

The Flora of Isle Royale

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THE FLORA OF ISLE ROYALE NATIONAL PARK, MICHIGAN



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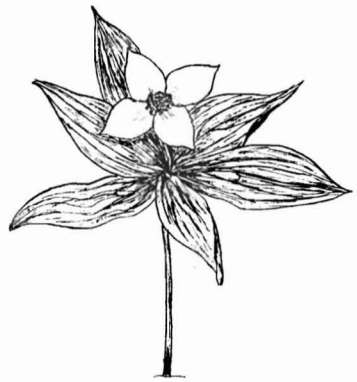
Printed in the United States of America

1984

PREFACE

This report is part of the end result of a five year project entitled "The Flora and Vegetational Ecology of Isle Royale National Park." The study was funded by the National Park Service, United States Department of the Interior. The text of this report reviews botanical exploration on the island and discusses major plant communities. The accompanying catalogue contains all of the vascular plants found on Isle Royale, each of which has been verified by a herbarium specimen. One hundred and fifty new species have been added since Clair Brown published his catalogue of the flora of Isle Royale in 1937. Certainly there are new species of plants yet to be found on Isle Royale. Notification of the discovery of new species will be appreciated to facilitate revision of the catalogue.

The authors are grateful to Dr. Edward G. Voss, University of Michigan, Ann Arbor, for his verification of the identity of specimens, for his aid in examination of herbarium specimens, for his helpful suggestions regarding taxonomic problems, and for allowing access to his personal records.





INTRODUCTION

Physical Environment

Isle Royale National Park is situated in the northwest corner of Lake Superior at approximately 89° west longitude, 48° north latitude. The park is an archipelago of islands, the largest being 72 km long in a northeast to southwest direction and 14 km wide at its widest point. There are about 200 smaller islands surrounding the main one, ranging in size from emerging rocks to Amygdaloid Island, which is 6.4 km long. Inland, there are 83 lakes. About 24 km to the north is the Canadian mainland, and 72 km to the south lies the Keweenaw Peninsula of Michigan.

The geology of the island is comprised of a series of ridges and valleys which parallel the long axis of the island. The Greenstone Ridge is the longest, extending from one end to the other, and also reaching the highest elevation near the southwest end (425 meters above sea level, 241 meters above Lake Superior).

Isle Royale is composed of rocks of the Keweenaw Age of the late Precambrian. Sandstones and conglomerates are imbedded in successive lava flows which went through a series of elevation, tilting, faulting and erosion to result in the ridges. The last glacial stage to cover the island, the Wisconsinan during the late Pleistocene, receded from Isle Royale only 10,000 years ago. Glacial erosion on Isle Royale has resulted in thin, poorly developed soils, an important factor in plant distribution.

There is little climatological data for Isle Royale. Cool weather is characteristic of the spring and fall. Summer rainfall leaves no month with a mean less than 5.08 cm. Mean temperature for May through October is 11.6°C (Strommen, 1969). Late springs, cool summers and early frosts in fall have a marked effect on the growing season.

Botanical History

Isle Royale has long been favored for botanical and ecological research. Botanical exploration dates back to 1840, when Douglass Houghton briefly visited Isle Royale and recorded notes on the vegetation in his journal (Brown, 1937). Subsequently, many other geologists visited the island. William Ives, in 1847, took field notes on the vegetation when he conducted a rectangular survey of the island (Brown, 1937). Also in 1847, George J. Dickenson and James McIntyre briefly described the vegetation in a geological report to the U. S. Senate. Dickenson wrote of encountering "hackmatack and thick undergrowth," cedar swamps, spruce and fir (Jackson, 1849).

One year later, J. W. Foster and J. D. Whitney visited Isle Royale. In their report on the copper district of the Lake Superior region, Foster and Whitney describe the "desolate appear-

ance" of Isle Royale, as "a dwarfed growth of cedars and birches hung with drooping moss" (Foster and Whitney, 1850). It was probably *Usnea* they saw, not a moss but a lichen, hanging from the trees. In a later report on the iron region, Whitney devoted an entire chapter to botany which listed plants from the region, including 15 from Isle Royale (Foster and Whitney, 1851).

T. C. Porter collected in the Lake Superior region in 1865, but the results of his work, including 22 species from Isle Royale, were not published until 1921 by W. L. McAtee.

These first descriptions of the vegetation of Isle Royale did little to characterize the nature of the flora. Later visits, however, especially that of A. E. Foote, were the beginning of extensive plant collecting in a diversity of habitats. Foote led a group from the University of Michigan and several hundred specimens from their collections are deposited in the herbarium there. Four specimens collected by the "University Party, Isle Royale" as the herbarium labels read, have not been reported from Isle Royale since Foote's expedition. These are: *Dicentra cucullaria* (Dutchman's breeches), *Sanguinaria canadensis* (bloodroot), *Erythronium americanum* (trout lily) and *Impatiens pallida* (pale touch-me-not). All have been positively identified from herbarium specimens. It is unlikely, given the extent of subsequent collecting on Isle Royale and the large area over which a plant like *Erythronium americanum* could flourish, that these four plants from Foote's collection were actually collected on Isle Royale. It is known that Foote's party stopped in Ontonagon, Michigan on the same expedition so it is possible that the specimens were collected there and mislabeled as Isle Royale specimens. Nevertheless, they are included here as plants that, if found on Isle Royale in 1868, are probably now extinct on the island.

C. E. Allen and C. S. Stuntz made large collections on the island in 1901. Although not published at the time, Clair Brown later examined lists provided by Dr. Allen and included the records of Allen and Stuntz in his 1935 report. However, many of the plants they recorded have been excluded due to misidentification.

During the summer of 1904, the first ecological study of plant communities on Isle Royale was made as part of a study on the ecology of northern Michigan by an expedition from the University of Michigan. Dr. A. G. Ruthven directed a study on the southwestern end of the island. He set up 10 field stations in which he studied ecological "facts and relations." Ruthven's study is beneficial because it included all of the representative habitats, including aquatic ones, and was the first to look at plant processes, i.e., the dynamics of plant succession. This way of studying plant communities by analyzing plant relationships in terms of change was considered innovative at the time. Ruthven was also the first to note the boreal nature of the plant communities and noted 91 plant species in his annotated list (Adams, 1906). It is unfortunate that herbarium specimens

were not preserved, for some species reported by Ruthven have not since been found.

In 1905 another party from the University of Michigan made a thorough survey of the ecology of Isle Royale. W. P. Holt, under the direction of C. C. Adams, set out to make "a general reconnaissance of the plant life on as many different parts of the island as possible." The resulting work, published in a classical study of Isle Royale ecology, discussed plant societies and contained an annotated list that included 283 vascular plants along with locations and habitats (Adams, 1909).

In 1909 and 1910, W. S. Cooper studied the vegetation ecology of Isle Royale. Five papers were published as a result of his work (Cooper, 1911, 1912, 1913a, 1913b, 1914). His catalogue of the flora, the most complete to that date, listed over 500 species and their habitats. Cooper delineated five courses of succession and accurately assigned each plant he reported to one of them. His catalogue also contained records of other collectors, most notably those collected by Holt in 1905. With Isle Royale becoming more popular as an ecological study site, the need for a concise list of the flora became evident.

In 1930, with funding from the State of Michigan for a survey of Isle Royale, the University of Michigan Herbarium sent a party to the island to conduct a botanical study. Clair A. Brown compiled a list of the ferns and flowering plants found on Isle Royale. His list of 671 species and varieties was based on his own collections and the records of others (Brown, 1937). For many years Brown's work was the conclusive work on Isle Royale flora; indeed, it was the only complete source available and consequently was cited in nearly every ecological paper that followed it. As thorough as Brown was in citing the works of others, he was negligent in checking identification of herbarium specimens and cited many species based on written records only.

The value of Brown's work lies in the descriptive record it provides of the vegetation 54 years ago. Since that time, no one has published extensive collection records for Isle Royale. Collections have taken place though, and fortunately specimens have been deposited in various herbaria. Others who have contributed significantly to the knowledge of Isle Royale flora through herbarium specimens (since 1930) are Clifford M. Wetmore, Harold and Virginia Bailey, Phillip C. Shelton and Edward G. Voss. Also, collections by C. S. Stuntz and C. E. Allen date from 1901.

More than 50 years have passed since Clair Brown compiled his catalogue of the flora of Isle Royale. Since that time, many new species have been found, the nomenclature has changed, and many of Brown's specimens and those of other collectors have been found to be misidentified. An up-to-date reference for researchers and park personnel is long overdue.

This report is part of a five year research project funded by the National Park Service entitled "Flora and Vegetation Ecology

of Isle Royale National Park." It is, then, a compilation of more than a century of data on the flora of Isle Royale. By examining herbarium specimens and searching the literature for authentic published records, the most accurate and up-to-date list of the flora of Isle Royale has been completed. During the past five years, also, our own search by systematic sampling has led to the discovery of many new species.

Plant Communities

Isle Royale is densely forested. Two distinct upland forest types reach their climax there. The island is situated at the southernmost limit of the northeastern conifer region. The boreal forest type *(Abies balsamea/Betula papyrifera/Picea glauca)* achieves its climax here at the lower elevations around the periphery of the island where climatic conditions are moister and cooler (Linn, 1955). All other plant societies in peripheral areas lead to this permanent vegetational stage. Other tree species commonly encountered in the boreal forest are *Thuja occidentalis* and *Populus tremuloides*. Common ground cover plants found in the mature northern boreal forest are *Aster macrophyllus, Aralia nudicaulis, Cornus canadensis, Clintonia borealis, Linnaea borealis* and *Lycopodium annotinum*. Tall shrubs are represented by *Rubus parviflorus* and *Alnus crispa*.

The second climax association is found on the westernmost end of the island. At higher elevations away from Lake Superior, where the soil is drier and the air warmer, the sugar maple and yellow birch association *(Acer saccharum* and *Betula alleghaniensis)* is the climax forest type (Linn, 1955). Sugar maple is at its northernmost limit here as part of the temperate deciduous forest biome. This smaller climax association covers only about 7% of the island. Other tree species occasionally found in this forest are *Sorbus decora* and *Acer spicatum*. Ground cover is sparse and is dominated by young maples. Other ground cover species are *Lycopodium lucidulum, Streptopus roseus* and *Clintonia borealis*. These two upland forest types which dominate Isle Royale are in sharp contrast to the lowlands between the parallel system of ridges. These contain a vast amount of wooded swamp composed of *Picea mariana* and *Thuja occidentalis*.

Also in these lowland areas many bogs are found. The bog communities of Isle Royale are rich in plant life, with sedges often dominating the sphagnum mat. Common bog sedges are *Carex livida, Carex limosa, Rhynchospora alba* and *Eriophorum spissum*. Other common bog species are *Ledum groenlandicum, Sarracenia purpurea, Vaccinium oxycoccus, Menyanthes trifoliata, Drosera* spp. and *Chamaedaphne calyculata*.

In 1936 20% of the island was burned and the humus layer was destroyed. This region, stretching from Siskiwit Bay in the west to Moskey Basin in the east, is now almost a pure stand of paper birch with scattered quaking aspen. The abundant ground cover species here are *Aster macrophyllus, Rubus parviflorus, Pteridium aquilinum,* and *Aralia nudicaulis*.

There have been two other recently burned areas on Isle Royale. Four hectares burned at Card Point in 1976 and less than one hectare burned at McGinty's Cove in 1975. Both of these areas are on the westernmost end of the island and are thick with ground cover vegetation. *Rubus parviflorus, Rubus strigosus, Epilobium angustifolium* and *Calamagrostis canadensis* are the dominant post-fire species at Card Point, while *Rubus strigosus, Aralia nudicaulis, Milium effusum* and *Sambucus pubens* are dominant at the McGinty Cove burn site (Janke, 1981).

Fire has played an important role in the boreal forest on Isle Royale. Fire drastically postponed the reproduction of balsam fir in the 1936 burn area. Without a nearby seed source balsam fir reproduction is minimal. Paper birch, on the other hand, can reproduce well on a mineral soil, hence it can act as a post-fire pioneer (Janke, 1978).

Another impact on the boreal forest is that of moose. Severe browsing by moose has nearly eliminated *Taxus canadensis* on the main island, but it remains as one of the dominant ground cover species on many of the outer islands. Likewise, *Sorbus decora* is sparsely distributed in those areas that are easily accessible to moose. Snyder and Janke (1976), when measuring the long term effects of moose browsing, found a significant decrease in balsam fir density and an increase in white spruce density. White spruce is not eaten by moose.

A phytosociological community of notable interest is the arctic-alpine community associated with the rocky shoreline of Lake Superior. The favorable glacial climate of the Pleistocene allowed arctic-alpine plants to migrate into the area; now they persist on the shoreline because they are exposed to cool winds and moist atmosphere from Lake Superior (Given and Soper, 1981). Butters and Abbe (1953) call these species "relics of the late Wisconsin dispersal," that is, plants that were well established before the boreal forest. It is implausible to suggest the migration of so many species of arctic affinity in more recent times; this community of plants, therefore, is indicative of a drastic post-glacial change of climatic conditions in the vicinity of Isle Royale. Shoreline plants of arctic-alpine affinity found on Isle Royale are listed in Table I.

Aside from the rock shore plants of arctic affinity, other common rock shore species are *Deschampsia cespitosa, Campanula rotundifolia, Achillea millifolium* and *Potentilla fruticosa*. At higher elevations above the rock shore, *Juniperus horizontalis* and *Arctostaphylos uva-ursi* are more frequently encountered. Their role in primary rock shore succession is evident—they help collect soil among their roots and creeping stems allowing other species to become established.

There are a dozen plants found on Isle Royale (and often in adjacent areas of the Great Lakes region), that have their major distribution in the west, and occur elsewhere no closer to Isle Royale than the Black Hills of South Dakota. These western disjunct species have long been a puzzle for botanists and their

origin a source of controversy. Fernald (1925, 1935) attributed the persistence of these plants to their survival (during periglacial times) on high bluffs which were not covered by the Wisconsinan glacier. He hypothesized that the plants subsequently spread to their present distribution, some being more readily dispersed than others. This idea is generally rejected now due to the absence of geological evidence.

Table I. Plants of arctic-alpine affinity found on Isle Royale.

