The Lower Mississippi River Bottomlands Natural Division

Characteristics

The Lower Mississippi River Bottomlands Natural Division, including the Mississippi River and its floodplain from Alton to the Thebes Gorge in southwestern Illinois, is glaciated bottomland country that used to be mostly forested with numerous marshes, wet prairies, and oxbow sloughs scattered throughout it. It historically was the wide Mississippi River bed before channelization, and is divided into a northern and southern section. The northern part of the division is also known as the American Bottoms, and it was here that the wet prairies and marshes occurred. The southern part of the division was more heavily forested. Glacial flood waters created this vast floodplain ecosystem. The soils in this natural division are finely textured, with both sandy (well-drained) and clay (poorly drained) areas, all developed from alluvium. The Mississippi River, silt-laden below the confluence with the Missouri River, contains a distinctive fish assemblage of silt-tolerant plains species (plains minnow, sturgeon chub, flathead chub, sicklefin chub).

Presettlement condition of this division was mostly forested, with historic wet prairies and marshes in the Northern Section. Many of the wet prairies were drained and converted into agricultural fields. These were replaced by more vast forest and bottomland swamp tree species typical of the coastal plain in the Southern Section. Aquatic habitats of this division are represented by oxbow lakes and sloughs, marshes, and springfed swamps. Some unique fish species are found only in the springfed swamps, and Gulf Coastal Plain reptiles and amphibians reach the northern-most edge of their range.

Major Habitats & Challenges

Forests - irregular and unnatural flood regimes invoked by levees created to protect farm ground; overuse from recreational such as off-road vehicles and all-terrain vehicles; land clearing and fragmentation; invasion and seed deposition by exotic plants such as garlic mustard and autumn olive; overgrazing by some livestock and abundant deer populations negatively affect forest composition and destroy rare plants.

Grasslands (wet prairies) - further destruction of wet prairies from draining for conversion to agricultural use; lack of fire to maintain fire-climax communities; invasion and seed deposition by exotic plants such as autumn olive and purple loosestrife; poor diversity and structure of cool-season grasslands

Wetlands (backwater sloughs and oxbows) - draining to promote farming of fertile floodplain soils; development of residential communities within the floodplain; sedimentation of small wetlands; invasion of shallow wetlands by native woody species such as willows

Streams - impaired water quality by pollution and herbicide runoff; degradation by sedimentation and development

Opportunities

This natural division has one of the larger amounts of floodplain habitat in the state. This corridor of river bottoms runs the Mississippi River bluffs from Madison to northern Alexander counties. There is a significant amount of this natural community type in public ownership (State of Illinois and U.S. Forest Service). Active management of portions of this floodplain have continued through acquisition by the U.S. Forest Service, enrollment in long term protection programs through the Illinois Nature Preserves Commission, and some prescribed burning in dry marshes by the Illinois Department of Natural Resources. Wetland enhancement and re-creation is occurring to serve as waterfowl hunting areas by private enterprises. Leased hunting is providing impetus to enhance forest stands for the benefit of wildlife (i.e., deer and wild turkey). The Nature Conservancy's Upper Mississippi River Project works in close partnership with other organizations to conserve and restore the Mississippi River and its major tributaries by improving water quality, restoring healthy river flows, and reclaiming floodplains as natural habitat.

Management Guidelines

<u>Landscapes</u>

Forests - Increase forest cover by at least 10,800 acres. Inventory forested blocks at least 500 acres, and prioritize for addition on linkage with other blocks. Encourage sound management practices to promote healthy floodplain forests through landowner education and assistance, timber stand improvements, and exotics control (mechanical, chemical and fire). Controlling deer herds in bottomland forests needs to be addressed

Grasslands - Increase grassland by at least 10,400 acres. In all remnant wet-mesic prairies, encourage sound management practices to maintain and increase their extent through prescribed burning, restoration with native cordgrass and stable water levels. Education of the public to the importance of wet prairies is necessary to gain support.

Wetlands - Increase wetlands by at least 4,000 acres. Recreating the historic meander scars and oxbow slough depressions may begin to restore wetlands on floodplain soils. Existing open wetlands need to be monitored and managed to prevent the encroachment of woody species such as willow. Establish buffer between wetlands and adjacent agricultural land to prevent herbicide runoff and sedimentation. Establishment of deeper and shallow wetlands is needed to increase amphibian breeding habitat, and help reduce harmful parasitic insect populations.

