



# Common Forest Herbs of Saint John's University & the College of St. Benedict

## Introduction:

Once the canopy closes in the spring, a plant on the forest floor gets very little light. In fact, no more than 2% of the sunlight that reaches the canopy penetrates to the forest floor. There are several consequences of this limited availability of light. Compared to plants that grow in prairies, disturbed areas, and other more lighted habitats, herbaceous plants that grow in mature forests after canopy closure:

- Are usually less diverse. Few plants can tolerate the low-light conditions. Not surprisingly, oak forests are often better habitats to find woodland wildflowers than a maple-basswood forest because oak forests are usually more open than maple-basswood forests. This allows for more light penetration to the forest floor and more species can take advantage of the additional light;
- Photosynthesize more slowly because of the lower light levels. However, forest herbs typically utilize light more efficiently – it takes very little light before they reach their maximum rate of photosynthesis;
- have a lower light compensation point and lower carbon dioxide point. Simply put, they are more efficient at using low amounts of light. These plants also have less rubisco (the enzyme that fixes carbon dioxide in the Calvin cycle).
- grow more slowly since they have less light available for manufacturing food;
- have thinner, larger leaves. The larger leaves act as a bigger antenna to more efficiently harvest the limited light that they receive;
- tend to be supported by water pressure rather than internal support tissues because the low

light conditions limit the amount of nutrients that they can invest in support structures. Thus, when picked, forest herbs usually wilt more rapidly than plants grown in more open environments; and

- Grow taller to 'reach' for light and outcompete neighboring plants for this precious resource

St. John's is located in the Eastern Broadleaf Forest Province which extends roughly in a narrow diagonal swath from the SE corner of the state northwest toward Lake Itasca (Minnesota Department of Natural Resources, 2005). This region formed a transition between the prairie to west and conifers to the north. Our campus woods are classified by the Minnesota DNR (2005) as a Central Mesic hardwood forest. Common trees in the area include sugar maple (*Acer saccharum*), northern red oak (*Quercus rubra*), basswood (*Tilia americana*), ironwood (*Ostrya virginiana*), red maple (*Acer rubrum*), and green ash (*Fraxinus pennsylvanica*).

The ground layer will be relatively sparse, in large part due to the destructive effect of earthworms and deer foraging. There are relatively few grass-like plants that grow in these habitats. Among them are mountain rice-grass (*Oryzopsis asperifolia*; tufted, semi-evergreen, erect leaves, persistent flowering culms with pairs of glumes) and bearded shorthusk (*Brachyelytrum erectum*; pubescent leaf sheaths, leaves held at a 90 angle to the stem, culms snapped off at first node), and a variety of clump-forming sedges (*Carex* sp.). Among the shrubs that occur here include chokecherry (*Prunus virginiana*), pagoda dogwood (*Cornus alternifolia*), gooseberry (*Ribes* sp.), leatherwood (*Dirca palustris*) and hazel (*Corylus* sp.)

## Checklist of Some Common Species

### ADOXACEAE (CAPRIFOLIACEAE) –

Honeysuckle Family

- Sambucus racemosa* (*S. pubens*) – Red elder

### APIACEAE – Carrot Family

- Cryptotaenia canadensis* – Honewort
- Osmorhiza claytonia* – Hairy sweet-Cicely
- O. longistylis* – Aniseroot
- Sanicula marilandica* – Black snakeroot

### ARACEAE – Arum family

- Arisaema triphyllum* – Jack in the pulpit

### ARALIACEAE – Ginseng Family

- Aralia nudicaulis* – Wild sarsaparilla
- Aralia racemosa* – Spikenard
- Panax quinquefolia* – Ginseng

### ARISTOLOCHIACEAE – Birthwort Family

- Asarum canadense* – Wild ginger

### ASTERACEAE (Compositae) – Sunflower Family

- Eurybia* (*Aster*) *macrophyllum* – Large-leaved aster (wood aster)
- Ageratina altissima* (*Eupatorium rugosum*) – White snakeroot
- Solidago flexicaulis* – Zigzag goldenrod
- Symphotrichium* (*Aster*) sp. – Aster

### BERBERIDACEAE – Barberry Family

- Caulophyllum thalictroides* – Blue cohosh

### BETULACEAE - Birch Family

- Corylus americana* – American hazel
- C. cornuta* – Beaked hazel

### BORAGINACEAE – Borage Family

- Hackelia deflexa* – Stickseed
- H. virginiana* – Beggar's lice

### CELASTRACEAE - Staff-Tree Family

- Celastrus scandens* – Bittersweet

### ERICACEAE - Heath Family

- Monotropa uniflora* – Indian pipe

### FABACEAE - Bean or Pulse Family

- Amphicarpaea bracteata* – Hog-peanut
- Desmodium canadense* – Tick-trefoil
- D. glutinosum* – Pointed-leaf tick-trefoil

### GENTIANACEAE – Gentian Family

- Gentiana andrewsii* – Bottle gentian

### GERANIACEAE – Geranium Family

- Geranium maculatum* – Wild geranium

### LILIACEAE – Lily Family

- Allium tricoccum* (Amaryllidaceae) – Wild leek
- Maianthemum canadense* (Asparagaceae) – Wild lily of the valley, Canada mayflower
- M. racemosum* (Asparagaceae) – False Solomon's-Seal
- Polygonatum* spp. (Asparagaceae) – Solomon's seal
- Streptopus lanceolatus* – Twisted stalk
- Trillium cernuum* (Melianthaceae) – Nodding trillium
- Uvularia grandiflora* (Colchiciaceae) – Large-flower bellwort
- U. sessilifolia* (Colchiciaceae) – Sessile-leaf bellwort

### ONAGRACEAE – Evening Primrose Family

- Circaea lutetiana* – Enchanter's nightshade

### ORCHIDACEAE – Orchid Family

- Goodyera pubescens* – Rattlesnake plantain

### PHYRMACEAE – Lopseed Family

- Phyrma leptostachya* – Lopseed

### POACEAE – Grass Family

- Brachyelytrum erectum* – Bearded shorthusk
- Elymus patula* – Bottlebrush grass
- Oryzopsis asperifolia* – Mountain rice-grass

### RANUNCULACEAE – Buttercup or Crowfoot Family

- Actaea rubra* – Red baneberry
- Anemone quinquefolia* – Wood anemone

- Aquilegia canadensis* – Wild columbine
- Hepatica americana* – Liverleaf, hepatica
- Thalictrum dioicum* – Meadow rue

**ROSACEAE** – Rose Family

- Agrimonia* sp. – Agrimony
- Geum* sp. – Avens

**RUBIACEAE** – Coffee Family

- Galium* sp. – Bedstraw

**THYMELAEACEAE** – Mezereum Family

- Dirca palustris* – Leatherwood

**URTICACEAE** – Nettle Family

- Laportea canadensis* – Wood-nettle
- Pilea pumila* – Clearweed
- Urtica dioica* – Stinging nettle

**VIOLACEAE** – Violet Family

- Viola* sp. – violets

**VITACEAE** – Grape Family

- Vitis riparia* – Wild or river grape
- Parthenocissus vitacea (inserta)* – Woodbine, Virginia creeper

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