Species	Family
Lycopodium selago	Lycopodiaceae
Selaginella selaginoides	Selaginellaceae
Dryopteris fragrans	Polypodiaceae
Poa alpina	Gramineae
Poa glauca	Gramineae
Trisetum spicatum	Gramineae
Carex capillaris	Cyperaceae
Scirpus cespitosus	Cyperaceae
Juncus stygius	Juncaceae
Luzula parviflora	Juncaceae
Tofieldia pusilla	Liliaceae
Polygonum viviparum	Polygonaceae
Sagina nodosa	Caryophyllaceae
Draba incana	Cruciferae
Saxifraga paniculata	Saxifragaceae
Saxifraga tricuspidata	Saxifragaceae
Potentilla tridentata	Rosaceae
Empetrum nigrum	Empetraceae
Vaccinium uliginosum	Ericaceae
Castilleja septentrionalis	Scrophulariaceae
Primula mistassinica	Primulaceae
Pinguicula vulgaris	Lentibulariaceae

Reevaluation of Fernald's hypothesis by many phytogeographers has led to a more feasible explanation for the occurrence of these disjunct species. Marquis and Voss (1981), in a well researched paper, discuss the criteria for disjunction and the alternatives to Fernald's hypothesis. They conclude with two explanations for the distribution of western species in the Great Lakes region. The first claims a preglacial western distribution for the disjuncts. As the glacier retreated, the plants migrated eastward along the glacial front and established themselves in niches free from competition. The range of these disjuncts was interrupted by a postglacial dry period and by competition from invading species. Hence, cool, moist microclimates such as those found on Isle Royale and in the Black Hills are the only areas where these often mountainous western species could persist. The other explanation holds that there was a transcontinental distribution of the species that survived only at the edges of the glacial front in Wisconsin. As the glacier retreated, the plants reinvaded the region and survived only in favorable microclimates. Whatever explanation one chooses to accept, it is probable that a more widespread distribution of these species existed at one time.

Table II lists the western disjunct species found on Isle Royale. Based on Marquis and Voss, this list only contains those species which clearly have a discontinuous distribution on Isle Royale. Since most of the disjuncts are of Cordilleran habitats in the west, it is not surprising to find that most of them thrive in the rocky areas of Isle Royale. Most visible of all the disjuncts is *Rubus parviflorus*. It is widely distributed throughout the island in wooded and open areas. In the west it ranges from Alaska to Mexico, with another disjunction in the Black Hills.

Table II: Western disjunct species found on Isle Royale (based on Marquis and Voss, 1981).

Species	**Family**
Cryptogramma crispa	**Polypodiaceae**
Festuca occidentalis	**Gramineae**
Poa canbyi	**Gramineae**
Goodyera oblongifolia	**Orchidaceae**
Polygonum douglasii	**Polygonaceae**
Arenaria macrophylla	**Caryophyllaceae**
Arabis holboellii	**Cruciferae**
Crataegus douglasii	**Rosaceae**
Rubus parviflorus	**Rosaceae**
Oplopanax horridus	**Araliaceae**
Osmorhiza chilensis	**Umbelliferae**
Collinsia parviflora	**Schrophulariaceae**

Most notable among the disjuncts is *Oplopanax horridus*, commonly called devil's club. Its distribution on Isle Royale is small; it is restricted to a few shaded rocky or swampy habitats on the northeast end of the main island, and on several of the outer islands. Its major distribution in western North America ranges from southern Alaska to Oregon and northwestern Montana. W. A. Wheeler first reported it in 1901 in a list of the most notable species he had collected on Isle Royale in 1900. He called the occurrence of devil's club "remarkable" and reported collecting it on "Passage Island" and "Black's Point" (probably Blake's Point, where it is now found). *Oplopanax* is also found on nearby Porphyry Island and the Slate Islands of Ontario.

In February of 1983 the Michigan Legislature approved a revised list of threatened and endangered plants for the state. Thirty-nine of these, some exclusively, are found on Isle Royale (Table III). The designation of plants into either of these categories is as summarized below, from the Public Acts of 1974 of the Michigan compiled Laws (R.299.224):

Endangered: Any plant species in danger of extinction throughout all or a significant part of its range.

Threatened: Any plant species likely to become an endangered species within the foreseeable future throughout all or a significant part of its range.

The Michigan Natural Features Inventory, a division of the Michigan Department of Natural Resources, has designated another category of plants called "special concern" plants. These plants, while not legally protected in the state, face the possibility of being given the status of threatened if action is not taken now to preserve them in their natural habitats. There are 16 plants of special concern status found on Isle Royale (Table IV).

Orchis rotundifolia is the only plant of endangered status found on Isle Royale. It has been collected twice on the island--once in 1942 two miles northwest of Lake Desor, and again in 1981 in a cedar swamp northwest of Conglomerate Bay. Complete information on the range, habitat, and, when possible, specific locations of this significant group of endangered, threatened and special concern plants are given in the annotated list.

It is interesting to note, given that Isle Royale has so many plants unusual in their distribution, that there are no nationally protected plants within the boundaries of the park. *Listera auriculata*, a small orchid of the boreal forest, has a rating of C2 on the Department of the Interior Endangered and Threatened Wildlife and Plant list. This means that there is insufficient information to justify legal protection, but the plant is under consideration for placement on the federal list.

Table III. Endangered (*) and threatened species found on Isle Royale.

Species	Family
Cryptogramma crispa	Polypodiaceae
Calamagrostis lacustris	Gramineae
Poa alpina	Gramineae
Poa canbyi	Gramineae
Carex atratiformis	Cyperaceae
Carex media	Cyperaceae
Juncus stygius	Juncaceae
Luzula parviflora	Juncaceae
Allium schoenoprasum	Liliaceae
Tofieldia pusilla	Liliaceae
Calypso bulbosa	Orchidaceae
* *Orchis rotundifolia*	Orchidaceae
Polygonum viviparum	Polygonaceae
Arenaria macrophylla	Caryophyllaceae
Sagina nodosa	Caryophyllaceae
Nymphaea tetragona	Nymphaeaceae
Ranunculus macounii	Ranunculaceae
Ranunculus rhomboideus	Ranunculaceae
Braya humilis	Cruciferae
Draba arabisans	Cruciferae
Draba incana	Cruciferae
Subularia aquatica	Cruciferae
Saxifraga paniculata	Saxifragaceae
Saxifraga tricuspidata	Saxifragaceae
Potentilla pensylvanica	Rosaceae
Empetrum nigrum	Empetraceae
Oplopanax horridus	Araliaceae
Vaccinium uliginosum	Ericaceae
Phacelia franklinii	Hydrophyllaceae
Castilleja septentrionalis	Scrophulariaceae
Collinsia parviflora	Scrophulariaceae
Euphrasia curta	Scrophulariaceae
Euphrasia hudsoniana	Scrophulariaceae
Pinguicula vulgaris	Lentibulariaceae
Lonicera involucrata	Caprifoliaceae
Viburnum edule	Caprifoliaceae
Antennaria rosea	Compositae
Aster modestus	Compositae
Lactuca pulchella	Compositae
Senecio indecorus	Compositae

Table IV. Special concern plants found on Isle Royale.

Species	Family
Lycopodium complanatum	Lycopodiaceae
Lycopodium selago	Lycopodiaceae
Cryptogramma stelleri	Polypodiaceae
Trisetum spicatum	Gramineae
Arethusa bulbosa	Orchidaceae
Cypripedium arietinum	Orchidaceae
Listera auriculata	Orchidaceae
Salix pellita	Salicaceae
Salix pyrifolia	Salicaceae
Clematis occidentalis	Ranunculaceae
Drosera anglica	Droseraceae
Ribes oxyacanthoides	Saxifragaceae
Crataegus douglasii	Rosaceae
Callitriche hermaphroditica	Callitrichaceae
Epilobium palustre	Onagraceae
Myriophyllum alterniflorum	Haloragidaceae

The Annotated Catalogue

The following list of 699 species (46 Pteridophytes; 653 Spermatophytes) contains every known vascular plant found on Isle Royale either currently or in the past, naturally occurring or introduced. Introduced species are given in Table V. Each plant in the catalogue has been verified by a herbarium specimen. For the monocots, the records of Dr. Edward G. Voss (University of Michigan Herbarium, Ann Arbor) were used to verify existing specimens. Specimens used for verification are in herbaria at the following locations:

University of Michigan Herbarium, Ann Arbor, MI
Isle Royale National Park Herbarium, Houghton, MI
University of Minnesota, Minneapolis, MN
Gray Herbarium, Harvard University, Cambridge, MA
University of Notre Dame, Notre Dame, IN
Ohio State University, Columbus, OH
New York Botanical Garden, Bronx, NY
University of Wisconsin, Madison, WI
Michigan State University, East Lansing, MI

The examination of herbarium specimens that date back to the 19th century creates a problem in that some plants collected long ago have not been relocated. Should they be included with a current inventory of the flora? A fitting example of this

Table V. Plants known or assumed to be introduced to Isle Royale.

Species	Family
Agropyron repens	Gramineae
Beckmannia syzigachne	Gramineae
Hordeum jubatum	Gramineae
Phleum pratense	Gramineae
Ulmus americana	Ulmaceae
Polygonum convolvulus	Polygonaceae
Rheum rhaponticum	Polygonaceae
Rumex acetosella	Polygonaceae
Chenopodium album	Chenopodiaceae
Cerastium tomentosum	Caryophyllaceae
Dianthus barbatus	Caryophyllaceae
Dianthus plumarius	Caryophyllaceae
Lychnis chalcedonica	Caryophyllaceae
Silene cucubalus	Caryophyllaceae
Silene noctiflora	Caryophyllaceae
Armoracia rusticana	Cruciferae
Sisymbrium altissimum	Cruciferae
Sedum acre	Crassulaceae
Sempervivum tectorum	Crassulaceae
Malus pumila	Rosaceae
Medicago lupulina	Leguminosae
Melilotus alba	Leguminosae
Melilotus officinalis	Leguminosae
Trifolium aureum	Leguminosae
Trifolium hybridum	Leguminosae
Trifolium pratense	Leguminosae
Trifolium repens	Leguminosae
Carum carvi	Umbelliferae
Pastinaca sativa	Umbelliferae
Syringa vulgaris	Oleaceae
Cynoglossum officinale	Boraginaceae
Myosotis laxa	Boraginaceae
Myosotis sylvatica	Boraginaceae
Plantago major	Plantaginaceae
Lonicera tatarica	Caprifoliaceae
Arctium minus	Compositae
Centaurea cyanus	Compositae

dilemma is *Vaccinium vitis-idaea*, the mountain cranberry. It was collected by A. E. Foote in 1868 from Smithwick Island, a narrow, rocky island south of the northeastern tip of the main island. This subarctic species, if not extinct on Isle Royale, must have a very local population. It is found on Ontario shores of Lake Superior, so it is feasible that it could occur on Isle Royale in a similar habitat. It is included in this catalogue as a plant presumed to be extirpated from Isle Royale.

Seventy-three species reported from the island by Brown have been excluded from this catalogue (Table VI). Either there are no known herbarium specimens to verify existence of these plants in the park, or a misidentification of the herbarium specimen has been discovered.

In this report, nomenclature for the Pteridophytes follows Gray's Manual of Botany (Fernald, 1970). For the monocots and gymnosperms, nomenclature follows Michigan Flora (Voss, 1972). Dicot families through the Cornaceae also follow Voss (in prep.). The Violaceae follow the nomenclature of H. Ballard, Jr., Western Michigan University. The 23 families remaining again follow Gray's manual. Varieties and forms of species have not been included in this catalogue.

For each plant, a short description of habitat preference and abundance within the park is given, along with the common name. Abundance was determined from statistical data collected during ecological studies conducted by R. A. Janke. When a plant was not encountered in sampling, abundance and habitat preference was based on information taken from herbarium labels. Plants that are threatened, endangered or of special concern in the state are indicated as such and when possible, more concise information is given as to their location. The plants are grouped by family in Gray's Manual order, but the genera are alphabetical within each family.

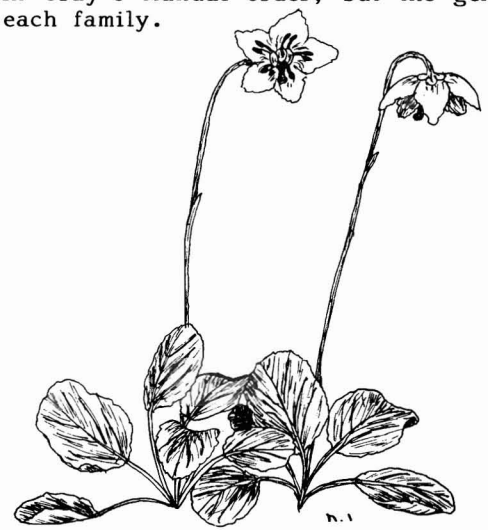


Table VI. Species listed by Clair Brown that have been excluded.

Adiantum pedatum L.
Dryopteris felix-mas (L.) Schott
Cystopteris bulbifera (L.) Bernh.
Potamogeton friesii Rupr.
Potamogeton hillii Morong
Potamogeton pectinatus L.
Potamogeton perfoliatus L.
Agropyron smithii Rydb.
Avena sativa L.
Calamagrostis neglecta (Ehrh.) Gaertn., Mey. & Scherb.
Danthonia compressa Austin
Danthonia intermedia Vasey
Festuca ovina L.
Glyceria torreyana (Spreng.) Hitchc.
Melica smithii (Porter) Vasey
Muhlenbergia racemosa (Michx.) BSP
Carex alopecoidea Tuckerm.
Carex concolor R.Br.
Carex festucacea Schkuhr.
Cares Foenea Willd.
Cares halleri Gunn.
Carex incomperta Bicknell
Carex lanuginosa Michx.
Carex laxiflora Lam.
Carex pratensis Drejer
Carex scoparia Schk.
Carex sterilis Willd.
Carex tribuloides Wahlenb.
Cares tuckermani Dewey
Juncus canadensis J. Gay
Juncus articulatus L.
Polygonatum biflorum (Walt.) Ell.
Trillium erectum L.
Uvularia perfoliata L.
Epipactis pubescens (Willd.) Eaton
Habenaria leucophaea (Nutt.) Gray
Liparis liliifolia (L.) Richard
Salix fragilis L.
Betula lenta L.
Gypsophila muralis L.
Ceratophyllum demersum L.
Brassica nigra (L.) Koch.
Parnassia parviflora DC.
Ribes setosum Lindl.
Saxifraga nivalis L.
Rosa virginiana Mill.
Rubus arcticus L.
Rubus frondosus Bigel.
Rhus glabra L.
Acer pennsylvanicum L.
Ceanothus americanus L.
Psedera quinquefolia (L.) Greene
Viola tricolor L.
Vaccinium vacillans Kalm.
Fraxinus americana L.
Gentiana andrewsii Griseb.
Asclepias incarnata L.
Convolvulus sepium L.
Myosotis arvensis (L.) Hill.
Euphrasia americana Wettst.
Euphrasia arctica Lange
Euphrasia disjuncta Fern. & Wieg.
Galium aparine L.
Sambucus canadensis L.
Echinocystis lobata (Michx.) T. & G.
Lobelia spicata Lam.
Ambrosia psilostachya DC.
Aster tradescanti L.
Cirsium discolor (Muhl.) Spreng.
Aster junceus Ait.
Lactuca villosa Jacq.
Erigeron acris L.
Solidago speciosa Nutt.

