

## **The Southern Till Plain Natural Division**

### **Characteristics**

The Southern Till Plain Natural Division of south-central Illinois is a dissected Illinoian till plain south of the terminal Wisconsinan moraine. Forest was found along streams and prairie occupied the level uplands. Although about 40% of the natural division was prairie at the time of European settlement, upland soils are largely alfisols formed under forests. These soils are relatively poor because of high clay content and frequent "claypan" subsoil. Because these soils have a comparatively light color, upland prairies here have been referred to as the "gray prairie." Southern flatwoods is a characteristic natural community found on level uplands and river terraces. Northern crayfish frog, ornate box turtle and remnant populations of greater prairie-chickens are characteristic animals of the Southern Till Plain Natural Division. The division encompasses large portions of the Kaskaskia River and Big Muddy River watersheds, and tributaries to the Wabash River. Extensive areas of river floodplain and ancient glacial lakebeds were occupied by forested wetlands and some wet prairies. Upland prairies were highly interspersed in the Southern Till Plan, and many were likely quite open due to the influence of fire.

### **Major Habitats & Challenges**

Forest - historic over-grazing, species composition, invasive species, fire suppression, fragmentation, poor timber harvest practices, changes in hydrology, exurban development

Open Woodland/Savanna/Barren - scarcity, overgrazing, succession, lack of prescribed fire, invasive species, poor timber harvest practices, exurban development

Grassland - scarcity, fragmentation, dominance by invasive species (especially fescue), overgrazing of pasture, excessively high or low disturbance levels, low structural diversity, loss and degradation of prairie remnants; much of the grassland acreage in the division is temporary in the Conservation Reserve Program

Wetlands - scarcity, altered hydrology, dominance by invasive plants, sedimentation

Lakes and Ponds - sedimentation, nutrient loading, backwater lakes have been nearly eliminated; water level fluctuations in the reservoirs and downstream of Rend and Carlyle lakes

Streams - sediment load, incision, lack of riparian habitat, channelization; impoundment for water supply, flood control, and recreation; runoff from urban areas, livestock facilities, and coal/oil extraction

### **Opportunities**

Large, publicly- and corporately-owned grasslands (many on reclaimed mine lands)

have existing and potential wildlife benefits (Prairie Ridge State natural Area and Pyramid State Park are Illinois Department of Natural Resources-managed examples). Large concentrations of Conservation Reserve Program grasslands occur in many areas of the natural division.

Large flood-prone areas (along Kaskaskia, Little Wabash and Big Muddy Rivers) have wetland and bottomland forest restoration potential through the Wetland Reserve Program, conservation easements and other programs. Illinois' largest concentration of bottomland forest along Kaskaskia River is known to harbor exceptional populations of birds. Large lake and wetland habitats are associated with Carlyle Lake, Rend Lake, though extreme water fluctuations at Carlyle diminish habitat quality.

## **Management Guidelines**

### Landscapes

**Grasslands:** Grassland management landscapes larger than 10,000 acres in the Southern Till Plain Natural Division should contain at least 40% grassland land cover (over 50% in patches larger than 160 acres) and less than 10% combined wooded and urban land covers. At least two additional Bird Conservation Areas (grasslands >3,000 acres; see Fitzgerald et al. 2000) should be established in addition to Prairie Ridge State Natural Area (both units require augmentation; see Walk 2004), and Pyramid State Park (needs management plan). An increase of 240,000 acres of grassland will support wildlife objectives. Grasslands should be managed for diverse structure and vegetation composition across the landscape with prescribed fire, proper grazing, soil disturbance, and exotic species control (mechanical, chemical). Open, treeless, upland grasslands more than 0.5 mile wide are especially important to Species in Greatest Need of Conservation.

**Forest, Open Woodland, Savanna and Barren:** Restore and manage broad transitions (at least 50 m) from cropland and grassland to closed upland forests using mechanical disturbances and prescribed fire. Identify degraded open woodlands, barrens and savannas, and restore with mechanical removal of undesirable vegetation, and manage with prescribed fire and proper grazing. Inventory, restore and manage all tracts of southern flatwoods of Illinois Natural Areas Inventory grade C or higher, with at least one tract >1,000 acres and at least one tract >500 acres in each the Effingham and Mt. Vernon sections. Restore and manage a bottomland forest tract of >10,000 acres in the Kaskaskia River watershed; restore and manage at least one bottomland forest tract >1,000 in the other major watersheds. Riparian wetlands and bottomland forests should be restored and managed to increase ecological connectivity and decrease fragmentation of patches larger than 500 acres, respectively. A net increase of 65,000 acres of forest and 75,000 acres of open woodland/savanna/barrens is needed to meet wildlife objectives.

