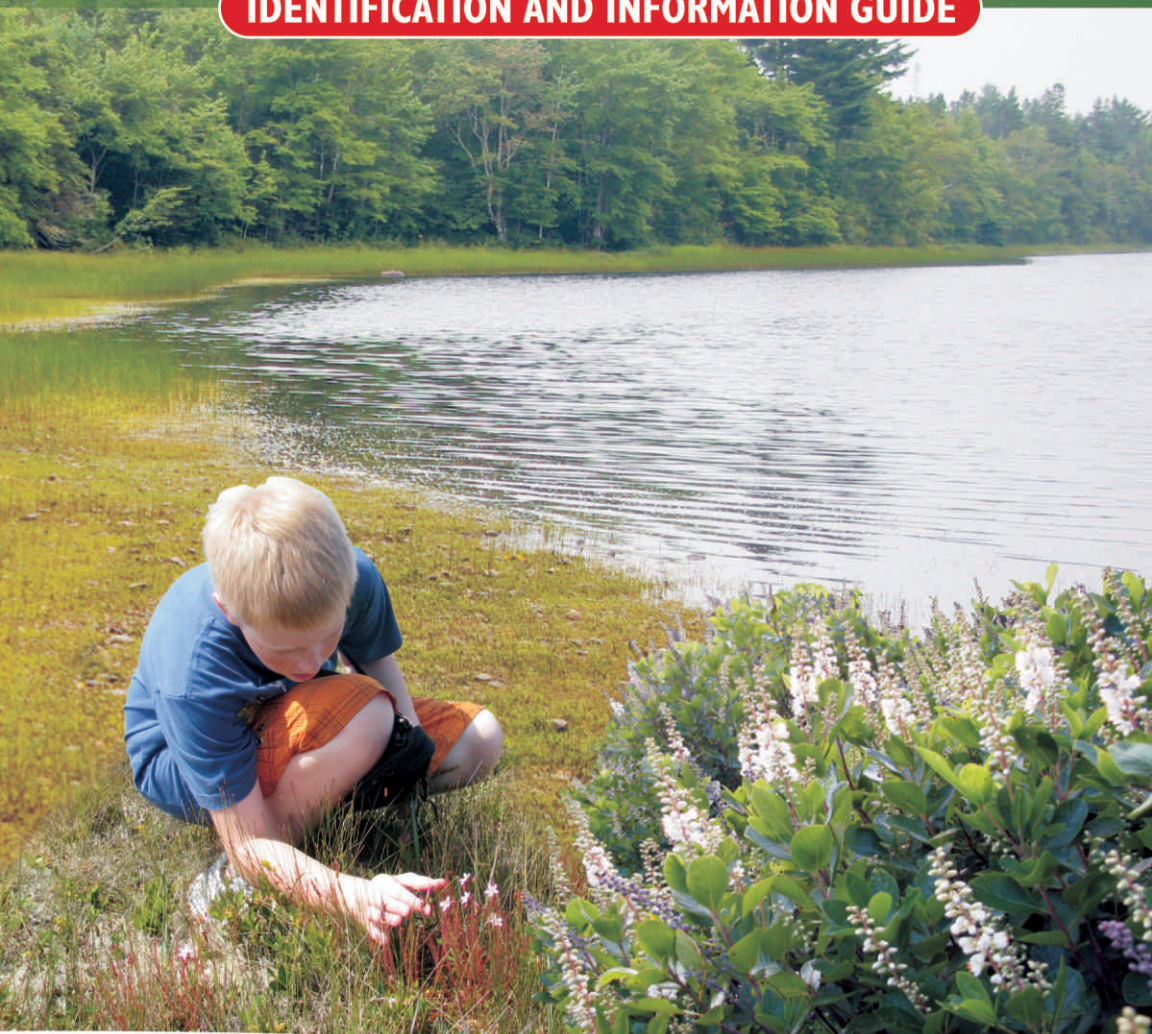


# ATLANTIC COASTAL PLAIN FLORA

In Nova Scotia

## IDENTIFICATION AND INFORMATION GUIDE







# Atlantic Coastal Plain Flora in Nova Scotia

## Identification & Information Guide

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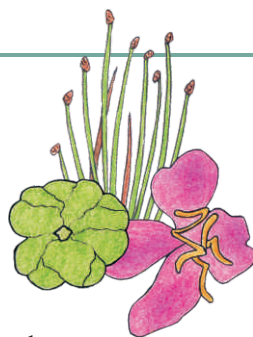
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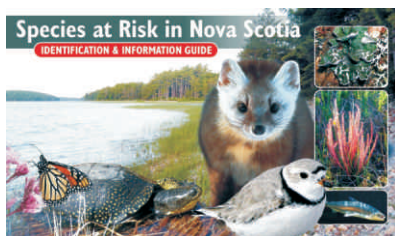


Visit [www.speciesatrisk.ca](http://www.speciesatrisk.ca) to view and download English and French electronic versions of this guide.

The front and back covers display a mosaic of ACPF species and habitats with photos by Megan Crowley, Alain Belliveau, Mark Elderkin, Martin Thomas and Sean Blaney.



This project was undertaken with the financial support of the Government of Canada provided through the Department of the Environment. The views expressed herein are solely those of the Mersey Tobeatic Research Institute and the ACPF Recovery Team. They are reflective and supportive of the ACPF Recovery Strategy & Management Plan and the Action Plan.



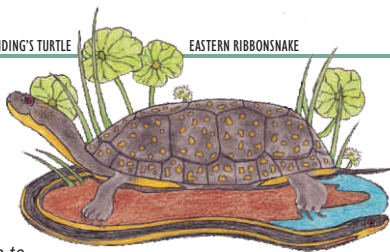
This guide is a companion to  
**Species at Risk in Nova Scotia:**  
Identification and Information Guide  
and  
**Healthy Lakes and Wetlands for Tomorrow:**  
A Landowner Stewardship Guide for Species at Risk  
in Nova Scotia (page 90).

# Drawings and Illustrations

WATER-PENNYWORT, BLANDING'S TURTLE

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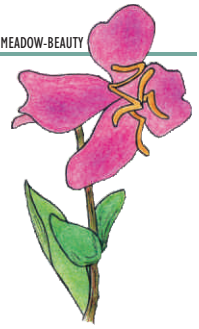
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Have fun and learn about ACPF by playing **SARGO** (Species at Risk Bingo!) To get started contact MTRI or Kejimikujik (See page 90).



*You belong among the wildflowers,  
You belong somewhere close to me.  
Far away from your trouble and worries  
You belong somewhere you feel free.*

- Tom Petty, Wildflowers



Through spring and summer we enjoy an amazing variety of wildflowers in fields, forests, lakeshores, salt marshes, bogs, barrens, beaches and other habitats. Only a small number of Nova Scotians are aware that we have wildflowers and other plants in the province that grow nowhere else in Canada! Unfortunately, a good number of these plants and their habitats are at risk.

Collectively called “Atlantic Coastal Plain Flora” these plants include such “beauties” as Plymouth Gentian, Thread-leaved Sundew and Tubercled Spikerush. This excellent field guide makes it relatively easy for anybody interested in Atlantic Coastal Plain Flora to identify them. The guide is very attractive, rich in information and put together by people who are dedicated to the conservation of these species and that care very much about nature and the quality of life in southwest Nova Scotia. In particular, we hope private landowners use the guide in their efforts to get to know their property and to be good stewards of the species and habitats found on their lands.

With environmental problems like climate change, water pollution and overharvesting so widespread and threatening, it can be easy to lose sight of what we can accomplish as individuals, or local communities. When we “take care” of ACPF and other native plants we take care of the habitats that support many other animals and plants and processes that improve the quality of life for people. Healthy lakes, bogs and other wetland systems, occupied by healthy native plant communities contribute to the provision of clean water and air, flood regulation, persistence of beneficial native pollinating insects and many other benefits.

I hope you enjoy this identification guide and find it useful in your efforts to be a better environmental steward. Together we can play a significant role in the recovery and conservation of Atlantic Coastal Plain Flora and in sustaining the beneficial ecosystems we share with them.

Take care.

A handwritten signature in blue ink, appearing to read 'S. Boates'. The signature is stylized with loops and a long horizontal stroke at the end.

Dr. Sherman Boates

Manager, Wildlife Resources, Biodiversity  
Nova Scotia Department of Natural Resources  
and  
Co-chair of the Atlantic Coastal Plain Flora Recovery Team

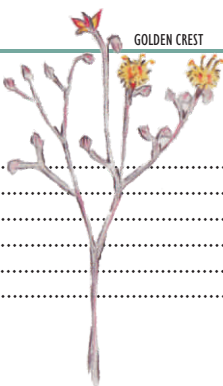
February, 2011



TUBERCLED SPIKERUSH



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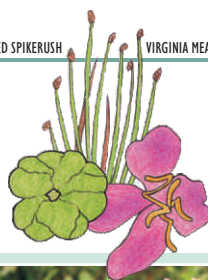
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Atlantic Coastal Plain Flora (ACPF) are a unique group of unrelated plants that are mainly restricted to the flat land along the Atlantic Coast from Florida to Nova Scotia (NS) called the Atlantic coastal plain. They are found throughout NS but concentrated in southwest part of the province mainly along inland lake and river shores, in wetlands and along the coast in salt marshes.



Toothed Flat-Sedge



Swamp Rose



Button Sedge



Golden Crest

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Groundseltree



NS False-Foxglove



Virginia Marsh St. John's-Wort

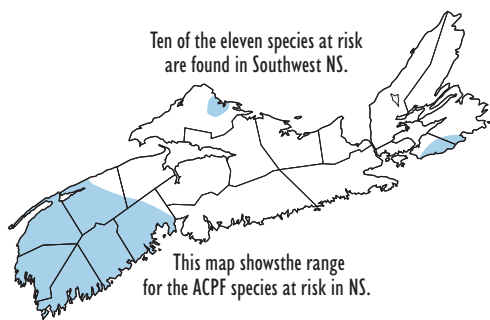


Golden-Pert



Pink Coreopsis

- There are over 90 species of ACPF in NS.
- Over one third of these plants are found nowhere else in Canada!
- Some are globally rare and NS has some of the best remaining habitat for these species in North America. These include Pink Coreopsis (page 4), Long's Bulrush (page 83), New Jersey Rush (page 73) and Plymouth Gentian (page 27).
- Many ACPF species are at risk of being lost from this province: 11 are listed as species at risk under the federal *Species at Risk Act* and provincial *NS Endangered Species Act*, and 25 are listed as 'at risk' (red ranked) by the NS General Status Ranks.
- In addition, 17 ACPF species in NS are listed as 'sensitive' (yellow ranked), 43 as 'secure' (green ranked), 2 as 'undetermined' (grey ranked) and 4 as 'extinct/extirpated' (blue ranked).
- It is important to maintain ACPF habitats so the sensitive and secure species do not become at risk.
- An ACPF species at risk Recovery Team assists in the conservation and recovery of ACPF, focusing their efforts on the at risk species in Southwest NS.
- There are many ways you can help these species. Step one is to learn to recognize them!