References

Adams, C. C. 1906. An ecological survey in northern Michigan. A report from the University Museum, University of Michigan, published by the State Board of Geological Survey for 1905, Lansing, Michigan.

Adams, C. C. 1909. An ecological survey of Isle Royale, Lake Superior. A report from the University of Michigan Museum, published by the State Biological Survey, as a part of the Report of the Board of Geological Survey for 1908. Lansing, Michigan. 468 pp.

Beal, W. J. 1904. Michigan flora. Rep. Mich. Acad. 5:1-147.

Billington, C. 1952. Ferns of Michigan. Cranbrook Inst. Sci. Bull. 32. 240 pp.

Brown, C. A. 1937. Ferns and flowering plants of Isle Royale, Michigan. U. S. Dept. of Interior. 90 pp.

Butters, F. K. and E. C. Abbe. 1953. A floristic study of Cook Co., Northeastern Minnesota. Rhodora 55:21-55.

Cooper, W. S. 1911. Reproduction by layering among the conifers. Bot. Gaz. 52:369-379.

Cooper, W. S. 1912. The ecological succession of mosses, as illustrated upon Isle Royale, Lake Superior. Plant World 15:197-213.

Cooper, W. S. 1913a. The climax forest of Isle Royale, Lake Superior, and its development. Bot. Gaz. 55:1-44, 115-140, 189-235.

Cooper, W. S. 1913b. A list of mosses collected upon Isle Royale, Lake Superior. Bryologist 16:3-8.

Cooper, W. S. 1914. A catalog of the flora of Isle Royale, Lake Superior. Ann. Rep. Mich. Acad. Sci. 16:109-131.

Cooper, W. S. 1928. Seventeen years of successional change upon Isle Royale, Lake Superior. Ecology 9:1-5.

Dorr, J. A., Jr. and D. F. Eschman. 1970. The geology of Michigan. Univ. of Mich. Press, Ann Arbor. 476 pp.

Fernald, M. L. 1925. Persistance of plants in unglaciated areas of boreal America. Mem. Am. Acad. Arts Sci. 15:239-342.

Fernald, M. L. 1933. Recent discoveries in the Newfoundland flora. Rhodora 35:342.

Fernald, M. L. 1935. Critical plants of the upper Great Lakes region of Ontario and Michigan. Rhodora 37:197-222, 238-262, 272-301, 324-341.

Fernald, M. L. 1970. Gray's manual of botany. 8th ed. D. Van Nostrand Co., New York. 1632 pp.

Foster, J. W. and J. D. Whitney. 1850. Report of the geology and topography of a portion of the Lake Superior land district in the State of Michigan. Pt. I. Copper Lands. Ex. Doc. No. 69, House of Rep., 1st Session, 31st Congress.

Foster, J. W. and J. D. Whitney. 1851. Report on the geology of the Lake Superior land district. Pt. II. The Iron Region. Sen. Ex. Doc. No. 4, Spec. Session, 32nd Congress.

Gillman, H. 1870. Note on *Botrychium lunaria* Swartz. Am. Nat. 8:360.

Given, D. R. and J. H. Soper. 1981. The arctic-alpine element of the vascular flora at Lake Superior. National Museums o Canada. Publ. Botany No. 10. 70 pp.

Hanson, H. L., L. W. Krefting and V. Kurmis. 1973. The forest of Isle Royale in relation to fire history and wildlife. Univ. of Minnesota Agricultural Experiment Station Bull. 294, series 13. 43 pp.

Hyppio, P. A. 1952. *Antennaria rosea* Greene in the Lake Superior region. Rhodora 54:291.

Jackson, C. T. 1849. Geological and mineralogical reports. Sen. Ex. Doc. No. 1, 1st Session, 31st Congress 3:371-935.

Janke, R. A. 1978. Annual report of the research project the ecology of the boreal forest-type of Isle Royale National Park. Unpublished manuscript submitted to the U. S. National Park Service.

Janke, R. A. 1981. Annual progress report of the research project entitled the flora and vegetational ecology of Isle Royale National Park, submitted to the National Park Service.

Kartesz, J. T. and R. Kartesz. 1980. A synonymized checklist of the vascular flora of the United States, Canada, and Greenland. Volume II. The biota of North America. North Carolina Press, Chapel Hill. 498 pp.

Kenoyer, L. A. 1923. Distribution of the Umbellales in Michigan. Papers Mich. Acad. Sci., Arts, and Letters 3:131-165.

Kenoyer, L. A. 1923. Distribution of the Ericales in Michigan. Papers Mich. Acad. Sci., Arts, and Letters 3:166-189.

Krefting, L. W., H. L. Hanson and M. P. Meyer. 1970. Vegetation type map of Isle Royale National Park. Bureau of Sport Fisheries and Wildlife, Denver, Colorado.

Linn, Robert M. 1955. The spruce-fir, maple-birch transition in Isle Royale National Park, Lake Superior. Unpubl. Ph.D. dissertation. Duke University, Durham, North Carolina. 101 pp.

Marquis, R. J. and E. G. Voss. 1981. Distribution of some western N. American plants disjunct in the Great Lakes region. Mich. Bot. 20:53-82.

McAtee, W. L. 1921. Notes on interesting plants of Michigan. Papers Mich. Acad. Sci., Arts, and Letters 1:155-166.

Rabeler, R. K. 1981. *Gypsophila muralis*. Is it naturalized in Michigan? Mich. Bot. 20:21-26.

Snyder, J. D. and R. A. Janke. 1976. Impact of moose browsing on boreal-type forests of Isle Royale National Park. Am. Mid. Nat. 95:79-92.

Soper, J. H. and P. F. Maycock. 1963. A community of arctic-alpine plants on the east shore of Lake Superior. Can. J. Bot. 41:183-198.

Strommen, N. D. 1969. Climatic summaries of resort areas, Isle Royale National Park, MI. U. S. Dept. of Commerce, Env. Sci. Ser. Adm., Climatography of the U. S. #21-20-1.

Toczydlowski, D. G., et. al. 1981. Aquatic baseline on Isle Royale, Michigan. Unpublished manuscript from S.O.S. project/National Science Foundation. Michigan Technological University. 51 pp. appendix.

Voss, E. G. 1966. Nomenclatural notes on monocots. Rhodora 68:435-463.

Voss, E. G. 1967. The status of some reports of vascular plants from Michigan. Mich. Bot. 6:13-24.

Voss, E. G. 1972a. Additional nomenclatural and other notes on Michigan monocots and gymnosperms. Mich. Bot. 11:26-37.

Voss, E. G. 1972b. Michigan flora. Cranbrook Institute of Science, Bloomfield Hills, Michigan. 488 pp.

Voss, E. G. and M. W. Bohlke. 1978. The status of certain hawkweeds (*Hieracium* subgenus *pilosella*) in Michigan. Mich. Bot. 17:35-47.

Wheeler, W. A. 1901. Notes on some plants of Isle Royale. Minn. Bot. Studies 2:619-620.

Wood, C. E. 1955. Evidence for the hybrid origin of *Drosera anglica*. Rhodora 57:105-130.



THE VASCULAR FLORA

EQUISETACEAE — Horsetail Family

Equisetum arvense L. [field horsetail]. Frequent in damp woods, stream banks.
Equisetum fluviatile L. [water horsetail]. Frequently emergent or on the shores of swamps and lakes. Forma polystachyum is also found--it has a strobilus at the tip of each branch.
Equisetum hyemale L. [smooth scouring rush]. Frequent in moist areas of the boreal forest.
Equisetum palustre L. [marsh horsetail]. Common in swamps and along lakeshores.
Equisetum pratense Ehrh. Rare, moist woods and meadows.
Equisetum scirpoides Michx. Uncommon, moist woods and stream banks.
Equisetum sylvaticum L. [wood horsetail]. Frequent in wet woods and swamps.
Equisetum variegatum Schleich [variegated scouring rush]. Uncommon, moist shores.

LYCOPODIACEAE — Clubmoss Family

Lycopodium annotinum L. [bristly clubmoss]. Frequent in mature boreal forest and recent burns.
Lycopodium clavatum L. [common clubmoss]. Frequent in mature boreal forest, occasionally in jack pine forest.
Lycopodium complanatum L. [trailing ground-pine]. Uncommon in the mature boreal forest. A plant of special concern in Michigan.
Lycopodium inundatum L. [bog clubmoss]. Rare, sphagnum bogs.
Lycopodium lucidulum Michx. [shining clubmoss]. Frequent in the sugar maple forest, recent burns and boreal forest on th western end of the island.
Lycopodium obscurum L. [ground-pine]. Frequent in young boreal forests, recent burns.
Lycopodium selago L. Rare, an arctic-alpine species found in small "mini-bogs" of sphagnum along the rock shore. In Michigan, found only on Isle Royale and in the Keweenaw Peninsula. A special concern plant in Michigan.
Lycopodium tristachyum Pursh. Rare, dry open areas.

SELAGINELLACEAE — Spikemoss Family

Selaginella rupestris (L.) Spring. Uncommon, rock shore of Lake Superior and dry rocky openings inland.
Selaginella selaginoides (L.) Link. [northern spikemoss]. Rare, moist depressions and pools of rock shore. An arctic-alpine species.

ISOETACEAE — Quillwort Family

Isoetes macrospora Dur. [quillwort]. Frequent, submersed in shallow water of inland lakes.

Isoetes muricata Dur. [quillwort]. Frequent, submersed in shallow water of inland lakes.

OPHIOGLOSSACEAE — Adder's tongue Family

Botrychium lanceolatum (Gmel.) Angstr. Rare, reported only by Clair Brown from "sod ground along shore," Rock Harbor.

Botrychium lunaria (L.) Sw. [moonwort]. Rare rocky openings. First reported in 1873 by Henry Gillman.

Botrychium matricariaefolium A. Br. Rare, moist woods.

Botrychium multifidum (Gmel.) Rupr. [leathery grape fern]. Rare, dry rocky openings.

Botrychium simplex E. Hitchc. Rare, only known from South Government Island.

Botrychium virginianum (L.) Sw. [rattlesnake fern]. Frequent, forests.

OSMUNDACEAE — Flowering fern Family

Osmunda cinnamomea L. [cinnamon fern]. Uncommon, swales and other moist, shady habitats.

Osmunda claytoniana L. [interrupted fern]. Frequent, moist woods and low ground.

Osmunda regalis L. [royal fern]. Uncommon, swamps and along wet stream banks.

POLYPODIACEAE — Fern Family

Asplenium trichomanes L. [maiden-hair spleenwort]. Rare, on rock of shady cliffs.

Athyrium filix-femina (L.) Roth [lady fern]. Frequent, boreal and mixed forests, rarely in rocky openings.

Cryptogramma crispa (L.) R. Br. [American rock brake]. Uncommon in dry, rocky openings inland and rock shore crevices along the south shore of the main island. Also reported from Mott and Amygdaloid Islands. Threatened in Michigan.

Cryptogramma stelleri (Gmel.) Prantl. [slender cliff brake]. Rare, conglomerate rock openings. A special concern plant.

Crystopteris fragilis (L.) Bernh. [fragile fern]. Uncommon, rocky island openings, rocky shoreline of Lake Superior, forests.

Dryopteris cristata (L.) Gray [crested shield fern]. Frequent in moist shady habitats and swamps, uncommon in bogs.

Dryopteris disjuncta (Ledeb.) C. V. Mort. [little oak fern]. Common, boreal forest, mixed deciduous forest.

Dryopteris fragrans (L.) Schott [fragrant fern]. Uncommon, shady cliffs and rock shore crevices.

Dryopteris marginalis (L.) Gray [marginal shield fern]. Uncommon, boreal and hardwood forests.

Dryopteris phegopteris (L.) Chr. [long beech fern]. Frequent, moist shady habitats, boreal and mixed hardwood forests.

Dryopteris spinulosa (O. F. Mull.) Watt. [spinulose shield fern]. Common, boreal and mixed hardwood forests.

Dryopteris thelypteris (L.) Gray [marsh shield fern]. Frequent, swamps and bogs, uncommon in swales in the boreal forest and mixed deciduous forests.

Onoclea sensibilis L. [sensitive fern]. Uncommon, moist swales of boreal and hardwood forests.

Polypodium virginianum L. [common polypody]. Frequent, inland rocky openings, rock shore of Lake Superior.

Pteretis pensylvanica (Willd.) Fern.[ostrich fern].Uncommon, moist boreal forest and mixed deciduous woods.

Pteridium aquilinum (L.) Kuhn [bracken fern]. Common in young forests dominated by quaking aspen or paper birch. Abundant in the birch forest of the 1936 burn but scattered elsewhere.

Woodsia ilvensis (L.)R.Br.[rusty woodsia]. Frequent, rock shore crevices, uncommon rocky openings along ridges.

TAXACEAE — Yew Family

Taxus canadensis Marsh. [American yew]. Abundant on Passage Island and common on some of the other outer islands. Heavy browsing by moose has resulted in sparse distribution of the plant on the main island.

PINACEAE — Pine Family

Abies balsamea (L.) Mill. [balsam fir]. Common in the boreal forest, becoming the most dominant tree species in mature forests. Frequent at the margins of swamps and along the rock shore. Uncommon in jack pine stands.

Larix laricina (Duroi) K.Koch. [tamarack]. Frequent at bog margins, sometimes found in swamps.

Picea glauca (Moench) A.Voss [white spruce]. Common in the mature boreal forest as one of the dominant species there, but found scattered elsewhere throughout the island.

Picea mariana (Mill.) BSP. [black spruce]. Common in bogs and swamps. This is the most abundant wetland tree species. Frequent in jack pine stands.

Pinus banksiana Lamb. [jack pine]. Uncommon on ridges and dry rocky openings in poor soil. Locally abundant in the Saginaw Peninsula area.

Pinus resinosa Ait. [red pine]. Uncommon, rocky openings on ridges.

Pinus strobus L. [white pine]. Uncommon, widely but sparsely distributed throughout the island.

CUPRESSACEAE — Cypress Family

Juniperus communis L. [common juniper]. Common along the rock shore in the later states of succession, jack pine woods and inland rocky openings.

