



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

Most of the dry conifer within the Eastern Upper Peninsula is considered to be in fair or good condition (~75%) and some areas are considered in excellent condition (~10%). The remaining areas are considered degraded or very degraded. 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

northern blue (*Lycaeides idas nabokovi*)
 frigga fritillary (*Boloria frigga*)
 freija fritillary (*Boloria freija*)
 hoary comma (*Polygonia gracilis*)

AMPHIBIANS

blue-spotted salamander (*Ambystoma laterale*)

REPTILES

western fox snake (*Elaphe vulpina*)
 smooth green snake (*Liochlorophis vernalis*)
 eastern massasauga (*Sistrurus catenatus catenatus*)

BIRDS

Spruce Grouse (*Falci pennis canadensis*)
 Sharp-tailed Grouse (*Tympanuchus phasianellus*)
 Bald Eagle (*Haliaeetus leucocephalus*)
 Cooper's Hawk (*Accipiter cooperii*)
 Northern Goshawk (*Accipiter gentilis*)
 Merlin (*Falco columbarius*)
 Upland Sandpiper (*Bartramia longicauda*)
 Black-billed Cuckoo (*Coccyzus erythrophthalmus*)
 Common Nighthawk (*Chordeiles minor*)

BIRDS cont.

Whip-poor-will (*Caprimulgus vociferus*)
 Black-backed Woodpecker (*Picoides arcticus*)
 Brown Thrasher (*Toxostoma rufum*)
 Kirtland's Warbler (*Dendroica kirtlandii*)
 Prairie Warbler (*Dendroica discolor*)
 Palm Warbler (*Dendroica palmarum*)
 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*)
 lynx (*Lynx canadensis*)
 American marten (*Martes americana*)
 least chipmunk (*Tamias minimus*)
 northern flying squirrel (*Glaucomys sabrinus*)
 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.

HABITAT CONVERSION

- Incompatible natural resource management: Planting of red pine where jack pine should be planted

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. Stands may convert to other species after harvest due a lack of effort for regeneration.

BIOLOGICAL INTERACTIONS

- Disease, pathogens, and parasites: Species like jack pine budworm (*Choristoneura pinus*) may affect community composition. Public land harvests triggered by the appearance of budworm may minimize the impact in these systems; private landowners may not harvest infested stands.

MICHIGAN'S WILDLIFE ACTION PLAN
TERRESTRIAL SYSTEMS: EASTERN UPPER PENINSULA

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]

LAND, WATER & SPECIES MANAGEMENT

- Manage to approximate natural disturbance regimes using prescribed fire. [Altered fire regime]
- Implement invasive species and parasite monitoring and control programs. [Disease, pathogens, and parasites]
- 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 retention and management. [Forestry practices]
- Evaluate opportunities to modify silvicultural practices to improve potential for jack-pine related species. [Forestry practices]
- Develop and implement forestry best management practices which address the value of dry conifer systems for wildlife. [Forestry 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]
- Manage for representation of all successional stages. [Incompatible natural resource management, Forestry practices]
- Support Landowner Incentive Programs to foster conservation on private land [variety of threats]
- When managing red pine plantations consider techniques that favor natural successional pathways. [Incompatible natural resource management]

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. 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 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 the value to wildlife 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 the presence of forest diseases and pathogens.
- Track acreage and distribution of dry conifers.