

## **The Upper Mississippi River and Illinois River Bottomlands Natural Division**

### **Characteristics**

The Upper Mississippi River and Illinois River Bottomlands Natural Division of western and west-central Illinois encompasses the river and floodplains of the Mississippi River above the confluence with the Missouri River, and of the bottomlands and backwater lakes of the Illinois River and its major tributaries south of LaSalle. Much of the division was originally forested but prairie and marsh occurred. Agriculture is the primary land use in the floodplains today. The big rivers, their fish and mussel communities, and the backwater lakes of the Illinois River are distinctive.

### **Major Habitats & Challenges**

Forest - loss of diversity and dominance of silver maple and cottonwood as a result of changes in hydrology, frequency and durations of flood events, over-harvest and the 1993 flood (these species invade bottomland hardwood tree plantings and make successful establishment more difficult), over-browsing by white-tailed deer

Grassland - scarcity; many Conservation Reserve Enhancement Program grasslands were established on forested soils and tend to be low quality, dominated by switchgrass with few or no forbs, and invaded by cottonwoods

Wetland - sedimentation, unnatural flood regimes, exotic and invasive species (reed canary grass, phragmites, willow, cattails, bighead and silver carp); many historical wetlands are still farmed; availability of state and federal programs limits restoration and management

Lakes & Ponds - Sedimentation has resulted in a lack of deep water fish escape habitat. The combination of flocculent lake bottoms, summer floods (summer bumps), and common carp have resulted in an absence of aquatic plants (moist soil, emergent, and submergence) in the backwater lakes. The conflicting goals of providing river connectivity for fish compared to aquatic vegetation for migrating waterfowl is a significant challenge (lateral connectivity allows fish access to floodplains, whereas levees promote moist soil plant development by excluding common carp and summer flooding). If the goals for the natural division are to be met, a fair and reasonable compromise to this conflict needs to be reached.

Streams - sedimentation, lack of riparian vegetation, channelization and dredging, altered hydrology

### **Opportunities**

Landscape-scale restoration and management is on-going at large state, federal and non-government organization-owned areas in the Upper Mississippi River and Illinois River Bottomlands Natural Division (Woodford State Fish & Wildlife Area, Marshall State Fish &

Wildlife Area, Upper Mississippi River National Fish & Wildlife Refuges, Illinois River National Wildlife Refuges, Donnelly State Fish & Wildlife Area, DePue State Fish & Wildlife Area, Hennepin-Hopper Lakes, Emiquon Preserve).

The Conservation Reserve Enhancement Program, Conservation Reserve Program and Wetlands Reserve Program can achieve many of the forest, grassland and wetland habitat goals of the Illinois River portion of the Upper Mississippi and Illinois River Bottomlands Natural Division.

Leveed cropland has been (and can be) protected from silt deposition and flooding; the infrastructure of levee districts allows for wetland restoration efforts. Wet prairie restoration is feasible along and within drainage ditches and other wet areas. Many privately-held tracts of land in the flood plain are large, and attractive for large-scale restoration and management. Many private duck clubs adjacent to the Illinois and Mississippi Rivers are managed as moist soil habitat. Some of the Illinois' tributary streams (i.e. both Crow Creeks, Big Sandy Creek) are less flood prone than the River. Adjacent fields with low levees provide ideal locations for reforestation or wetland development.

### **Management Guidelines**

This division consists of two major parts; the leveed, and unleveed portions of the floodplain. Management outside of the levees is river-stage dependent. In many cases flood events render long-term vegetation management strategies ineffective and impractical. Vegetation management within the leveed portion of the division has greater potential. Wetland habitats have potential to increase. Both grassland and forested acreage would increase in association with wetland restoration.

#### Landscapes

Forest - Increase forest acreage by 36,000 acres, in floodplains and along riparian corridors. Restore isolated and connected floodplains along rivers and streams to promote floodplain function and habitats. Emphasize restoring and managing bottomland hardwoods in larger blocks on forested soils.

Streams - Prevent the invasion by black carp and other invasive species. Restore tributary streams to reduce head-cutting and sediment transmission to larger rivers. Remove dramatic water level changes associated with operation of wicket dams at Peoria and LaGrange. Maintain all existing connections between backwaters and main channel (connections at the 50% exceedance flow duration). Reduce low-water fluctuations along the mainstem Illinois River where possible, concentrating on the months of May through October. Eliminate excessive sediment delivery to specific high value habitat both along the main channels and in tributary areas of rivers and streams. Restore or maintain main stem to tributary connectivity, where appropriate, on major rivers and streams. Restore and maintain side channel habitats.

Lakes and Ponds - Promote aquatic plants (including moist soil) for waterfowl and restoring and managing adequate deep water escapement for riverine fishes. Restore and rehabilitate backwaters: restoration should result in a diversity of depths (a general target would be to have the following distributions of depths: 5% >9 feet, 10% 6-9 feet, 25% 3-6 feet and 60% <3 feet). Compact sediments to improve substrate conditions for aquatic plants, fish and wildlife, and identify beneficial uses of dredged sediments.

