

## Orchidaceae

The orchid family is one of the world's largest families of vascular plants. Numbering more than 30,000 species worldwide, the majority are tropical epiphytes. In Nova Scotia, all 40 species are terrestrial perennial herbs.

Typically these plants have the leaves alternate, rarely opposite or whorled. Flowers are three-merous, any parts therein may be modified or irregular. The developing flower usually has its uppermost petal resupinate, emerging in the lowermost petal's position, as the labellum or lip. The labellum may be ornamented or modified further into a pouch. Generally it serves as an attractant and nectar guide. Pollinator specificity is high in this family. Anthers are cuplike, containing the pollinia. The stigmas and styles are united to form the column, unique to this family. Stigmas are trilobed, but may have only two fertile lobes. The third may be modified to form the rostellum, a beaklike surface for pollinia attachment. Ovary is three-parted and inferior in position. Fruit is a dry capsule, which shatters releasing dustlike seeds, no more than 0.5mm long. Cotyledons are absent. Terrestrial seedlings are mycorrhizal, and thence saprophytic.

Many orchids are cultivated and hybrids are common at both intergeneric and intrageneric levels. Vanilla, a tropical vine provides vanilla extract, a common flavouring agent.

### Key to the Orchid genera

|   |                     |
|---|---------------------|
| A. Flowers with labellum forming a pouch.   | <i>Cypripedium</i>  |
| aa. Flowers with labellum not forming a pouch.  | <b>B</b>            |
| B. Plants with leaves reduced to bracts, at least while in flower.                                    | <b>C</b>            |
| C. Flowers solitary, pink; plants green.  | <i>Arethusa</i>     |
| cc. Flowers in a raceme, yellow to reddish; plants not green (yellowish green in <i>C. trifida</i> ). | <i>Corallorhiza</i> |
| bb. Plants with leaves not so reduced.  | <b>D</b>            |
| D. Labellum with spur at least 2–3mm long.  | <b>E</b>            |
| E. Bracts of the inflorescence shorter than the flowers.  | <i>Platanthera</i>  |
| ee. Bracts of the inflorescence longer than the flowers.  | <i>Dactylorhiza</i> |
| dd. Labellum with spurs absent, or inconspicuous.   | <b>F</b>            |
| F. Flowers 1-several; usually pink or white, >3cm wide.   | <b>G</b>            |
| G. Flowers solitary; labellum lowermost and drooping; leaves widely lanceolate.                       | <i>Pogonia</i>      |
| gg. Flowers several; labellum uppermost, arcuate; leaves narrowly lanceolate.                         | <i>Calopogon</i>    |
| ff. Flowers many in a long or dense raceme, not pink, 1–3cm.  | <b>H</b>            |
| H. Plant to 1m in height; cauline leaves alternate.   | <i>Epipactis</i>    |
| hh. Plant less than 50cm tall; cauline leaves opposite.   | <b>I</b>            |
| I. Leaves 1 or 2.   | <b>J</b>            |
| J. Single leaf.   | <i>Malaxis</i>      |
| jj. Leaves 2.   | <b>K</b>            |

- K. Leaves opposite, ovate; sessile; midway on stem. *Listera*
- kk. Leaves basal, narrowly lanceolate, clasping. *Liparis*
- ii. Leaves more than 2. L
- L. Leaves oval, marked with white. *Goodyera*
- ll. Leaves narrowly lanceolate, not marked. *Spiranthes*

***Arethusa* L.**  
**dragon's-mouth**

A North American genus, it is monotypic. A single flower appears before the single leaf. *Arethusa* is also a Greek nymph, daughter of Zeus and twin of Apollo; goddess of chastity.

***Arethusa bulbosa* L.**  
**Dragon's-mouth; aréthuse bulbeuse**



photo by Sean Blaney

The flower is terminal on a slender scape, 10–30cm in height. Two or more bracts clasp the scape at its base. Flowers are magenta, rarely pure white. The spotted or streaked labellum armed with yellow bristles is distinctive and will easily separate it from *Calopogon* (labellum in upper position) and *Pogonia* (all pink).

Flowers appear in mid-June to July, earlier than the other pink species.

Found in bogs around the cool coasts, less frequent inland.

So far absent from the Northumberland Strait counties.

The species ranges from NF, west to SK, south to SC and IL.



Photo by Sean Blaney

***Calopogon* R. Br.**  
**Grass-pink**

All four species are eastern North American, with a single species reaching Nova Scotia. It is unusual amongst our orchids in that the labellum is not resupinate, instead it occupies the upper position above

the column. Colourful yellow or pale bristles or hairs mark the lip. The lateral petals are triangular in shape. Sepals and petals are the same colour. The species offers no nectar reward to insect visitors, although it does mimic the colour of neighbouring species that exude these droplets (*Rhexia*, *Rosa*, *Sabatia* and *Geranium*).

### ***Calopogon tuberosus* (L.) BSP**

#### **Grass-pink; calopogon tubéreux**



photo by David Mazerolle

Our species stands a slender 15–30cm tall and carries a single lanceolate leaf. Stem may be sheathed by one or two bracts. Flowers are several, 2–3cm across, ranging from deep pink to white. Petals are narrower than the sepals, but of the same colour. The labellum appears upside-down, located above the staminode, which easily distinguishes it from either *Arethusa* or *Pogonia*.

Flowers appear in July.

It is a typical bog species, frequenting mature coastal bogs, swamps and even lakeshores.

Common throughout the province, including Sable Island.

Ranges from NS westward to MB, south to the Gulf of Mexico.



Photo by Martin Thomas

### ***Corallorhiza Gagnebin***

#### **Coral-roots**

The coral-roots range from yellow to brown or purple and contain no chlorophyll. They are mycorrhizal with the partial exception of one species, producing limited chlorophyll. Standing 5–40cm tall, there are no leaves on the stem, but a few scales. The stalked flowers are carried in a raceme, of the same colour as the stem. Plants can be distinguished from other mycorrhizal vascular plants, by the irregular shape of the flowers and the epigynous position of the ovary. Plants may not flower each year, remaining dormant until growing conditions become optimal. A New World genus of 10 species, two are native to NS. The vernacular name is a direct translation from the Greek genus name.

#### Key to species

Plants purplish; plants stout, 20–40cm tall; spur on labellum conspicuous.

*Corallorhiza maculata*

Plants yellowish green, slender, 5–20cm tall; spur on labellum absent or inconspicuous.

