



Forest: Dry conifer

Description

Dry conifer forests have dry soils and are generally dominated by such trees as jack pine (*Pinus banksiana*), red pine (*Pinus resinosa*), and white pine (*Pinus strobus*). Fire is an important natural disturbance in many dry conifer forests, where the frequency and magnitude of fires play a major role in determining species composition, successional stage, forest structural characteristics, and configuration. Dry forest openings are also created by high winds or disease. With fire suppression, some dry conifer forests are colonized by shade-tolerant maples or conifers (i.e., balsam fir, white spruce) and thus succeed to mesic forests.

General Condition of Feature

Much of the dry conifer in the Northern Lower Peninsula is considered to be in fair or good condition (~50%). Much of the remaining areas are considered degraded or very degraded (~45%). Dry hardwood natural communities are considered rare or uncommon in Michigan.

Associated Natural Communities

Boreal Forest
Dry Northern Forest

Dry-mesic Northern Forest
Wooded Dune and Swale Complex

Associated Species of Greatest Conservation Need

INSECTS

secretive locust (*Appalachia arcana*)
dusted skipper (*Atrytonopsis hianna*)
gorgone checkerspot (*Chlosyne gorgone carlota*)
pine imperial moth (*Eacles imperialis pini*)
boreal fan moth (*Brachionycha borealis*)

AMPHIBIANS

blue-spotted salamander (*Ambystoma laterale*)

REPTILES

black rat snake (*Elaphe obsoleta obsoleta*)
eastern hognose snake (*Heterodon platirhinus*)
smooth green snake (*Liochlorophis vernalis*)
eastern massasauga (*Sistrurus catenatus*
catenatus)
eastern box turtle (*Terrapene carolina carolina*)

BIRDS

Spruce Grouse (*Falcapennis canadensis*)
Sharp-tailed Grouse (*Tympanuchus phasianellus*)
Bald Eagle (*Haliaeetus leucocephalus*)
Cooper's Hawk (*Accipiter cooperii*)
Northern Goshawk (*Accipiter gentilis*)
Merlin (*Falco columbarius*)

BIRDS cont.

Black-billed Cuckoo (*Coccyzus erythrophthalmus*)
Common Nighthawk (*Chordeiles minor*)
Whip-poor-will (*Caprimulgus vociferus*)
Black-backed Woodpecker (*Picoides arcticus*)
Brown Thrasher (*Toxostoma rufum*)
Kirtland's Warbler (*Dendroica kirtlandii*)
Prairie Warbler (*Dendroica discolor*)
Connecticut Warbler (*Oporornis agilis*)
Eastern Towhee (*Pipilo erythrophthalmus*)
Red Crossbill (*Loxia curvirostra*)
White-winged Crossbill (*Loxia leucoptera*)
Evening Grosbeak (*Coccothraustes vespertinus*)

MAMMALS

pygmy shrew (*Sorex hoyi*)
red bat (*Lasiurus borealis*)
hoary bat (*Lasiurus cinereus*)
American marten (*Martes americana*)
northern flying squirrel (*Glaucomys sabrinus*)
woodland vole (*Microtus pinetorum*)
southern bog lemming (*Synaptomys cooperi*)
deer mouse (*Peromyscus maniculatus gracilis*)
snowshoe hare (*Lepus americanus*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Altered fire regime: Lack of fire may lead to vertical simplification.
- Fragmentation

HABITAT CONVERSION

- Industrial, residential, and recreational development
- Incompatible natural resource management: An emphasis on aspen (*Populus* spp.) retention may result in altered community composition.

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Inappropriate forestry practices may lead to vertical simplification. Cultivation of harvested land may lead to a lack of species diversity.
- Mining practices: Oil and gas development may impact dry conifer areas.

Conservation Actions Needed [Threats addressed]

LAND & WATER PROTECTION

- Expand conservation easement programs [variety of threats]
- Support and expand conservation purchase of high quality occurrences [variety of threats]

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

LAND, WATER & SPECIES MANAGEMENT

- Manage to approximate natural disturbance regimes using prescribed fire. [Altered fire regime]
- 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]
- Work with land managers to develop priorities for dry conifer restoration and management. [Incompatible natural resource management; Fragmentation]
- Develop and implement forestry best management practices which address the wildlife value of dry conifer systems. [Forestry practices]
- Manage for representation of all successional stages. [Incompatible natural resource management; Forestry practices]
- Promote the closure of non-essential resource management roads and seek other road closure opportunities that do not conflict with other appropriate uses. [Fragmentation]
- Temporary roads or clearings for oil and gas extraction should be planned and constructed to be revegetated. [Mining practices]
- Where large diameter tree snags and coarse woody debris are occasional or rare, seek to increase their volume. [Incompatible natural resource management; Forestry practices]
- When managing red pine plantations consider techniques that favor natural successional pathways. [Incompatible natural resource management]
- Support Landowner Incentive Programs to foster conservation on private land [variety of threats]

LAW & POLICY

- Work with municipalities to promote planning and zoning insuring adequate protection for dry conifer systems. [Fragmentation; Industrial, residential and recreational development]
- Develop new and enforce existing regulations for mitigation of oil and gas extraction facilities. [Mining practices]

Research and Survey Needs

- An inventory needs to be conducted to determine the location, condition, and classification of dry conifers and of the opportunities for restoration.
- Test the assumption that dry conifer remnants are widely dispersed and becoming more fragmented resulting in a loss of species diversity.
- A better understanding is needed of the management needs and appropriate management techniques to maintain and improve dry conifer features.
- A better understanding is needed of the temporal and spatial distribution of disturbance and its influence on dry conifer communities. What factors provide disturbance within dry conifer communities?
- Identify the characteristics of dry conifer systems that contribute to their value to wildlife and which species may be affected by changes in these characteristics.
- Identify invasive species and diseases that may degrade the value of dry conifer sites for wildlife. Develop techniques to control invasive species. Develop treatments for diseases that threaten mesic conifers.
- Document the historic and current range of variation between dry conifer sites. This includes variables such as species composition, age or size class, and stand size.
- Determine whether differences exist in wildlife value of natural stands, forest plantations, and barrens. Quantify the structural differences between these communities.

Monitoring

- Track woody species composition and diversity, with attention to structure and age class.
- Track the presence and abundance of invasive species.
- Track acreage and distribution of dry conifers.