This guide was written for landowners so that they can learn more about the ACPF species they share their land with.



Stewardship is taking a personal ownership of and responsibility for the environment. It means caring for the land in a responsible way to ensure that healthy ecosystems are passed on to future generations. To ensure that this special group of plants remains in NS there are a few simple actions we can take to help. ACPF are threatened by habitat modification from activities such as shoreline development, road building, infilling, and nutrient run-off. These species occur in low nutrient environments where competition from other species is low. They can become displaced if water nutrient levels increase and allow more common and competitive species to move in. Many people already know or have learned about these species and are taking actions to help them. If you live or work near this special group of plants become a steward and help these species by participating in the actions below.



## YOU CAN HELP BY

- Recognizing these species and the habitats they depend on.
- Maintaining the natural vegetation around lake shorelines and wetlands.
- Reducing or eliminating lawns, especially if they are on the lake side of the house/cottage.
- Planting only native species to discourage the spread of invasive species.
- Driving off-highway or all-terrain vehicles on designated trails only, and avoiding all sensitive habitats (lake shorelines, wetlands, beaches).
- Avoiding rock wall installation, raking, mowing, or infilling the lake shoreline.
- Ensuring that septic systems and agricultural operations do not impact water quality.
- Eliminating chemical use and buying phosphate-free cleaning products.
- Ensuring that you are aware of provincial and municipal laws, regulations, and permits.
- Telling your friends, families and neighbours what you are doing and how they can help.
- Volunteering your time and becoming a steward!

Learn more in “Healthy Lakes and Wetlands for Tomorrow” (page 90).



Volunteer Diana taking a water quality sample

© MEGAN CROWLEY



Sherman sharing his knowledge and love of plants

© MEGAN CROWLEY



ATV tracks along a shoreline with ACPF

© MARTIN THOMAS



Steward Jerome learning about ACPF

© MEGAN CROWLEY

Nova Scotia's low nutrient, high disturbance shorelines and wetlands contain some of the most diverse ACPF habitat in Canada. ACPF species are mainly found along the lakeshores, salt marshes and freshwater wetlands in the southwest part of the province. For several species, Nova Scotia has some of the most intact and largest remaining habitat for these species in the world. By maintaining these habitats on our properties we help ensure that this distinct and diverse group of plant species are not lost.



**Lakeshores**

ACPF most commonly occur along lakeshores that are gently sloping and composed of sand, cobble, gravel or peat and in areas that receive high levels of natural disturbance such as ice scour, seasonally fluctuating water levels, and wave action. They are able to survive in nutrient poor environments, and are generally out-competed by more aggressive species in nutrient rich environments. One way to maintain lake water quality and shoreline habitat is to preserve the natural vegetation along the lakeshore and 30 m up from the shore.

Some ACPF species are found growing in the water, including Purple Bladderwort (page 37), Bayonet Rush (page 75), and Thread-like Naiad (page 18).



Gently sloping shoreline on Wilson's Lake with Plymouth Gentian

© MARTIN THOMAS



Bayonet rush growing in the water along the shore of Hog Lake

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Molega Lake

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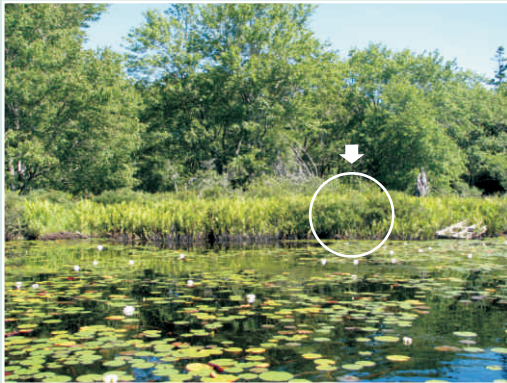


Agard Lake

© MEGAN CROWLEY



Other ACPF species can be found in wetlands adjacent to the lake, including Swamp Rose (page 56) and Long's Bulrush (page 83). Note: Long's Bulrush and Swamp Rose can be found in non-wetland areas along the lakeshore as well.



Swamp Rose along a shoreline wetland on Agard Lake

© MEGAN CROWLEY



Long's Bulrush growing in a wetland along Lac de l'École

© MEGAN CROWLEY

ACPF are not always found on gently sloping lakeshores. They can grow in rocky areas or in rock barrens along the lakeshore like Broom Crowberry (page 49).



Broom Crowberry rock barren on Shingle Lake

© SEAN BLANEY



Redroot along a steeper rocky lakeshore on Molega Lake

© MEGAN CROWLEY



## Wetlands

A wetland is an area that is waterlogged, partially or completely covered by water for all or part of the year. The Canadian Wetland Classification System organizes freshwater wetlands into five types: bogs, fens, swamps, marshes and shallow water. Wetlands are areas of high biodiversity and are important for filtering and maintaining clean water. Many ACPF species are found in freshwater wetlands. Some occur in the most waterlogged areas where competition from other species is low. The ACPF species at risk that occur in wetlands are primarily located in bogs and fens.

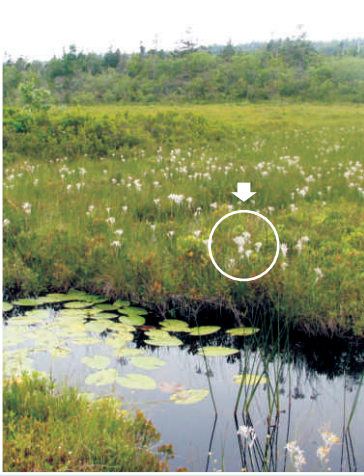


Thread-leaved Sundew habitat at Port Latour bog

© MEGAN CROWLEY



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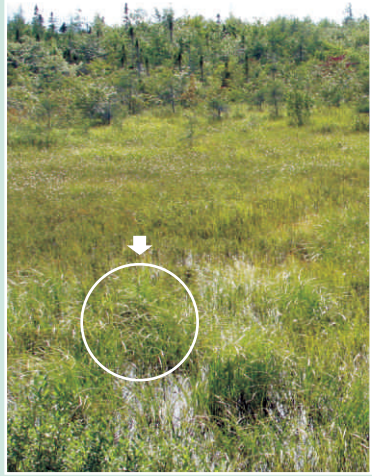
Golden Crest fen near Digby

© SEAN BLANEY



Button Sedge marsh

© MEGAN CROWLEY



Long's Bulrush at Eighteen Mile Brook



## Salt Marshes

Salt marshes are low lying areas that are in the transition zone between the land and the ocean. The plants that grow in salt marshes are adapted to living in salty (saline) conditions. Some ACPF species are found along the inland edges of salt marshes, including Saltmarsh Virginia Wild Rye (page 71) and Groundseltree (page 46) but many occur throughout including Saltmarsh False-Foxglove (page 1) and Rich's Sea-Blite (page 32).



Marsh Elder salt marsh near West Pubnico

© SEAN BLANEY



Salt marsh near the Tusket River with Groundseltree

© MEGAN CROWLEY



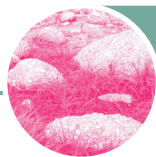
Salt marsh near Port Latour with Rich's Sea-Blite

© MARTIN THOMAS



Morris Island salt marsh

© MARTIN THOMAS



Other Habitats

ACPF also occur in habitats such as river shorelines, rock barrens, estuaries, forests, and sand barrens. The “other” habitat icon is used in this guide only when the species is not found in lakeshores, wetlands or salt marshes. If a species found in lakeshores, wetlands or salt marshes is also found in other habitats they will be noted in the habitat section on the page (but the 'other' habitat symbol will not appear on the page).

© SEAN BLANEY



Skunk Cabbage forest habitat. ACPF forest species are typically in fairly wet areas.

© MEGAN CROWLEY



Mild Water-pepper along the Tusket River

© DAVID PATRIQUIN



Golden Heather rock barren

Estuaries are areas along the coast where rivers enter into the ocean. The freshwater from the river mixes with the salty water of the ocean to create a somewhat salty (brackish) environment. Eastern Lilaeopsis (page 13) is an ACPF species at risk that is found in estuaries. It is generally located on gentle, muddy slopes in the intertidal zone that are exposed and then submerged under water with the tides. Marsh Elder (page 54) is also found in estuaries.



Roseway River estuary with Eastern Lilaeopsis

© MEGAN CROWLEY



Eastern Lilaeopsis in the brackish Pleasant Lake

© MEGAN CROWLEY





Dr. Paul Keddy

© NICK HILL

In the early 1920s Harvard University botanist Merritt Fernald led botanical expeditions throughout much of southwest NS, providing the initial documentation of the extent of ACPF in NS. In the 1950s and 1960s botanists including Albert Roland, Ernest Chalmers Smith, John Erskine and David Erskine greatly increased understanding of ACPF

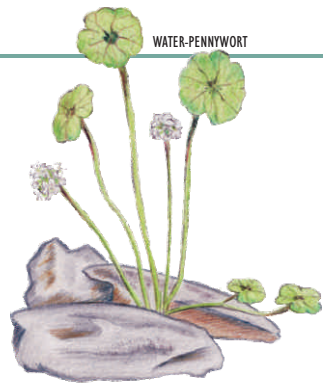
distribution through general botanical surveys all over the province.

Researchers including Paul Keddy, Cathy Keddy, and Irene Wisheu published status reports and many scientific papers about the ecology of ACPF species in NS in the 1980s and brought conservation attention to many ACPF species, leading to the first legal protection for ACPF species at risk.

Many dedicated landowners and individuals have been looking after and enjoying these species for many years. The ACPF Recovery Team was initiated in 1995 and provides guidance on all aspects of the conservation and recovery of the ACPF species at risk. Many organizations including the NS Department of Natural Resources, Tuskent River Environmental Protection Agency (TREPA), Parks Canada, NS Department of Environment, Atlantic Canada Conservation Data Center (ACCDC), Nova Scotia Nature Trust (NSNT), and professors, honours and masters students from universities have been involved in ACPF research, monitoring and stewardship projects over the last twenty years.

In 2010, the Mersey Tobeatic Research Institute (MTRI) and its partners initiated a project focused on furthering the science, education, and stewardship surrounding this special group of plants. One aspect involves surveying the 36 lakes in the province where the 11 ACPF species at risk are found, to provide detailed data on species' distribution and habitat use, and to provide a benchmark for assessing changes that maybe taking place over time. The project also includes a community-based, volunteer-driven water quality monitoring program to measure nutrients in ACPF watersheds. This provides useful information for both ACPF, which require low nutrient shorelines, and for people in the community, who also desire clean, low-nutrient water. This project involves botanists, biologists and anyone that is interested in joining researchers in the field and learning about the plants with which they share their province. To get involved contact MTRI at 902-682-2371 or visit [www.merseytobeatic.ca](http://www.merseytobeatic.ca).

To learn more about ACPF, see more photos, view distributions maps and data, please visit [www.speciesatrisk.ca](http://www.speciesatrisk.ca).



