4.1.5 Refuge Administration

Administration Goal:

Provide leadership and support to federal, state, local and private partners at the Refuge, ecosystem and landscape scales that is proactive in addressing a wide range of conservation opportunities and issues.

4.1.5.1 Law Enforcement

Continue to enforce laws for which the Service is responsible on the Refuge Complex, including the Archeological Resources Protection Act of 1979; the Lacey Act (1981 amendments), the Endangered Species Act, the Migratory Bird Treaty Act, the Migratory Bird Hunting and Conservation Stamp Act, and the National Wildlife Refuge Administration Act, as well as state laws governing hunting, fishing, and motor vehicle use.

Objective 1. Increasing compliance of state and federal regulations on Refuge land will be a priority for the Refuge throughout the life of this CCP.

Strategy 1. Revise Refuge visitor regulations for consistency and compatibility.

Strategy 2. Continually increase the public's knowledge of Refuge visitor regulations and the boundaries of Fish and Wildlife Service lands, throughout the life of this CCP.

Strategy 3. Add one full-time law enforcement officer by 2007.

Strategy 4. Upgrade radio systems to meet federal narrow-band digital standards by 2005.

Strategy 5. Upgrade patrol vehicles to meet state and federal emergency vehicle standards by 2005.

Objective 2. Continue to serve as a leader, facilitator, and source of information for natural resources issues along the Illinois River.

Strategy 1. Actively participate in partnership activities.

Strategy 2. Emphasize partnerships within Refuge Focus Areas.