

USGS-NPS Vegetation Mapping Program

Isle Royale National Park

Thuja occidentalis - Fraxinus nigra Forest

COMMON NAME Northern White-cedar - Black Ash Forest
SYNONYM White Cedar - Black Ash Swamp
PHYSIOGNOMIC CLASS Forest (I)
PHYSIOGNOMIC SUBCLASS Mixed evergreen-deciduous forest (I.C)
PHYSIOGNOMIC GROUP Mixed needle-leaved evergreen - cold-deciduous forest (I.C.3)
PHYSIOGNOMIC SUBGROUP Natural/Semi-natural (I.C.3.N)
FORMATION Saturated mixed needle-leaved evergreen - cold-deciduous forest (I.C.3.N.d)
ALLIANCE THUJA OCCIDENTALIS - ACER RUBRUM SATURATED FOREST ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 3

USFWS WETLAND SYSTEM TERRESTRIAL

RANGE

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This community occurs primarily at the southwest end of the island; the furthest east it was sampled was near the west end of Chickenbone Lake.

Globally

This association can be found in Michigan and Ontario.

ENVIRONMENTAL DESCRIPTION

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This community occupies wet depressions with saturated soils, at elevations ranging from 700 to 1200 feet.

Globally

This type is found in confined basins surrounded by upland or as part of large wetland complexes. If associated with peatlands, it is usually found on the upland border where wetter, more minerotrophic conditions exist. Soils are either deep, well decomposed peats or shallow well decomposed peats over clay. Microtopography of hummocks and hollows may be well developed or absent. Standing water is often present. The water regime is seasonally flooded to saturated (M. Smith personal communication 1999).

MOST ABUNDANT SPECIES

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<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Thuja occidentalis</i> , <i>Fraxinus nigra</i>
Tall shrub	<i>Alnus incana</i>
Forb	<i>Symplocarpus foetidus</i>

Globally

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Thuja occidentalis</i> , <i>Fraxinus nigra</i>
Tall shrub	<i>Alnus incana</i>

CHARACTERISTIC SPECIES

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Thuja occidentalis, *Fraxinus nigra*, *Symplocarpus foetidus*

Globally

Thuja occidentalis, *Fraxinus nigra*, *Alnus incana*

VEGETATION DESCRIPTION

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This white cedar - black ash swamp is a wooded wetland with a mixed evergreen and deciduous tree canopy, and a variable canopy closure ranging from 40 to 100% canopy cover. *Thuja occidentalis* and *Fraxinus nigra* are codominant (each typically with 25 to 50% cover). *Betula alleghaniensis* is a common associate in the canopy (typically with less than 20% cover). The shrub layer is variable, ranging from 5 to 50% cover. The most abundant tall shrubs are *Alnus incana*, and saplings of *Fraxinus nigra*, *Thuja occidentalis*, and *Acer spicatum*. Dwarf shrub cover varies from 0 to 20%, and herb

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cover varies from 40 to 90%. *Rubus pubescens* is a common dwarf shrub, and *Symplocarpus foetidus* is the most abundant herb. Other characteristic herbs are *Carex intumescens*, *Mitella nuda*, *Equisetum fluviatile*, and *Athyrium filix-femina*.

Globally

Canopy cover is variable, sometimes fairly open. *Thuja occidentalis* and *Fraxinus nigra* dominate the canopy, but some stands may have *Fraxinus nigra* in the upper canopy and *Thuja occidentalis* in the lower canopy. *Thuja occidentalis* also tends to occur on the hummocks and *Fraxinus nigra* in the hollows. *Populus tremuloides* can be a major component, but this may be caused by logging of *Thuja occidentalis*. *Acer rubrum*, *Betula alleghaniensis*, and *Picea glauca* may also be present. Shrubs include *Acer spicatum*, *Alnus incana*, *Cornus alternifolia*, *Lonicera canadensis*, *Ribes* spp., and *Rubus pubescens*. The herb rich layer includes *Aralia nudicaulis*, *Arisaema triphyllum*, *Carex gracillima*, *Carex intumescens*, *Clintonia borealis*, *Cornus canadensis*, *Dryopteris carthusiana*, *Galium triflorum*, *Maianthemum canadense*, *Tiarella cordifolia* and *Trientalis borealis* (Chambers *et al.* 1997). In northern Minnesota, moss cover is highly variable, ranging from 30-90%. The most abundant mosses are *Rhytidiadelphus triquetrus*, *Calliergon cordifolium*, *Calliergon giganteum*, *Mniaceae*, *Thuidium* spp., *Sphagnum warnstorffii*, and *Sphagnum squarrosum* (M. Smith personal communication 1999).

OTHER NOTEWORTHY SPECIES

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Information not available.

CONSERVATION RANK G?.

DATABASE CODE CEGL005165

MAP UNITS 18

COMMENTS

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Globally

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.
- Harris, A. G., S. C. McMurray, P. W. C. Uhlig, J. K. Jeglum, R. F. Foster, and G. D. Racey. 1996. Field guide to the wetland ecosystem classification for northwestern Ontario. Ont. Minist. Nat. Resour., Northwest Sci. Tech. Field Guide FG-01. Thunder Bay, Ont. 74 p.