Botanist Dr. Nick Hill and volunteer Lillian Perry surveying ACPF for MTRI on Barrington Lake



Volunteer Bruce MacInnis and botanist David Mazerolle identifying plants on Hog Lake



Volunteer water quality training session





Acadia University ACPF research



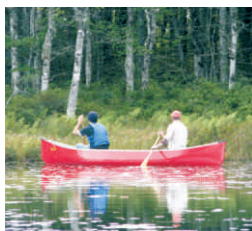
MTRI ACPF Survey



Water-pennywort monitoring (Parks Canada)



Volunteer John Cunningham taking a water quality sample



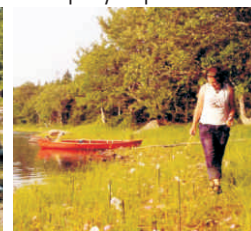
David Mazerolle performing an AC CDC rare plant survey



Sherman Boates surveying Groundseltree (DNR)



TREPA members doing an ACPF survey



Plymouth Gentian research (Acadia University)



Brad Toms observing Eastern Lilaeopsis (MTRI)



Megan Crowley surrounded by Sweet Pepperbush (Parks Canada)



Long's Bulrush research (Mount St. Vincent University)



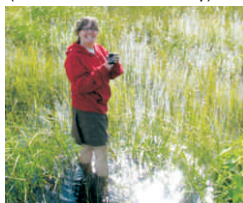
ACPF Social event



Samara Eaton monitoring lake water quality (DNR & EC)



NSNT monitors identifying ACPF on Wilsons Lake



Jen McKinnon appreciating Long's Bulrush



Mark Elderkin photographing Thread-leaved Sundew (DNR)



Monitoring Water-pennywort on Keji Lake (Parks Canada)



Jennifer Lusk collecting data for her master's research (Acadia)



Volunteer Appreciation Event (MTRI)



Landowners enjoying and sharing their property with ACPF



Lindsey Beals monitoring water quality (MTRI)



Volunteer Martin Thomas photographing ACPF

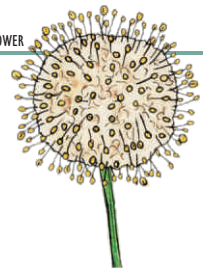


NSNT monitors identifying ACPF on Great Pubnico Lake

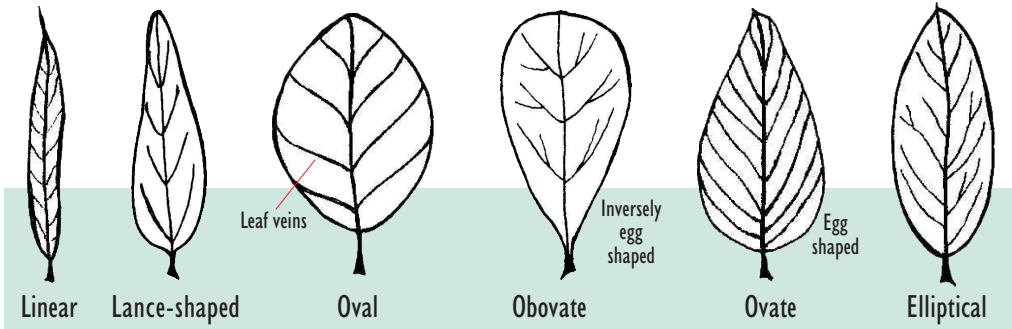
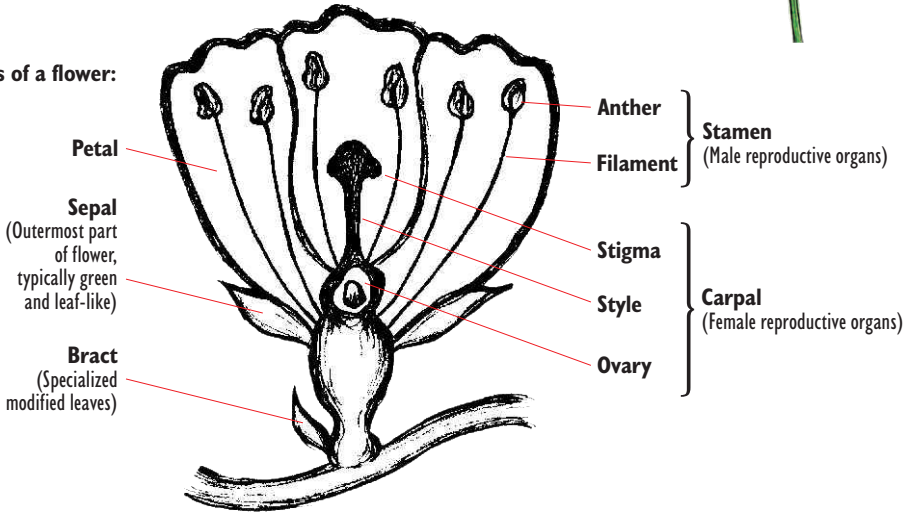


Sean Blaney surveying rare plants (AC CDC)

Most of the terms in this guide are explained in the text right on each species page (with the more technical term in brackets). However, the diagrams below may help to highlight some of the more commonly used plant terms in this guide.

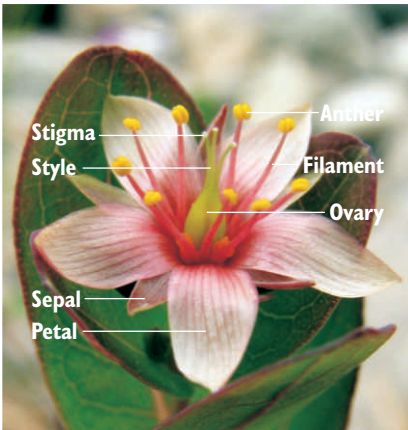


**Parts of a flower:**



**Common leaf shapes**

ALL ILLUSTRATIONS © JENNIFER MCKINNON



© MEGAN CROWLEY



Serrate leaf edges

© SEAN BLANEY



Opposite, sessile leaves

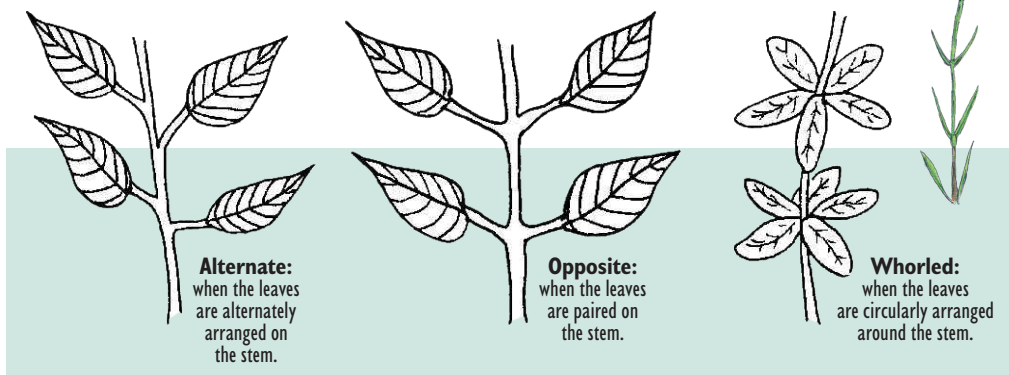
© MEGAN CROWLEY



Linear, entire leaf

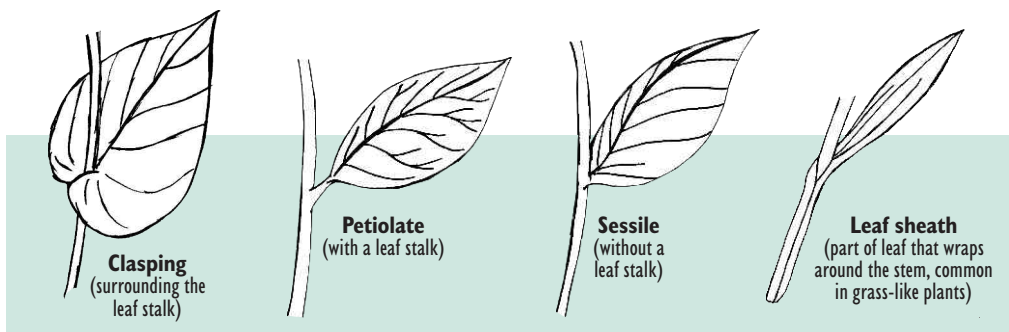
© MEGAN CROWLEY





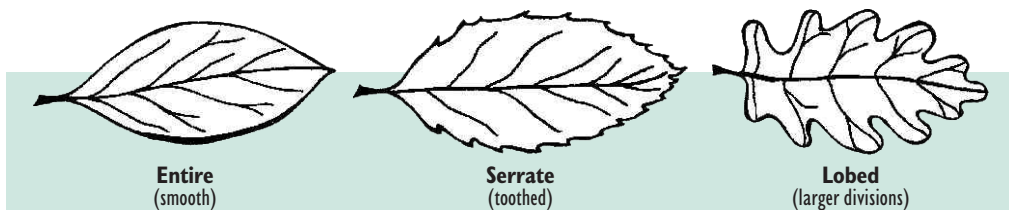
## Leaf Arrangements

ALL ILLUSTRATIONS © JENNIFER MCKINNON



## Leaf Attachments

ALL ILLUSTRATIONS © JENNIFER MCKINNON



## Leaf edges (margins)

ALL ILLUSTRATIONS © JENNIFER MCKINNON



© SEAN BLANEY



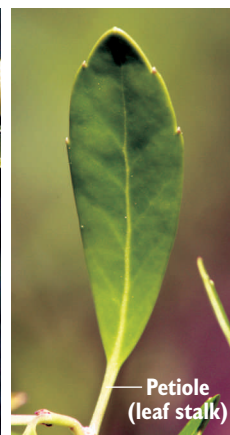
© MEGAN CROWLEY



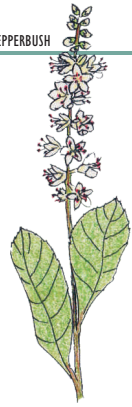
© ALAIN BELLIVEAU



© JOHN HILTY



© ALAIN BELLIVEAU



This guide is divided into three sections:  
**Herbs**  
(non-woody plants),  
**Shrubs**  
(woody plants) and  
**Grass-like**  
plants (graminoids).  
Each section is organized by alphabetical order of the scientific name.

The counties in NS where the species have been observed are highlighted. Species may not always been documented in all counties in which they occur. New county records are of interest and can be submitted to MTRI or AC CDC with supporting details.