**Wetland:** Restore 3,800 acres of backwater and wetland habitats. Ephemeral and semi-permanent (fishless) wetlands associated with grasslands, flatwoods and bottomland forests are important to many amphibians and reptiles, including crayfish frog, Kirtland's snake

and eastern massasauga.

Stream: Restore riparian vegetation along 100% of streams in the natural division.

Lake & Pond: Establish aquatic vegetation on 10-20% of the littoral zone on all impoundments.

### Natural Communities

Southern flatwoods is largely restricted to the natural division. All of the 700 acres of high-quality remnants occur here. Dry barrens, dry-mesic prairie, dry-mesic forest, dry-mesic savanna, low gradient creeks, big river, and sandstone overhang are natural communities found here, but less commonly in other portions of Illinois.

### Critical Species

Western sand darter (Kaskaskia), eastern sand darter (Embarras, Little Wabash River), gravel chub (Kaskaskia), harlequin darter (Embarras), bigeye chub (Embarras, Little Wabash, Big Muddy, Kaskaskia), bigeye shiner (Little Wabash, Kaskaskia), crayfish frog, Kirtland's snake, eastern massasauga, ornate box turtle, Henslow's sparrow, LeConte's sparrow, nelson's sharp-tailed sparrow, grasshopper sparrow, short-eared owl, upland sandpiper, red-shouldered hawk, brown creeper, northern harrier, sedge wren, yellow-billed cuckoo, northern flicker, cerulean warbler, little blue heron, willow flycatcher, least bittern, American bittern, bald eagle, yellow-breasted chat, loggerhead shrike, red-headed woodpecker, osprey, American golden-plover, king rail, American woodcock, dickcissel, field sparrow, brown thrasher, greater yellowlegs, buff-breasted sandpiper, greater prairie-chicken, barn owl, Bell's vireo, Indiana bat, marsh rice rat, golden mouse, river otter, and bobcat

### Emphasis Game Species

largemouth bass, smallmouth bass, warmouth, white bass, yellow bass, bluegill, longear sunfish, redear sunfish, rock bass, white crappie, black crappie, white catfish, blue catfish, channel catfish, flathead catfish, black bullhead, yellow bullhead, freshwater drum, migratory waterfowl, wild turkey, northern bobwhite, white-tailed deer, eastern cottontail, swamp rabbit, beaver, fox squirrel

### Nongame Indicator Species

Forest - eastern box turtle, red-eyed vireo, American redstart

Open Woodland/Savanna/Barren - red-headed woodpecker, eastern kingbird, Baltimore oriole, great crested flycatcher

Grasslands - prairie kingsnake, dickcissel, grasshopper sparrow, eastern meadowlark, field sparrow (shrub-grassland), southern bog lemming, *Microtus* species

Wetlands - willow flycatcher, migratory shorebirds, southern leopard frog, cricket frog, chorus frog, spring peeper, smallmouth salamander

Streams - paddlefish, freckled madtom, shorthead redhorse, flier, pugnose minnow, slenderhead darter, smooth softshell turtle

### **Recreational Opportunities**

Fishing on major reservoirs (Rend, Carlyle), impoundments (Newton, others) and streams; waterfowl hunting (especially at Rend and Carlyle); white-tailed deer, wild turkey, northern bobwhite and mourning dove hunting; furbearer trapping & hunting; Prairie Ridge State Natural Area, Carlyle, and Rend are "destination" birding sites for Illinois within the natural division; large multiple-use recreation facilities at Carlyle Lake, Rend Lake, Pyramid State Park, and Ten-Mile Creek State Fish & Wildlife Area; water sport recreation on Carlyle Lake, Rend Lake; canoeing on streams & rivers; morel and ginseng hunting

### **Educational/Interpretive**

Interpretive trails and wildlife viewing platforms on Illinois Audubon Society properties at Prairie Ridge State Natural Area (Jasper and Marion counties); U.S. Army Corps of Engineers visitors' centers, Eldon Hazlet State Park and Wayne Fitzgerald State Park at Carlyle and Rend Lakes; Illinois Natural History Survey field stations (Great Rivers-Brighton, Ridge Lake - Charleston, Sam Parr - Kinmundy); Southeastern Illinois and Carlyle Lake Birding Trail; Ballard Nature Center, Altamont; Bremer Audubon Sanctuary; White Demonstration Farm, Belleville; Southwest Illinois College Outdoor Classroom, Belleville; Heartland prairie, Alton; St. Clair County Silver Creek nature preserve, Mascoutah; Highland high School Outdoor Classroom; Washington County Storck Woods Nature Preserve; Centralia Park District; Greenville Park District; Frank Holton State Park; Washington County Conservation Area