Juniperus horizontalis Moench [creeping juniper]. Common in rock shore crevices in the later stages of succession and inland rocky openings.

Thuja occidentalis L. [northern white cedar]. Common in swamps and along the shores, scattered in mature woods, occasionally in bogs.

TYPHACEAE — Cat-tail Family

Typha latifolia L. [cat-tail]. Frequent, swamps, streams and beaver meadows.

SPARGANIACEAE — Bur-reed Family

Sparganium americanum Nutt. Rare, shallow water of outlet at Chickenbone Lake.
Sparganium angustifolium Michx. Frequent in shallow, calm water of inland lakes, rivers and streams, and protected coves of Lake Superior.
Sparganium chlorocarpum Rydb. Frequent in shallow water of inland lakes and streams throughout the island.
Sparganium eurycarpum Engelm. Frequent, in shallow water and inland lakes.
Sparganium fluctuans (Morong) Robinson. Frequent, in shallow water of lakes.
Sparganium minimum (Hartm.) Fries. Frequent, rooted in shallow water with floating leaves, in lakes, streams, beaver ponds and bogs.

POTAMOGETONACEAE — Pondweed Family

Potamogeton alpinus Balbis. Rare, submersed in shallow water.
Potamogeton berchtoldii Fieber. Uncommon, submersed in shallow water.
Potamogeton amplifolium Tuckerm. Frequent, submersed in shallow to deep water, sometimes forming thick mats clogging inland lakes.
Potamogeton epihydrus Raf. Frequent, submersed in shallow water.
Potamogeton filiformis Pers. Rare, collected by Brown in six feet of water at McCargoe Cove.
Potamogeton foliosus Raf. Rare, Tobin Harbor.
Potamogeton gramineus L. Common, submersed in shallow water of inland lakes, rivers and streams.
Potamogeton natans L. Common, submersed and floating in shallow water of inland lakes, streams and rivers.
Potamogeton obtusifolius Mert. & Koch. Frequent, submersed in shallow water of inland lakes.
Potamogeton praelongus Wulf. Rare, collected once in deep water of Tobin Harbor.
Potamogeton richardsonii (Benn.) Rydb. Frequent, submersed in shallow to deep water of inland lakes and protected areas of Lake Superior.
Potamogeton robbinsii Oakes. Rare, collected once, from Lake Richie, in shallow water.
Potamogeton strictifolius Bennett. Collected once from Wood Lake, submersed in shallow water.
Potamogeton spirillus Tuckerman. Rare, submersed in shallow water.

Potamogeton zosteriformis Fern. Uncommon, submersed in shallow water of inland lakes.

NAJADACEAE — Najad Family

Najas flexilis (Willd.) R. & S. [bushy pond-weed]. Uncommon, rooted in shallow water of inland lakes.

JUNCAGINACEAE — Arrow-grass Family

Scheuchzeria palustris L. [arrow grass]. Uncommon, bog mats.
Triglochin maritimum L. Uncommon, bog mats.

ALISMATACEAE — Water-plantain Family

Sagittaria cuneata Sheldon [wapato]. Common, emergent in littoral zone of lakes, ponds, rivers and streams.
Sagittaria graminea Michx. Uncommon, emergent in shallow water or on shores.
Sagittaria latifolia Willd. [arrowhead]. Common, emergent in shallow water or on mucky shores.

HYDROCHARITACEAE — Frog's bit Family

Elodea canadensis Michx. [elodea]. Uncommon, submersed in shallow water of lakes, ponds, rivers and streams.
Vallisneria americana Michx. [wild-celery]. Uncommon, submersed in lakes, ponds, rivers and streams.

GRAMINEAE — Grass Family

Agropyron repens (L.) Beauv. [quack grass]. Uncommon, old disturbed sites. Probably introduced with horse feed.
Agropyron trachycaulum (Link) Malte [wheatgrass]. Frequent, old and recent burns, rocky openings and disturbed sites. Uncommon in mixed deciduous forests.
Agrostis gigantea Roth [redtop]. Uncommon, in a variety of habitats, meadows, forest clearings and rocky openings; rarely in bogs.
Agrostis hyemalis (Walter) BSP. [ticklegrass]. Frequent, rock shore, beaver ponds, boreal forest clearings, rocky openings, lake shores and old burns. Uncommon in bogs.
Arrhenatherum elatius (L.) Mert. & Koch [tall oatgrass]. Uncommon, on rocky soil in clearings of boreal forest and other disturbed sites.
Beckmannia syzigachne (Steudel) Fern. [slough grass]. Rare, collected by Brown on a gravelly point opposite Birch Island. He assumed it to be introduced. Threatened in Michigan.
Bromus ciliatus L. [fringed brome grass]. Uncommon, beaver ponds, mixed deciduous forests and swamps.
Bromus inermis Leysser [smooth brome grass]. Uncommon, lake margins, meadows and disturbed sites.
Calamagrostis canadensis (Michx.) Beauv. [blue-joint grass]. Abundant, found in nearly every habitat on the island, but especially so at the margins of beaver ponds and in swamps.

Calamagrostis inexpansa Gray. Rare, rock shore and rocky swamps
Calamagrostis lacustris (Kearney) Nash [reed grass]. Rare, reported by Brown from an open rock ridge at McCargoe Cove and a rock opening at Rock Harbor. A threatened species in Michigan.
Cinna latifolia (Goepp.) Griseb. Found frequently in a variety of habitats: old burns, mixed deciduous forests, swamps and bogs.
Cynosurus cristatus L. [dogtail grass]. Rare, dry clearings.
Dactylis glomerata L. [orchard grass]. Uncommon in meadows, disturbed soil.
Danthonia spicata (L.) R. & S. [oatgrass]. Frequent, rock shore, rocky openings, jack pine forest and old burns.
Deschampsia cespitosa (L.) Beauv. [common hairgrass]. Common in rock shore crevices.
Deschampsia flexuosa (L.) Beauv. [common hairgrass]. Common in rocky openings, rock shore crevices, jack pine forest, old burns and disturbed sites.
Elymus wiegandii Fern. Rare, one specimen collected from a ridge.
Festuca occidentalis Hooker [western fescue grass]. Uncommon, clearings, dry hillsides. A western disjunct species, found in the Pacific northwest to as far east as Wyoming.
Festuca saximontana Rydb. Frequent, rock shore crevices, birch-aspen and mixed forests.
Glyceria borealis (Nash) Batch. Frequent, emergent in shallow water, or wet soil of beaver ponds, lakeshores and stream banks.
Glyceria canadensis (Michx.) Trin. [rattlesnake grass]. Frequent in beaver ponds, bogs and along lakeshores.
Glyceria striata (Lam.) Hitchc. [fowl manna grass]. Frequent in beaver ponds, along lake and stream shores, and swamps.
Hierochloe odorata (L.) Beauv. [vanilla grass]. Rare, found by Brown in a moist meadow on Washington Island.
Hordeum jubatum L. [squirrel-tail grass]. Rare, collected only by Brown, from Caribou Island.
Milium effusum L. [millet grass]. Frequent, only found as far east on the island as Lake Mason; beaver ponds, moist clearings, recently burned sites and mature boreal forests.
Muhlenbergia glomerata (Willd.) Trin. [marsh wild-timothy]. Uncommon, swamps and bogs.
Muhlenbergia uniflora (Muhl.) Fern. Rare, rock shore crevices.
Oryzopsis pungens (Sprengel) Hitch. Frequent in rocky openings, rock shore crevices, jack pine forest and old burns.
Oryzopsis asperifolia Michx. Frequent in jack pine and mixed deciduous forests.
Panicum depauperatum Muhl. Rare, rocky openings.
Panicum xanthophysum Gray. Rare, crevices of rocky openings.
Phalaris arundinacea L. [reed canary grass]. Uncommon, sandy lakeshore.
Phleum pratense L. [timothy]. Uncommon, meadows and disturbed sites. An introduced species.
Phragmites australis (Cav.) Steudel [reed grass]. Uncommon, shallow water of lakeshores.

Poa alpina L. Rare, populations are very local along the rock shoreline of North Government Island, Edwards Island and Blake Point. An arctic species threatened in Michigan.
Poa alsodes Gray. Rare, mixed deciduous forests.
Poa annua L. [annual bluegrass]. Uncommon, rock shore of Lake Superior, rocky clearings and lakeshores.
Poa canbyi (Scribner) Piper. A western disjunct species known on the island only from Monument Rock. Threatened in Michigan.
Poa compressa L. [Canada bluegrass]. Frequent, rocky openings, meadows and disturbed sites; uncommon in the boreal forest.
Poa glauca Vahl. Uncommon, rock shore crevices and recent burns.
Poa nemoralis L. Uncommon, rock shore, inland rocky openings, old and recent burns.
Poa palustris L. [fowl meadow grass]. Common in many habitats: beaver ponds, rock shore, rocky openings, recent and old burns.
Poa pratensis L. [Kentucky bluegrass]. Common, rock shore, inland rocky openings, clearings in the boreal forest and meadows.
Poa saltuensis Fern. & Wieg. Uncommon, moist open woods, recent burns.
Puccinellia fernaldii (Hitch.) E. Voss. Rare, collected only by Brown "at outer margin of sedge mat, in water, McCargoe Cove."
Schizachne purpurascens (Torry) Swallen [false melic grass]. Uncommon, rocky clearings and dry forest sites.
Trisetum spicatum (L.) Richter. Frequent, an arctic species found in rock crevices along Lake Superior. A special concern plant in Michigan, reported from Edwards Island, Smithwick Island, Raspberry Island, Bat Island, North and South Government Islands, Passage Island, Mott Island and Blake Point.

CYPERACEAE — Sedge Family

Carex aenea Fern. Uncommon, rock shore pools and boreal forest floor, frequent in early stages of fire succession, birch woods and meadows.
Carex angustior Mack. Common in swamps, shallow water of lakes and beaver ponds, and moist meadows; frequent in bogs.
Carex aquatilis Wahl. A common circumpolar species found emergent in many aquatic habitats: swamps, lakeshores, rivers and streams.
Carex arctata Boott. Frequent in all types of forests.
Carex argyrantha Tuckerman. Frequent in swamps and beaver meadows.
Carex atratiformis Britton. Uncommon, rock shore crevices and rocky beaches. A boreal species threatened in the state. Reported from Rock Harbor, Passage Island, wet woods on Mott Island, an outer island "adjacent to Mott Island" and Cork Island.
Carex aurea Nutt. Uncommon, along inland lakeshores, beaver ponds, bogs and moist clearings.

Carex bebbii (Bailey) Fern. Frequent in swamps, beaver ponds, uncommon along the rock shore and in meadows.
Carex brunnescens (Pers.) Poiret. Frequent, banks of lakes and beaver ponds.
Carex buxbaumii Wahl. Uncommon, rock shore crevices and pools.
Carex canescens L. Frequent along banks and in shallow water of beaver ponds, uncommon in rock shore crevices.
Carex capillaris L. Uncommon, rock shore crevices. An arctic-alpine species.
Carex castanea Wahl. Uncommon, moist soil of spruce-fir forest and swamps.
Carex cephalantha (Bailey) Bickn. Uncommon, rock shore, moist shores of inland lakes.
Carex chordorrhiza L. Uncommon, standing shallow water of lakes and bogs.
Carex communis Bailey. Uncommon, boreal forest.
Carex crawfordii Fern. Uncommon, moist shores of lakes and ponds.
Carex crinita Lam. Uncommon, swamps and lakeshores.
Carex cristatella Britton. Uncommon, rock shore, moist inland lakeshores.
Carex cryptolepis Mack. Frequent in swamps, shallow water of beaver ponds and meadows; uncommon along the rock shore.
Carex deflexa Hornem. Uncommon, clearings in the boreal forest.
Carex deweyana Schwein. Frequent, boreal and birch-aspen woods, uncommon in early stages of fire succession.
Carex diandra Schrank. Uncommon, swamps and grass mats of lakeshores.
Carex disperma Dewey. Frequent, bog mats and in swamps.
Carex eburnea Boott. Rare, rock shore crevices.
Carex exilis Dewey. Rare, bogs.
Carex flava L. Frequent, shallow water and banks of beaver ponds, swamps and lakeshores, cedar swamps; uncommon along the rock shore.
Carex folliculata L. Rare, collected once in a bog.
Carex garberi Fern. Uncommon, margins of bogs and inland lakes and along the rock shore.
Carex gracillima Schw. Uncommon lake and bog margins, moist swales in the boreal forest, rock shore of Lake Superior.
Carex houghtoniana Dewey. Abundant in the early stages of fire succession at Card Point and McGinty's Cove. Scattered in a variety of other habitats: margins of lakes, swamps and beaver ponds, boreal forest floor. Uncommon in rocky openings.
Carex hystericina Willd. Uncommon, rock shore and shores of inland lakes.
Carex interior Bailey. Frequent in shallow water of swamps, beaver ponds, shores and bogs.
Carex intumescens Rudge. Common in swamps, beaver ponds and streams, and lake margins. Uncommon in birch and aspen forests.
Carex lacustris Willd. Uncommon, emergent in shallow water in beaver ponds.
Carex lasiocarpa Ehrh. Common, bog mats, lakeshores, swamps and beaver ponds.

Carex lenticularis Michx. Uncommon, rock shore crevices, banks and shallow water of beaver ponds.
Carex leptalea Wahl. Frequent in bogs and adjacent forest, uncommon along shores of lakes and ponds.
Carex leptonervia Fern. Uncommon in birch-aspen forest.
Carex limosa L. Frequent in bogs, uncommon in shallow water of inland lakeshores.
Carex livida (Wahl.) Willd. Frequent on bog mats, uncommon along rock shore of Lake Superior.
Carex media R.Br. Frequent, rock shore crevices along Lake Superior and grassy dry clearings. Threatened in Michigan and reported here only from Isle Royale and the Keweenaw Peninsula. Reported from Raspberry Island, Passage Island, Cork Island, Horner Island, Green Island and Chippewa Harbor.
Carex merritt-fernaldii Mack. Uncommon in rocky openings, rare in birch-aspen forests.
Carex michauxiana Boeckl. Frequent in swamps, shallow water and banks of beaver ponds, lake margins, bogs and moist swales of the boreal forest.
Carex oligosperma Michx. Frequent in bogs and swamps.
Carex ormostachya Wieg. Uncommon, mixed woods.
Carex pauciflora Lightf. Common on sphagnum bog mats.
Carex paupercula Michx. Uncommon along Lake Superior rock shores in pools and sphagnum bogs.
Carex peckii Howe. Rare, known from Pickett's Bay.
Carex pedunculata Willd. Uncommon in birch-aspen woods.
Carex projecta Mack. Frequent, shallow water of beaver ponds and swamps.
Carex retrorsa Schw. Common in swamps, lakeshores, ponds and margins thereof.
Carex rostrata Stokes. Common in shallow water of beaver ponds, swamps and lake margins. Also found in bogs.
Carex rugosperma Mack. Rare, known from the rock shore at Siskiwit Bay.
Carex stipata Willd. Abundant in aquatic habitats, swamps, margins of lakes and streams, beaver ponds and meadows.
Carex stricta Lam. Frequent in shallow water along the shores of lakes and ponds.
Carex tenuiflora Wahl. Uncommon, bogs.
Carex tetanica Schkuhr. Rare, known from two 19th century collections: "damp woods" and "wet places."
Carex trisperma Dewey. Uncommon in pools along the rock shore of Lake Superior, moist swales in the boreal forest, bogs and swamps.
Carex umbellata Willd. Rare, rock shore.
Carex vaginata Tausch. Rare, known from a bog forest near Hidden Lake and a "swampy area," Little Siskiwit Bay.
Carex vesicaria L. Abundant in aquatic habitats, swamps, lakeshores and stream margins, beaver ponds and meadows.
Carex viridula Michx. Uncommon, marly coves, sandy shores, stream and lake banks.
Cladium mariscoides (Muhl.) Torrey [twig-rush]. Frequent but scattered on bog mats and lake margins.