*C. trifida*

***Corallorhiza maculata* Raf.  
Spotted Coral-root**



photo by Sean Blaney



Photo by Martin Thomas

Spotted Coral-root is a robust plant with an unbranched raceme of flowers atop a purplish scape, 20–50cm tall. The flowers are white or cream, streaked or spotted with purple. Spur is well-developed. There are two forms found in the province. The typical variety is a yellowish plant, with an unspotted labellum. Found in dense colonies in mixed forests, it is especially frequent on the slopes above the Annapolis Valley. Var. *occidentalis* (Lindl.) Ames has reddish or purple flowers with a spotted labellum, limited to Kings, Annapolis, Cumberland and Hants counties.

Look for flowers in July.

Usually in deciduous forests, it may also be associated with gypsum sinkholes or conifers, occasionally. It is typical of the climax forest in northern Cape Breton.

In the province, this species is common from Annapolis County northward. Scattered in Queens County and infrequently seen in the southwestern counties.

Elsewhere, it ranges from NF to BC and AK, south to CA, TX and GA.



*Photo by Martin Thomas*

***Corallorhiza trifida* Chatelain**  
**Northern or Early Coral-root; corallorhize trifide**



*photo by Sean Blaney*

Plants short (20cm), slender and generally yellowish green throughout. Flowers have purplish markings on a white lip. Spur is absent.

Flowers as early as May and as late as July.

Grows in dense shade, as beneath conifers, often in gypsum sinkholes.

It is scattered from Annapolis to Cumberland counties, north to Cape Breton. Characteristic species of the pine woods of the Annapolis Valley.

Found from NF to BC and AK, south to CA, NM and MD; also in Eurasia.



Photo by Sean Blaney

## ***Cypripedium* L.**

### **Lady's-slippers**

Of 11 species found in North America only four reach Nova Scotia, with two varieties found of one species. Plants bear relatively large, showy flowers which give rise both to the Latin name of the genus and its English vernacular name.

The defining character for all species is the presence of a pouch, the labellum, with a central opening, dissected by the staminode. As pollinators enter, the barbed stigmata remove the pollen-load. Upon exiting through the basal opening they remove additional pollen. Attractive colours and pleasant aromas attract a variety of insects, while it is believed that digger bees provide most of the pollination.

Capsules are produced infrequently. These plants have not yet been cultivated from seed and mature plants do not transplant well. Handling these species should be avoided. A contact dermatitis has been reported in sensitive individuals (IWK Poison Centre database, 2014).

#### Key to species

- |   |                           |
|---|---------------------------|
| A. Leaves basal, 2; labellum slit dorsally.   | <i>Cypripedium acaule</i> |
| aa. Leaves cauline, >2; labellum with round opening at the top.                     | B                         |
| B. Labellum triangular when viewed from the side; 3 sepals separate; flowers <2 cm. | <i>C. arietinum</i>       |
| bb. Labellum ovate when viewed from the side; lower 2 sepals united; flowers >3cm.  | C                         |
| C. Labellum yellow; sepals long and acute.  | <i>C. parviflorum</i>     |
| cc. Labellum white, suffused with purple; sepals with blunt or rounded tips.        | <i>C. reginae</i>         |

***Cypripedium acaule* Aiton**

**Moccasin flower, Pink Lady's-slipper; cypripède acaule**



*photo by Sean Blaney*



*Photo by Sean Blaney*

Distinctive flowers of late spring and early summer, there is but a single flower 3–6cm long atop the bare scape. Labellum ranges in colour from deep magenta, to pink, brownish or white. A lanceolate bract arches above. The pair of basal leaves are elliptic and nearly opposite. Plant usually reaches 30cm in height. It is not unusual to find pure white flowers in an area where pink forms abound.

Flowering begins in June, extending into late summer.

Preferring acidic soils, the moccasin flower frequents conifer woods, bogs and open areas, wet or dry.

Commonly found throughout the province and often abundant where found.

Ranges from NL to NT, south to AB, AL and GA. It is now considered to be the provincial floral emblem of Prince Edward Island.

***Cypripedium arietinum* R. Br.**  
**Ram's-head Lady's-slipper; cyripède tête-de-bélier**



photo by Sean Blaney

This species is the smallest of our Lady's-slippers, reaching 20–25cm. Bearing 3–5 lanceolate cauline leaves, each plant produces a single flower, up to 2.2cm in length, subtended by three spreading sepals. The white labellum is triangular in side-view, resembling a charging ram. From the top, purplish streaks mark it.

Flowering only in May, this species may be overlooked.

Nearly colonial, it is highly restricted to gypsum sinkholes.

Scattered from St. Croix to Brooklyn and reported from Summerville, all in a small portion of Hants County. A single population occurs in Cumberland Co.

Elsewhere it ranges from QC west to SK, south to NY and MN. So far unknown from the rest of Maritime Canada.

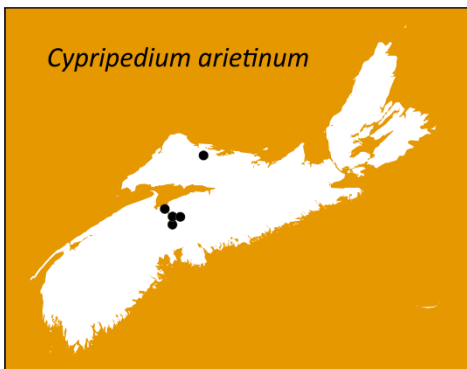
STATUS: ORANGE-listed, due to its severely limited range.



Photo by Sean Blaney



Photo by Martin Thomas





***Cypripedium parviflorum* Salisb.  
Yellow Lady's-slipper**

There are two varieties here. Nova Scotian material can be difficult to key to variety.

Plant densely hairy; flowers mildly fragrant; sepals and petals light-colored.  
Plant smooth or nearly so; flowers intensely fragrant; sepals and petals dark.

var. *pubescens*  
var. *makasin*

***Cypripedium parviflorum* Salisb, var. *makasin* (Farw.) Sheviak**



photo by Sean Blaney

This smaller variety, with lip up to 29 mm long,, has darker sepals. The pubescence is sparse.

Flowering during early June.

It is reported as the more common form at Sweet's Corner, Gore, both in Hants County and Chipman Brook, Kings County.

Ranges from Newfoundland to British Columbia, south to California, Great Lakes and New Jersey.



