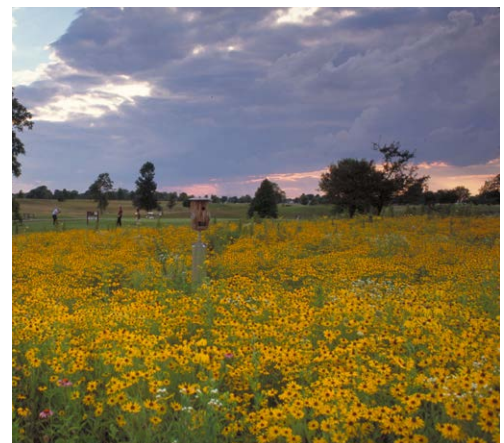




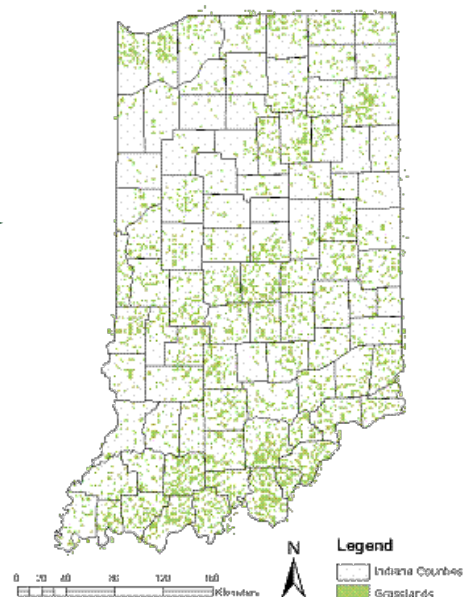
GRASSLANDS HABITAT SUMMARY



Grasslands are defined as open areas dominated by grass species. This habitat includes early successional areas, farm bill program lands, fescue, haylands, pasture, prairies, reclaimed minelands, savanna, vegetated dunes and swales, and shrub/scrub.



Over 15% of Indiana is in grasslands, constituting prairies and reclaimed mine lands. Those areas are primarily in southern, central and extreme northern parts of the state. Grasslands comprise more than 5,800 miles² or 3.7 million acres.



Representative Species of Grasslands

The grasslands habitat guild is represented by several species. These representative species “paint a reasonable mental picture” of grasslands.

Crawfish Frog

Northern Harrier

Badger

Cottontail Rabbit

Red-Winged Blackbird

Bobolink

Eastern Wood-Pewee

Eastern Spadefoot

Eastern Mole

Bull Snake

Short-Tailed Shrew

Northern Bobwhite

Dickcissel

Red-Headed Woodpecker

Eastern Meadowlark

Red Fox

Ornate Box Turtle

Franklin's Ground Squirrel

Grasshopper Sparrow

Savannah Sparrow



From left to right: *Badger, Northern Harrier, and Bobolink (SMaslowski, USFWS)*

Indiana's State Wildlife Action Plan

Species of Greatest Conservation Need (SGCN) in Grasslands

SGCN are animal species whose populations are rare, declining, or vulnerable.

Blue-spotted Salamander
Henslow's Sparrow
Northern Leopard Frog
Sedge wren
Butler's Garter Snake
Western Meadowlark
Smooth Green Snake
Spotted Turtle
American Bittern

Barn Owl
Eastern Spadefoot
Northern Harrier
Blanding's Turtle
Upland Sandpiper
Ornate Box Turtle
Bobcat
Western Ribbon Snake
Plains Pocket Gopher

Crawfish Frog
Loggerhead Shrike
Plains Leopard Frog
Short-eared Owl
Kirtland's Snake
Badger
Franklin's Ground Squirrel
Least Weasel



From left to right: *Henslow's Sparrow, Ribbon Snake, and Short-eared Owl*

Threats to Grasslands

- Habitat degradation
- Commercial or residential development (sprawl)
- Habitat fragmentation
- Residual contamination (persistent toxins)
- Counterproductive financial incentives or regulations
- Successional change
- Agricultural/forestry practices
- Invasive/non-native species
- Mining/acidification
- Point source pollution (continuing)

Indiana's State Wildlife Action Plan

High Priority Conservation Actions for Grasslands

Habitat restoration incentives (financial)

- Support farm programs that convert row-crop areas to grasslands to benefit a variety of birds including American bittern, barn owl, Henslow's sparrow, loggerhead shrike, northern harrier, sedge wren, short-eared owl, upland sandpiper, western meadowlark.
- Develop large-scale grassland restoration projects on reclaimed strip mined lands and assess their effectiveness for providing habitat for area-sensitive bird (SGCN) species.

