



## 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 degraded or very degraded across much (~60%) of the Northern Lower Peninsula. Most of the remaining area is considered to be of fair or good condition.

### 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*)

Ruby-crowned Kinglet (*Regulus calendula*)

Wood Thrush (*Hylocichla mustelina*)

Northern Parula (*Parula americana*)

#### BIRDS cont.

Black-throated Blue Warbler (*Dendroica caerulescens*)

Blackburnian Warbler (*Dendroica fusca*)

Cerulean Warbler (*Dendroica cerulea*)

Prothonotary Warbler (*Protonotaria citrea*)

Worm-eating Warbler (*Helminthos vermivorus*)

Louisiana Waterthrush (*Seiurus motacilla*)

Eastern Towhee (*Pipilo erythrophthalmus*)

Red Crossbill (*Loxia curvirostra*)

### Associated Threats

#### MODIFICATION OF NATURAL PROCESSES

- Altered fire regime: Large, intensive fires may impact late successional forest. Fire suppression carries the hazard of allowing a buildup of fuel and a higher probability of catastrophic fire.
- Fragmentation

#### HABITAT CONVERSION

- Industrial, residential, and recreational development
- Incompatible natural resource management: Management goals which emphasize early successional stages reduce the likelihood of establishment of late successional forest. A lack of visual management may increase development pressures due to a lack of aesthetics.

#### CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Forestry practices: Harvest in late successional forest may be detrimental. This may be exacerbated by a demand for forest products from this system, a lack of protection for these systems, and a lack of appropriate planning to maintain a late successional stage.

#### BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Invasive insects may impact these forests.

### Conservation Actions Needed [Threats addressed]

#### LAND, WATER & SPECIES MANAGEMENT

- Manage to approximate natural disturbance regimes using prescribed fire. [Altered fire regime]
- 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]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Work with land managers to develop priorities for late successional forest establishment, retention, and management. [Incompatible natural resource management]
- Develop and implement forestry best management practices which address the value of late successional forest for wildlife. [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]

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

*LAW & POLICY*

- Work with municipalities to promote planning and zoning insuring adequate protection for late successional forest.  
[Fragmentation; Industrial, residential, and recreational development]

Research and Survey Needs

- Identify and quantify characteristics that define late successional forest.
- Compare the effect of stand age with stand structure in providing wildlife value 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.