15

**Golden Crest**  
*Lophiola aurea*

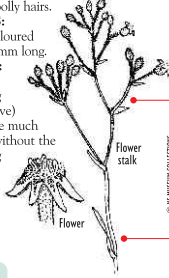
NS General Status Rank: Threatened  
RBS: NON-WOODY PLANTS



**STATUS**  
Threatened  
Threatened

**SIZE:** 30-60 cm tall.  
**LEAVES:** Long, narrow, basal leaves (grow from the base) that are blue-green with a reddish tinge at the bottom, up to 30 cm long and 2-5 mm wide.  
**STEM:** Flower stalk slender, covered in white woolly hairs, and higher than the leaves.  
**FLOWERS:** Golden yellow and small (1 cm wide) in a cluster at the top of the flower stalk. The flower cluster is branching, 5-10 cm wide, and covered in white woolly hairs.  
**FRUITS:** Straw-coloured seeds, 1 mm long.

**NOTES:**  
Non-flowering (vegetative) plants are much shorter without the flowering stalk (up to 30 cm tall).

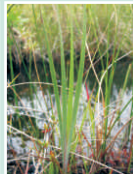


© M. MERRILL COLLECTION



Flower

© MEGAN CROWLEY



Vegetative plant

© MEGAN CROWLEY

**Similar Species:**

The vegetative plant can look similar to Redroot (*Lachnanthes caroliniana*, page 12) and small Blue Flag Iris (*Iris versicolor*), however both these plants have white underground stems (rhizomes) rather than red. Golden Crest leaves are a paler blue-green than Redroot and are often somewhat hairy in their lower half.



Redroot (left), Blue Flag Iris (right)



Dried flower stalks

**Habitat:**  
Found along lakeshores and in wetlands (fens). Lakeshore habitat includes gently sloping cobble and peaty substrates and bays of lakes that become filled with peat. Also occurs on floating mats of peat.  
**Interesting Point:** Can be recognized by its dried flower stalks from the previous year.



Golden Crest wetland

© MEGAN CROWLEY

4

All the provinces where the species is found are noted.

3

**Canadian Flag symbol:**  
*Species at Risk Act*  
or Committee on the Status of  
Endangered Wildlife in Canada  
(COSEWIC)  
**Nova Scotia Flag symbol:**  
*Nova Scotia Endangered  
Species Act*

Line drawings are included for each species with identifying features pointed out on them.

Refer to page ix to see a diagram of common leaf shapes.

If there is another common name or scientific name that this species is also known as, the name is listed in the NOTES section.



- 1** This circle indicates the main habitat(s) in which the species is found in: **Lakeshores, Wetlands, Salt Marshes, and Other** habitats (such as estuaries, rock barrens, or forests). If a species is found in more than one of these habitats, the circle is split to show multiple icons. The “other” habitat icon is used if the species is not found in lakeshores, wetlands or salt marshes. If a species found in lakeshores, wetlands or salt marshes is also found in other habitats they will be noted in the habitat section on the page (but the ‘other’ habitat symbol will not appear on the page).



- 2** The scientific name is listed for each species at the top of the page under the common name. Each scientific name has two parts, the genus name and the species name (i.e. *Carex bullata*). Species closely related to each other have the same genus name. Sometimes there is var. (variety) or ssp. (subspecies) after the species name which refers to plants that have the same genus and species name but that have distinctions in their appearance that make them slightly different from one another.
- 3** ACPF species that are listed under the federal *Species at Risk Act* or provincial *NS Endangered Species Act* have a status box under their name. The status of species changes over time and this guide is current as of March 2011. The categories include:

**Extinct:** No longer living anywhere on the planet.

**Extirpated:** No longer living in a particular regions (province, country) but still exists elsewhere.

**Endangered:** Facing imminent extinction.

**Threatened:** Likely to become endangered if the threats to its survival are not reversed.

**Special Concern /Vulnerable:** Sensitive to activities that may make it endangered or threatened.

**Not at Risk:** Not at risk of extinction.

For more information refer to “Species at Risk in Nova Scotia: Identification and Information Guide” (page 90), or visit [www.speciesatrisk.ca](http://www.speciesatrisk.ca), [www.sararegistry.gc.ca](http://www.sararegistry.gc.ca) and [www.gov.ns.ca/natr/wildlife/biodiversity/at-risk-overview.asp](http://www.gov.ns.ca/natr/wildlife/biodiversity/at-risk-overview.asp).

- 4** All species in NS are assessed through the General Status Assessment Process and receive a colour rank based on how healthy and secure their populations are in this province. This can help identify species that may be at risk so that attention can be brought to them in an attempt to prevent further decline. The status ranks are:

**RED** (At Risk): Species that are at risk of extinction/extirpation.

**YELLOW** (Sensitive): Species that are not believed to be at risk of immediate extinction/extirpation but that may require protection to prevent them from becoming at risk.

**GREEN** (Secure): Species that are not believed to be at risk.

**GREY** (Undetermined): Species for which insufficient data, information, or knowledge is available to reliably evaluate their status.

**BLUE** (Extinct/Extirpated): Species that are no longer thought to be present in the province or in Canada. Extirpated species have been eliminated from a given geographic area but may occur in other areas. Extinct species are extirpated worldwide.

For more information visit <http://www.gov.ns.ca/natr/wildlife/genstatus/>.



# Saltmarsh False-Foxglove

*Agalinis maritima*

NS General Status Rank: At Risk

HERBS: NON-WOODY PLANTS



© MEGAN CROWLEY



Flower

© MEGAN CROWLEY



Flowers in bud

© MEGAN CROWLEY



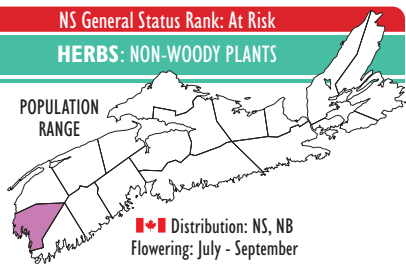
© MARTIN THOMAS



Rare white flowers

© MARTIN THOMAS

POPULATION  
RANGE



Distribution: NS, NB  
Flowering: July - September

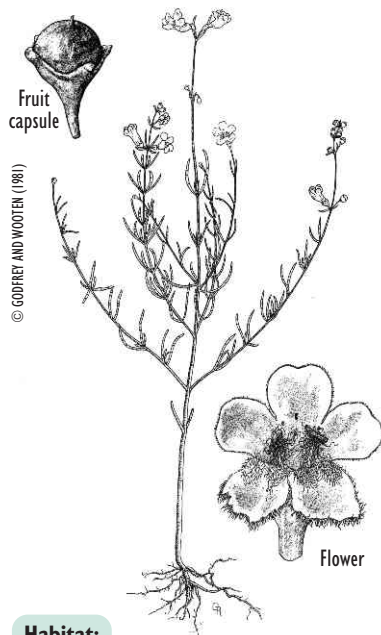
**SIZE:** Up to 30 cm tall.

**LEAVES:** Straight and narrow (linear), fleshy (succulent), 5 cm long and up to 2 mm wide. Alternately arranged or paired (opposite) on the stem. The upper surface is sometimes rough and the leaf edges are smooth.

**STEM:** Smooth and four-sided with some branching.

**FLOWERS:** Pink to purple (rarely white) and bell-shaped, with 2-10 mm long flower stalks. The flower pairs (typically 2-5 per plant) are mostly located near the top of the plant and bloom from the base upward.

**FRUITS:** Semi-round capsules (5-6 mm long) that contain bumpy, brown seeds.



© GODFREY AND WOOLLEN (1981)

Fruit capsule

Flower

## Habitat:

Found only in salt marshes.

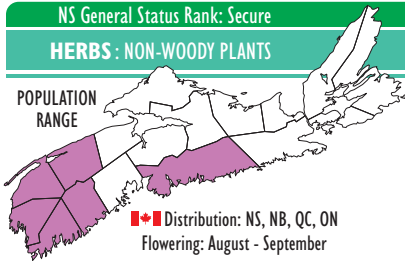
**Interesting point:** This species has been observed with white petals at one salt marsh in Yarmouth County.

**Similar species:** Nova Scotia False-Foxglove (*Agalinis neoscotica*, page 2) has wider leaves, flowers on many branches of the plant (not only near the top), and is found along lakeshores and in wetlands.

NS General Status Rank: Secure

HERBS : NON-WOODY PLANTS

POPULATION  
RANGE



🇨🇦 Distribution: NS, NB, QC, ON  
Flowering: August - September

## Nova Scotia False-Foxglove

*Agalinis neoscotica*



2

**SIZE:** Up to 30 cm tall.

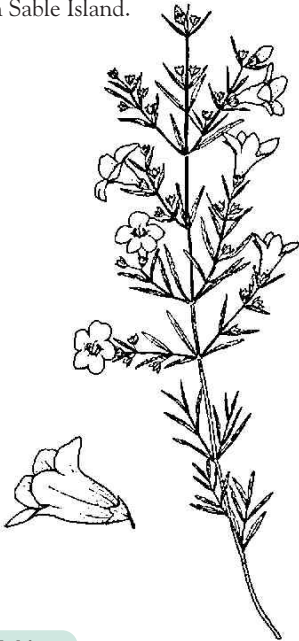
**LEAVES:** Straight and narrow (linear) with smooth leaf edges (entire) and up to 5 cm long and 4 mm wide. They are paired on the stem (opposite). The upper surface is sometimes rough.

**STEM:** Smooth with some branching and four-sided.

**FLOWERS:** Pink to purple, bell shaped, hairy inside, and on a flower stalk 1-4 mm long. The flowers are in singles or clusters and generally numerous (but sometimes few).

**FRUITS:** Round capsules.

**NOTES:** This species is found on Sable Island.



© BRITTON AND BROWN (1913)



© MEGAN CROWLEY



Fruit and flowers

© MEGAN CROWLEY



Straight, narrow leaves

© ALAIN BELLIVEAU

### Habitat:

This species grows in sandy and peaty wetlands (bogs) and lakeshores.

**Interesting point:** The flowers that blossom in the late summer only last for one day.

### Similar species:

Saltmarsh False-Foxglove (*Agalinis maritima*, page 1) has flowers mostly along the main stalk near the top of the plant, blunt-tipped (versus pointed) sepals, narrower and thicker leaves, and is restricted to salt marshes.





## Screwstems

*Bartonia* spp.

### HERBS: NON-WOODY PLANTS



Yellow Screwstem

© ALAIN BELLIVEAU



Screwstem

© ALAIN BELLIVEAU



Yellow Screwstem flower

© ALAIN BELLIVEAU



Screwstem flowers

© SEAN BLANEY

### Yellow Screwstem

*Bartonia virginica*

NS General Status Rank: Secure

🇨🇦 Distribution: NS, NB, NL, QC, ON  
(rare in other provinces)

Small scale-like leaves paired on the stem (opposite). Yellowish-white petals.

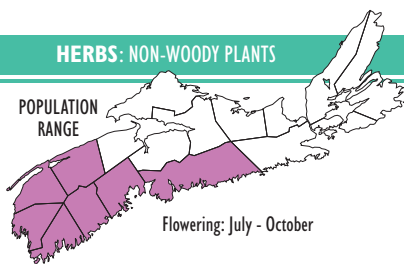
### Screwstem

*Bartonia paniculata*  
*ssp. iodandra*

NS General Status Rank: Secure

🇨🇦 Distribution: NS, NB, NL

Small scale-like leaves alternate on stem (some of the leaves on the lower part of the stem could be opposite). White to greenish-white petals.