Dulichium arundinaceum (L.) Britton [three-way sedge]. Common, in nearly every aquatic habitat. Emergent in shallow water of lakeshores, swamps, streams and beaver ponds.
Eleocharis acicularis (L.) R. & S. Uncommon to frequent, littoral zone of lakes, ponds and streams.
Eleocharis elliptica Kunth. Frequent, shallow water of lakes and streams.
Eleocharis obtusa (Willd.) Schultes. Frequent, littoral zone of lakes.
Eleocharis pauciflora (Lightf.) Link. Rare, collected once from a floating log at Wallace Lake.
Eleocharis smallii Britton [common spike-rush]. Common in most aquatic habitats; lakeshores, swamps and beaver ponds.
Eriophorum gracile W.D.J. Koch. Frequent, bog mats and hummocks.
Eriophorum spissum Fern. Abundant, bog mats.
Eriophorum tenellum Nutt. Uncommon, bog mats.
Eriophorum viridi-carinatum (Engelm.) Fern. Frequent, bog margins and mats.
Rhynchospora alba (L.) Vahl. Frequent, bog mats and marsh hummocks.
Rhynchospora fusca (L.) Ait.f. Uncommon, but locally abundant when found, bog mats.
Scirpus acutus Bigelow [hard stem bulrush]. Uncommon, emersed in shallow water of lakes.
Scirpus atrovirens Willd. Frequent, rock shore pools, crevices and swamps.
Scirpus cespitosus L. An arctic species, abundant in rock shore pools and crevices, bog hummocks.
Scirpus cyperinus (L.) Kunth [wool-grass]. Abundant in aquatic and moist habitats, emersed or on wet soil in swamps, beaver ponds, meadows, bogs, streams, lake margins and rock shore pools.
Scirpus hudsonianus (Michx.) Fern. [swaying-rush]. Uncommon, stream and lake margins, rocky shore of Lake Superior.
Scirpus microcarpus Presl. Uncommon, moist soil of stream banks.
Scirpus subterminalis Torr. Uncommon, nearly completely submersed in the littoral zone of lakes.
Scirpus validus Vahl. [soft-stem bulrush]. Uncommon, bogs.

ARACEAE — Arum Family

Arisaema triphyllum (L.) Schott [jack-in-the-pulpit]. Uncommon, sugar maple forest.
Calla palustris L. [water arum]. Frequent, rooted in mucky soil or emersed in swamps and slow moving streams.
Symplocarpus foetidus (L.) Nutt. [skunk-cabbage]. Frequent in swamps.

LEMNACEAE — Duckweed Family

Lemna minor L. [duckweed]. Uncommon, floating on ponds and lakes and standing water in swamps.
Lemna trisulca L. [star duckweed]. Collected only by Cooper in "aquatic delta streams."

ERIOCAULACEAE — Pipewort Family

Eriocaulon septangulare With. [pipewort]. Frequent, submersed or emersed in shallow water of inland lakes, rooted in sand or muck.

JUNCACEAE — Rush Family

Juncus alpinus Vill. Occasional, rocky openings.
Juncus brevicaudatus (Engelm.) Fern. Common, lake and stream shores, rock shore pools. Frequently in bogs.
Juncus dudleyi Wieg. Frequent, lake and stream shores and beaver ponds.
Juncus effusus L. Commonly emersed in shallow water of beaver ponds and swamps.
Juncus filiformis L. Rare, known from Gull Island.
Juncus nodosus L. Frequent, emersed in shallow water, rooted in sand.
Juncus pelocarpus Meyer. Rare, sedge mat of bog.
Juncus stygius L. A rare circumboreal species collected once in 1901 by C. S. Stuntz and C. E. Allen, no location given on herbarium specimen. Threatened in Michigan.
Juncus tenuis Willd. [path rush]. Common along paths, disturbed soil.
Luzula acuminata Raf. [wood rush]. Occasional, moist woods.
Luzula multiflora (Retz.) Lej. [wood rush]. Uncommon, rocky, grassy openings.
Luzula parviflora (Ehrh.) Desv. An uncommon circumboreal plant whose only location in Michigan is Isle Royale. Occurs at Passage Island, Moskey Basin and Washington Harbor. Threatened in Michigan.

LILIACEAE — Lily Family

Allium schoenoprasum L. [wild chives]. Uncommon, rock shore crevices and pools. Occurs at Blake Point, Cork Island, Captain Kidd Island and Passage Island. Threatened in Michigan.
Clintonia borealis (Aiton) Raf. [blue-bead lily]. Common throughout the island in moist forests.
Erythronium americanum Ker [trout lily]. Collected by A. E. Foote in 1868, possibly mislabeled (see text).
Lilium philadelphicum L. [wood lily]. Frequent in clearings, rocky openings and aspen woods.
Maianthemum canadense Desf. [wild lily-of-the-valley]. Common in moist woods, abundant in the jack pine forest.
Polygonatum pubescens (Willd.) Pursh. Rare in mature forests, especially sugar maple.
Smilacina racemosa (L.) Desf. [false spikenard]. Frequent in sugar maple forest.
Smilacina trifolia (L.) Desf. Frequent in bogs, uncommon along stream banks.
Streptopus amplexifolius (L.) DC. Frequent in wet woods and swamps.

Streptopus roseus Michx. [rose mandarin]. Frequent in the mature boreal forest.
Tofieldia glutinosa (Michx.) Pers. Rare, at the margins of rock shore pools.
Tofieldia pusilla (Michx.) Pers. Uncommon, an arctic tundra species found at the margin of rock shore pools. Threatened in Michigan. Occurs at Passage Island, North Government Island and Blake's Point.
Trillium cernuum L. [nodding trillium]. Uncommon and nearly exclusive to the west end of the island in mature forests. Rare elsewhere in wet shady sites.
Trillium grandiflorum (Michx.) Salisb. [common trillium]. Frequent in the mature forests on the western end of the island.
Uvularia grandiflora Sm. [bellwort]. Rare in mature sugar maple forest on the west end of the island.

IRIDACEAE — Iris Family

Iris versicolor L. [wild blue flag]. Frequent in swamps, streams, lake margins and beaver ponds.
Sisyrinchium angustifolium Miller. Uncommon, rock shore, rocky openings and grassy meadows.
Sisyrinchium montanum Greene [blue-eyed-grass]. Rare, grassy clearings.

ORCHIDACEAE — Orchid Family

Arethusa bulbosa L. [arethusa, dragon's mouth]. Rare, bog mats. A plant of special concern in Michigan.
Calopogon tuberosus (L.) BSP. [grass-pink]. Rare, found once on a bog mat near Saginaw Point.
Calypso bulbosa (L.) Oakes [calypso]. Uncommon in the boreal forest, often forming dense patches of up to 100 plants.
Corallorhiza maculata Raf. [spotted coral-root]. Uncommon, coniferous forests. Forma flavida is also found--the entire plant is yellow with a white lip.
Corallorhiza striata Lindley [striped coral-root]. Uncommon in the boreal forest.
Corallorhiza trifida Chat. [early coral-root]. Frequent in the boreal forest clearings. A plant of special concern in Michigan.
Cypripedium acaule Aiton [moccasin flower]. Uncommon, locally distributed in moist forests.
Cypripedium arietinum R.Br. [ram's head lady-slipper]. Rare, boreal forest clearings. A plant of special concern in Michigan.
Cypripedium calceolus L. [yellow lady-slipper]. Uncommon in bogs, rarely found in swamps.
Cypripedium reginae Walter [showy lady-slipper]. Rare, bogs.
Goodyera oblongifolia Raf. [rattlesnake-plantain]. Uncommon, boreal forests, birch forests. A western disjunct species also found in the Black Hills of South Dakota.
Goodyera repens (L.) R.Br. [rattlesnake-plantain]. Uncommon, throughout the island in moist forests.
Goodyera tesselata Lodd. Uncommon, moist forests throughout the island.

Habenaria clavellata (Michx.) Sprengel [one leafed rein orchid]. Uncommon, bogs, swamps and moist swales in coniferous woods.
Habenaria dilatata (Pursh) Hooker [bog-candle]. Frequent in bogs.
Habenaria hookeri Gray [Hooker's orchid]. Rare, moist forest.
Habenaria hyperborea (L.) R.Br. [tall northern rein orchid]. Frequent, swamps and bogs.
Habenaria obtusata (Pursh) Richardson [blunt-leaf orchid]. Uncommon in swamps, swales in the coniferous forests, birch forests.
Habenaria orbiculata (Pursh) Torrey [round-leaf orchid]. Rare, mixed deciduous forest and boreal forest.
Habenaria psycodes (L.) Sprengel [purple fringed orchid]. Uncommon, swamps and bogs.
Habenaria viridis (L.) R.Br. [bracted orchid]. Uncommon, boreal and mixed hardwood forests.
Liparis loeselii (L.) Richard [green twayblade]. Rare in bogs and swamps.
Listera auriculata Wieg. [auricled twayblade]. Rare, boreal forest. This is the only plant found on Isle Royale under consideration for federal protection (see text). A special concern plant in Michigan.
Listera convallarioides (Sw.) Torrey [broad-leaved twayblade]. Rare in moist swales and along stream banks, boreal forest floor, bogs.
Listera cordata (L.) R.Br. [heart-leaved twayblade]. Uncommon, bogs and swamps.
Malaxis monophylla (L.) Sw. [white adder's tongue]. Rare, moist habitats in the boreal forest.
Malaxis unifolia Michx. [green adder's tongue]. Uncommon, rocky openings, moist clearings and swamps.
Orchis rotundifolia Pursh [round-leaved orchid]. Rare, reported twice for Isle Royale (see text). An endangered species in Michigan.
Pogonia ophioglossoides (L.) Ker [rose pogonia]. Uncommon, bogs.
Spiranthes cernua (L.) Rich. [nodding ladies tresses]. Rare in moist openings of the boreal forest.
Spiranthes lacera (Raf.) Raf. [slender ladies tresses]. Uncommon, mixed forests.
Spiranthes romanzoffiana Cham. [stout ladies tresses]. Uncommon, bog mats and other wet open habitats, including rock shore pools.

SALICACEAE — Willow Family

Populus balsamifera L. [balsam poplar]. Frequent, rocky clearings and in forests where it sometimes forms pure stands. Scattered elsewhere.
Populus grandidentata Michx. [big-toothed aspen]. Uncommon on the west end of the island.
Populus tremuloides Michx. [quaking aspen]. Abundant, second only to paper birch as a post fire pioneer species in the boreal forest.
Salix bebbiana Sarg. Frequent, rocky openings and rock shore crevices.

Salix discolor Muhl. Frequent, rock shore crevices and rocky clearings. Uncommon at the recent burn sites.
Salix humilis Marsh. Frequent, rockshore crevices and rocky openings. Uncommon in boreal forest clearings.
Salix lucida Muhl. Rare, lakeshores.
Salix pedicellaris Pursh. Rare, bogs.
Salix pellita Anderss. Rare, rock shore of Greene Island.
Salix petiolaris Sm. Rare, beaver meadow along Benson Creek.
Salix planifolia Pursh. Uncommon, rocky shores.
Salix pyrifolia Anderss. Uncommon, rocky clearings and thickets.

MYRICACEAE — Wax-myrtle Family

Myrica gale L. [sweet gale]. Common along the shores of lakes and ponds, less common in bogs and swamps. Rarely in rock shore pools.

BETULACEAE — Hazel Family

Alnus crispa (Ait.) Pursh [mountain alder]. Frequent, rocky clearings and boreal forest.
Alnus rugosa (DuRoi) Spreng. [speckled alder]. Common, lake and stream margins, swamps, infrequent in the boreal forest.
Betula alleghaniensis Britt. [yellow birch]. Abundant along the Greenstone Ridge in the sugar maple forest west of Lake Desor.
Betula papyrifera Marsh. [paper birch]. The most common post-fire pioneer tree species in the boreal forest. Abundant in the area of the 1936 burn. Common in the boreal forest as one of the dominant tree species there. Uncommon along the rock shore.
Betula pumila L. Uncommon, shrub zone of bogs.
Corylus cornuta Marsh. [beaked hazelnut]. Frequent, rocky openings, especially in old unforested burns.
Ostrya virginiana (Mill.) K. Koch [ironwood]. Rare, Greenstone Ridge north of Hay Bay.

FAGACEAE — Beech Family

Quercus rubra L. [northern red oak]. Uncommon, rocky openings and maple forest.

ULMACEAE — Elm Family

Ulmus americana L. [American elm]. Found only at Edisen Fishery. An introduced plant.

URTICACEAE — Nettle Family

Urtica dioica L. [stinging nettle]. Rare, disturbed soil and sandy beaches.

SANTALACEAE — Sandalwood Family

Comandra umbellata (L.) Nutt. Frequent, rocky openings, clearings in the boreal forest.

Geocaulon lividum (Richards) Fern. [northern comandra]. Frequent, mature boreal forest, rocky clearings, rock shore of Lake Superior, grassy clearings.

ARISTOLOCHIACEAE — Birthwort Family

Asarum canadense L. [wild ginger]. Rare, moist, fertile soil, Windigo area.

