

## **Regional Assessment of the Shawnee Hills Natural Division**

### **Characteristics**

The Shawnee Hills Natural Division in the southern tip of Illinois is unglaciated hill country characterized by ridged uplands with many cliffs and deeply dissected valleys. Cuesta Ridge of the northern Shawnee Hills extends from the Mississippi River to the Ohio. The steep south facing escarpment is nearly in the middle of the division and separates the land to the north known as the Greater Shawnee Hills and the hills to the south which average 200 feet lower, known as the Lesser Shawnee Hills. Cave and sinkholes are locally common in the division. Presettlement vegetation was mostly forest with some prairie vegetation contained in glades and barrens. At present this natural division is the most heavily forested in the state and hosts some of the most outstanding biodiversity.

### **Major Habitats & Challenges**

Forests - lack of oak regeneration; oak decline; potential infestation of European gypsy moth; overuse from recreation; land clearing and fragmentation for exurban development; invasion by *Microstegium viminium* could affect regeneration; other exotic plants (including Japanese and bush honeysuckle); lack of fire management leading to composition change; poorly planned logging continues to be a threat to healthy forests; overgrazing by livestock and abundant deer populations are affecting forest composition and destroying rare plants in some localities

Open Woodland/Savanna/Barrens - lack of fire management leading to invasion by mesophytic species of trees and shrubs

Grasslands - no large, contiguous natural grasslands exist; lack of diversity of species, succession and exotic plants (autumn olive, fescue, sericea lespedeza) are threats to Conservation Reserve Program and U.S. Forest Service-managed grasslands

Lakes and Ponds - bank erosion; sedimentation; possible future exotics problem (e.g., curly leaved pond weed)

Streams - inadequate riparian buffers in some areas; exurban development; sedimentation; pollution (mainly non-point agricultural)

Caves - sinkhole dumping and ground water contamination; inappropriate, repetitive disturbance during visitation, along with vandalism; quarry and mining operations

Primary Communities - increases in recreational climbing threatens cliff habitats by creating bolted routes which are used repetitively, destroying plants on the cliff face; glades are shading in due to encroachment of more mesophytic woody plants such as eastern red cedar, in some locations exotic species are a major threat such as sweet clover; sandstone glades

are often used as trail corridors for equestrians due to the scenic nature of their placement on the landscape

## **Opportunities**

This natural division has the largest concentration of forested habitat and the most extensive area of upland oak-hickory forest in the state. It also has over 180,000 acres of public land with many large tracts. Opportunities exist for the creation of larger, more contiguous forest blocks of habitat which would be more suitable for recruitment of Neotropical migratory songbirds. Landscape scale management becomes a viable goal given the significant land base and the ability for land management agencies to pool resources and form partnerships. Many acres of public land are already in large tracts which could with relatively few additions be linked to form macrosites. Ecosystem Partnerships cover most of the division which could help facilitate greater cooperation and involvement by private landowners in landscape scale management. There is already a high level of interest and participation in Illinois Department of Natural Resources and U.S. Department of Agriculture conservation programs among private landowners.

A 1997 study indicated suitable habitat was available for reintroducing elk to the Shawnee Hills, though private property damage was likely (Buhnerkempe and Higgins 1997). Bachman's sparrows, extirpated in Illinois since about 1980, have been found nesting in western Kentucky, less than 100 miles from Illinois. Restoration of barren and glade habitat may facilitate natural recolonization of Illinois by Bachman's sparrows, as may expected climate change (Matthews et al. 2004).

## **Management Guidelines**

### Landscapes

Forest - Promote the use of forest stand improvement, prescribed burning and sound harvesting practices to increase oak regeneration and native plant diversity in upland oak-hickory forests. Increase cooperation and coordination of management activities across ownership boundaries to facilitate landscape level management. Increase forest cover by at least 22,000 acres. Forested blocks of at least 500 acres should be inventoried and prioritized for addition or linkage to other forest blocks. Restore and manage two contiguous forest blocks of greater than 50,000 acres each. Forest landscapes larger than 50,000 acres should contain at least 80% forest land cover and less than 5% cropland cover. Forests should grade into open woodland habitats on adjacent uplands.