Wetlands - Emphasize restoring and managing healthy, functioning wetlands. Restore and manage an additional 20,000 acres of wetlands.

Grasslands - Restore and manage grasslands with high species diversity on grassland soils; a net increase of 31,000 acres is needed to meet wildlife objectives.

#### Natural Communities

Major rivers, backwater lakes/sloughs, side channels, marshes, wet prairie, pin oak/pecan floodplain forest, temporary and permanent wetlands, seeps, fens

#### Critical Species

Numerous species of mussels, paddlefish, smooth soft-shell turtle, king rail, black rail, Wilson's snipe, northern harrier, bald eagle, osprey, bobcat, prothonotary warbler, least bittern, American bittern, great egret, black-crowned night-heron, snowy egret, little blue heron, barn owl, red-headed woodpecker, river otter, Indiana bat, gray fox. The Illinois River Valley, and Chautauqua National Wildlife Refuge in particular, is a shorebird concentration area of international importance.

#### Emphasis Game Species

White-tailed deer, wild turkey, waterfowl (mallard, wood duck), furbearers (muskrat, beaver, raccoon, mink, muskrat, red fox), northern bobwhite, bullfrog, snapping turtle, crappie, bass, channel catfish

#### Non-game Indicator Species

Wetland - spring peepers, gray tree frogs, red-eared slider, northern water snake, great blue heron, great egret, migratory shorebirds, prothonotary warbler, Baltimore oriole, spotted sandpiper

Forest - red-headed woodpecker, bats

Grassland - common yellowthroat

#### **Recreational Opportunities**

Deer, turkey, raccoon, and waterfowl hunting, fishing, boating, camping, birding/wildlife viewing for American white pelicans, shorebirds, wading birds, waterfowl, bald eagles and

others at numerous outstanding sites, including Hennepin-Hopper Lakes and Chautauqua National Wildlife Refuge

### **Educational/Interpretive**

Pere Marquette State Park Visitor Center, Two Rivers National Wildlife Refuge Visitor Center, Bald Eagle Appreciation Days, Big River Days

### **Natural Resource Commodities**

Forest products, commercial fisheries, tree nurseries, trapping, hunting opportunity (white-tailed deer, waterfowl)

### **Conservation Opportunity Areas**

#### Middle Illinois River

Protected lands - Woodford State Fish & Wildlife Area, Marshall State Fish & Wildlife Area, Illinois River National Wildlife Refuges, Donnelly State Fish & Wildlife Area, and DePue State Fish & Wildlife Area, Hennepin-Hopper Lakes, Sanganois State Fish & Wildlife Area, Anderson Lake State Fish & Wildlife Area, Rice Lake State Fish & Wildlife Area, Spring Lake State Fish & Wildlife Area, Banner Marsh State Fish & Wildlife Area, Pekin Lake State Fish & Wildlife Area, numerous Conservation Reserve Enhancement Program, Conservation Reserve Program, and Wetland Reserve Program enrollments

Priority Resources - emergent/moist soil/submergent wetlands, bottomland forest, deep-water habitat, backwater lakes, fish and mussel communities, migratory birds

Conservation philosophy - Promote wetland habitat in backwaters that support viable fish populations and migrating and wintering waterfowl and shorebirds; promote bottomland hardwood forests that support viable populations of wildlife including rare and declining species.

Wildlife and habitat objectives - establish aquatic plants in 20% of the backwater lake surface area; establish deep water fish habitat in 50% of the backwater lakes in the pool

Key actions - aquatic plant and bottomland forest establishment

Partners - Illinois Department of Natural Resources, The Wetlands Initiative, The Nature Conservancy, U.S. Department of Agriculture, Soil & Water Conservation Districts, U.S. Fish & Wildlife Service, U.S. Army Corps of Engineers

Implementation resources - Current and future Farm Bill conservation programs, U.S.

Army Corps of Engineers programs, Migratory Waterfowl Stamp funds, North American Wetland Conservation Act

Monitoring and evaluation mechanisms- Indicator species need to be designated and monitored. Annual aerial photos taken in October and digitized could be used to measure plant coverage in the backwaters.

#### Upper Mississippi River

Priority resources – mussel and fish communities, migratory birds

#### Lost Mound - Hanover Bluff - Mississippi Palisades

Protected Lands: Upper Mississippi River National Fish & Wildlife Refuge - Lost Mound unit, Hanover Bluff Nature Preserve, Mississippi Palisades State Park

Conservation Philosophy: Restoration of the continuum of riverine (Mississippi River bottomlands), prairie (Lost Mound), and upland forest (Hanover Bluff, Mississippi Palisades) as an ecosystem landscape.

Partners: U.S. Fish & Wildlife Service, Illinois Department of Natural Resources, The Friends of the Depot, The Prairie Enthusiasts, The Nature Conservancy, Jo Daviess Natural Areas Guardians, Driftless Area Partnership, Natural Land Institute, Jo Daviess Conservation Foundation, Blufflands Alliance, National Wild Turkey Federation

\* See also Illinois River and Mississippi River Sand Areas and Wisconsin Driftless natural divisions

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