Photo by Sean Blaney

Both varieties are considered to be at-risk of extinction in NS due to habitat loss and strict habitat requirements. Neither should be picked and caution is advised in handling these plants. Contact dermatitis has been reported.

STATUS: YELLOW-listed.



***Cypripedium parviflorum* Salisb. var. *pubescens* (Willd.) Knight**



photo by Sean Blaney

Densely pubescent, this variety has larger flowers, the labellum measuring 54 mm long. The sepals are light-coloured, with petals yellowish green. Flowers are terminal, 1–2 per scape.

Look for these showy yellow flowers during the first half of June.

Grows in calcareous soils, outcrops of gypsum or limestone and occasionally under mixed deciduous trees.

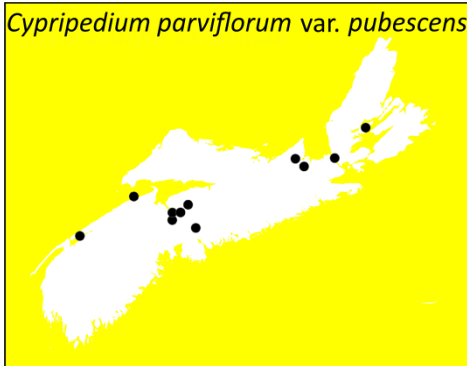


Photo by David Mazerolle

Infrequent in Kings County, eastward to Hants Co., especially from Windsor to Brooklyn; east to Cape Breton, particularly in the area around Iona.

Ranges NS to BC, south to FL and TX.

*Cypripedium parviflorum* var. *pubescens*



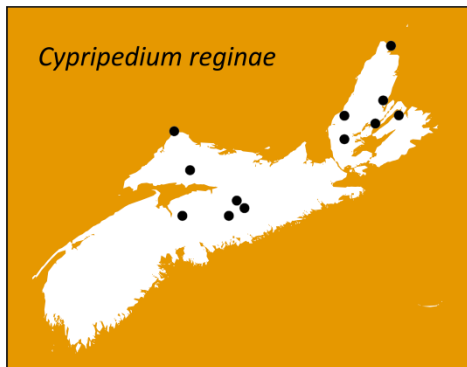
***Cypripedium reginae* Walter**  
**Showy Lady's-slipper; cyripède royal**



photo by Sean Blaney



Photo by Sean Blaney



One of this province's most beautiful wildflowers, it is also amongst its least common. In stature, plants may reach 80cm in height, bearing several to many elliptic leaves. Plants are finely pubescent. The labellum is white, blushing pink or purple. The other petals and sepals are white.

Flowers from June through to August.

Look for this species in alkaline swamps and bogs.

Widely scattered localities in the province: Meander River in Hants Co. and the Musquodoboit River Valley, Halifax County to Cumberland County, to northern Cape Breton.

Considered to be of conservation concern and therefore should not be picked or dug. Some folks may even develop a contact dermatitis from handling it.

STATUS: ORANGE-listed.

***Dactylorhiza* Necker**  
**Long-bracted Green orchid**

Now including more than 50 species, the genus includes plants of the northern hemisphere, temperate or subarctic in distribution. Terrestrial they generally prefer basic soils of wetlands or wet forests. Stems are tuberous. Long leaves are lanceolate and often blotched. They reduce in size upwards along stems,

ranging from 70–90cm. Compact racemes contain from 25–50 flowers, ranging from pale pink through purple.

***Dactylorhiza viride* (L.) R.M. Bateman, A.M. Pridgeon & M.W. Chase  
(=*Coeloglossum viride* (L.) Hartm.)**

**Long-bracted Green Orchid; orchis grenouille**



photo by David Mazerolle

Standing only 25cm, its most distinguishing features are the 2cm long leafy bracts subtending the individual flowers. Closer examination of individual flowers will reveal an oblong labellum with three bulges extending upwards toward the nectary. Flowers are green with purple blush. It is often missed because of the relatively few green flowers and short stature.

Flowers from May to August.

An uncommon, local species, it favours wet sites in mature woods, fir forests or treed floodplains.

Northern Cape Breton, Sable Island and also Black River Lake region of Kings County.

Ranges from NF to AK, south to SC and AZ.

ORANGE-listed.



***Epipactis* Zinn**

Our only introduced orchid, it reached the North American shores by 1879. During the 1900s, its range extended northward from New York. Only one of the 20 Eurasian species is known to us.

***Epipactis helleborine* (L.) Crantz**  
**Helleborine; épipactis petit-hellébore**



photo by Martin Thomas

The leafy helleborine stands 60 or more cm, with alternate ovate-lanceolate leaves, strongly ribbed and sessile. Flowers are greenish, with purple marks arranged in a bracteate raceme. Sepals and petals are free and spreading; the labellum is lobed and shorter than the other two petals. Third stigma is modified into a rostellum.

Summer flowering, in early August.

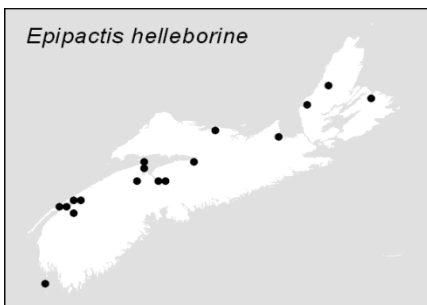
In Nova Scotia, this species is weedy in deciduous forests and open fields.

First reported during the 1980s at Cape Blomidon; now known from Shelburne to Cape Breton counties, with new records reported annually.

Known from NF to ON, south to AR and NC; west coast and various inland jurisdictions; Eurasia.



Photo by Jamie Ellison



## ***Goodyera* R. Br. rattlesnake plantains**

Colonial plants, the rattlesnake plantains are typified by the evergreen basal rosettes of leaves with attractive white or silvery markings. Flowers are borne in a short raceme atop a naked scape. Worldwide in their distribution of 25 species, Nova Scotia hosts only four species.

