

## USGS-NPS Vegetation Mapping Program

### Isle Royale National Park

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#### Thuja occidentalis / Abies balsamea - Acer spicatum Forest

COMMON NAME	Northern White-cedar / Balsam Fir - Mountain Maple Forest
SYNONYM	White Cedar - Boreal Conifer Mesic Forest
PHYSIOGNOMIC CLASS	Forest (I)
PHYSIOGNOMIC SUBCLASS	Evergreen forest (I.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar needle-leaved evergreen forest (I.A.8)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (I.A.8.N)
FORMATION	Conical-crowned temperate or subpolar needle-leaved evergreen forest (I.A.8.N.c)
ALLIANCE	THUJA OCCIDENTALIS FOREST ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM TERRESTRIAL

#### RANGE

##### **Isle Royale National Park**

This community is uncommon, and widely scattered throughout the park.

##### **Globally**

This community is found in northern Minnesota, northern Wisconsin, northern Michigan, and northwestern Ontario.

#### ENVIRONMENTAL DESCRIPTION

##### **Isle Royale National Park**

This community occupies gentle to steep slopes at elevations from 620 to 910 feet. Soils are usually sandy loams.

##### **Globally**

This community is found on gentle wet-mesic slopes to very steep well-drained slopes (MN NHP 1993). The predominant aspect is north to northeast. Soils are moderately deep to deep (50-100 cm), calcareous, coarse to fine textured, and often contain boulders at the surface (Ohmann and Ream 1971, Sims *et al.* 1989).

#### MOST ABUNDANT SPECIES

##### **Isle Royale National Park**

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Thuja occidentalis</i> , <i>Abies balsamea</i>

##### **Globally**

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Thuja occidentalis</i>
Tree subcanopy	<i>Abies balsamea</i>

#### CHARACTERISTIC SPECIES

##### **Isle Royale National Park**

*Thuja occidentalis*

##### **Globally**

*Thuja occidentalis*, *Abies balsamea*, *Acer spicatum*, *Coptis trifolia*

#### VEGETATION DESCRIPTION

##### **Isle Royale National Park**

This white cedar mesic forest is an evergreen forest with a variable canopy cover ranging from 50 to 90% cover. *Thuja occidentalis* is the most abundant canopy tree; *Abies balsamea* and *Betula papyrifera* are common associates. Cover of short shrubs varies from 0 to 60%; the most abundant shrubs are *Rubus parviflorus* (25 to 50% cover), *Rubus pubescens* and *Diervilla lonicera*. Herbaceous cover varies from 20 to 70%; the most abundant herbs are *Aralia nudicaulis*, *Lycopodium annotinum*, *Streptopus roseus*, and *Cornus canadensis*.

##### **Globally**

The overstory is dominated by coniferous trees, with or without a substantial deciduous component. *Thuja occidentalis* is the most abundant tree and may occur in pure stands. Usually there are other canopy species, especially *Abies balsamea*, *Betula papyrifera*, *Picea glauca*, *Picea mariana*, *Populus tremuloides*, and *Pinus strobus*. There is usually an abundant shrub/sapling layer with saplings of *Thuja occidentalis* and *Abies balsamea* along with the shrubs *Acer spicatum*, *Corylus cornuta*, *Linnaea borealis*, *Lonicera canadensis*, *Rubus pubescens*, and *Sorbus decora*. The ground layer is typically diverse on mesic to wet-mesic

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stands and less so on steep drier stands. Wet-mesic stands can contain a hummock and hollow topography, with a seasonally saturated hydrology. Typical species include *Aralia nudicaulis*, *Aster macrophyllus*, *Clintonia borealis*, *Coptis trifolia*, *Cornus canadensis*, *Dryopteris carthusiana*, *Galium triflorum*, *Maianthemum canadense*, *Mitella nuda*, and *Trientalis borealis*. Mosses include *Drepanocladus uncinatus*, *Hylocomium splendens*, *Plagiomnium cuspidatum*, *Pleurozium schreberi*, *Ptilium crista-castrensis*, and *Rhytidiadelphus triquetrus* and, in wetter phases of the type, *Sphagnum* spp (Ohmann and Ream 1971, Sims *et al.* 1989, Chambers *et al.* 1997).

#### OTHER NOTEWORTHY SPECIES

##### **Isle Royale National Park**

Information not available.

CONSERVATION RANK G4.

DATABASE CODE CEGLO02449

MAP UNITS 04

#### COMMENTS

##### **Globally**

Browsing by deer can be a serious hindrance to *Thuja occidentalis* reproduction (MN NHP 1993).

#### REFERENCES

- Chambers, B.A., B.J. Naylor, J. Nieppola, B. Merchant, P. Uhlig. Field Guide to Forest Ecosystems of Central Ontario. Southcentral Science Section (SCSS) Field Guide FG-01, Ontario Ministry of Natural Resources, North Bay, Ontario, Canada. 200 pp.
- Grigal, D. F. and L. F. Ohmann. 1975. Classification, description, and dynamics of upland plant communities within a Minnesota wilderness area. *Ecological Monographs* 45:389-407.
- Minnesota Natural Heritage Program. 1993. Minnesota's native vegetation: A key to natural communities. Ver. 1.5. Minn. Dep. Nat. Resour., Nat. Heritage Prog. St. Paul, Minn. 110 p.
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- Sims, R. A., W. D. Towill, K. A. Baldwin, and G. M. Wickware. 1989. Field guide to the forest ecosystem classification for northwestern Ontario. Ontario Ministry of Natural Resources.