



Terrestrial characteristics: Late successional forest

Description

Late successional forests are forests that have experienced many decades or centuries without significant environmental disturbance. Plant communities of these forests have gone through a series of successional stages over time. The natural disturbance regime is characterized by gap phase dynamics: frequent, small windthrow gaps allow for the regeneration of the shade-tolerant canopy dominants. In Michigan, late successional forests commonly include hemlock (*Tsuga canadensis*), sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), and yellow birch (*Betula alleghaniensis*).

General Condition of Feature

Late successional forest, as a forest characteristic, is generally considered to be degraded or very degraded across about 60% of the Western Upper Peninsula. About 40% of the region is considered to be in fair or good condition in terms of late successional forest.

Associated Natural Communities

Mesic Northern Forest

Associated Species of Greatest Conservation Need

AMPHIBIANS

spotted salamander (*Ambystoma maculatum*)

BIRDS

Bald Eagle (*Haliaeetus leucocephalus*)

Cooper's Hawk (*Accipiter cooperii*)

Northern Goshawk (*Accipiter gentilis*)

Red-shouldered Hawk (*Buteo lineatus*)

Wood Thrush (*Hylocichla mustelina*)

BIRDS cont.

Northern Parula (*Parula americana*)

Black-throated Blue Warbler (*Dendroica caerulescens*)

Blackburnian Warbler (*Dendroica fusca*)

Cerulean Warbler (*Dendroica cerulea*)

Eastern Towhee (*Pipilo erythrophthalmus*)

Red Crossbill (*Loxia curvirostra*)

Associated Threats

MODIFICATION OF NATURAL PROCESSES

- Climate change: Increased frequency of storms makes destructive events more likely.
- Fragmentation: A lack of ownership longevity decreases emotional investment in the quality of wildlife habitat and results in splitting and selling parcels.

HABITAT CONVERSION

- Industrial, residential, and recreational development
- Incompatible natural resource management: Short rotation cycles (shorter than the life span of the tree species within the stand) prevent the establishment of late successional stands.

CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Timber management that discriminates against certain age or size classes reduces the diversity of the stand.

BIOLOGICAL INTERACTIONS

- Other biological interactions: White-tailed deer (*Odocoileus virginianus*) browse affects the multi-layer canopy within forests and hinders regeneration.

EDUCATION

- Social attitudes: Economic values drive timber harvest selection, especially for private landowners and the timber industry.

Conservation Actions Needed [Threats addressed]

LAND, WATER, & SPECIES MANAGEMENT

- Manage for late successional forest at representative and appropriate areas across the landscape. Maintenance for late successional forests may include prescribed fire and mechanical treatments. [Altered fire regime, Forestry practices, Incompatible natural resource management]
- Manage deer densities to allow regeneration and growth of woody vegetation. [Other biological interactions]
- Develop and enforce forestry best management practices which address the value of late successional forest to wildlife. [Forestry practices; Incompatible natural resource management]
- Promote the closure of non-essential resource management roads and seek other road closure opportunities that do not conflict with other appropriate uses. [Fragmentation]

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

LAW & POLICY

- Develop local ordinances to retain larger parcel sizes in late successional forest complexes. Work with municipalities to promote planning and zoning insuring adequate protection for late successional forests. [Fragmentation; Industrial, residential, and recreational development]

EDUCATION & AWARENESS

- Provide education to landowners on the value of late successional forest to wildlife. [Fragmentation; Social attitudes]

Research and Survey Needs

- Identify and quantify characteristics that define late successional forest.
- Compare the effect of stand age with stand structure in providing value to wildlife in late successional forest. Can a young stand provide similar benefits as an old stand if it has a similar structure?
- Develop management techniques that will establish or maintain late successional forests.

Monitoring

- Track abundance and distribution of late successional forest across the landscape.