SIZE: 10-40 cm tall.

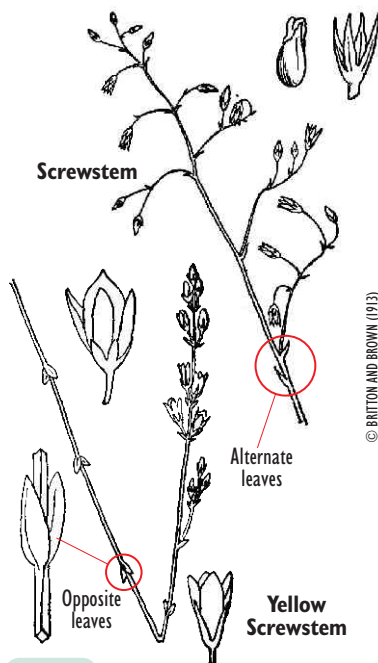
LEAVES: Reduced to small scales on the stem.

STEM: Slender, wiry, and spiral or twining.

FLOWERS: 3-4 mm long with bell-shaped whitish petals. Arranged in a tight spiral when in bud. The sepals are deeply lobed.

FRUITS: Capsules, 2-3 cm long.

NOTES: These two species may cross-breed with each other and produce a hybrid species (a mix between the two).



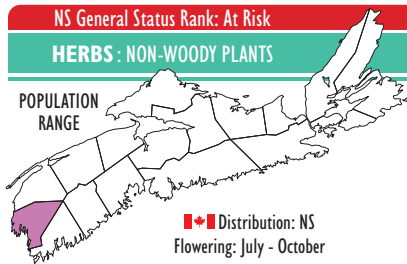
© BRITTON AND BROWN (1913)

#### Habitat:

Peaty or cobble lakeshores, wetlands (bogs) and acidic moist areas. Yellow Screwstem may also be found in dry barrens. The range map shows the distribution of Yellow Screwstem (Screwstem is more widespread).

**Interesting point:** These species are mycotrophic, meaning they obtain their nutrients from fungi in the soil rather than from the sun. That is why their leaves are so small!

**Similar Species:** No similar species other than each other. *Bartonia paniculata* ssp. *paniculata* is not believed to occur in NS.

POPULATION  
RANGE

🇨🇦 Distribution: NS  
Flowering: July - October

## STATUS

Endangered 🇨🇦

Endangered 🇳🇸

**SIZE:** 20-60 cm tall.

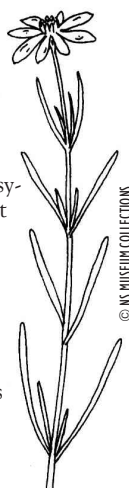
**LEAVES:** Narrow (linear), smooth, 2-5 cm long, 0.5-3 cm wide, and paired on the stem (opposite).

**STEM:** Slender and erect.

**FLOWERS:** Small and daisy-like with yellow centers that are 5-10 mm wide. The petal-like rays are pink to white and 8-13 mm long.

**FRUITS:** Dry, one-seeded, and 2 mm long.

**NOTES:** Also known as Pink Tickseed. This plant is located on only 7 lakes in Yarmouth County.



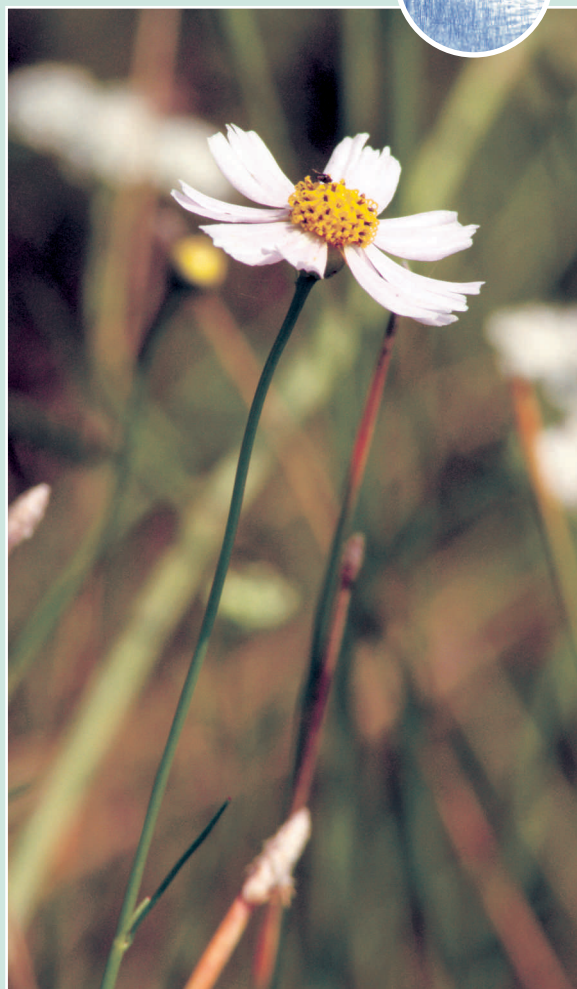
© NY MUSEUM COLLECTIONS

**Habitat:**

Gently sloping, broad lakeshores that are usually sand, gravel, peat or cobblestone.

**Interesting point:** Pink Coreopsis is a globally rare species and Nova Scotia contains some of the largest remaining habitat for this species worldwide. We live in a special place!

**Similar species:** Plymouth Gentian (*Sabatia kennedyana*, page 27) has wider petals that are yellow at the base. Virginia Meadow-Beauty (*Rhexia virginica*, page 26) has large yellow stamens and four petals.



© ALAIN BELLIVEAU



Pink Coreopsis - top, © MEGAN CROWLEY  
Plymouth Gentian - bottom



Narrow leaves and slender stem

© MEGAN CROWLEY



Daisy-like flower

© MARK ELDERKIN



Unopened flower

© MEGAN CROWLEY



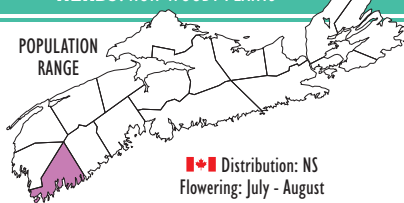


## Thread-leaved Sundew

*Drosera filiformis*

NS General Status Rank: At Risk

HERBS: NON-WOODY PLANTS



### STATUS

Endangered 🇨🇦

Endangered 🇳🇸



© MARK ELDERKIN



Long, straight leaf

© MEGAN CROWLEY



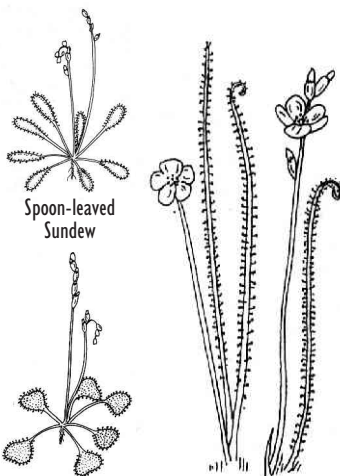
Flowers bloom one at a time from the bottom of the flowering stalk to the top



Insect caught in the sticky leaves

© MEGAN CROWLEY

© MEGAN CROWLEY



Spoon-leaved Sundew

Round-leaved Sundew

© NS MUSEUM COLLECTIONS

### Habitat:

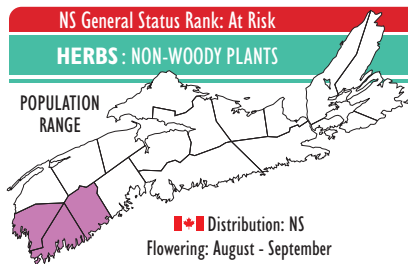
Located in the peaty hollows of raised bogs.

**Interesting point:** Sundews are carnivorous! They trap insects on their sticky leaves and digest them to obtain extra nutrients.

**Similar species:** Two other sundew species are found in NS and are much more common. Round-leaved Sundew (*Drosera rotundifolia*) has short, round leaves (4-10 mm long) rather than the long, upright leaves of Thread-leaved Sundew. Spoon-leaved Sundew (*Drosera intermedia*) has narrow, spoon-shaped leaves on leaf stalks 2-5 cm long.



POPULATION  
RANGE



Canada Distribution: NS

Flowering: August - September

**SIZE:** 40-100 cm tall.

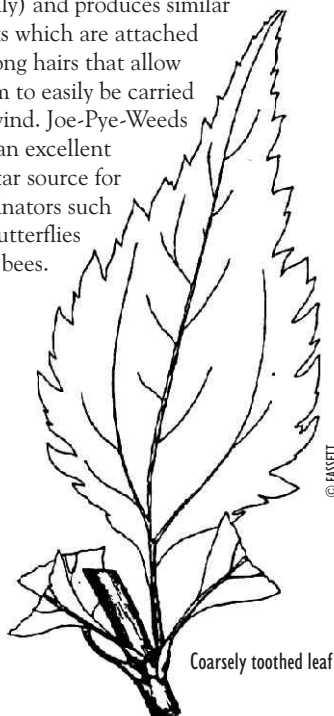
**LEAVES:** Firm and lance-shaped with broad bases, 5-12 cm long and 2-7 cm wide. They have three main veins running lengthwise, coarsely toothed edges (serrate), are abruptly rounded at their base (do not taper) and have a rough appearance. They are circularly arranged around the stem (whorled) mostly in groups of 3-4.

**STEM:** Stout and erect with purple spots and small sticky hairs (at least near the top).

**FLOWERS:** Small, purple and grouped in heads which are arranged in a fairly dense round-topped branched cluster (6-8 cm wide). Each head contains 4-10 flowers.

**FRUITS:** Small dry one-seeded fruits (achenes), attached to a row of long hairs or bristles.

**NOTES:** This plant is in the same family as dandelions (Daisy or Aster family) and produces similar fruits which are attached to long hairs that allow them to easily be carried by wind. Joe-Pye-Weeds are an excellent nectar source for pollinators such as butterflies and bees.



Coarsely toothed leaf



© ALAIN BELLIVEAU

© SEAN BLANEY



Start of flowers and whorled leaves



Leaf with three main veins

© ALAIN BELLIVEAU

**Habitat:**

Rocky, muddy or peaty shores of lakes and rivers as well as shoreline thickets and forest edges.

**Interesting point:** This species belongs to a group of plants that were historically used for their medicinal value and were named after a medicine man named Jopi from New England.

**Similar species:** Spotted Joe-Pye-Weed (*Eupatorium maculatum*) is very similar but is taller (60 to 200 cm), has a flat-topped flower cluster, more flowers per head (9-22) and has longer leaves (6 to 20 cm) that gradually taper at their base. The leaves have one main vein whereas Coastal Plain Joe-Pye-Weed generally have three.



