



Forest: Forest opening

Description

Forest openings are herbaceous or shrubby openings or patches in the forest canopy. They are variable in size and can be created or maintained by tree fall, fire, tree disease, hydrological conditions, or soil conditions. Forest openings can be "permanent" (e.g., a bog opening or rock outcrop) or they can be ephemeral (e.g., patch created by treefall or fire). Forest openings, depending upon the type of opening and context, can act as "resource patches" for wildlife. Forest openings can promote invasive species and some native species respond negatively to these openings.

General Condition of Feature

About 55% of the forest openings in the Southern Lower Peninsula are considered to be in fair to good condition. Much of the remaining areas are considered degraded (~30%). While forest openings are very common in the region, quality openings within a healthy forest are fairly rare.

Associated Natural Communities

N/A – no native natural communities

Associated Species of Greatest Conservation Need

INSECTS

grey petaltail (*Tachopteryx thoreyi*)
a spur-throat grasshopper (*Melanoplus eurycercus*)
Hebard's green-legged locust (*Melanoplus viridipes*)
post-oak grasshopper (*Dendrotettix quercus*)
persius duskywing (*Erynnis persius persius*)
Dukes' skipper (*Euphyes dukesi*)
Karner blue (*Lycaeides melissa samuelis*)
Henry's elfin (*Callophrys henrici*)
frosted elfin (*Callophrys irus*)
swamp metalmark (*Calephelis mutica*)
regal fritillary (*Speyeria idalia*)
tawny crescent (*Phyciodes batesii*)
Sprague's pygarctia (*Pygarctia spraguei*)
three-staff underwing (*Catocala amestris*)
Newman's brocade (*Meropon ambifusca*)

AMPHIBIANS

smallmouth salamander (*Ambystoma texanum*)
Fowler's toad (*Bufo fowleri*)
pickerel frog (*Rana palustris*)

REPTILES

Kirtland's snake (*Clonophis kirtlandii*)
blue racer (*Coluber constrictor foxii*)
northern ringneck snake (*Diadophis punctatus edwardsii*)
eastern fox snake (*Elaphe gloydi*)
black rat snake (*Elaphe obsoleta obsoleta*)
eastern hognose snake (*Heterodon platirhinos*)
smooth green snake (*Liochlorophis vernalis*)

REPTILES cont.

copperbelly water snake (*Nerodia erythrogaster neglecta*)
eastern massasauga (*Sistrurus catenatus catenatus*)
spotted turtle (*Clemmys guttata*)
Blanding's turtle (*Emydoidea blandingii*)
wood turtle (*Glyptemys insculpta*)
eastern box turtle (*Terrapene carolina carolina*)

BIRDS

Cooper's Hawk (*Accipiter cooperii*)
Northern Goshawk (*Accipiter gentilis*)
American Woodcock (*Scolopax minor*)
Long-eared Owl (*Asio otus*)
Chuck-will's-widow (*Caprimulgus carolinensis*)
Whip-poor-will (*Caprimulgus vociferus*)
Northern Flicker (*Colaptes auratus*)
Blue-winged Warbler (*Vermivora pinus*)
Golden-winged Warbler (*Vermivora chrysoptera*)
Kentucky Warbler (*Oporornis formosus*)
Connecticut Warbler (*Oporornis agilis*)
Eastern Towhee (*Pipilo erythrophthalmus*)

MAMMALS

least shrew (*Cryptotis parva*)
hoary bat (*Lasiurus cinereus*)
northern bat or northern myotis (*Myotis septentrionalis*)
evening bat (*Nycticeius humeralis*)
southern bog lemming (*Synaptomys cooperi*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Climate change
- Altered fire regime: A lack of fire leads to succession to forested features within forest openings.
- Altered hydrologic regime

HABITAT CONVERSION

- Incompatible natural resource management: Management for younger forests reduces the likelihood of opening creation through windthrow and other natural dynamics.

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Legal injunctions against logging on public land reduce opportunities for artificial creation of openings and lead to succession, which fills in existing openings. Clear-cutting eliminates the potential for creation of isolated openings within a forested matrix.

MICHIGAN'S WILDLIFE ACTION PLAN
TERRESTRIAL SYSTEMS: SOUTHERN LOWER PENINSULA

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Invasive shrubs may affect the species composition within openings. The presence of openings within the forest may aid the dispersal of invasive species (e.g., brown-headed cowbirds (*Molothrus ater*) using grassy openings to expand their range northward).

Conservation Actions Needed [Threats addressed]

LAND, WATER & SPECIES MANAGEMENT

- Manage to approximate natural disturbance regimes using prescribed fire and restoration of natural water flow patterns. [Altered fire regime; Altered hydrologic regimes]
- Assess management goals to ensure that they provide for a diversity of communities across the landscape. [Incompatible natural resource management]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Consider wildlife values, timber values, and natural landcover and conditions when selecting vegetative species composition as part of management of these areas [Incompatible natural resource management]
- Develop and implement best management practices for timber harvests that address wildlife needs including the importance of forest opening maintenance. [Incompatible natural resource management; Forestry practices]

EDUCATION & AWARENESS

- Educate the public about the value of regulated timber harvests for the management of quality wildlife habitat. [Forestry practices]

CAPACITY BUILDING

- Develop networks between landowners and private timber companies to provide a coordinated response to legal challenges to timber harvests. [Forestry practices]

Research and Survey Needs

- Develop a functional definition of forest opening. At what point (size, configuration, etc.) does an opening become the surrounding matrix?
- A better understanding is needed of the management needs and appropriate management techniques to maintain and improve forest openings. What characteristics of forest openings provide the greatest value to wildlife? How does the location of the opening impact its value to wildlife?
- A better understanding is needed of the temporal and spatial distribution of disturbance and its influence. What factors provide disturbance within forest openings?
- Identify invasive species and diseases that may degrade the value of forest openings for wildlife. Develop techniques to control invasive species. Develop treatments for diseases that threaten mesic conifers.
- Document the historic and current range of variation of forest openings. This includes variables such as size, species composition, and vegetation structure.
- Determine whether differences exist in the value to wildlife of natural openings and artificial openings. Quantify the differences between these communities.
- Determine the impacts of development (gas pipelines, cell towers, etc.) on forest openings. Do these areas continue to function similarly and provide habitat to SGCN after development? Do these areas contribute more to forest fragmentation than other forest openings?
- Examine both the positive and negative values of forest openings to wildlife. These systems contribute to fragmentation but may also provide travel corridors or patches of necessary habitat. Is there an optimal amount of forest openings which balances these effects?
- Examine how the size, shape, and vegetative species composition of forest openings affect their value to wildlife. Are there other variables of the condition of forest openings that influence their value to wildlife? Does the feature type or species composition of the surrounding matrix have a significant effect on the value to wildlife?
- Inventory forest opening management methodologies. How prevalent are these techniques? What are the impacts of each technique on wildlife?
- Determine the role of forest openings in facilitating range expansion of invasive species.

Monitoring

- Track woody species composition and diversity in and around forest openings, with attention to structure and age class.
- Track the presence and abundance of invasive species.
- Track acreage and distribution of forest openings.
- Track hydrology patterns and water quality in lowland forest communities.