POLYGONACEAE — Buckwheat Family

Polygonum achoreum Blake. Rare, disturbed sites.
Polygonum amphibium L. Uncommon, shores and littoral zones of lakes and streams.
Polygonum aviculare L. [knotweed]. Uncommon, rocky clearings.
Polygonum cilinode Michx. Uncommon, rocky clearings, recent burns.
Polygonum convolvulus L. Uncommon, clearings and rocky openings. An introduced plant.
Polygonum douglasii Greene. Uncommon, rocky openings along the ridges.
Polygonum lapathifolium L. Rare, boreal forest clearings.
Polygonum sagittatum L. Rare, shores and thickets.
Polygonum viviparum L. [alpine buckwheat]. Uncommon, sandy and rocky beaches, moist depressions of the rock shore. An arctic-alpine plant. Threatened in Michigan.
Rheum rhaponticum L. [rhubarb]. Introduced at Star, Johnson, Passage and Captain Kidd Islands, at the Edisen and Banksund Fisheries, and at Crystal Cove.
Rumex acetosella L. [sheep sorrel]. Common, dry clearings. An introduced plant.
Rumex crispus L. [curled dock]. Rare, grassy clearings. Hat Island, Siskiwit Camp.
Rumex domesticus Hartm. Rare, dry clearings, disturbed sites.
Rumex triangulivalvis (Danser) Rech.f. Rare, most shores.
Rumex obtusifolius L. [bitter dock]. Rare, clearings, disturbed sites.
Rumex orbiculatus Gray [water dock]. Uncommon, lakeshores and swamps.

CHENOPODIACEAE — Goosefoot Family

Chenopodium album L. [lamb's quarters]. Rare, first collected in 1901 (no location given) and by Brown in 1930 near Rock Harbor fishing camp.
Chenopodium capitatum (L.) Asch. [strawberry blight]. Rare, dry clearings.

PORTULACACEAE — Purslane Family

Claytonia caroliniana Michx. Uncommon, maple woods.

CARYOPHYLLACEAE — Pink Family

Arenaria macrophylla Hook. [big leaf sandwort]. Rare, rocky openings. Collected at Siskiwit Bay by Brown. Threatened in Michigan.

Arenaria serpyllifolia L. [thyme-leaf sandwort]. Rare, dry clearings.
Cerastium arvense L. [field cerastium]. Frequent, dry, rocky clearings.
Cerastium fontanum Baumg. [mouse-eared chickweed]. Uncommon, dry clearings.
Cerastium tomentosum L. [snow in summer]. Rare, Wrights Island, probably introduced.
Dianthus barbatus L. [sweet william]. Rare, cultivated and escaped at Windigo.
Dianthus plumarius L. [garden pink]. Rare, cultivated and escaped at Wright Island.
Lychnis chalcedonica L. [scarlet lychnis]. Rare, probably spread from cultivation.
Myosoton aquaticum (L.) Moench. Uncommon, lakeshores and swamps.
Sagina nodosa (L.) Fenzl. [pearlwort]. Uncommon, rock crevices. Threatened in Michigan.
Silene antirrhina L. [sleepy catchfly]. Uncommon, rocky openings.
Silene cucubalus Wibel [bladder-campion]. Reported near park headquarters at Mott Island. Probably introduced.
Silene noctiflora L. [night-flowering catchfly]. Rare, Siskiwit Bay, Rock Harbor Lodge, and clearing near Rock Harbor Lighthouse.
Silene pratensis (Rafn) Godron and Gren. [white campion]. Uncommon, birch forest of the 1936 burn, weedy areas.
Stellaria calycantha (Ledeb.) Bong. Frequent, recent burns. Rarely along the rockshore.
Stellaria graminea L. Rare, dry clearings.
Stellaria longifolia Muhl. Uncommon, dry clearings, sand banks.
Stellaria media (L.) Cyrill. [chickweed]. Uncommon, grassy meadows, clearings.

CERATOPHYLLACEAE — Hornwort Family

Ceratophyllum echinatum Gray [hornwort]. Rare, collected only by Cooper in "Delta streams."

NYMPHAEACEAE — Water Lily Family

Brasenia schreberi Gmel. [water shield]. Frequent, littoral zone of shallow ponds and lakes.
Nymphaea odorata Ait. [scented water-lily]. Rare, undisturbed lakes.
Nymphaea tetragona Georgi. Rare, rooted in muck with floating leaves in shallow to deep water of stream deltas of Chippewa Harbor and Duncan Bay.
Nuphar variegata Durand [bullhead-lily]. Common, rooted in muck with floating leaves in shallow ponds, lakes, rivers and streams.

RANUNCULACEAE — Crowfoot Family

Actaea pachypoda Ell. [white baneberry]. Uncommon, sugar maple forest and mixed hardwood forests on the western end of the island.

Actaea rubra (Ait.) Willd. [red baneberry]. Frequent, boreal forest.
Anemone canadensis L. Frequent, margins of streams, lakes and swamps.
Anemone multifida Poir. Uncommon, rocky openings, clearings.
Anemone quinquefolia L. [wood anemone]. Uncommon, banks of streams and lakes in the boreal forest.
Anemone virginiana L. Uncommon, stream banks and lakeshores.
Aquilegia canadensis L. [eastern columbine]. Frequent, rocky openings, rare along the rockshore of Lake Superior.
Caltha palustris L. [marsh marigold]. Common, streams, wet banks of lakes, swamps and beaver ponds.
Clematis occidentalis (Hornem.) DC. [purple clematis]. Uncommon, dry clearings.
Clematis virginiana L. [virgin's bower]. Uncommon, stream banks and thickets.
Coptis trifolia (L.) Salisb. [goldthread]. Common, spruce-fir forests.
Hepatica americana Ker. [hepatica]. Uncommon, mixed hardwood forests.
Ranunculus abortivus L. [kidney-leaf buttercup]. Common, wet banks of lakes, streams, beaver ponds, swamps, and mixed forests.
Ranunculus acris L. [tall buttercup]. Frequent, meadows and clearings.
Ranunculus fascicularis Muhl. [early buttercup]. Rare, known from a ridge near Lake Linklater, collected in 1930.
Ranunculus hispidus Michx. [swamp buttercup]. Uncommon, lakeshores and swamps.
Ranunculus longirostris Godr. [white water crowfoot]. Rare, known from Lake Richie, rooted in sandy bottom.
Ranunculus macounii Britt. Rare, low muddy area in forest on Passage Island. Brown reported it from Brady Cove and Tobin Harbor. Threatened in Michigan.
Ranunculus pensylvanicus L.f. [bristley crowfoot]. Uncommon, swamps, margins of lakes and beaver ponds.
Ranunculus reptans L. [creeping spearwort]. Uncommon, submersed in shallow water of inland lakes and coves of Lake Superior.
Ranunculus rhomboideus Goldie [prairie buttercup]. Uncommon, rocky openings along the ridges. Threatened in Michigan.
Ranunculus sceleratus L. [cursed crowfoot]. Uncommon, lake margins and swamps.
Thalictrum dasycarpum Fisch. & Lall. [purple meadowrue]. Common, beaver meadows, banks of lakes, streams and swamps.

PAPAVERACEAE — Poppy Family

Sanguinaria canadensis L. [bloodroot]. Collected once by A. E. Foote, and probably mislabled as an Isle Royale specimen (see text).

FUMARIACEAE Fumitory Family

Corydalis aurea Willd. [golden corydalis]. Rare, dry rocky openings.

Corydalis sempervirens (L.) Pers. [rock harlequin]. Frequent, rock shoreline of Lake Superior and rocky openings along the ridges.

Dicentra cucullaria (L.) Bernh. [Dutchman's breeches]. Collected once in 1868 by A. E. Foote, and probably mislabeled as an Isle Royale specimen (see text).

CRUCIFERAE Mustard Family

Arabis divaricarpa Nels. Frequent, rocky openings. Less frequent along the rock shore of Lake Superior.

Arabis drummondii Gray. Frequent, rocky openings and grassy clearings, rockshore crevices.

Arabis hirsuta (L.) Scop. Uncommon, rocky openings.

Arabis holboellii Hornem. Rare, collected on the Minong Ridge in 1978. A western disjunct plant.

Arabis lyrata L. [rock cress]. Frequent, rock shore crevices and adjacent clearings.

Arabis glabra (L.) Bernh. Rare, reported by Voss as a specimen misidentified by Clair Brown.

Armoracia rusticana (Lam.) Gaertn., Mey & Scherb. [horseradish]. Rare, Wright Island, introduced.

Barbarea orthoceras Ledeb. Rare, rock shore of Lake Superior.

Barbarea vulgaris R. Br. Rare, moist meadow near Siskiwit swamp, sandy and rocky beaches.

Berteroa incana (L.) Rare, rocky clearings.

Brassica kaber (DC.) L. C. Wheeler. Uncommon, clearings and sandy shores.

Braya humilis (C.A.Mey.) Robins. Rare, collected only by P. E. Hebert "on rocks." Threatened in Michigan.

Capsella bursa-pastoris (L.) Medic. [shepherd's purse]. Uncommon, disturbed sites and rock shore crevices.

Cardamine parviflora L. Uncommon, rocky hillsides and ridges.

Cardamine pensylvanica Muhl. Uncommon and variable in habitat, sandy beaches, swamps, clearings and rocky openings.

Draba arabisans Michx. Uncommon, rock shore crevices and rocky openings on Belle Isle, Passage Island, Hat Island, Captain Kidd Island, and at Monument Rock. Threatened in Michigan.

Draba incana L. Rare, found only on the northwest end of Passage Island, the only reported location in Michigan. Threatened in Michigan. An arctic-alpine species.

Erysimum cheiranthoides L. Uncommon, rockshore crevices.

Erysimum inconspicuum (S. Wats.) MacM. Uncommon, rock shore crevices.

Lepidium campestre (L.) R.Br. Uncommon, rocky clearings.

Lepidium densiflorum Schrad. Uncommon, rock shore crevices.

Lepidium virginicum L. [poor man's pepper]. Uncommon, disturbed sites and clearings.

Rorippa palustris (L.) Bess. [marsh cress]. Uncommon, gravelly and sandy banks.

Sisymbrium altissimum L. [hedge mustard]. Rare, collected by Brown near Rock Harbor Lighthouse in 1930 and on Little Siskiwit Island in 1931. Also found near old C.C.C. Camp, Siskiwit Bay, in open meadow. Introduced.

Subularia aquatica L. [awlwort]. Rare, collected by Brown submersed at Moskey Basin and not since reported. Threatened in Michigan.

Thlaspi arvense L. [field penny cress]. Rare, disturbed sites at Windigo.

SARRACENIACEAE Pitcher Plant Family

Sarracenia purpurea L. [pitcher plant]. Common in bogs.

DROSERACEAE Sundew Family

Drosera anglica Huds. Rare, bogs and rock pool margins. A special concern plant in Michigan.

Drosera intermedia Hayne. Frequent, bogs. Uncommon at lake margins. Also found at rock pool margins on Passage Island.

Drosera linearis Goldie. Frequent, bog mats, uncommon at the margins of rock shore pools and lakes.

Drosera rotundifolia L. [round leaf sundew]. Common on bog mats, frequently at lake margins, occasionally at the margin of rock shore pools.

CRASSULACEAE Orpine Family

Sedum acre L. [mossy stonecrop]. Rare, an introduced species along the trail to the Minong Mine.

Sempervivum tectorum L. [hen and chickens]. Introduced on Star Island and Johnson Island.

SAXIFRAGACEAE Saxifrage Family

Mitella nuda L. [bishop's cap]. Frequent, boreal forest and mixed hardwood forest.

Parnassia palustris L. Rare, swamps and lake margins.

Ribes glandulosum Grauer [skunk currant]. Frequent and widespread mixed woods, rocky openings and jack pine stands.

Ribes hudsonianum Richards. Uncommon, rocky clearings, mixed woods, and swales.

Ribes lacustre (Pers.) Poir. [bristly black currant]. Uncommon, boreal forest clearings.

Ribes oxyacanthoides L. [gooseberry]. Uncommon but widespread, rocky clearings and beaches.

Ribes triste Pall. [red currant]. Uncommon, rocky clearings along the ridges and in the boreal forest.

Saxifraga paniculata P. Mill. [yellow mountain saxifrage]. Rare but widespread, in rock shore crevices along Lake Superior at McGinty Cove, Passage Island, Blake Point, Saginaw Point, Mott and Heron Islands. An arctic plant threatened in Michigan.

Saxifraga tricuspidata Rottb. Uncommon, rock shore crevices and rocky openings. Threatened in Michigan.

Saxifraga virginiensis Michx. [early saxifrage]. Uncommon, rock shore crevices and inland rocky openings.

ROSACEAE — Rose Family

Agrimonia striata Michx. Uncommon but widespread on the western end of the island in clearings, meadows and the sugar maple forest.
Amelanchier bartramiana (Tausch) Roemer. Uncommon, rock shore crevices and rocky openings.
Amelanchier arborea (Michx. f.) Fern. Rare, collected once from a rocky opening along the Daisy Farm Trail in 1978.
Amelanchier interior complex. Frequent in rock shore crevices and inland rocky openings.
Amelanchier laevis Wieg. Uncommon, thickets and moist woods.
Amelanchier sanguinea complex. Frequent in rocky openings, grassy clearings and birch-aspen woods.
Aronia prunifolia (Marsh.) Rehd. Uncommon, thickets and shores.
Crataegus douglasii Lindl. Rare, rocky openings along the ridges. A western disjunct plant.
Fragaria vesca L. [woodland strawberry]. Uncommon, rocky openings, clearings in the boreal forest.
Fragaria virginiana Duchesne [wild strawberry]. Frequent, boreal forest, mixed hardwood forests, clearings and rocky openings.
Geum aleppicum Jacq. Uncommon, meadows and clearings, mixed forests.
Geum rivale L. [water avens]. Rare, reported by Brown from an old burn on the slopes of Mt. Franklin.
Malus pumila Mill. [apple]. Introduced at Hay Bay, Grace Island, Siskiwit Camp, Daisy Farm, Windigo, Siskiwit Mine, and Greenstone Ridge just southwest of Ishpeming Point.
Physocarpus opulifolius (L.) Maxim. [ninebark]. Frequent, rock shore crevices, rocky openings and thickets and beach margins.
Potentilla anserina L. [silverweed]. Uncommon, sandy and rocky beaches, rock shore crevices.
Potentilla argentea L. [silvery cinquefoil]. Uncommon, rocky clearings and disturbed sites.
Potentilla arguta Pursh. [tall cinquefoil]. Frequent, inland rocky openings. Less frequent in rock shore crevices.
Potentilla fruticosa L. [shrubby cinquefoil]. Frequent, rock shore crevices along Lake Superior.
Potentilla norvegica L. Uncommon but widespread, clearings, rocky openings and disturbed sites.
Potentilla palustris (L.) Scop. [marsh cinquefoil]. Frequent, swamps, beaver meadows, lakeshores and bogs.
Potentilla pensylvanica L. Uncommon, rock shore crevices. Threatened in Michigan.
Potentilla recta L. Uncommon, clearings and disturbed sites.
Potentilla simplex Michx. [old field cinquefoil]. Frequent, clearings and rocky meadows. Uncommon in rock shore crevices.
Potentilla tridentata Ait. [three-toothed cinquefoil]. Frequent, rock shore crevices, rocky openings, clearings.
Prunus pensylvanica L.f. [pin cherry]. Frequent, grassy clearings, rocky openings and recent burn sites.