Spotted Joe-Pye-Weed

© SEAN BLANEY

# Carolina Fragrant Goldenrod

*Euthamia caroliniana*

NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS



© MEGAN CROWLEY

© ALAIN BELLIVEAU

© SEAN BLANEY



Linear, alternate leaves



© MEGAN CROWLEY



Flower cluster with one flower head circled

## Habitat:

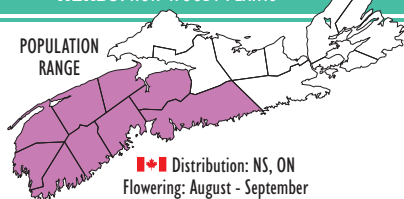
Sandy, gravelly and rocky lake or river shores as well as edges of open shoreline wetlands. Typically found on damp to wet acidic soils.

**Interesting point:** Goldenrods are great native nectar sources for many insects including butterflies and bees. This species is in the same family as dandelions and produces similar fruits which are attached to long hairs that allow them to easily be carried by wind.

**Similar species:** Narrow-Leaved Goldenrod (*Euthamia graminifolia*) is common in a wider variety of habitats throughout the province, has a flat-topped flower cluster (inflorescence) that is 5-20 cm wide and wider leaves (3-12 mm) that are clearly three-veined.



Narrow-Leaved Goldenrod flowers



**SIZE:** 30-100 cm tall.

**LEAVES:** Narrow and linear, 2-7 cm long and 1.5-4 mm wide with 1-3 noticeable veins. They are typically widely spreading or pointing upwards and alternately arranged along the stem. There are often clusters of smaller leaves where the main leaves meet the stem (leaf axils).

**STEM:** Slender and unbranched below the flower cluster.

**FLOWERS:** In a compact, branched, flat-topped, cluster (inflorescence) at the top of the plant. The cluster is 1-2 cm wide and contains many small, yellow, daisy-like flower heads which are each composed of approximately 25-50 miniature flowers or florets.

**FRUITS:** Small, dry, one-seeded fruits (achenes) attached to a row of long hairs or bristles.

**NOTES:** Until recently, *Euthamia caroliniana* and *Euthamia galetorum* were treated as two separate but very similar species. They are now both considered to be Carolina Fragrant Goldenrod.



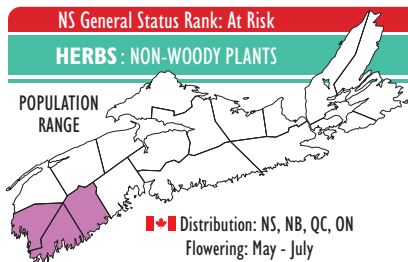
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Narrow-Leaved Goldenrod leaves

© SEAN BLANEY





**SIZE:** 20-80 cm long.

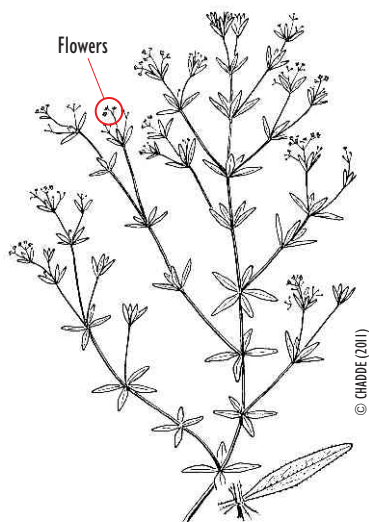
**LEAVES:** Long and narrow (linear to lance-shaped), 1-3 cm long and 3-5 mm wide, with a rounded tip. Circularly arranged around the stem (whorled) in groups of 4 (sometimes 5-6).

**STEM:** Slender, weak stem that branches and spreads. It is green, four-sided and smooth except for short bristly hairs where the leaves attach to the stem.

**FLOWERS:** Small, 4-petaled and white in groups of 3-5 at branch tips. The flower stalks (pedicels) are 5-12 mm long and point upwards.

**FRUITS:** Dark, smooth, 4-5 mm long and made up of two round parts.

**NOTES:** This species grows in a sprawling and weakly-erect fashion.



## Large Marsh Bedstraw

*Galium obtusum*

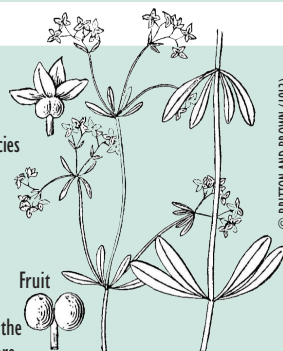


### Habitat:

Wet marshes, boggy swales, flood plains, stream banks, and wet forests. It can occur near lakeshores in these habitats.

**Interesting point:** There are 300 species of bedstraw and some species are capable of curdling milk to create cheese.

**Similar species:** Marsh Bedstraw (*Galium palustre*) leaves are circularly arranged around the stem (whorled) in groups of 2-6 (usually 4-5), with leaves 0.5-1.5 cm long. Small hairs are absent on the stem where the leaves attach. The flowers are in groups of 5 or more and the fruit is larger.





# Golden-Pert *Gratiola aurea*

NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS



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© SEAN BLANEY



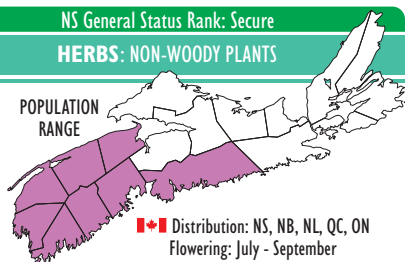
Non-flowering plants

© MEGAN CROWLEY



Bell-shaped flower

© MEGAN CROWLEY



**SIZE:** 10-30 cm long. Grows upright or creeps along the ground.

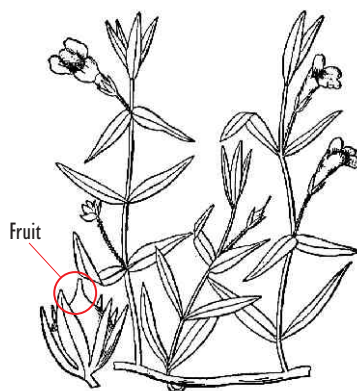
**LEAVES:** Lance-shaped to ovate with a wide base that clasps (partially surrounds) the stem, 1-2.5 cm long. Smooth to slightly toothed leaf edges.

**STEM:** Smooth, simple or branched, and somewhat four-angled.

**FLOWERS:** Yellow and tubular or bell-shaped, 12-16 mm long. Flowers attach to a slender stalk 5-15 mm long.

**FRUITS:** Round capsules, 2-3 mm long.

**NOTES:** This species can grow in large dense patches.



© BRITTON AND BROWN (1913)

## Habitat:

Sandy or gravelly lakeshores, can be found growing in the water.

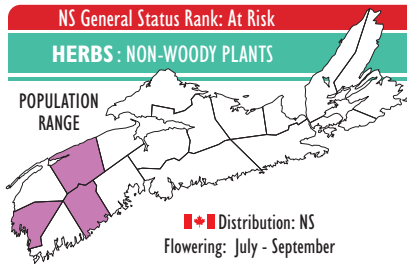
**Interesting point:** Some populations produce a pure white flower. Look for them along your lakeshore!

**Similar species:** None



White flower

© MEGAN CROWLEY

POPULATION  
RANGE

🇨🇦 Distribution: NS  
Flowering: July - September

## STATUS

Threatened 🇨🇦

Endangered 🇨🇦

**SIZE:** 10-30 cm tall leaf stalks (petioles) when above water, up to 1 m long when underwater.

**LEAVES:** Single, roundish, with shallow lobes, 1-7 cm wide. They float like a lily pad in deeper water and stand erect in shallow water (or above the water line). The leaf undersides are green.

**STEM:** Slender and creeping along the ground with leaf stalks (petioles) emerging from it.

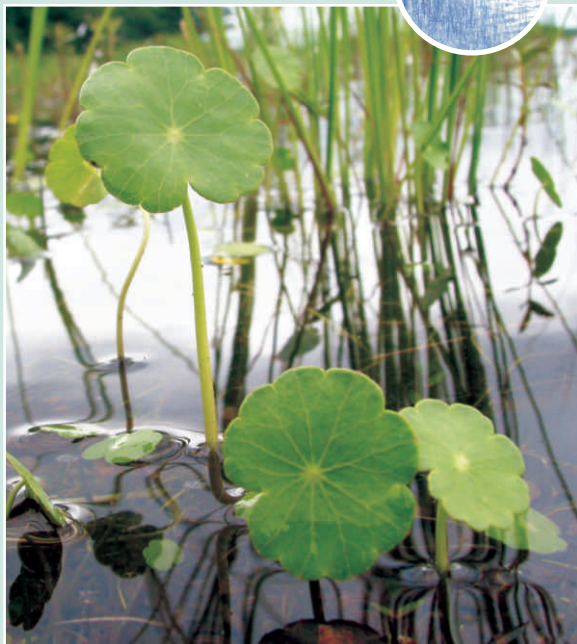
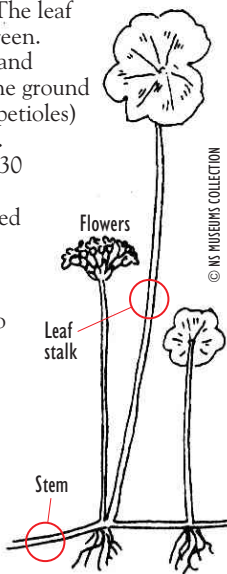
**FLOWERS:** 15-30

small, white or greenish, 5-petaled flowers cluster together on top of a flower stalk (peduncle), up to 15 cm tall.

Observed in low water years.

## NOTES:

Also known as Many-Flowered Pennywort.



© MEGAN CROWLEY



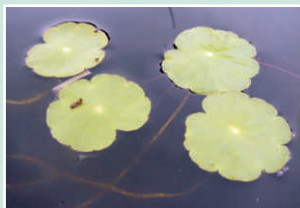
Monitoring in Keji

© MEGAN CROWLEY



Flowers

© MEGAN CROWLEY



Floating leaves

© MEGAN CROWLEY



Green undersides

© MEGAN CROWLEY

## Habitat:

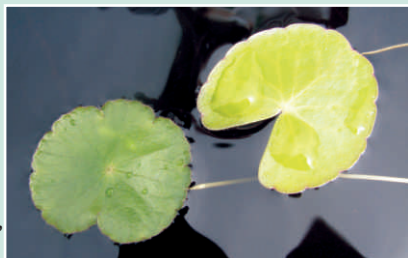
Sand, gravel or cobble lakeshores.

**Interesting point:** This species is only found on two lakes in all of Canada! It is found on Kejimikujik Lake in Annapolis and Queens Counties, and on Wilson's Lake in Yarmouth County.

## Similar species:

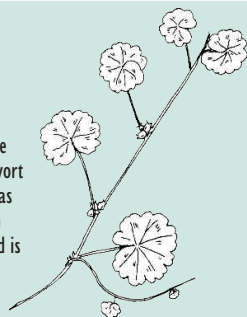
Floating Heart (*Nymphoides cordata*) has heart shaped leaves with the slit going right to the center and purple undersides.