Open Woodland/Savanna/Barren - Encourage management practices such as prescribed fire to maintain open woodlands, savannas and barrens. Set a goal for a net increase of 11,000 acres of this habitat type.

Grassland - Improve by encouraging conversion from fescue to warm season grasses, discouraging overgrazing and providing education and assistance for landowners.

Wetlands - Construct 2-3 ephemeral wetlands on public sites each year. Inventory croplands on state sites to identify lands marginal for cultivation and begin by converting these first. Begin a program to encourage landowners to construct and maintain "fishless" impoundments to benefit amphibians and dragonflies. Set a goal for 15-25 new impoundments per year on private lands.

Lakes & Ponds - Promote sound management of water, by producing educational materials for landowners which would cover runoff, pollution and siltation threats to impoundments.

Streams - Increase education efforts in areas of high development or karst topography. Widen and protect riparian areas along high quality streams. Begin restoration efforts on the Saline River and its tributaries.

Caves - Work with landowners and local volunteer groups (grotto's, etc.) to locate and map all caves and sinkholes in the division. Provide technical support and incentives for protection at biologically significant caves. Protect all significant bat hibernacula with preservation agreements and/or gating projects. Maintain 30 m vegetated buffer around caves, sinkholes, and springs. Gate appropriate bat hibernacula (caves, mine entrances), and create Indiana bat winter hibernacula in southern Illinois by opening abandoned/sealed mines.

Primary Communities - Complete inventory of cliff and shelter bluff/overhang habitats and take steps to protect these habitats on public lands and educate private landowners to the uniqueness of these rare habitats. Restoration and management of glades on public and private lands should become a priority. Efforts to work with private landowners to prevent destruction of glade habitat should be increased along with education. Elimination or relocation of recreational activities such as equestrian trails traversing glades should be a top priority.

#### Natural Communities

Xeric upland forest, upland oak-hickory forest, shale glades, limestone glades, sandstone glades, cliffs, shelter bluffs, barrens, caves and sinkholes

#### Critical Species

Alligator snapping turtle, timber rattlesnake, ruffed grouse, Bachman's sparrow, Henslow's sparrow, hooded warbler, ovenbird, worm-eating warbler, southeastern myotis, gray myotis, Indiana bat, Rafinesque's big-eared bat

#### Emphasis Game Species

White-tailed deer, wild turkey, gray and fox squirrel, eastern cottontail, raccoon, large-mouth bass, black and white crappie, bluegill, red ear sunfish, spotted bass, channel catfish

### Nongame Indicator Species

American and Fowlers' toad, black kingsnake, slimy salamander, red-bellied woodpecker, pileated woodpecker, Carolina wren, Carolina chickadee, prairie warbler, Louisiana water thrush, summer tanager, red-eyed vireo

### **Recreational Opportunities**

Horseback riding, hunting (upland and forest game), trapping, fishing, hiking, wildlife observation, biking. All outdoor activity is unique in this natural division, considering the easy access to large blocks of public land and the opportunity for solitude in wilderness areas.

### **Educational/Interpretive**

Portions of a National Wildlife Refuge, National Forest, four state parks, a state trail, and Dixon Springs Agriculture Center; fire/timber stand improvement demonstration areas are being developed on at least five sites.

### **Natural Resource Commodities**

Forest products, hunting reserves/clubs/outfitters

### **Conservation Opportunity Areas**

#### LaRue - Pine Hills - Western Shawnee - Trail of Tears

Protected lands - Pine Hills Ecological Area/Research Natural Area, LaRue Ecological Area/Research Natural Area, Ozark Hills Nature Preserve

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 guided by historical conditions

Priority Resources (Shawnee) - high-quality streams, glades, barrens, large oak-hickory forest tracts, Neotropical migratory birds

Objectives - restoration and management of a forest >50,000 acres; proactively manage natural 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 - Illinois Department of Natural Resources, U.S. Forest Service, The Nature Conservancy

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

### Eastern Shawnee

Protected lands - Shawnee National Forest

Priority resources - high-quality streams, glades, barrens, large oak-hickory forest tracts, Neotropical migratory birds

Objectives - restoration and management of a forest >50,000 acres; proactively manage natural 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, Illinois Nature Preserves Commission

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