### Key to species

- |   |                            |
|---|----------------------------|
| A. Flowers arranged in a raceme.  | B                          |
| B. Leaves blue-green with light green pattern; flowers loosely arranged.          | <i>Goodyera tessellata</i> |
| bb. Leaves dark green with conspicuous white markings; flowers densely clustered. | <i>G. pubescens</i>        |
| aa. Flowers on one side of the stem, or loosely spiraled.                         | C                          |
| C. Plants large, to 40 cm tall; leaf blade 4–8cm long; perianth 6–8mm long.       | <i>G. oblongifolia</i>     |
| cc. Plants smaller, 10–30cm tall; leaf blade 1–4cm long; perianth 3–5mm long.     | D                          |
| D. Raceme strongly one-sided; labellum with recurved tip.                         | <i>G. repens</i>           |
| dd. Raceme loosely spiraled; labellum with straight tip.                          | <i>G. tessellata</i>       |

### ***Goodyera oblongifolia* Raf.**

#### **Giant Rattlesnake Plantain; goodyérie à feuilles oblongues**



Photo by Sean Blaney

Our largest *Goodyera*, plants may reach 40cm in height. The basal leaves are nearly erect, ovate-lanceolate leaves, splashed with white. Racemes are 10–12 cm long. Each flower is 8–10mm long.

Look for the creamy white flowers in late summer.

Found in deciduous upland forests and ravines.

So far known only from northern Cape Breton, where it is

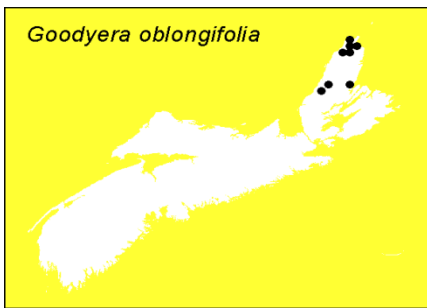


*Photo by Sean Blaney*

scattered, in Victoria and Inverness Counties.

Somewhat limited in its range, from NF to ON south to WI and ME in the east; AK to CA, east to SK and NM.

YELLOW-listed in NS.



***Goodyera pubescens* (Willd.) R. Br**  
**Downy Rattlesnake Plantain; goodyérie pubescente**



photo by Eugene Quigley

Aside from netlike patterns on the leaves, the most distinctive character of this species, is the densely pubescent scape. Leaves number 3–8, oblong or elliptic in outline. The flowers are arranged in a tightly packed raceme.

Summer-flowering in July and August.

Forms large colonies in woodlands and thickets.

Only recently discovered in Nova Scotia (1963) and so far known from Queens, Kings, Annapolis, Hants and Halifax counties.

Elsewhere ranges from NS to ON, south to OK and FL.

ORANGE-listed.



Photo by Sean Blaney

***Goodyera repens* (L.) R. Br.**  
**Creeping Rattlesnake Plantain; goodyérie rampante**



photo by Sean Blaney

A small, creeping species, these plants rarely exceed 15cm in height. The oval leaves are merely 1–3 cm long, dark green with white markings. The tiny flowers are crowded in the raceme, the inflorescence appearing to be one-sided. Resembling the next species, but in general a smaller and more delicate plant.

Flowers July and August.

Look for it beneath conifers, with few other plants.





Photo by Sean Blaney

Locally distributed but abundant where found. Atlantic counties of Shelburne and Queens, to Guysborough. Local about the head of the Bay of Fundy and in northern Cape Breton.

Elsewhere species ranges from NF to AK, variously south to AZ and NC; Eurasia.

STATUS: YELLOW-listed.

***Goodyera tessellata* Lodd.**

**Checkered Rattlesnake Plantain; goodyérie panachée**



photo by Sean Blaney

This species is very similar to *G. repens*, but for its size. Slightly taller at 20cm, the flowers are arranged loosely in a spiral, each measuring 3–4mm in size. Leaves with veins outlined in light green.

Summer flowering, in conifer woods.

Scattered in southwestern Nova Scotia and in the Annapolis Valley, becoming more common in northern Cape Breton.

Ranges from NF to MB, south to MD and MN.



Photo by David Mazerolle

## ***Liparis* L.C. Richard twayblade**

The twayblades comprise a genus of about 250 species, with only two reaching North America's cooler regions. Only one is found in Nova Scotia. The soft fleshy leaves sheath the corm, from which a scape arises, bearing small flowers. The long thin petals are subtended by spreading sepals. The labellum is lobed or notched at the tip and recurved.

### ***Liparis loeselii* (L.) L.C. Richard Loesel's Twayblade or Fen Orchid; liparis de Loisel**



*photo by Sean Blaney*

This small plant is often overlooked, because of its short stature and greenish appearance. Reaching 10–15cm in height, it is surrounded by two upright basal leaves. Greenish yellow flowers are loosely clustered at the top. The long spreading petals and sepals lend a ragged appearance to this peat-dweller.

Flowering begins in late June, extending into July.

Found in bogs, peaty meadows, cobble lakeshores and behind barrier beaches, in damp peaty soil.

Occasional to frequent throughout the province.

Ranges westward from NS to SK and NT, south to WA, KS and AL; Eurasia.



*Photo by Sean Blaney*

## **Listera R. Br.**

Of the 25 worldwide species of cooler regions, north and south, only three reach Nova Scotia. All require a hand-lens to examine the tiny flowers. Rarely more than 30cm in stature, the stem bears two opposite leaves midway. Flowers are loosely arranged in a raceme, with the lobed labellum much exceeding the other petals. The column bears a single anther; the stigma rests below it. Rostellum is present, which discharges a drop of mucilage on the back of the pollinator, to which the pollinia stick.

Key to species

A. Labellum notched at the tip.

*Listera convallarioides*

aa. Labellum deeply cleft, nearly half its length.

B

B. Pedicels and their axis finely pubescent; lip 6–10mm long; without a pair of horns at its base.

*L. australis*

bb. Pedicels and their axis not pubescent; lip 4–5mm long; with a pair of horns at its base.

*L. cordata*

### **Listera australis Lindl.**

#### **Southern Twayblade; listère du Sud**



photo by Sean Blaney

Reddish purple flowers sit atop a finely pubescent axis; pedicels also glandular-pubescent. The narrow labellum is cleft about half its length of 1cm into narrow lobes. Horns are absent at base of the lip.

Flowers only in June.

Grows in shaded sphagnum mosses of bogs or wooded swamps. Inconspicuous after mid-summer.

Scattered over more than 30 swampy sites from southwest NS (Shelburne Co.) to Halifax Co.; Kings Co. to Cape Breton.

Elsewhere scattered from NS to ON, south to Florida and TX, mostly along the coastal plain.

STATUS: ORANGE-listed in NS.



