

# Ferns of Queen's University Biological Station

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This checklist covers 47 species of ferns (division Pteridophyta) that are found or expected to be found at Queen's University Biological Station (N44°33' W76°19'). We expect this list to be useful as a reference for the area surrounding QUBS but it is intended to focus on the station properties themselves.

We follow the scientific nomenclature of FOIBIS (<http://www.uoguelph.ca/foibis/index.htm>). Common names in the checklist generally follow Cody and Britton (1989; *Ferns and Fern Allies of Canada*) but where they are not given in that work we have consulted various internet sources and selected the most widely used name.



A portion of a walking fern (*Asplenium rhizophyllum*) colony. This fern is unique at QUBS for its frond shape and means of vegetative reproduction. The tips of leaves root in the mossy substrate and produce a new plant, hence the name walking fern. Anecdotal reports of historic colonies at locations where they no longer exist suggest that this species may be slowly disappearing from QUBS.

For each species we give a status which is primarily based on our own observations at QUBS. In addition we have also consulted several published sources including Pringle (1987; *Annotated Key to the Ferns of the Kingston Region, Ontario, with Special Reference to Occurrences in the Vicinity of Lake Opinicon*) as well as Crowder et al (1996; *Plants of the Kingston Region: 1996*) and Crowder (2008; *Update of Plants of the Kingston Region: 1996*). Status definitions are as follows:

**Abundant** – extremely numerous, nearly impossible to miss even to the casual observer.

**Common** – observed regularly and in good numbers.

**Uncommon** – requires some effort to locate and may be missed on some outings.

**Rare** – either of very local distribution at QUBS or represented by limited observations.

**Hypothetical** – this species has not been recorded at QUBS but it is expected to occur. Please report any species in this category (see below)

In addition to status assignments we have included a description of the preferred habitat and some information on the distribution of each species in the QUBS region. We have avoided giving specific locations of ferns because of the risk of disturbance or depredation by unscrupulous collectors.

The Fowler Herbarium at Queen's University has an extensive collection of local plants. We did not search the herbarium records thoroughly for additional records of species but a comprehensive search of the collection may add to our knowledge of the distribution of all pteridophytes at the station.

Please report errors, omission, sightings information (especially of rare and hypothetical species) and suggested status changes to Mark Andrew Conboy (7mc19@queenssu.ca).

| Scientific Name   | Common Name            | Status at QUBS         | Habitat Preferences   | Distribution at QUBS  |
|---|------------------------|------------------------|---|---|
| <b>Ophioglossaceae</b>                                      |                        | <b>Succulent Ferns</b> |   |   |
| <input type="checkbox"/> <i>Ophioglossum pusillum</i>       | Adder's-tongue         | Rare                   | Wetland margins and open areas including pastures           | Local near Chaffey's Lock; can be easily missed   |
| <input type="checkbox"/> <i>Botrychium virginianum</i>      | Rattlesnake fern       | Common                 | Moist forests   | Widespread, especially in mature forests  |
| <input type="checkbox"/> <i>Botrychium dissectum</i>        | Cut-leaved grapefern   | Rare                   | Clearings, pastures and rocky ridge tops; sometimes forests | Only two colonies known, one is associated with <i>Betula</i> and the other with <i>Juniperus</i> |
| <input type="checkbox"/> <i>Botrychium oneidense</i>        | Blunt-lobed grapefern  | Rare                   | Deciduous forests with rich moist soil                      | One specimen found on Massassauga Tract   |
| <input type="checkbox"/> <i>Botrychium multifidum</i>       | Leathery grapefern     | Uncommon               | Old fields, forests and edges                               | Known from several localities; is possibly more widespread but overlooked                         |
| <input type="checkbox"/> <i>Botrychium rugulosum</i>        | Ternate grapefern      | Rare                   | Wet locations such as swamps, stream banks and fields       | Known from several locations near Lake Opinicon   |
| <input type="checkbox"/> <i>Botrychium simplex</i>          | Little grapefern       | Rare                   | Pastures, forests and edges                                 | Local; can be easily missed   |
| <input type="checkbox"/> <i>Botrychium matricariifolium</i> | Matricary grapefern    | Uncommon               | Forests, swamps, swales and pastures                        | Widespread  |
| <input type="checkbox"/> <i>Botrychium lanceolatum</i>      | Lance-leaved grapefern | Hypothetical           | Along streams in deciduous and mixed forests                | Recorded in the region but has not yet been found at QUBS   |
| <b>Osmundaceae</b>  |                        | <b>Flowering Ferns</b> |   |   |
| <input type="checkbox"/> <i>Osmunda regalis</i>             | Royal fern             | Abundant               | Wetlands and margins of lakes                               | Widespread  |
| <input type="checkbox"/> <i>Osmunda claytoniana</i>         | Interrupted fern       | Common                 | Wetlands and forests  | Widespread  |

