

USGS-NPS Vegetation Mapping Program

Isle Royale National Park

Quercus rubra - Acer saccharum Forest

COMMON NAME	Red Oak - Sugar Maple Forest
SYNONYM	Red Oak - Sugar Maple Forest
PHYSIOGNOMIC CLASS	Forest (I)
PHYSIOGNOMIC SUBCLASS	Deciduous forest (I.B)
PHYSIOGNOMIC GROUP	Cold-deciduous forest (I.B.2)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (I.B.2.N)
FORMATION	Lowland or submontane cold-deciduous forest (I.B.2.N.a)
ALLIANCE	QUERCUS RUBRA - ACER SACCHARUM - (QUERCUS ALBA) FOREST ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 2

USFWS WETLAND SYSTEM TERRESTRIAL

RANGE

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This community is rare; it seems to be restricted to the southwest end of the island on Red Oak Ridge.

Globally

This association is found in Wisconsin, Minnesota, Michigan, and Ontario.

ENVIRONMENTAL DESCRIPTION

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This community occupies somewhat steep to steep, south- to southeast-facing slopes at elevations from 1200 to 1300 feet. Soils are rapidly drained sandy loams. Landscape position is a high slope of a ridge.

Globally

Stands are found on dry to dry-mesic ridge tops and upper- to midslopes, occasionally with bedrock outcrops. Soils are moderately shallow (30-60 cm) to deep, varying from fine sands to loams and clay loams (Chambers *et al.* 1997, especially ecosites 23.1 and 23.2). In central Ontario, stands typically occur on mid- to upper slopes of morainal landforms, with some stands on lower, very moist soils. Soil depths range from shallow (<30 cm) to deep (over 60 cm).

MOST ABUNDANT SPECIES

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<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Acer saccharum</i> , <i>Quercus rubra</i>
Short shrub	<i>Juniperus communis</i> , <i>Amelanchier</i> sp.
Forb	<i>Aralia nudicaulis</i> , <i>Cabystegia spithamea</i>
Nonvascular	<i>Lencobryum glaucum</i>

Globally

<u>Stratum</u>	<u>Species</u>
Tree canopy	<i>Acer saccharum</i> , <i>Quercus rubra</i>
Short shrub	<i>Amelanchier</i> spp.
Forb	<i>Aralia nudicaulis</i>

CHARACTERISTIC SPECIES

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Acer saccharum, *Quercus rubra*

Globally

Acer saccharum, *Quercus rubra*

VEGETATION DESCRIPTION

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This red oak - sugar maple forest is a closed canopy, deciduous forest. Canopy cover varies from 30 to 70%. *Quercus rubra* is codominant with *Acer saccharum*; other tree species present at less than 10% cover include *Acer rubrum*, *Thuja occidentalis*, *Picea glauca*, *Sorbus decora*, and *Pinus strobus*. Tall shrubs vary from 0 to 30% cover, and cover of short shrubs varies from 10 to 70%. The most abundant shrubs are *Juniperus communis* and *Amelanchier* spp. Cover of herbs is from 30 to 40%. The most abundant herbs are *Aralia nudicaulis*, *Cabystegia spithamea*, and *Elymus* sp. Cover of nonvascular plants

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is about 10 to 20%. Characteristic nonvascular plants are the moss *Leucobryum glaucum* and reindeer lichens (*Cladina* spp.).

Globally

The canopy is dominated by deciduous trees. Dominant tree species include *Quercus rubra*, *Acer saccharum*, and *Acer rubrum*. Associates include *Betula papyrifera*, *Pinus strobus*, *Populus grandidentata*, and, in the eastern part of its range, *Fagus grandifolia*, *Fraxinus americana*, and *Ostrya virginiana*. Subcanopy species typically include *Acer rubrum* and *Acer saccharum*. Shrubs include *Amelanchier laevis*, *Acer pensylvanicum*, *Corylus cornuta*, and *Lonicera canadensis*. Herbs include *Aralia nudicaulis*, *Aster macrophyllus*, *Dryopteris carthusiana*, *Maianthemum canadense*, *Mitchella repens* (a creeping semi-shrub), *Polygonatum pubescens*, and *Pteridium aquilinum*. Diagnostic species include *Quercus rubra* with groundlayer species typical of the mixed hardwood/conifer region (Chambers *et al.* 1997).

OTHER NOTEWORTHY SPECIES

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Information not available.

CONSERVATION RANK G?

DATABASE CODE CEGL002461

MAP UNITS 10

COMMENTS

Globally

The type is thought to have originated through a combination of logging and burning of pine stands, at least in Minnesota, and the natural patterns of disturbance are not clear (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.
- 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.