Water-pennywort (left),  
Floating Heart (right)



© MEGAN CROWLEY

American Marshpennywort (*Hydrocotyle americana*) is the only other pennywort species in NS. It has multiple leaves on each leaf stalk and is less robust.



© NS MUSEUM COLLECTIONS



## Slender Blue Flag

*Iris prismatica*

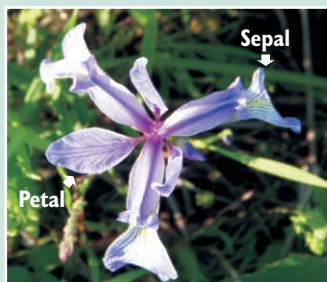
NS General Status Rank: At Risk

HERBS: NON-WOODY PLANTS



© KELLY OMAND, NANTUCKET CONSERVATION FOUNDATION

© KELLY OMAND, NCF

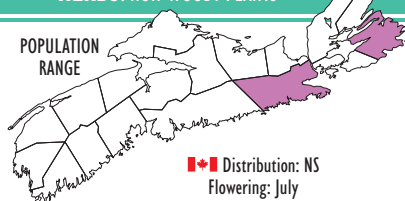


Flower

© KELLY OMAND, NCF



Long, narrow leaves at the base



**SIZE:** 30-100 cm tall.

**LEAVES:** Long, narrow, straight, vertically oriented, 50-70 cm long, and 3-7 mm wide. Specialized leaves (spathes) are present just below the flowers, and are narrow, lance-shaped and 2-4 cm long.

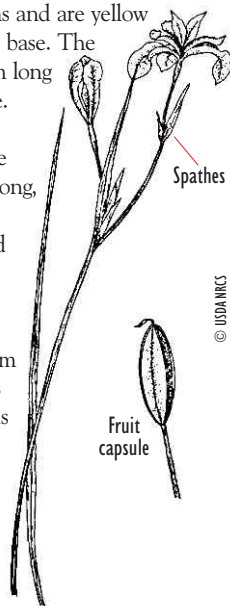
**STEM:** Slender and erect.

**FLOWERS:** One to three flowers, 5-8 cm long, at the top of a flower stalk (petiole). Each flower has 3 petals that are violet, lance-shaped, point upwards, and are 3-4 cm long (over half the length of the sepals). They are surrounded by 3 showy, petal-like sepals that curve back towards the stem and have purple veins and are yellow and white at the base. The sepals are 4-5 cm long and 1-2 cm wide.

**FRUITS:**

Capsules that are narrow, 3-5 cm long, and three-sided with well defined edges.

**NOTES:** Grows from a slender, underground stem (rhizome) that is slightly poisonous and could cause irritation if your skin comes into contact with it.



© USDA NRCS

### Habitat:

Swamps near the coast and brackish wetlands.

**Interesting point:** European iris rhizomes, called orris root, produce a violet-scent and are used for perfumes, potpourri, soaps, wreaths and are also used in spirits for flavouring.

**Similar species:** Blue Flag (*Iris versicolor*) has wider leaves (1.5 cm) and flat petals that are half the length of the sepals. Beach Blue Flag (*Iris setosa*) has flower petals that are tubular and one quarter the length of the sepals. Both of these species have fruit capsules with blunt edges.



Blue Flag

© SEAN BLANEY



Beach Blue Flag

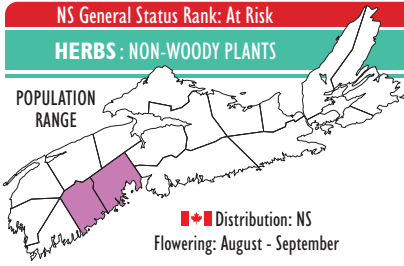
© SEAN BLANEY



NS General Status Rank: At Risk

HERBS : NON-WOODY PLANTS

POPULATION  
RANGE



🇨🇦 Distribution: NS

Flowering: August - September

**STATUS**

Special Concern 🇨🇦

Threatened 🏠

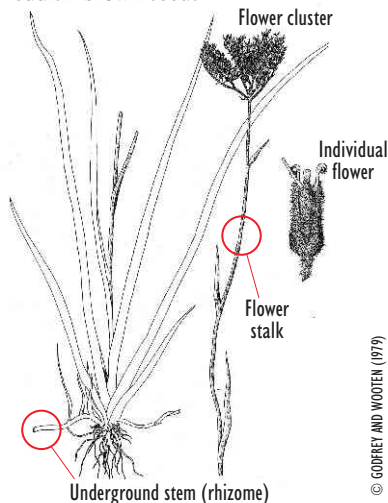
**SIZE:** 20-80 cm tall.

**LEAVES:** Long, narrow, arise from the base (basal), vertically oriented and 3-10 mm wide.

**STEM:** Bright red underground stem (rhizome).

**FLOWERS:** 10-30 light yellow, woolly flowers are clustered at the top of a flower stalk. The flower cluster is 3-8 cm wide and each individual flower is 10-12 mm. The flower stalk is pale green, arises from the base, is taller than the leaves and the upper section is covered in pale yellow hairs.

**FRUITS:** Round fruit capsules with reddish-brown seeds.



© GODFREY AND WOOTEN (1979)



Red rhizomes

© MEGAN CROWLEY

## Redroot

*Lachnanthes caroliniana*

12



© ALAIN BELLIVEAU

© MEGAN CROWLEY

© MEGAN CROWLEY



Flower cluster



Woolly flowers beginning to open

### Habitat:

© ALAIN BELLIVEAU

Peat, sand and gravel lakeshores.

**Interesting point:** This special plant is only found on 8 lakes in all of Canada, all located in southwest Nova Scotia!

### Similar species:

When not in flower this plant can look similar to small Blue Flag Iris (*Iris versicolor*) and Golden Crest (*Lophiola aurea*- page 15). Redroot has bright green leaves and red underground stems (rhizomes) while the other species have white rhizomes. Golden Crest leaves are blue-green and tinged with red.



Golden Crest (left), Redroot (right)



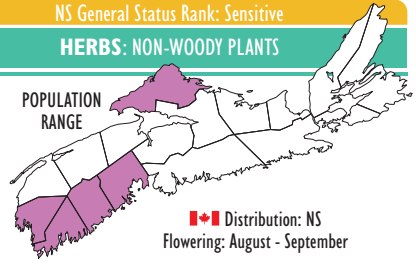
## Eastern Lilaeopsis

*Lilaeopsis chinensis*

NS General Status Rank: Sensitive

HERBS: NON-WOODY PLANTS

POPULATION  
RANGE



🇨🇦 Distribution: NS

Flowering: August - September

**STATUS**

Special Concern 🇨🇦

Vulnerable



Eastern Lilaeopsis growing under Saltwater Cordgrass

© MEGAN CROWLEY



Small, rounded, linear leaves

© MEGAN CROWLEY



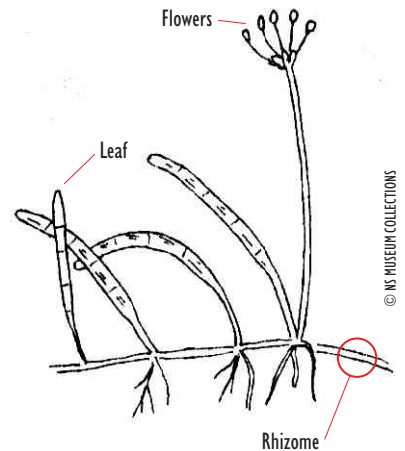
Start of flowers

© MEGAN CROWLEY



Tiny white flowers

© MARTIN THOMAS



© NS MUSEUM COLLECTIONS

### Habitat:

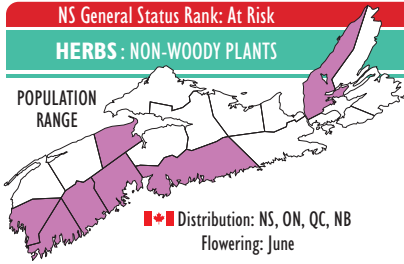
The flat, muddy slopes in estuaries and estuarine rivers or lakes.

**Interesting point:** This species was first discovered in this province by the eminent Harvard University botanist Merritt Fernald. Fernald led botanical expeditions throughout much of southwestern NS in the 1920s and greatly contributed to our knowledge of the flora in this province.

**Similar species:** None.



POPULATION  
RANGE



■ Distribution: NS, ON, QC, NB  
Flowering: June

**SIZE:** 15-30 cm tall.

**LEAVES:** Two in total that are ovate, green, and 1-2 cm long. They attach directly to the stem and wrap around it at the base (clasping).

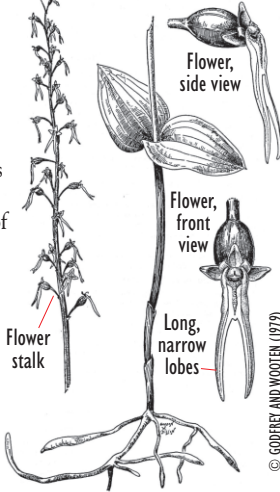
**STEM:** Slender, and unbranched.

**FLOWERS:** In a long, narrow, cluster (inflorescence) at the top of the plant. They are small, greenish-purple to dull red and non-showy with a bottom lip that has two long narrow lobes, 6-10 mm long. The flower stalks (pedicels) have fine hairs covering them.

**FRUITS:** Ovate capsules.

**NOTES:**

This species was named in honour of the great naturalist, Martin Lister.



© GODFREY AND WOOTEN (1979)

**Habitat:**

Shaded bogs and swamps, typically with trees and mosses, and moist forests.

**Interesting point:**

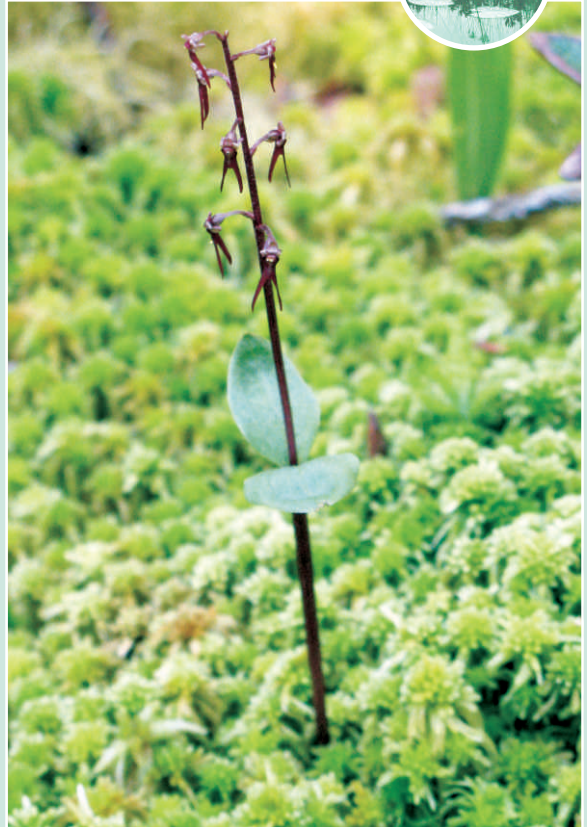
When the flower of this plant is touched by insects, the flower secretes an adhesive which helps stick pollen to the insect.