*Photo by Alain Belliveau*



*Photo by Charles Linney*



***Listera convallarioides* (Sw.) Nutt.**  
**Broad-lipped Twayblade; listère faux-muguet**



*photo by Sean Blaney*



*Photo by Sean Blaney*

A more robust species, this plant still only reaches 20cm in stature. The leaves are from 2–4cm wide, while the other two NS species barely manage 1cm. Flowers are white or yellow-green on finely glandular pedicels. The axis of the raceme is also softly pubescent, visible only with a hand lens. Labellum is split into two broad, roundish lobes, up to 1cm in length.

Flowers from June to August.

On fertile slopes beneath deciduous trees and streamsides. Generally limited to old-growth or little-disturbed sites.

From Annapolis County to Cape Breton, where it is common in the north. Not known from southwestern NS.

In the east, NS to ON south to MN and NY; AB, BC and AK south to CA and AZ.

***Listera cordata* (L.) R. Br.**  
**Heart-leaved Twayblade**



*photo by Sean Blaney*



*Photo by Sean Blaney*

Bearing a strong resemblance to *L. australis*, but without the pubescence. Standing approximately 15cm tall, the reddish, green or straw-coloured flowers each have a deeply-split labellum, with a pair of appendages at the base.

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Flowers from early June to September.

In damp coniferous forests and ravines.

Occasional throughout the province, more frequent near the coast and typical of forested northern Cape Breton.

Greenland to AK, south to NC and CA; Eurasia.

## ***Malaxis Soland.*** **adder's-mouth**

Two species of *Malaxis* reach Nova Scotia. Both are small, delicate species with a single clasping soft leaf arising from a tuberous stem. The terminal raceme is crowded with flowers of threadlike, recurved petals and sepals. Standing less than 10cm in height they are easily missed.

Key to species

Leaves 2–3 (5).

*Malaxis brachypoda*

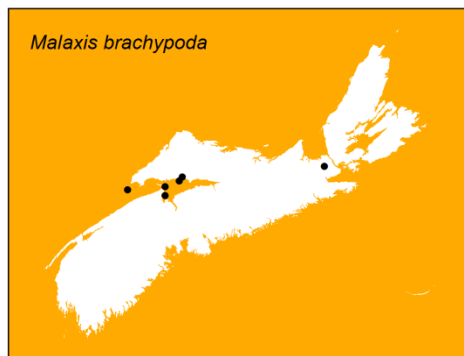
Leaves 1 (rarely 2).

*M. unifolia*

*Malaxis bayardii* Fern., although reported from Cape Breton Island, requires substantiation by a collection before inclusion.

### ***Malaxis brachypoda* (Gray) Fern.** **(= *Malaxis monophylla* (L.) Sw.)**

**White Adder's-mouth; malaxis à pédicelles courts**



The basal leaf and longer, slender inflorescence should separate this species easily. The raceme is at least half the plant's height. Flowers are white, labellum entire, with a slender tapering tip.

Flowers from May until August.

Grows in the moss cushions and dripping mossy cliff edges, where competition is low.

Its distribution is rare and local: Isle Haute, Cumberland County; Five Island River, Colchester County and in Guysborough County.

Elsewhere, found from NL to BC, south to Newfoundland, NS and NB; New England mountains to TX, CO and CA.

STATUS: ORANGE-listed.

***Malaxis unifolia* Michx.**

**Green adder's-mouth; malaxis unifolié**



*Photo by Martin Thomas*

Another delicate species, with a clasping leaf part way up the stem. The raceme is much more compact, nearly as wide as long, appearing round. The flowers are green, with a broad labellum, cleft at the tip. Page | 1267

Summer flowering, July and August.

Found in wet meadows, fields and bogs.

Uncommon, but scattered throughout the province.

Ranges from NF to MB, south to FL and TX.



*Photo by Martin Thomas*



***Platanthera* LC Richard**  
**Fringed Orchids**  
**Rein Orchids**

Our 11 species of fringed orchids have showy flowers arranged in a spike or raceme. Colours range from white to green, pink and purple. The labellum may be split, fringed or ornamented in various ways. Its base is modified into a spur, which characters vary from species to species, depending upon the moth species that pollinate.

Flowers are required for positive identification.

Key to species

- |   |                               |
|---|-------------------------------|
| A. Labellum entire, or toothed, but not fringed.  | B                             |
| B. Leaves cauline.  | C                             |
| C. Cauline leaves 1 or 2.   | <i>Platanthera clavellata</i> |
| cc. Cauline leaves more than 2.   | D                             |
| D. Plants 2–14cm tall; base of labellum with central lobe on top and 2 lateral tubercles. | <i>P. flava</i>               |
| dd. Plants 30–80cm tall; lip without a spur near the base.                                | E                             |
| E. Flowers greenish white or greenish yellow.   | F                             |
| F. Flowers greenish white; lip 5–12 mm; spur ≥ 5 mm in length; flowers scented .          | <i>P. huronensis</i>          |
| ff. Flowers greenish yellow; lip < 6mm; spur < 5 mm; flowers scentless.                   | <i>P. aquilonis</i>           |
| ee. Flowers pure white.   | <i>P. dilatata</i>            |
| bb. Leaves nearly basal, oblong to round.   | G                             |
| G. Leaf solitary, erect, clasping at the base.  | <i>P. obtusata</i>            |
| gg. Leaves 2; often flat on the ground, not clasping.                                     | H                             |
| H. Stem without bracts; lip lanceolate, to 1cm long; ovary sessile.                       | <i>P. hookeri</i>             |
| hh. Stem bracteate; labellum 1.5–2cm long, narrow; ovary with a stem.                     | I                             |
| I. Spur >2.7 cm long.   | <i>P. macrophylla</i>         |
| ii. Spur <2.6cm long.   | <i>P. orbiculata</i>          |
| aa. Labellum fringed distally or on the sides.  | J                             |
| J. Lip not tripartite.  | <i>P. blephariglottis</i>     |
| jj. Lip clearly tripartite.   | K                             |
| K. Flowers greenish white; labellum finely fringed.                                       | <i>P. lacera</i>              |

kk. Flowers purple, lilac or white (not greenish); lip margin coarsely fringed. L

L. Inflorescence 2.5–4cm wide; lip 1–1.3cm wide; fringed <1/3 of lobe. *P. psycodes*

ll. Inflorescence 5–8cm wide; lip 1.8–2.5cm wide; fringed >1/3 of the lobe. *P. grandiflora*

***Platanthera aquilonis* Sheviak**  
**platanthère du Nord**



Photo by David Mazerolle

Plants stand 5–60cm and bear a few ascending leaves, scattered along the stem. They are reduced to bracts towards the inflorescence. The yellowish green flowers are not showy, their lips are a dull yellow. Petal margins are entire and do not have a basal swelling. The spur is clavate or cylindrical, the lobes divergent and projecting downward.

