



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 50% of the forest openings in the Eastern Upper Peninsula are considered to be degraded. Most of the remaining areas are considered to be in fair or good condition (~45%).

Associated Natural Communities

N/A – no native natural communities

Associated Species of Greatest Conservation Need

INSECTS

Hine's emerald dragonfly (*Somatochlora hineana*)
incurvate emerald dragonfly (*Somatochlora incurvata*)
ebony boghaunter (*Williamsonia fletcheri*)
early hairstreak (*Erora laeta*)
northern blue (*Lycaeides idas nabokovi*)
Henry's elfin (*Callophrys henrici*)
tawny crescent (*Phyciodes batesii*)
hoary comma (*Polygonia gracilis*)

AMPHIBIANS

pickerel frog (*Rana palustris*)

REPTILES

blue racer (*Coluber constrictor foxii*)
northern ringneck snake (*Diadophis punctatus edwardsii*)
smooth green snake (*Liochlorophis vernalis*)
eastern massasauga (*Sistrurus catenatus catenatus*)
Blanding's turtle (*Emydoidea blandingii*)
wood turtle (*Glyptemys insculpta*)

BIRDS

Spruce Grouse (*Falcapennis canadensis*)
Cooper's Hawk (*Accipiter cooperii*)
Northern Goshawk (*Accipiter gentilis*)

BIRDS cont.

Merlin (*Falco columbarius*)
Upland Sandpiper (*Bartramia longicauda*)
American Woodcock (*Scolopax minor*)
Long-eared Owl (*Asio otus*)
Whip-poor-will (*Caprimulgus vociferus*)
Black-backed Woodpecker (*Picoides arcticus*)
Northern Flicker (*Colaptes auratus*)
Ruby-crowned Kinglet (*Regulus calendula*)
Golden-winged Warbler (*Vermivora chrysoptera*)
Kirtland's Warbler (*Dendroica kirtlandii*)
Palm Warbler (*Dendroica palmarum*)
Connecticut Warbler (*Oporornis agilis*)
Eastern Towhee (*Pipilo erythrophthalmus*)
Vesper Sparrow (*Poocetes gramineus*)
Red Crossbill (*Loxia curvirostra*)

MAMMALS

arctic shrew (*Sorex arcticus*)
pygmy shrew (*Sorex hoyi*)
hoary bat (*Lasiurus cinereus*)
northern bat or northern myotis (*Myotis septentrionalis*)
moose (*Alces alces*)
least chipmunk (*Tamias minimus*)
southern bog lemming (*Synaptomys cooperi*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered fire regime: A lack of fire may lead to succession within openings to forested feature types.

HABITAT CONVERSION

- Industrial, residential, and recreational development
- Conversion to agriculture: Forest openings may be converted to food plots for wildlife.

BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Deliberate introduction of exotic plants (e.g., *Cannabis sativa*) may be locally common in the Eastern Upper Peninsula.

Conservation Actions Needed [Threats addressed]

LAND, WATER & SPECIES MANAGEMENT

- Manage to approximate natural disturbance regimes using prescribed fire. [Altered fire regime]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]

LAW & POLICY

- Work with municipalities to promote planning and zoning insuring adequate protection for forest openings or their conversion to features that have greater value to wildlife. [Industrial, residential and recreational development]

- Locate and remove plantings of controlled substances. [Invasive plants and animals]

EDUCATION & AWARENESS

- Educate private landowners on the value of natural vegetation communities, rather than cultivated crops, within forest openings. [Conversion to agriculture]

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?
- Determine whether forest openings function as sinks. Determine how this varies by species?
- 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.