### **Natural Resource Commodities**

Forest products (timber, medicinal plants, foods, ornamental); Grassland products (grazing, hay); Commercial fisheries; Guided hunting and fishing (local, centered at Carlyle and Rend); Bird-watching, nature viewing (Prairie Ridge State Natural Area); Ecotourism, nature photography, carbon sequestration, soil protection/enhancement, clean air & water, improved human health & quality of life

### **Conservation Opportunity Areas**

#### Prairie Ridge Landscape

Protected lands - Prairie Ridge State Natural Area (nature preserve, land & water reserve and Illinois Natural Areas Inventory parcels), Twelve-Mile Prairie (conservation easement)

Priority resources - rare and declining grassland wildlife (especially threatened and endangered birds) and grassland-wetland wildlife, remnant prairie communities

Conservation philosophy - The primary goal is development of a grassland ecosystem capable of maintaining viable populations of grassland species, including both permanent residents and migratory species, with emphasis on threatened and endangered species. A secondary goal is the development of a prairie preserve characteristic of the presettlement flora of the Southern Till Plain natural division of Illinois (from Simpson & Esker 1997).

10-Year Goals - add 500 grassland acres per year until target acreages (5,000 acres in each unit) are obtained; improve private land synergies (open space, foraging areas, brood habitat) on 500 acres near each unit within 3 years; establish three 500-acre satellite locations from year 4 to 7 of implementation (see Simpson and Esker 1997, Walk 2004)

Key Actions - Establishing additional habitat at core locations and satellites. Promoting compatible agricultural practices on adjacent private lands (managed grazing, small grains, legumes, idle/fallow areas, and field borders) with incentives and farm programs. Continually addressing grassland management/succession and invasive species (especially fescue) with methods including grazing, prescribed fire, mowing and mechanical and chemical control. Addressing management, restoration and outreach staffing/equipment/facility needs.

Partners - Illinois Department of Natural Resources, Illinois Audubon Society, U.S. Department of Agriculture - Natural Resources Conservation Service & Farm Service Agency, Ameren-CIPS, The Nature Conservancy, Illinois Central Gulf Railroad, Eastern Illinois University, University of Illinois, Illinois Natural History Survey, Endangered Species Protection Board, Illinois Nature Preserves Commission

Research, Monitoring & Evaluation - ongoing and periodic efforts include site breeding bird census, Christmas Bird Count (Jasper County), Spring Bird Count, prairie-chicken lek surveys, prairie-chicken genetic evaluations, threatened/endangered species surveys, herpetological surveys, insect surveys, vegetation cover mapping, research on grassland birds, mesopredators, reptiles, and prairie restorations (Illinois Department of Natural Resources, Illinois Natural History Survey, Eastern Illinois University, University of Illinois)

#### Pyramid - Arkland Landscape

Protected lands - Pyramid State Park

Priority resources - grassland, shrubland and wetland wildlife; Henslow's sparrow, northern harrier, short-eared owl, Bell's vireo, loggerhead shrike, northern bobwhite, migratory waterfowl, least bittern; potential landscape for greater prairie-chicken re-introduction

Conservation philosophy - Maintain shrub, marsh and lake habitats in an open grassland matrix to manage priority wildlife resources, while providing high-quality resource-compatible recreation opportunities.

Key Actions - Continually addressing grassland and shrubland management/succession and invasive species with methods including grazing, prescribed fire, mowing and mechanical and chemical control). Develop site management plan that balances natural resource conservation with recreational demands; may require re-designation of "Arkland" portion from State Park to State Fish & Wildlife Area.

#### Lower Kaskaskia River Bottomlands

Priority Resources - High concentration and large tracts of bottomland hardwood forest (including Illinois' largest forest); area includes one-half of all high quality flatwoods in Illinois. Near-natural floodplain-river ecosystem, wood duck, cerulean warbler, red-shouldered hawk, brown creeper, prothonotary warbler

Partners - U.S. Army Corps of Engineers, Kaskaskia Watershed Association, Illinois Department of Natural Resources

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