|                          |                                   |                               |              |   |  |
|--------------------------|-----------------------------------|-------------------------------|--------------|---|--|
| <input type="checkbox"/> | <i>Osmunda cinnamomea</i>         | Cinnamon fern                 | Abundant     | Wetlands                                | Widespread   |
|                          | <b>Pteridaceae</b>                | <b>Maidenhairs and Brakes</b> |              |   |  |
| <input type="checkbox"/> | <i>Dennstaedtia punctilobula</i>  | Hay-scented fern              | Hypothetical | Rocky ridge tops                        | Not yet recorded at QUBS despite some searching        |
| <input type="checkbox"/> | <i>Pteridium aquilinum</i>        | Bracken                       | Abundant     | Forests, old fields and open locations  | Widespread   |
| <input type="checkbox"/> | <i>Pellaea glabella</i>           | Smooth cliff-brake            | Uncommon     | Metasedimentary rocks, often over water | Colonial and very local                                |
| <input type="checkbox"/> | <i>Pellaea atropurpurea</i>       | Purple cliff-brake            | Hypothetical | Exposed limestone                       | Reported in the surrounding region but not yet at QUBS |
| <input type="checkbox"/> | <i>Cryptogramma stelleri</i>      | Slender cliff-brake           | Uncommon     | Limestone and metasedimentary faces     | Colonial and very local                                |
| <input type="checkbox"/> | <i>Adiantum pedatum</i>           | Maidenhair fern               | Common       | Moist forests                           | Widespread   |
|                          | <b>Aspidiaceae</b>                | <b>Typical Ferns</b>          |              |   |  |
| <input type="checkbox"/> | <i>Matteuccia struthiopteris</i>  | Ostrich fern                  | Common       | Forests and margins of wetlands         | Widespread   |
| <input type="checkbox"/> | <i>Onoclea sensibilis</i>         | Sensitive fern                | Abundant     | Wetlands, forests and disturbed areas   | Widespread   |
| <input type="checkbox"/> | <i>Woodsia ilvensis</i>           | Rusty woodsia                 | Common       | Shady or sunny rocky outcrops           | Widespread   |
| <input type="checkbox"/> | <i>Woodsia obtusa</i>             | Blunt-lobed woodsia           | Rare         | Shady rocky outcrops                    | Local; endangered in Ontario                           |
| <input type="checkbox"/> | <i>Polystichum acrostichoides</i> | Christmas fern                | Common       | Forests                                 | Widespread   |
| <input type="checkbox"/> | <i>Dryopteris fragrans</i>        | Fragrant woodfern             | Hypothetical | Shady rocky outcrops                    | Recorded in Frontenac Provincial Park                  |