Prunus virginiana L. [choke cherry]. Uncommon but widespread, rocky clearings.
Rosa acicularis Lindl. Common, rockshore crevices, rocky openings, recent burns. Frequent in jack pine stands and other forests.
Rosa arkansana Porter. Uncommon, clearings and rocky openings.
Rosa blanda Ait. Reported by Brown from Grace Island.
Rubus strigosus Michx. [red raspberry]. Abundant at McGinty Cove and Card Point, scattered elsewhere in mixed forests. Abundant at recent burn sites, frequent in clearings.
Rubus parviflorus Nutt. [thimbleberry]. Abundant, young forests. A western disjunct plant.
Rubus pubescens Raf. [dwarf raspberry]. Frequent, boreal forest, grassy and rocky openings.
Rubus pensylvanicus complex [blackberry]. Uncommon in thickets, clearings and rocky openings.
Sorbus decora (Sarg.) Hyland [mountain-ash]. Common, woods and rock openings, but reduced to low stature by moose browsing.
Spiraea alba Duroi. Uncommon, moist thickets and banks.
Waldsteinia fragarioides (Michx.) Tratt. [barren-strawberry]. Uncommon, rocky openings.

LEGUMINOSAE — Pulse Family

Lathyrus japonicus Willd. [beach pea]. Frequent, sandy, rocky and gravelly beaches.
Lathyrus ochroleucus Hook. Uncommon, rocky openings, dry clearings, jack pine stands.
Lathyrus palustris L. Uncommon, margins of swamps, streams and lakes.
Medicago lupulina L. [black medic]. Introduced at Mott Island.
Melilotus alba Desr. [white sweet clover]. Found at Siskiwit Camp and Windigo. Probably introduced via horse feed.
Melilotus officinalis (L.) Lam. [yellow sweet clover]. Found at Siskiwit Camp and Windigo. Probably introduced along with preceding species.
Trifolium aureum Poll. [hop clover]. Uncommon, rocky openings, meadows and disturbed sites. Introduced.
Trifolium hybridum L. [alsike clover]. Uncommon, clearings, disturbed sites. Introduced.
Trifolium pratense L. [red clover]. Frequent, clearings, disturbed sites. Uncommon in the boreal forest. Introduced.
Trifolium repens L. [white clover]. Frequent, clearings, disturbed sites and the boreal forest. Introduced.
Vicia americana Muhl. Uncommon, clearings, rocky openings and mixed woods.
Vicia sepium L. Rare, collected in 1959 near the Windigo Inn.

OXALIDACEAE — Wood-sorrel Family

Oxalis acetosella L. [common wood-sorrel]. Uncommon, mixed hardwood forests and recently burned areas.

GERANIACEAE — Geranium Family

Geranium bicknellii Britt. [Bicknell's cranebill]. Frequent, rock shoreline of Lake Superior and inland rocky openings.
Geranium carolinianum L. Collected once in 1868 by A. E. Foote.

POLYGALACEAE — Milkwort Family

Polygala paucifolia Willd. [gay wings]. Frequent, mature boreal forests, uncommon in jack pine stands.

EUPHORBIACEAE — Spurge Family

Euphorbia cyparissias L. [cypress spurge]. Rare, disturbed soil.

CALLITRICHACEAE — Water Starwort Family

Callitriche hermaphroditica L. Rare. Brown reported this as a narrow leaf form of Elodea. A special concern plant in Michigan.
Callitriche verna L. [water-starwort]. Frequent, in shallow water of lakes, ponds and slow-moving streams and swamps.

EMPETRACEAE — Crowberry Family

Empetrum nigrum L. [black crowberry]. Rare, rock shore crevices along Lake Superior at Scoville Point and Passage Island. An arctic species threatened in Michigan.

ANACARDIACEAE — Cashew Family

Toxicodendron radicans Ktze. [poison-ivy]. Rare, known only from a recent collection on the Minong Ridge near Lane Cove.
Rhus typhina L. [staghorn sumac]. Frequent, dry rocky openings along the ridges.

ACERACEAE — Maple Family

Acer rubrum L. [red maple]. Uncommon, sugar maple forest on western end of the island, scattered elsewhere.
Acer saccharum Marsh. [sugar maple]. Abundant at high elevations on the western end of the island, uncommon in the 1936 burn area. A few scattered patches occur on the eastern end, especially at Mt. Ojibway.
Acer spicatum Lam. [mountain maple]. Common throughout but especially on the southwest end of the island.

BALSAMINACEAE — Touch-me-not Family

Impatiens capensis Meerb. [spotted touch-me-not]. Frequent, shores and moist banks of lakes, ponds and streams and often directly on beaver dams. Less frequent in swamps and moist clearings.
Impatiens pallida Nutt. [pale touch-me-not]. Collected by A. E. Foote in 1868 and not since found. Possibly mislabeled (see text).

RHAMNACEAE — Buckthorn Family

Ceonothus ovatus Desf. Rare, open rock ridge. Found only by Janke on Stanley Ridge near Lane's Cove.
Rhamnus alnifolia L'Her. [alder buckthorn]. Uncommon, margins of bogs and swamps, rocky openings.

GUTTIFERAE — St. John's-wort Family

Hypericum boreale (Britt.) Bickn. [Northern St. John's-wort]. Uncommon, sandy beaches and lakeshores.
Hypericum canadense L. Uncommon, lakeshores, bogs and swamps.
Hypericum perforatum L. [St. John's-wort]. Rare, dry disturbed sites near the Rock Harbor Lodge.
Triadenum fraseri (L.) Raf. [marsh St. John's-wort]. Frequent, swamps, beaver ponds, lakeshores and banks.

VIOLACEAE — Violet Family

Viola adunca Sm. Frequent, rock shore crevices and pools, inland rocky openings and clearings.
Viola blanda Willd. Frequent, swamps and coniferous woods.
Viola conspersa Reichenb. Frequent, swamps and adjacent woods, moist banks.
Viola cucullata Ait. Frequent, moist banks of lakes, ponds and streams.
Viola macloskeyi Lloyd. Frequent, bog mats and adjacent woods. Uncommon in mixed woods.
Viola nephrophylla Greene. Frequent, rocky openings and hardwood forests.
Viola pubescens Ait. [downy yellow violet]. Frequent, hardwood forests and mixed deciduous woods.
Viola renifolia Gray [kidney-leaf violet]. Common, moist woods.
Viola selkirkii Goldie. Frequent, boreal forest, occasionally in the sugar maple forest.
Viola sororia Willd. Rare, collected only by Janke recently in rocky opening on Mt. Siskiwit.

ELAEAGNACEAE — Oleaster Family

Shepherdia canadensis (L.) Nutt. [buffalo berry]. Uncommon, dry clearings, open woods.

THYMELAEACEAE

Dirca palustris L. [leatherwood]. Collected only by A. E. Foote in 1868.

ONAGRACEAE — Evening Primrose Family

Circaea alpina L. [enchanter's nightshade]. Frequent on the western end of the island in mixed hardwood forests, rarely occurring at the recent burns.
Epilobium angustifolium L. [fireweed]. Abundant at recent burn sites, uncommon elsewhere in dry clearings and meadows.
Epilobium ciliatum Raf. Common, moist soil and recent burns.

Epilobium leptophyllum Raf. Uncommon, bogs and lake margins.
Epilobium palustre L. [willow herb]. Uncommon, bogs and swamps. A special concern plant in Michigan.
Oenothera biennis L. [evening-primrose]. Rare, collected on a beach at McCargoe Cove by Clair Brown and identified by W. Dietrich, University of Dusseldorf in 1981.
Oenothera fruticosa L. Rare, roadside at Windigo.
Oenothera oakesiana Robbins.
Oenothera parviflora L. Uncommon, meadows and shores.
Oenothera perennis L. Uncommon, grassy clearings and shores.
Oenothera villosa Humb. Rare, collected only near Washington Harbor in 1944.

HALORAGIDACEAE — Water Milfoil Family

Myriophyllum alterniflorum DC. Uncommon, submersed in up to two meters of water at Siskiwit Lake, Feldtmann Lake and Sargent Lake. A special concern plant in Michigan.
Myriophyllum exalbescens Fern. Uncommon, littoral zone of lakes and streams.
Myriophyllum tenellum Bigel. Frequent, submersed and rooted in the sandy bottom of lakes.
Myriophyllum verticillatum L. Uncommon, found only by Cooper in "delta swamps."

HIPPURIDACEAE — Mare's-tail Family

Hippuris vulgaris L. [mare's-tail]. Uncommon, submersed in shallow water of lakes and ponds.

ARALIACEAE — Ginseng Family

Aralia hispida Vent. [bristly sarsaparilla]. Uncommon, rock shore of the main island and outer islands.
Aralia nudicaulis L. [wild sarsaparilla]. Abundant in the boreal forest.
Aralia racemosa L. [spikenard]. Uncommon, forests on the western end of the island.
Oplopanax horridus (Sm.) Miq. [devil's club]. Uncommon in a few rocky or swampy habitats on Blake Point, North and South Government Islands, Boys' Island, Edwards Island, Porter Island and Smithwick Island. Very abundant on Passage Island. Threatened in the State of Michigan (see text).

UMBELLIFERAE — Parsley Family

Carum carvi L. [caraway]. Rare, near Windigo Inn. Probably introduced.
Cicuta bulbifera L. [water-hemlock]. Frequent, margins of lakes, ponds and streams, and swamps. Less frequent in bogs.
Heracleum maximum Bartr. [cow parsnip]. Frequent and widespread in unforested areas.
Osmorhiza chilensis H. & A. [sweet cicely]. Rare, reported by Cooper from the Windigo area. A western disjunct plant.
Osmorhiza claytoni (Michx.) C. B. Clarke. Uncommon, moist woods.
Osmorhiza depauperata Phil. Frequent, mixed woods.

Pastinaca sativa L. [parsnip]. Rare, clearings at Windigo and Daisy Farm. Probably introduced.
Sanicula marilandica L. [black snakeroot]. Uncommon, woods and swamps.
Sium suave Walt. [water parsnip]. Uncommon to frequent, shores, streams, thickets and swamps.

CORNACEAE — Dogwood Family

Cornus alternifolia L.f. [alternate-leaf dogwood]. Rare, sugar maple forest.
Cornus canadensis L. [Canada dogwood]. One of the most abundant ground cover species in the boreal forest.
Cornus rugosa Lam. [round-leaf dogwood]. Uncommon, ridge tops, disturbed sites along trails.
Cornus stolonifera Michx. [red-osier dogwood]. Frequent, river and stream banks, lakeshores and swamps. Uncommon in mixed forests.

PYROLACEAE — Wintergreen Family

Chimaphila umbellata (L.) Bart. [pipsissewa]. Frequent, jack pine stands, boreal forest.
Moneses uniflora (L.) Gray [one-flowered wintergreen]. Uncommon, boreal forest.
Monotropa hypopithys L. [pinesap]. Rare, mixed forests.
Monotropa uniflora L. [Indian pipe]. Uncommon but widespread in boreal and mixed hardwood forests.
Pyrola asarifolia Michx. [pink pyrola]. Frequent, boreal and mixed forests.
Pyrola elliptica Nutt. [shinleaf]. Uncommon, boreal forest, rocky slopes.
Pyrola minor L. Uncommon, mixed woods, boreal forest.
Pyrola rotundifolia L. Rare, boreal and mixed hardwood forests.
Pyrola secunda L. [one-sided pyrola]. Frequent, boreal and mixed forests.
Pyrola virens Schweigger [green pyrola]. Uncommon, boreal and mixed forests.

ERICACEAE — Heath Family

Andromeda glaucophylla Link [bog-rosemary]. Frequent, bogs and sphagnum swamps, occasionally at the margins of rock shore pools.
Arctostaphylos uva-ursi (L.) Spreng. [bearberry]. Common, rock shore crevices, inland rocky openings and jack pine stands.
Chamaedaphne calyculata (L.) Moench [leatherleaf]. Abundant, bogs and sphagnum swamps.
Gaultheria hispidula (L.) Bigel. [creeping snowberry]. Uncommon, bogs and adjacent forests, sphagnum swamps.
Gaultheria procumbens L. [wintergreen]. Rare, recently found in jack pine stands at Saginaw Point. Older specimens are from Hay Bay, Mt. Franklin, and Angleworm Lake.
Kalmia polifolia Wang. [bog laurel]. Frequent, bogs and sphagnum swamps.

Ledum groenlandicum Oeder [Labrador tea]. Common, bogs and sphagnum swamps.
Vaccinium angustifolium Ait.[blueberry]. Common, rocky openings, jack pine stands.
Vaccinium macrocarpon Ait. [large cranberry]. Uncommon, bogs, sphagnum swamps, hummocks around lakes.
Vaccinium myrtilloides Michx. [sour-top blueberry]. Frequent, rocky openings and jack pine stands.
Vaccinium oxycoccos L. [small cranberry]. Frequent, bogs, sphagnum hummocks in swamps.
Vaccinium uliginosum L. [alpine blueberry]. Rare, rock shore crevices. An arctic tundra plant threatened in Michigan.
Vaccinium vitis-idaea L. Collected by A. E. Foote in 1868 and now believed to be extirpated from Isle Royale (see text).

PRIMULACEAE — Primrose Family

Lysimachia ciliata L. Rare, collected once at Windigo, in a grassy swale.
Lysimachia terrestris (L.) BSP. [loosestrife]. Common, bog hummocks, shores and moist banks, swamps and beaver ponds.
Lysimachia thyrsiflora L. [tufted loosestrife]. Frequent, swamps, shores, and moist banks.
Primula mistassinica Michx. [birdseye primrose]. Uncommon, rock shore crevices and pool margins along Lake Superior. An arctic plant.
Trientalis borealis Raf. [starflower]. Frequent, mixed forests and swamps. Occasionally in jack pine stands.