Streams - Encourage sound management practices to maintain and upgrade the quality of streams through landowner education and assistance, adjacent buffer and riparian corridors to filter herbicide runoff and avoid degradation by siltation and development, and discouraging destructive alteration by illegal off-road vehicle and all-terrain vehicle use.

Natural Communities

Floodplain forest, wet and mesic prairie, cypress-tupelo swamps, geological areas

Critical Species

Spring cavefish, bantam sunfish, Alabama shad, plains minnow, sturgeon chub, flathead chub, sicklefin chub, banded pygmy sunfish, Illinois chorus frog, eastern narrowmouth toad, bird-voiced treefrog, green treefrog, mole salamander, alligator snapping turtle, mud snake, western cottonmouth, Mississippi green water snake, timber rattlesnake, eastern massasauga, least bittern, pied-billed grebe, Mississippi kite, least tern, red-shouldered hawk, bald eagle, common moorhen, migratory shorebirds, eastern wood rat, Indiana bat, river bulrush, cattail, lotus, pickerelweed

Emphasis Game Species

White tailed deer, wild turkey, swamp rabbit, eastern cottontail, gray and fox squirrels, muskrat, beaver, raccoon, mink, Canada goose, blue-winged teal, wood duck, largemouth bass, black and white crappie, bluegill, red ear sunfish, spotted bass, and channel catfish

Non-game Indicator Species

Forests - bobcat, red and hoary bats, red-headed woodpecker, pileated woodpeckers, prothonotary warblers, summer and scarlet tanagers, spotted and marbled salamanders, eastern box turtles, skinks, western ribbon snake, speckled kingsnake

Wetland - herons and egrets, cricket frog, chorus frog, southern leopard frog, American toad, yellowbelly water snake, Graham's crayfish snake

Streams, springs - siren, cave and longtail salamanders

Recreational Opportunities

Waterfowl and bottomland forest game hunting, trapping, fishing, hiking, wildlife observation, biking, and limited equestrian use.

Educational/Interpretive

The La Rue Swamp is a registered National Natural Landmark and also a federal Research Natural Area. Portions of the southern section are U.S. Forest Service, with some distinction between National Natural Landmarks and Research Natural Areas. State sites include Poag Chorus Frog Site, Horseshoe Lake State Park (Madison County), Frank Holten State Park, Kidd Lake Marsh Natural Area, Fort de Chartres Historic Site, Lovet's Pond Nature Preserve, and Union County Conservation Area.

Natural Resource Commodities

Forest products, commercial fisheries, hunting reserves/clubs, waterfowl clubs, nature-based tourism (scenic roadways, bird watching, backpacking/hiking, and nature observation/recording)

Conservation Opportunity Area

LaRue - Pine Hills - Western Shawnee - Trail of Tears

Protected lands - Pine Hills Ecological Area, LaRue Ecological Area, Ozark Hills Nature Preserve, Shawnee National Forest (including Oakwood Bottoms), Trail of Tears State Forest

Conservation philosophy - Maintain connectivity among Ozark, Shawnee Hills and Lower Mississippi River Bottomlands Natural Divisions with riverine, swamp, bottomland forest, bluff, and upland forest, glade and barrens communities. Protect and proactively manage for the unique flora and fauna native to these ecosystems. Use sound management decisions, with historical conditions as a guide.

Priority Resources (LaRue Swamp) - swamp, sloughs of the Big Muddy River, high diversity of reptiles and amphibians

Objectives - enroll unprotected critical habitats for endangered/threatened species into long term protection plans; generate funding to increase biologist positions to help with personnel needed to proactively manage these communities.

Priority actions - use prescribed fire to manage fire climax communities of glades, barrens, and upland forests; land acquisition of available target parcels of high quality community types; reforestation to create larger patches

Partners - U.S. Forest Service, Illinois Department of Natural Resources, The Nature Conservancy

Research, monitoring & evaluation - research and monitoring can be conducted by Illinois Department of Natural Resources, Southern Illinois University (Carbondale and Edwardsville campuses), Southwest Illinois College, and the Illinois Natural History Survey

*See also Ozark and Shawnee Hills natural divisions.

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