|                          |                                   |                    |              |   |   |
|--------------------------|-----------------------------------|--------------------|--------------|---|---|
| <input type="checkbox"/> | <i>Dryopteris intermedia</i>      | Evergreen woodfern | Common       | Relatively dry forests                              | Widespread  |
| <input type="checkbox"/> | <i>Dryopteris carthusiana</i>     | Spinulose woodfern | Abundant     | Moist to dry forests                                | Widespread; one of the principle ferns at QUBS  |
| <input type="checkbox"/> | <i>Dryopteris marginalis</i>      | Marginal woodfern  | Abundant     | Forests and edges                                   | Widespread; one of the principle ferns at QUBS  |
| <input type="checkbox"/> | <i>Dryopteris goldiana</i>        | Goldie's fern      | Uncommon     | Wet forests   | Extremely local   |
| <input type="checkbox"/> | <i>Dryopteris cristata</i>        | Crested woodfern   | Common       | Wetlands and forests with shaded understories       | Widespread  |
| <input type="checkbox"/> | <i>Dryopteris clintoniana</i>     | Clinton's woodfern | Rare         | Wetlands  | Extremely local   |
| <input type="checkbox"/> | <i>Gymnocarpium dryopteris</i>    | Common oak fern    | Common       | Mixed forests                                       | Widespread but somewhat colonial  |
| <input type="checkbox"/> | <i>Gymnocarpium robertianum</i>   | Limestone oak fern | Hypothetical | Deciduous or mixed forests on calcareous soil       | Not yet recorded at QUBS but should be looked for growing on top of limestone bedrock |
| <input type="checkbox"/> | <i>Thelypteris noveboracensis</i> | New York fern      | Common       | Mixed forests                                       | Widespread  |
| <input type="checkbox"/> | <i>Thelypteris palustris</i>      | Marsh fern         | Abundant     | Wetlands and wet fields                             | Widespread  |
| <input type="checkbox"/> | <i>Phegopteris hexagonoptera</i>  | Broad beech fern   | Rare         | Rocky deciduous forests                             | Very local; endangered in Ontario   |
| <input type="checkbox"/> | <i>Phegopteris connectilis</i>    | Long beech fern    | Uncommon     | Deciduous forests                                   | Somewhat widespread but never abundant at one location                                |
| <input type="checkbox"/> | <i>Cystopteris bulbifera</i>      | Bulbet fern        | Common       | Edges and roadsides; mainly on calcareous soils     | Widespread but usually colonial   |
| <input type="checkbox"/> | <i>Cystopteris fragilis</i>       | Fragile fern       | Common       | Rocky deciduous forests; mainly on calcareous rocks | Widespread  |
| <input type="checkbox"/> | <i>Athyrium filixfemina</i>       | Lady fern          | Abundant     | Deciduous forests                                   | One of the most common and widespread ferns at QUBS                                   |

|                          |                                      |                          |              |   |   |
|--------------------------|--------------------------------------|--------------------------|--------------|---|---|
| <input type="checkbox"/> | <i>Diplazium pycnocarpon</i>         | Narrow-leaved spleenwort | Uncommon     | Rich soils over limestone; wet bottomlands and ravines                                      | Scattered locations on Hughson and Bonwill Tracts                                   |
| <input type="checkbox"/> | <i>Deparia thelypteroides</i>        | Silvery spleenwort       | Hypothetical | Rich soils over limestone; wet bottomlands and ravines                                      | Recorded in Frontenac Provincial Park   |
| <b>Blechnaceae</b>       |                                      | <b>Chain Ferns</b>       |              |   |   |
| <input type="checkbox"/> | <i>Woodwardia virginica</i>          | Virginian chain fern     | Hypothetical | <i>Sphagnum</i> bogs and other wetlands   | Recorded in surrounding area, but not yet at QUBS                                   |
| <b>Aspleniaceae</b>      |                                      | <b>Spleenworts</b>       |              |   |   |
| <input type="checkbox"/> | <i>Asplenium platyneuron</i>         | Ebony spleenwort         | Common       | Rocky outcrops with thin soil in forest or open locations                                   | Widespread  |
| <input type="checkbox"/> | <i>Asplenium trichomanes</i>         | Maidenhair spleenwort    | Common       | Rocky outcrops  | Widespread  |
| <input type="checkbox"/> | <i>Asplenium trichomanes-ramosum</i> | Green spleenwort         | Hypothetical | Should be looked for on limestone outcrops  | Old records in the surrounding region   |
| <input type="checkbox"/> | <i>Asplenium rhizophyllum</i>        | Walking fern             | Uncommon     | Rocky outcrops and cliff faces; usually associated with moss; often north-facing and shaded | Localized concentrations; apparently now absent from many previously occupied sites |
| <b>Polypodiaceae</b>     |                                      | <b>Polypodys</b>         |              |   |   |
| <input type="checkbox"/> | <i>Polypodium virginianum</i>        | Rock polypody            | Abundant     | Rock faces, boulders and talus slopes   | Widespread  |