OLEACEAE — Olive Family

Fraxinus nigra Marsh. [black ash]. Uncommon, wooded swamps.
Syringa vulgaris L. [lilac]. Rare, site of old Belle Isle Lodge, Johnson Fishery at Chippewa Harbor, and old fishery at Star Island.

GENTIANACEAE — Gentian Family

Gentiana rubricaulis Schwein. [closed gentian]. Uncommon, moist swales and shores.
Halenia deflexa (Sm.) Griseb. [spurred gentian]. Frequent, boreal forest.
Menyanthes trifoliata L. [bog buckbean]. Common in bogs, uncommon at lakeshores, ponds and swamps.

APOCYNACEAE — Dogbane Family

Apocynum androsaemifolium L. [spreading dogbane]. Frequent, dry rocky openings along the ridge tops.

CONVOLVULACEAE — Morning Glory Family

Convolvulus spithamaeus L. [low bindweed]. Uncommon, dry rocky clearings.

HYDROPHYLLACEAE — Waterleaf Family

Phacelia franklinii (R.Br.) Gray. Uncommon, rocky openings at Crystal Cove and Captain Kidd Island. Threatened in Michigan.

BORAGINACEAE — Borage Family

Cynoglossum boreale Fern. [northern wild comfrey]. Uncommon, rocky openings and dry clearings. Rarely in jack pine stands.
Cynoglossum officinale L. [common hound's tongue]. Rare, clearing at Rock Harbor Lodge. Introduced.
Mertensia paniculata (Ait.) G. Don [lungwort]. Uncommon, margins of swamps and lakes.
Myosotis laxa Lehm. [forget-me-not]. Uncommon, clearing near old lighthouse, Rock Harbor. Introduced.
Myosotis sylvatica Hoffm. Rare, but locally abundant where found. Brown reported it under cultivation and rapidly spreading at Washington Island in 1930. In 1958 and 1965 collected in mixed woods near Washington Creek Trail just northeast of campground. In 1970, collected on Greenstone Ridge, open rocky site, about .75 mile southwest of Mt. Ojibway. Introduced.

LABIATAE — Mint Family

Dracocephalum parviflorum Nutt. [dragonhead]. Uncommon, dry rocky openings.
Galeopsis tetrahit L. [hemp nettle]. Frequent at the recent burns, sandy shores and disturbed sites.
Glechoma hederacea L. [ground-ivy]. Uncommon, moist banks and clearings.
Lycopus americanus Muhl. Frequent, moist shores, swamps.
Lycopus uniflorus Michx. Common, swamps and shores, less common on bog mats.
Mentha arvensis L. [field mint]. Frequent, swamps and shores of lakes and ponds.
Prunella vulgaris L. [self-heal]. Frequent in clearings, uncommon in the boreal forest.
Satureja vulgaris (L.) Fritsch. [wild basil]. Frequent, clearings, meadows and disturbed sites.
Scutellaria epilobiifolia A. Hamilton [skull-cap]. Frequent, lakeshores and banks.
Scutellaria lateriflora L. [mad-dog skullcap]. Uncommon, lakeshores.
Stachys palustris L. [woundwort]. Rare, found only on wet soil near Huginnin Cove Trail.
Thymus serpyllum L. [creeping thyme]. Rare, rocky openings, McCargoe Cove campsite.

SOLANACEAE — Nightshade Family

Chamaesaracha grandiflora (Hook.) Fern. [large white-flowered ground-cherry]. Rare, rocky openings.

SCROPHULARIACEAE — Figwort Family

Castilleja septentrionalis Lindl. [eastern paintbrush]. Common, rocky clearings and crevices and aspen woods. An arctic-alpine species. Threatened in Michigan.

Chelone glabra L. [turtlehead]. Uncommon, swamps.

Collinsia parviflora Dougl. Rare, rocky openings along ridges. A western disjunct. Threatened in Michigan.

Euphrasia curta (Fries) Wettst. Uncommon, rock shore crevices and rocky openings. Threatened in Michigan.

Euphrasia hudsoniana Fern. & Wieg. Frequent, rock shore pools and crevices. Threatened in Michigan.

Linaria vulgaris Hill [butter and eggs]. Rare, gravelly beach at Grace Island.

Melampyrum lineare Desr. [cow-wheat]. Frequent, boreal forest, rocky clearings.

Mimulus ringens L. [monkey flower]. Rare, swamp at McCargoe Cove.

Scrophularia lanceolata Pursh. [figwort]. Rare, collected only by Brown along trail to Lake Desor and at Lake Desor.

Verbascum thapsus L. [great mullein]. Frequent, dry rocky openings and clearings.

Veronica americana (Raf.) Schwein. [American brooklime]. Uncommon, swamps and swales.

Veronica arvensis L. Rare, disturbed aspen ridge near Rock Harbor Lodge.

Veronica officinalis L. [common speedwell]. Rare, collected by R. Janke in grassy meadow near Windigo.

Veronica serpyllifolia L. [thyme-leafed speedwell]. Rare, "moist soil."

Veronica verna L. Rare, collected in 1959 by Harold and Virginia Bailey. This was the first record for the United States and the second for North America

Veronicastrum virginicum (L.) Farw. [culver's-root]. Rare, "Washington Harbor."

LENTIBULARIACEAE — Bladderwort Family

Pinguicula vulgaris L. [butterwort]. Uncommon, rock shore pools and crevices at Scoville Point, Raspberry, Smithwick and Mott Islands and other exposed rocky locations. Also found on mossy banks. An arctic plant threatened in Michigan.

Utricularia cornuta Michx. Common, bog mats and muddy shores.

Utricularia gibba L. Uncommon, submersed in open water of ponds and lakes.

Utricularia intermedia Hayne. Abundant, submersed and often rooted in the mucky bottom of lakes, streams, swamps, ponds and bogs.

Utricularia minor L. Uncommon, submersed in lakes and ponds.

Utricularia vulgaris L. Common, submersed in shallow water of ponds, lakes, streams and bogs.

PLANTAGINACEAE — Plantain Family

Plantago major L. [common plantain]. Uncommon, disturbed soil.

RUBIACEAE — Madder Family

Galium asprellum Michx. [rough bedstraw]. Uncommon, moist swales and banks.

Galium boreale L. [northern bedstraw]. Rare, reported by Brown "near Washington Club."

Galium tinctorium L. Uncommon, bog mats, moist swales.

Galium trifidum L. Uncommon, moist banks of lakes and ponds, swamps.

Galium triflorum Michx. [sweet-scented bedstraw]. Common, mixed forests. Less common in swamps.

CAPRIFOLIACEAE — Honeysuckle Family

Diervilla lonicera Mill. [bush honeysuckle]. Abundant, rocky openings, mixed woods and rock shore crevices.

Linnaea borealis L. [twinflower]. Common in the boreal forest, frequent in mixed hardwood forests.

Lonicera canadensis Bartr. [Canada honeysuckle]. Frequent, jack pine stands and the boreal forest, increasing with forest maturity.

Lonicera dioica L. Uncommon, rocky openings and jack pine stands.

Lonicera hirsuta Eat. [hairy honeysuckle]. Uncommon, lake margins and swamps.

Lonicera involucrata (Richards) Banks [involucred honeysuckle]. Rare, found near park headquarters at Mott Island, next to Rock Harbor Lodge, in dry woods .75 mile southwest of Rock Harbor Lodge, along the south shore of Tobin Harbor, along Lake Richie Trail, along the Feldtmann Trail. Threatened in Michigan.

Lonicera oblongifolia (Goldie) Hook. [swamp fly honeysuckle]. Rare, from a swamp southwest of Daisy Farm.

Lonicera tatarica L. [tartarian honeysuckle]. Introduced on Washington Island.

Lonicera villosa (Michx.) R.&S. [mountain fly honeysuckle]. Rare, moist shores and swamps.

Sambucus pubens Michx. [red-berried elder]. Abundant at burn sites, frequent in forests and rocky openings.

Symphoricarpos albus L. [snowberry]. Uncommon, inland rocky openings.

Viburnum edule (Michx.) Raf. [squashberry]. Common and widespread in the boreal forest and mixed woods.

Viburnum trilobum Marsh. [high-bush-cranberry]. Uncommon, lake and stream margins, thickets.

CAMPANULACEAE — Blue Bell Family

Campanula aparinoides Pursh. Uncommon, lake, pond and bog margins, often on hummocks.

Campanula rotundifolia L. [harebell]. Common, rock shore crevices, uncommon in rocky openings inland.

Campanula uliginosa Rydb. [marsh bell-flower]. Uncommon, lake and swamp margins.

Lobelia dortmanna L. [water lobelia]. Uncommon, submersed or emersed in shallow water, rooted in sand or muck.
Lobelia kalmii L. Uncommon, rock crevices and pool margins along Lake Superior, rarely in bogs.

COMPOSITAE Composite Family

Achillea lanulosa Nutt. Uncommon, reported from the head of Rock Harbor, Mott Island and the Lake Richie Trail.
Achillea millefolium L. [common yarrow]. Common, rocky openings and clearings.
Anaphalis margaritacea (L.) C. B. Clarke [pearly everlasting]. Frequent, rocky openings, clearings and meadows.
Antennaria munda Fern. Cited by Fernald (1933).
Antennaria neodioica Greene. Uncommon, grassy clearings, rocky openings, rock shore crevices.
Antennaria canadensis Greene. Uncommon, rocky openings, rock shore crevices, dry clearings.
Antennaria plantaginifolia (L.) Hook. Uncommon, rocky openings.
Antennaria rosea Greene. Rare, collected by Herma Baggley in 1940 from Caribou Island. Threatened in Michigan.
Antennaria rupicola Fern. Cited by Fernald (1933).
Arctium minus (Hill) Bernh. [common burdock]. Rare, disturbed sites.
Artemisia canadensis Michx. [wormwood]. Uncommon, rock shore crevices.
Artemisia caudata Michx. Rare, rock shore crevices, Passage Island.
Aster ciliolatus Lindl. Frequent, rocky openings and clearings.
Aster lateriflorus (L.) Britt. Uncommon, lakeshores and clearings.
Aster macrophyllus L. [big-leaf aster]. The most abundant ground cover species in all stages of boreal forest succession.
Aster modestus Lindl. Rare, known from the rocky shore at Siskiwit Lake and a field at Washington Harbor. Threatened in Michigan.
Aster ptarmicoides (Nees.) T. & G. Frequent, rock shore of Lake Superior.
Aster puniceus L. Frequent, lakeshore, ponds, streams and swamps.
Aster umbellatus Mill. Frequent, swamps.
Aster simplex Willd. Uncommon, swamps, sandy shores and stream banks.
Bidens cernua L. Uncommon, bogs and swamps.
Centaurea cyanus L. [bachelor button]. Introduced near Rock Harbor Lodge and spreading slowly into nearby open fields.
Chrysanthemum leucanthemum L. [common daisy]. Frequent, rocky clearings, meadows.
Cirsium arvense (L.) Scop. [Canada thistle]. Frequent, clearings and rocky openings.
Cirsium muticum Michx. [swamp thistle]. Uncommon, stream and lake banks, swamps.
Cirsium vulgare (Savi) Tenore [common thistle]. Rare, recent burns.

Crepis tectorum L. Rare, collected once on a small island in Belle Harbor.
Erigeron annuus (L.) Pers. [dwarf fleabane]. Uncommon, rocky clearings and fields.
Erigeron canadensis L. [horse-weed]. Uncommon, clearings and disturbed sites.
Erigeron philadelphicus L. Rare, from a creek bed two miles above Washington Harbor.
Erigeron strigosus Muhl. [daisy fleabane]. Frequent, rocky openings, dry clearings.
Eupatorium maculatum L. [joe-pye weed]. Frequent, banks and shores of beaver ponds, lakes and rivers.
Gnaphalium macounii Greene. Uncommon, rocky openings, meadows.
Hieracium aurantiacum L. [orange hawkweed]. Uncommon, clearings at Birch Island, Siskiwit Camp, Coyote Ridge, Rock Harbor Lodge, Mott Island, Greenstone Ridge 1 mile SW of Ishpeming Point. Also in rocky openings throughout 1936 burn. Probably introduced.
Hieracium canadense Michx. [Canada hawkweed]. Frequent, rocky openings, clearings and sandy beaches. Uncommon in the boreal forest.
Hieracium florentinum All. [king devil hawkweed]. Frequent, rocky clearings and meadows. [Synonym: H. piloselloides Vill.]
Hieracium scabrum Michx. Uncommon, rocky clearings and the boreal forest.
Hieracium umbellatum L. Uncommon, rocky clearings and beaches, birch forest.
Lactuca biennis (Moench) Fern. Uncommon, mixed forests, recent burn sites.
Lactuca canadensis L. Uncommon, recent burns, rocky openings.
Lactuca pulchella (Pursh) DC. [blue lettuce]. Rare, recent burns, rocky clearings.
Matricaria matricarioides (Less.) Porter [pineapple weed]. Uncommon, clearings and disturbed sites.
Megalodonta beckii (Torr.) Greene. Uncommon, submersed in shallow lakes and slow streams.
Petasites palmatus (Ait.) Gray [sweet coltsfoot]. Frequent, swamps. Uncommon in young forests.
Prenanthes alba L. [white-lettuce]. Uncommon, boreal forest, rarely in swamps.
Prenanthes recemosa Michx. Uncommon, rocky openings and rock shore crevices.
Rudbeckia hirta L. [black-eyed susan]. Frequent, meadows and rocky clearings.
Senecio indecorus Greene. Uncommon, dry, rocky openings.
Senecio pauperculus Michx. [ragwort]. Rare, rocky openings.
Solidago altissima L. Uncommon, clearings and rocky openings.
Solidago canadensis L. [Canada goldenrod]. Frequent, recent burns, uncommon in swamps and damp soil.
Solidago gigantea Ait. Uncommon, damp soil.
Solidago graminifolia (L.) Salisb. Frequent, swamps and shores. Uncommon along the rock shore.

Solidago hispida Muhl. Common, rock shore crevices, less common along the ridge tops.
Solidago juncea Ait. Uncommon, clearings and rocky openings.
Solidago nemoralis Ait. Uncommon, rocky clearings.
Solidago purshii Porter. Uncommon, swamps and bogs.
Solidago randii (Porter) Britt. Uncommon, rocky clearings.
Sonchus arvensis L. [field sow-thistle]. Uncommon, rocky openings, clearings and disturbed sites, sandy beaches.
Tanacetum vulgare L. [common tansy]. Uncommon, disturbed sites.
Taraxacum officinale Weber [dandelion]. Frequent, clearings, disburbed sites.
Tragopogon pratensis L. [goat's beard]. Uncommon, clearings and meadows.



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