Habitat protection on public lands

- Restore native grasslands on public land to benefit blue-spotted salamander, crawfish frog, eastern spadefoot, northern leopard frog, plains leopard frog, Blanding's turtle, Butler's garter snake, Kirtland's snake, ornate box turtle, smooth green snake, spotted turtle, western ribbon snake, American bittern, barn owl, Henslow's sparrow, loggerhead shrike, northern harrier, sedge wren, short-eared owl, upland sandpiper, western meadowlark, badger, bobcat, Franklin's ground squirrel, least weasel, plains pocket gopher.
- Restore moist soil units or grassy wetlands for the benefit of blue-spotted salamander, crawfish frog, eastern spadefoot, northern leopard frog, plains leopard frog, Blanding's turtle, Butler's garter snake, Kirtland's snake, smooth green snake, spotted turtle, western ribbon snake, and American bittern, northern harrier, sedge wren, short-eared owl, upland sandpiper, least weasel.
- Convert row-crop areas to grasslands to benefit a variety of SGCN including: blue-spotted salamander, crawfish frog, eastern spadefoot, northern leopard frog, plains leopard frog, Blanding's turtle, Butler's garter snake, Kirtland's snake, ornate box turtle, smooth green snake, spotted turtle, western ribbon snake, barn owl, Henslow's sparrow, loggerhead shrike, northern harrier, sedge wren, short-eared owl, upland sandpiper, western meadowlark, badger, bobcat, Franklin's ground squirrel, least weasel, plains pocket gopher.
- Incorporate management for rare grassland-dependent SGCN such as blue-spotted salamander, crawfish frog, eastern spadefoot, northern leopard frog, plains leopard frog, Blanding's turtle, Butler's garter snake, Kirtland's snake, ornate box turtle, smooth green snake, spotted turtle, western ribbon snake, American bittern, barn Owl, Henslow's sparrow, loggerhead shrike, northern harrier, sedge wren, short-eared owl, upland sandpiper, western meadowlark, badger, bobcat, Franklin's ground squirrel, least weasel, plains pocket gopher on public lands (e.g., Fish and Wildlife Areas, Indiana Dunes National Lakeshore).

Cooperative land management agreements (conservation easements)

- Develop cooperative agreements with transportation agencies for management and restoration of habitats on railroad ROWs to benefit Franklin's ground squirrels, badgers, and other grassland dependent species.

Habitat restoration on public lands

- Incorporate management for rare grassland-dependent SGCN, such as the Franklin's ground squirrel and badger, on public lands (e.g., FWA).

Corridor development/protection

- Identify and promote the retention of natural habitat corridors to connect patches of grassland habitat for the benefit of SGCN>

Land use planning

- Provide technical assistance to land use planning entities to promote development and retention of landscape features and management practices that benefit SGCN.

Restrict public access and disturbance

- Develop and promote implementation of BMPs that limit disturbance to nesting grassland birds (SGCN), especially on public conservation lands.

Habitat restoration through regulation

- Promote the use of native grass and forb vegetation to benefit SGCN on projects conducted under state permits or receiving public funds.
- Provide technical assistance relative to grassland restoration to benefit SGCN to state agencies involved in habitat mitigation.

Technical assistance

- Provide information to landowners and public land managers on methods to manage grassland areas for the benefit of SGCN including: blue-spotted salamander, crawfish frog, eastern spadefoot, northern leopard frog, plains leopard frog, Blanding's turtle, Butler's garter snake, Kirtland's snake, ornate box turtle, smooth green snake, spotted turtle, western ribbon snake, American bittern, barn Owl, Henslow's sparrow, loggerhead shrike, northern harrier, sedge wren, short-eared owl, upland sandpiper, western meadowlark, badger, bobcat, Franklin's ground squirrel, least weasel, plains pocket gopher.

Adaptive Management

- Modify survey and monitoring, research and other conservation actions and activities in response to new information to improve habitat conservation efficiency for SGCN.

Threats to SGCN in Grasslands

- Habitat loss (breeding range)
- Habitat loss (feeding/foraging areas)
- Invasive/non-native species
- Predators (native or domesticated)
- Dependence on irregular resources (cyclical annual variations) (e.g., food, water, habitat limited due to annual variations in availability)
- Degredation of movement/migration routes (overwintering habitats, nesting and staging sites)
- Bioaccumulation of contaminants
- Unintentional take/direct mortality (e.g., vehicle collisions, power line collisions, by catch, harvesting equipment, land preparation machinery)
- Viable reproductive population size or availability
- Small native range (high endemism)

High Priority Conservation Actions for SGCN in Grasslands

Population management

- Determine distribution and relative abundance of grassland-dependent SGCN such as badger and Franklin's ground squirrel.
- Develop survey and monitoring programs for grassland-dependent SGCN such as badgers and Franklin's ground squirrels.

Public education to reduce human disturbance

- Develop and promote implementation of BMPs that limit disturbance to nesting grassland birds (SGCN), especially on public conservation lands.

Exotic/invasive species control

- Control shrub encroachment and invasive species in grassland areas in order to benefit a variety of SGCN including American bittern, barn owl, Henslow's sparrow, loggerhead shrike, northern harrier, sedge wren, short-eared owl, upland sandpiper, western meadowlark.

Protection of migration routes

- Identify and protect potential dispersal corridors for grassland species occupying isolated blocks of habitats

Food plots

- Promote the use of native grass and forb species in the restoration of suitable disturbed areas, such as surfaced mined areas, for the benefit of grassland SGCN.

Threats reduction

- Determine threats to grassland-dependent SGCN, such as the Franklin's ground squirrel.

Habitat protection

- Promote the protection and proper management of grassland habitat, including wet prairies, for the benefit of grassland SGCN.

Regulation of collecting

- Encourage public support for collection prohibitions to protect vulnerable populations of grassland SGCN, especially reptiles and amphibians.

Native predator control

- Investigate the impact of predation, especially raccoon predation, on vulnerable populations of grassland SGCN, especially turtles (eggs).

Limiting contact with pollutants

- Work with the State Chemist Office and other to develop herbicide and pesticide label directions that are protective of SGCN
- Support compliance with all state and federal environmental regulations relative to grasslands lands.

Adaptive Management

- Modify survey and monitoring, research and other conservation actions and activities in response to new information to improve conservation efficiency for SGCN.

