

USGS-NPS Vegetation Mapping Program

Isle Royale National Park

***Picea mariana* / *Alnus incana* / *Sphagnum* spp. Forest**

COMMON NAME	Black Spruce / Speckled Alder / Peatmoss species Forest
SYNONYM	Black Spruce / Alder Rich Swamp
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	Saturated temperate or subpolar needle-leaved evergreen forest (I.A.8.N.g)
ALLIANCE	PICEA MARIANA SATURATED FOREST ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM TERRESTRIAL

RANGE

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This community is rare and scattered, it was sampled at two sites: at the east end of Lake Halloran (southwest end of the park), and on Amygdaloid Island (northeast end of the park).

Globally

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

ENVIRONMENTAL DESCRIPTION

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This community occupies wet depressions with a gentle slope facing southeast or southwest at elevations ranging from 620 to 662 feet. Soils are saturated peats.

Globally

This type occurs as part of large peatlands, in confined basins and along the upland margins of less minerotrophic peatlands (Harris *et al.* 1996). Stands occur on level, wet, poorly drained organic soils (Zoladeski 1995). The substrate is deep, fibric Sphagnum peat or shallow peat over clay. Hummock and hollow microtopography is moderately to well developed with standing water occasionally occurring in the hollows. The water regime is saturated.

MOST ABUNDANT SPECIES

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<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Picea mariana</i> , <i>Picea glauca</i>
Tall shrub	<i>Alnus incana</i>
Graminoid	<i>Carex rostrata</i> , <i>Calamagrostis canadensis</i>
Nonvascular	<i>Sphagnum</i> spp., <i>Calliergon</i> sp.

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CHARACTERISTIC SPECIES

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Picea mariana, *Alnus incana*

Globally

Picea mariana, *Alnus incana*

VEGETATION DESCRIPTION

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The black spruce/alder rich swamp is an open canopy, evergreen, wooded wetland. The tree canopy (over 5 m tall) is sparse, with 10 to 20% cover; the same species are present in the tall shrub layer (2 to 5 m tall) with 30 to 40% cover. *Picea mariana* and *Picea glauca* are the most abundant trees, each with 5 to 25% cover. *Alnus incana* is the most abundant

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tall shrub, with 20 to 40% cover; other tall shrubs include *Picea mariana*, and *Larix laricina*, each with 5 to 25% cover. Short shrub and dwarf shrub layers are very sparse, with less than 10% cover. There is 70 to 80% herbaceous cover; the most abundant herbs are *Carex rostrata*, *Calamagrostis canadensis*, *Iris versicolor*, *Impatiens capensis*, and *Aster puniceus*. *Sphagnum* spp. (including *Sphagnum magellanicum*) and *Calliergon* spp. are the most abundant mosses, with 5 to 25% cover. *Usnea* spp. are the most abundant lichens.

Globally

The overstory is composed almost exclusively of conifers. *Picea mariana* is the most abundant tree and may occur in pure stands. *Abies balsamea*, *Larix laricina*, and *Thuja occidentalis* vary from minor to codominant. There is a moderately well developed tall shrub/sapling layer, consisting of *Alnus incana* and saplings of the canopy trees. Several shrubs, many of them ericaceous, make up a low shrub layer. These include *Andromeda polifolia*, *Chamaedaphne calyculata*, *Gaultheria hispidula*, *Ledum groenlandicum*, *Linnaea borealis*, *Rubus pubescens*, and *Vaccinium angustifolium*. The herbaceous layer is frequently species rich, containing species such as *Calamagrostis canadensis*, *Carex leptalea*, *Carex trisperma*, *Clintonia borealis*, *Coptis trifolia*, *Cornus canadensis*, *Dryopteris cristata*, *Eriophorum* spp., *Mitella nuda*, and *Trientalis borealis*. Mosses include *Dicranum flagellare*, *Dicranum polysetum*, *Pleurozium schreberi*, *Ptilium crista-castrensis*, *Sphagnum girgensohnii*, *Sphagnum magellanicum*, and *Sphagnum nemoreum* (Sims *et al.* 1989, Harris *et al.* 1996, Chambers *et al.* 1997).

OTHER NOTEWORTHY SPECIES

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Information not available.

CONSERVATION RANK G5.

DATABASE CODE CEGL002452

MAP UNITS 66

COMMENTS

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. Ontario Ministry of Natural Resources, Northwest Science and Technology, Thunder Bay, Ontario. Field guide FG-01. 74 p.
- Janssen, C. R. 1967. A floristic study of forests and bog vegetation, northwestern Minnesota. *Ecology* 48(5):751-765.
- Kurmis, V., S. L. Webb, and L. C. Merriam. 1986. Plant communities of Voyageurs National Park, Minnesota, U.S.A. *Can. J. Bot.* 64:531-540.
- 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.
- 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.
- Zoladeski, C. A., G. M. Wickware, R. J. Delorme, R. A. Sims, and I. G. W. Corns. 1995. Forest ecosystem classification for Manitoba: field guide. Natural Resources Canada, Canadian Forest Service, Northwest Region, Northern Forestry Center, Edmonton, Alberta. Special Report 2.