Species is summer flowering.

Grows in wet habitats as riparian areas, marshes, meadows and even dry deciduous slopes.

In NS, it is found from Annapolis to Queens counties and north to Cape Breton. Less frequent in southwestern NS.

Elsewhere it ranges from NF to AK, south to CA, NM and NJ.

It was erroneously reported as *P. hyperborea*. (Roland and Smith, 1969.).

***Platanthera blephariglottis* (Willd.) Lindl.**  
**White Fringed Orchid**



*Photo by Sean Blaney*



*Photo by Martin Thomas*

A multitude (20–30) of highly fragrant white flowers mark this very attractive native orchid. Standing nearly 50cm in height, it carries several lanceolate leaves, reducing in size towards the top to mere bracts. They are keeled and sheathing. The inflorescence is nearly oval in outline, almost 5cm long. The long spur exceeds the fringed labellum in length.

Flowering in July and August.

Usually in peaty lowlands such as bogs or upland rock barrens.

Common in Yarmouth and Shelburne counties, but infrequent throughout the remainder of the mainland. Typical of mature bogs in Cape Breton.

Ranges from NF to ON, variously south to IL, and along the coast to FL and TX.

***Platanthera clavellata* (Michx.) Luer**  
**Northern Club-spur; Little Orchid; platanthère claviforme**



*Photo by Sean Blaney*

A slender orchid, this species has a single obovate leaf at the base of the plant. The inflorescence measures 2–4cm in height, containing from 3–15 flowers. Labellum is yellowish-green, truncate and with 2–3 teeth. Spur exceeds the labellum in length.

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A summer flowering plant, expect to see it from June to August.

In swamps, bogs or along streams.

This species is common throughout Nova Scotia.

Elsewhere it ranges from NF and ON south to FL to TX.



*Photo by Martin Thomas*

***Platanthera dilatata* (Pursh) Lindl.**  
**Tall White Northern Bog-orchid**



*Photo by Sean Blaney*



*Photo by David Mazerolle*

***Platanthera flava* (L.) Lindl.**  
**Pale Green Orchid**



*Photo by Sean Blaney*

A tall leafy species, with pure white flowers in an inflorescence 20cm long. Labellum widens abruptly at the base, and tapers gradually towards the tip. Spur is of similar length as labellum. Notable is the fragrance resembling cloves of this beautiful species.

July flowers.

Grows in sunny and wet habitats such as wetlands and riparian situations.

Common from Digby County to northern Cape Breton, where it is typical of dripping cliffs and ledges. Also on the Atlantic coast.

From NL to AK, south to PA MI, NM and CA. Asia.

Reaching from 2–14cm in height, this slender species has two or more slender lanceolate leaves. The basal leaf, up to 15cm long, sheaths the stem. The flower spike is 5–10cm long. The bracteate, flowers are from 4–5mm wide, greenish yellow in colour. Labellum has tubercles on either side of the swollen base.

Flowers from May to August.

Known from a variety of habitats: sandy, gravelly or peaty



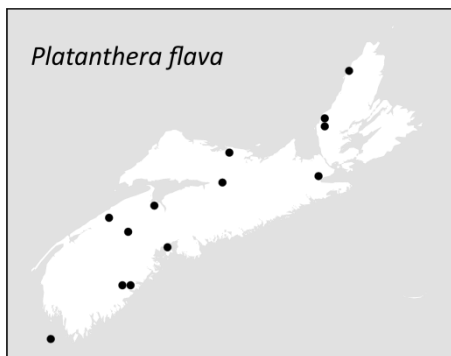
Photo by Martin Thomas

shorelines of lakes or streams; bogs, swamps and meadows.

Found along the Tusket River, Yarmouth Co., Medway River, Queens County and north to Kings and Colchester Co. (Kemptown).

Ranges from NS to ON south to TX and FL.

Its status remains undetermined in NS at this time.



***Platanthera grandiflora* (Bigelow) Lindl.**

**Large Purple-fringed Orchid; platanthère grandiflore**



A tall, robust species, it was once considered a variety of *P. psycodes*. Exceeding 60cm in height, the leaves are more elliptic than lanceolate. Purple flowers are crowded into a spike, appearing two weeks before the Small Purple-fringed Orchid. Labellum is trilobed and deeply cut into a fine fringe.

Flowers in July.

Favours wet meadows and riparian habitats.

More often found in north-central Nova Scotia. Infrequent in southwestern NS.

Photo by Sean Blaney



Photo by Martin Thomas

Elsewhere from NF west to the Great Lakes, south to TN and GA.

***Platanthera hookeri* (Torrey) Lindl.**

**Hooker's Orchid; platanthère de Hooker**



Photo by Sean Blaney

One of two round-leaved species, this is the smaller of the two, reaching only 40cm in height. Bearing a pair of basal leaves, they are lustrous green, but not glossy. Stem is without bracts. Yellow-green flowers are sessile, arranged in a spike. Lip is lanceolate or triangular, 8–10mm long; spur is much longer.

Flower appear from May to August.

Grows in open dry forests of mixed conifers.

Scattered in most of the province, local in the southwestern counties. So far absent from the eastern shore.

Ranges NS to MB, south to New England and IA.



Photo by Sean Blaney

***Platanthera huronensis* (Nutt.) Lindl.**  
**Northern Green Bog-orchid; platanthère du lac Huron**



Photo by Sean Blaney

Height ranges upwards to 80cm. The stem bears 5–6 cauline leaves, which are oblong to narrowly lanceolate. Flowers are green, the cluster 8–15cm long. Labellum is lanceolate, 4–8mm long, spur slightly longer.

Flowers throughout the summer.

Elsewhere known from streamsides, in wetlands, even forests.

It is believed present although no good records are known at this time.

In the east from NF to MB south to IL and NJ; in the west from AK to AB and WY south to NM; Greenland, Iceland and northeastern Asia.



***Platanthera lacera* (Michx.) G. Don**  
**Ragged Orchid; Green-fringed Orchid; platanthère lacérée**



*Photo by Sean Blaney*



*Photo by Martin Thomas*

This common species stands 30–80cm tall, the stem sheathed by 2–5 keeled, lanceolate leaves. Leaves are reduced to bracts in the raceme. Labellum is deeply divided into three lobes, which are finely fringed. Erect petals extend beyond the sepals. Petals are pale yellow to greenish white. Even pinkish flowers are reported in the eastern counties. Distinctly ragged in appearance.

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Flowers July to August.

Meadows or other sunny locations with poorly drained clay soils.

Common throughout, occasional on Sable Island.

Grows from NS to ON, south to FL and TX.

A hybrid between this and *P. psycodes* has been collected from Queens and Colchester counties. It ranges from white to deep claret in colour. Named *P. x andrewsii* (White) Luer.

***Platanthera macrophylla* (Goldie) PM Brown**  
**Large-leaved Orchid; platanthère à grandes feuilles**



Photo by Alain Belliveau

This orchid resembles *P. orbiculata* but is generally larger. The spur is much longer as well, in this species, usually exceeding 2cm.

Flowers in August.

Grows in deciduous or mixed deciduous forests.

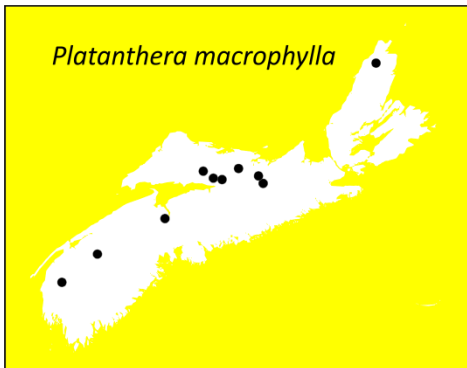
Found from Hants Co. through the Cobequids to Cape Breton.

Ranges from NL to ON south to WI and MD.

STATUS: YELLOW-listed in NS.



Photo by Alain Belliveau



***Platanthera obtusata* (Banks) Lindl.**  
**Blunt-leaved Rein Orchid**



Photo by Sean Blaney

Stem is only 20–30cm tall with one or two bracts. Leaf is oblanceolate, erect, 5–10cm long and clasping. Inflorescence stretches 2–10 cm, of uncrowded greenish white flowers. Spur and labellum are equal in length, with spur recurving from a swollen base. Base of the labellum is limbed and projects backwards dividing the entrance.

Flowers during July and August.

Found in wooded wetlands and conifer forests.

Scattered to common in the eastern counties; infrequent in southwest, where it is local.

Canada-wide south to New England and OR; Norway; Asia.

***Platanthera orbiculata* (Pursh) Lindl.**  
**Large Round-leaved Orchid; platanthère à feuilles orbiculaires**



Photo by Sean Blaney

This distinctive species is easily recognized by the presence of glossy, ovate basal leaves. The pair may each measure nearly 19cm across, dark green above and silvery below with delicate veining. The scape has small bracts alternating its length, nearly 60cm in height. Spur measures 1.8–2.8cm long, which separates it from *P. macrophylla*.

Flowers in August.

Grows in dense shady woods.

Scattered from Shelburne County to Colchester County and northern Cape Breton. Typical of northern conifer forests.

Across Canada from NS, south to SC and OR.



*Photo by David Mazerolle*

***Platanthera psycodes* (L.) Lindl.**

**Small Purple-fringed Orchid; Butterfly Orchid; platanthère papillon**



*Photo by Sean Blaney*

A leafy species, it may reach 80cm in stature. The basal leaves are lanceolate-elliptical, abruptly shrinking in size, towards the inflorescence. Raceme of flowers carries 30–50 fragrant mauve or purple flowers, 5–12cm long. Labellum is divided into three shallowly-fringed segments. It is not unusual to see pale white, pink or bicoloured flowers. Colonial in habit.

June to August flowering.

Usually in damp, sunny locations in wetlands or edges of peatlands.

Common throughout NS.

NF to ON, south to GA and IA.



Photo by Mark F Elderkin

Sympatric with *P. grandiflora* and intermediate forms are common. Hybrids between *P. psycodes* and *P. lacera* have been named *P. x andrewsii*.

## ***Pogonia* Jussieu**

A genus of only three species, they are all perennial in habit and terrestrial in habitat. Slender stems bear single leaves towards the middle, their blades are fleshy. The terminal inflorescence has a single flower or sometimes a two-flowered raceme. The fruits are capsules.

### ***Pogonia ophioglossoides* (L.) Ker Gawl.**

#### **Rose Pogonia; pogonie langue-de-serpent**

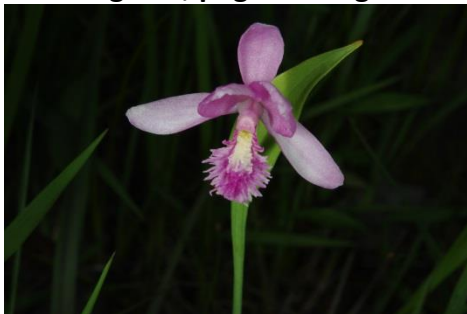


Photo by Martin Thomas

Another of our beautiful native pink orchids, this one has the aroma of raspberries, in flower. The slender stem arises from fibrous roots, bearing a single leaf midway along it. Flowers are terminal, 1(–3) subtended by a single leafy bract. Labellum is bearded, with three rows of fringes. Petals rose-pink to white. Resembles two other pink-flowered orchids in our Province. *Arethusa* has but a single flower appearing on a naked scape, before the leaf opens. *Calopogon* has several rose-coloured flowers, but the labellum is formed by the uppermost petal, rather than the lowermost as in *Pogonia*, appearing upside down.

Flowers in August.

Associated with mature peatlands. Less frequent in meadows, on lakeshores or in riparian habitat; sunny and poorly drained sites.

Profuse on the Atlantic side and in northern Cape Breton.



Photo by Ross Hall

Scattered elsewhere.

NF to MB, south to FL and TX.

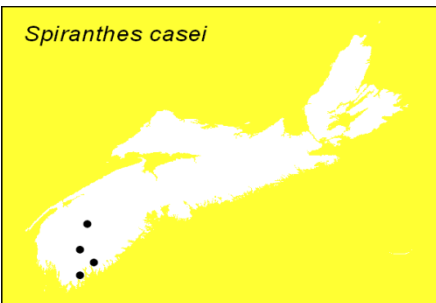
## ***Spiranthes* LC Richard ladies'-tresses**

*Spiranthes* is a New World genus, both temperate and tropical. Six are reported from NS out of the 29 species distributed in Canada and US. They are small in stature, erect and bearing whitish tubular flowers spiralling the slender stems. Difficult to identify, except with fresh material.

### Key to species

- A. Leaves oval, basal; flowers arranged in a single row; labellum with a green stripe. *Spiranthes lacera*
- aa. Leaves cauline, lanceolate or linear; flowers in 3 rows; labellum not striped. B
- B. Labellum round, blunt, throat bright yellow; leaves long-persistent; flowers in early July. *S. lucida*
- bb. Labellum ovate or long; throat green or cream; leaves not persistent; flowers late summer. C
- C. Lip fiddle-shaped; sepals and lateral petals curving upwards forming a hood. *S. romanzoffiana*
- cc. Lip not constricted at middle; sepals and lateral petals not forming a hood. D
- D. Sepals 5–7mm long. *S. casei*
- dd. Sepals longer than 7.5mm E
- E. Flowers white; labellum without fleshy centre obscuring veins. *S. cernua*
- ee. Flowers cream to yellow; labellum fleshy in centre, hiding veins. *S. ochroleuca*

## ***Spiranthes casei* Catling & Cruise Case's Ladies'-tresses; spiranthe de Case**



Resembling both *S. romanzoffiana* and *S. lucida*, this species has sepals less than 7mm long. The flowers range from greenish to creamy, but not yellow nor especially fragrant.

Two varieties are recognized, with the typical var. *casei* very restricted so far is known in the province. It has from 0–3 leaves. The flower has a broad, blunt delicately ruffled labellum. Var. *novaescotiae* Catling is more common. A leafy

plant with 2–4 basal leaves; the labellum is pointed and fleshy, its margins inrolled.

Flowers in September.

Look for this species in acidic, sandy soils on rock barrens or even roadsides. Page | 1282

So far restricted to southwestern counties, Jordan Falls to Pubnico, Belleville and the Annapolis Valley.

Fairly limited, from NS to ON, south to WI and PA.

YELLOW-listed provincially.

***Spiranthes cernua* (L.) Richard**  
**Nodding Ladies'-tresses; spiranthe penchée**



*Photo by Sean Blaney*

A robust species, but reaching only from 15–30cm. There are several lanceolate leaves near the base, others reduce in size towards the top of the plant. The white flowers are arranged in three spirals around the stem. The labellum has a prominent fleshy swelling at its base. Pale yellow forms are known. These seem not to have the fleshy lip. Veins are still visible after drying.

Flowering in late August.

In seepy sandy locations, such as meadows, bogs and even roadside ditches.

Scattered throughout the province, but more abundant where sandy soils prevail, such as the Annapolis Valley and



Photo by Sean Blaney

southwest. Its appearance is reported to be cyclic, disappearing then reappearing years later.

Elsewhere ranging from NS to ON, south to GA and TX.

***Spiranthes lacera* Raf.**

**Northern Slender Ladies'-tresses; spiranthe découpée**



Photo by Sean Blaney

Our most slender species, this little orchid stands 20–35cm in all. Leaves are wilted or absent at flowering, with only a few scales remaining on stem. Recurved flowers are white, spiraling the stem, in a raceme 5–8cm long, each flower measuring 4–6mm.

Flowers appear in late July through August.

Found in sandy, gravelly soil as along forest edges, or on rock barrens and blueberry fields.

Scattered throughout the province.

Ranges from NS to AB, south to TX and FL.





Photo by David Mazerolle

***Spiranthes lucida* (HH Eaton) Ames**  
**Shining Ladies'-tresses; spiranthe lustrée**



Photo by Sean Blaney

Fleshy leaves are arranged about the base. They are obovate and shiny, up to 2 cm wide. The white flowers are arranged in three spirals. The labellum is oblong, deep yellow in the centre. Swellings are absent at the base.

Unlike our other species, flowers appear in early July

Grows in alluvial soils and damp rocky shores. Found in thickets and meadows.

Rare and local. There are a few known localities in central NS, along the Yarmouth shores and in coastal Pictou County. There is a single Cape Breton collection to date.

NS to ON south to AR, AL and NC.

STATUS: ORANGE-listed in NS.



***Spiranthes ochroleuca* (Rydb.) Rydb.**  
**(*S. cernua* (L.) LC Richard, var. *ochroleuca* (Rydb.) Ames**  
**Yellow Ladies'-tresses; spiranthe jaunâtre**



Photo by Sean Blaney



Photo by Sean Blaney

Noticeably fragrant, this species has yellowish or creamy-yellow flowers, turning black or brown upon drying. The labellum has two prominent projections 0.8–1.5mm long, visible best with a lens. Formerly included with *S. cernua*, the yellow colour should separate it.

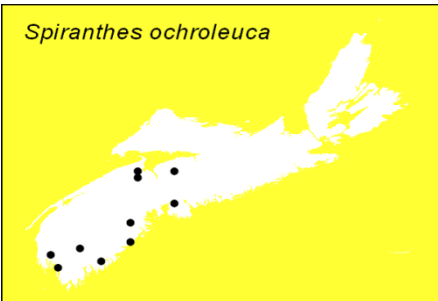
Autumn-flowering, from September to October.

Typical of only the driest sand barrens, roadside, fields.

In the western half of the province, northwest to Hants County.

Elsewhere from NS; ON, south to TN and NC.

YELLOW-listed.



*Spiranthes ochroleuca*

***Spiranthes romanzoffiana* Cham.**  
**Hooded Ladies'-tresses; spiranthe de Romanzoff**



*Photo by Sean Blaney*

This is a stout plant, reaching upwards of 35cm in height. Leaves are linear or lanceolate, mostly basal, with a few reduced in size up the stem. Flowers cream or white with the petals and sepals tightly compressed and recurved forming a hood over the fiddle-shaped lip. Fragrance is reminiscent of vanilla.

Flowers late July to early August.

Wetlands and seepy open areas.

Scattered throughout. Less frequently seen on Sable Island.

Across Canada to AK, south to PA, IA and CA; Europe.



*Photo by Martin Thomas*