**Similar species:**

Heartleaf Twayblade (*Listera cordata*) has flowers with a shorter bottom lip (always less than 5 mm long) and leaves that are more heart-shaped than ovate.



Heartleaf Twayblade

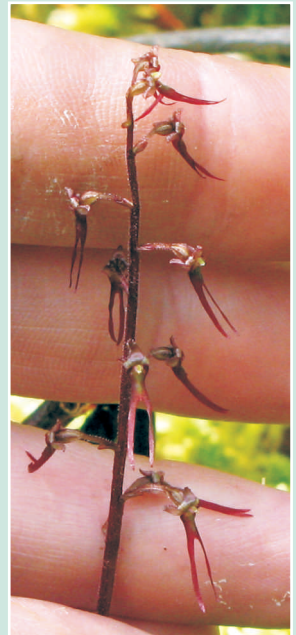


© SEAN BLANEY



Fruit capsules

© SEAN BLANEY



Flowers, with fingers for scale

© SEAN BLANEY



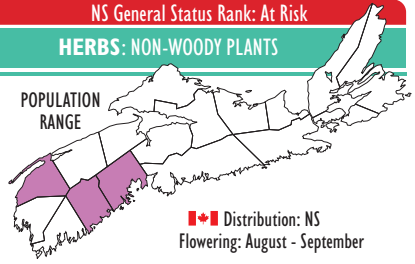


## Golden Crest *Lophiola aurea*

NS General Status Rank: At Risk

HERBS: NON-WOODY PLANTS

POPULATION  
RANGE



🇨🇦 Distribution: NS  
Flowering: August - September

**STATUS**

Threatened 🇨🇦

Threatened 🇬🇧



© MEGAN CROWLEY



Flower

© MEGAN CROWLEY



Vegetative plant

© MEGAN CROWLEY

**SIZE:** 30-60 cm tall.

**LEAVES:** Long, narrow, basal leaves (grow from the base) that are blue-green with a reddish tinge at the bottom, up to 30 cm long and 2-5 mm wide.

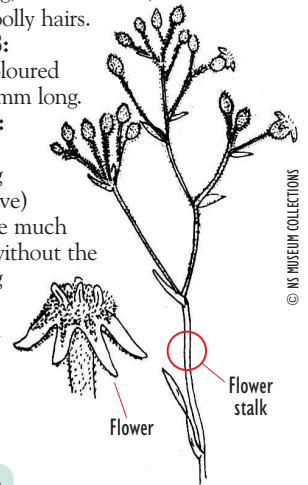
**STEM:** Flower stalk slender, covered in white woolly hairs, and higher than the leaves.

**FLOWERS:** Golden yellow and small (1 cm wide) in a cluster at the top of the flower stalk. The flower cluster is branching, 5-10 cm wide, and covered in white woolly hairs.

**FRUITS:** Straw-coloured seeds, 1 mm long.

**NOTES:**

Non-flowering (vegetative) plants are much shorter without the flowering stalk (up to 30 cm tall).



© NS MUSEUM COLLECTIONS

### Similar Species:

The vegetative plant can look similar to Redroot (*Lachnanthes caroliniana*, page 12) and small Blue Flag Iris (*Iris versicolor*), however both these plants have white underground stems (rhizomes) rather than red. Golden Crest leaves are a paler blue-green than Redroot and are often somewhat hairy in their lower half.



Redroot (left), Blue Flag Iris (right)

Dried flower stalks

© MEGAN CROWLEY

### Habitat:

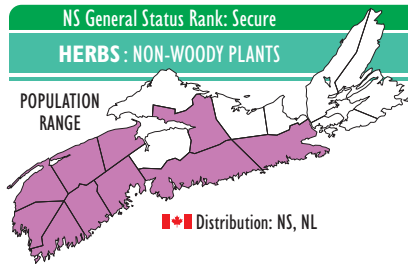
Found along lakeshores and in wetlands (fens). Lakeshore habitat includes gently sloping cobble and peaty substrates and bays of lakes that become filled with peat. Also occurs on floating mats of peat.

**Interesting Point:** Can be recognized by its dried flower stalks from the previous year.



Golden Crest wetland

© MEGAN CROWLEY

POPULATION  
RANGE

🇨🇦 Distribution: NS, NL

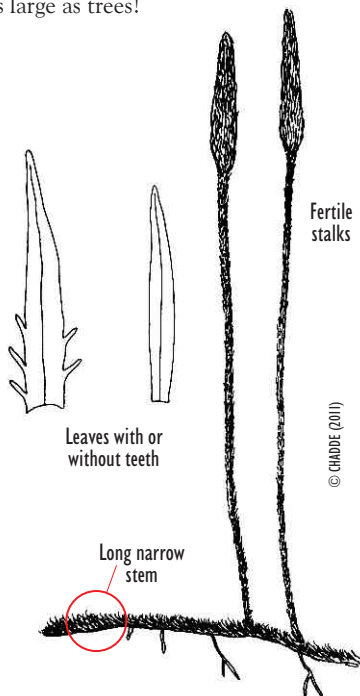
**SIZE:** 10-45 cm long, trailing along the ground and producing roots at several points along the stem.

**LEAVES:** Small, 5-8 mm long and 1 mm wide, dark green and arranged in several rows along the stem. They may be pressed against the stem or spread out and their edges can be smooth or have up to 7 tiny teeth.

**STEM:** Long, narrow, grows along the ground and can bear 1 to 7 erect fertile stalks.

**REPRODUCTIVE STALKS:** Erect fertile stalks, 5 to 15 cm tall, that form leafy cone-like structures (strobili) which produce spores. The leaves on the fertile stalks are typically tightly pressed against the stems and have smooth edges.

**NOTES:** This species is part of an ancient group of plants (Lycopodiophyta) that have lived on this earth for 410 million years. Some of the extinct species in this group were as large as trees!



## Southern Bog Clubmoss

*Lycopodiella appressa*

16



© MARTIN THOMAS

© DAVID MAZEROLLE



Erect fertile stalks



Small green leaves

© BRAD TOMS



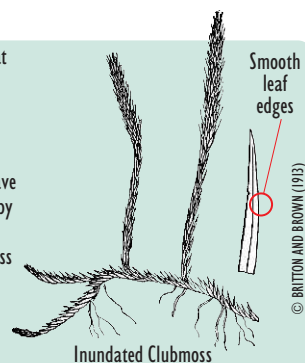
© MEGAN CROWLEY

### Habitat:

Wet typically peaty lakeshores, usually at the water's edge.

**Interesting point:** Clubmosses are well known for the highly flammable oil found in their spores. The spores can be abundant when they are released and have traditionally been used as flash powder by early photographers.

**Similar species:** Inundated Clubmoss (*Lycopodiella inundata*) is generally smaller, has shorter fertile branches (3.5-6 cm long), and the leaf edges are without small teeth.



© BRITTON AND BROWN (1913)



## Low Water-Milfoil

*Myriophyllum humile*

NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS



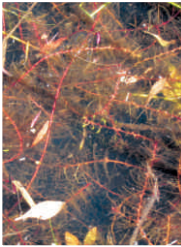
Above water branches

© DAVID MAZEROLLE



Fine, branching underwater leaves

© MEGAN CROWLEY



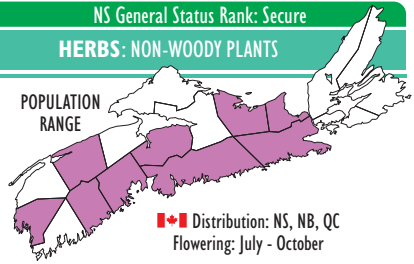
Underwater

© DAVID MAZEROLLE



Flowers in leaf axils

© DAVID MAZEROLLE

**SIZE:** Up to 1 m long.

**LEAVES:** Underwater leaves are feathery and very slender with fine segments branching in 5 to 12 pairs from the main stem (pinnately divided). They are usually over 1 cm long and alternately arranged along the stem, although plants often also have opposite or whorled leaves. Branches above the water have modified leaves (bracts) that are entire (instead of divided) and fleshier. They are typically green but can take on a brownish or reddish color.

**STEM:** The stems are slender, weak, smooth and often branched. They are green, reddish-brown or bright red (typically turn red later in the season).

**FLOWERS:** Four-parted and inconspicuous. They grow above or under the water at the base of the leaves where they attach to the branches (leaf axils). The flowers are mostly located near the ends of the branches.

**FRUITS:** Shiny, smooth (or sometimes barely roughened) four-parted nutlets that split into 0.7-1.2 mm long seeds.

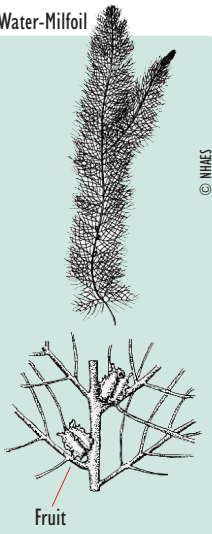
**NOTES:** This plant is typically aquatic and submersed in water, but can occasionally be found growing on wet soil at the water's edge.

**Habitat:**

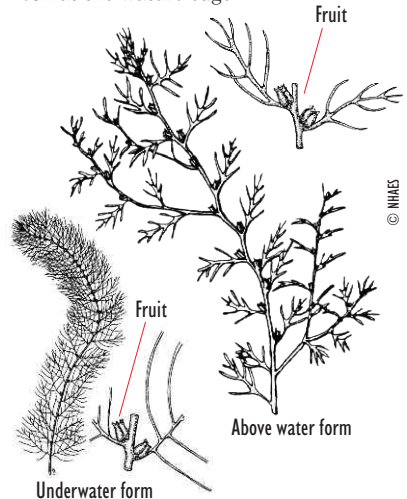
Shallow acidic waters and shores of lakes, streams, and rivers on peaty, sandy, or muddy soils.

**Interesting point:** Water-Milfoil species are fragmenting plants, meaning that when cut or broken, the fragments may float away and take root elsewhere, creating new colonies. The scientific name for the genus (*Myriophyllum*) alludes to the highly divided submersed leaves and comes from the Greek myrios, meaning "countless" and phyllon meaning "leaf".

**Similar species:** Low Water-Milfoil is readily distinguished from NS's five other Water-Milfoil species by the combination of its smooth fruits, often reddish stems and ability to live in or out of water. Farwell's Water-Milfoil (*Myriophyllum farwellii*) is completely aquatic and has rough fruits that are longer (2 to 2.5 mm). Water-Milfoils can also be similar to many bladderworts (*Utricularia* spp.) but are distinguished by their lack of bladders.

**Farwell's Water-Milfoil**

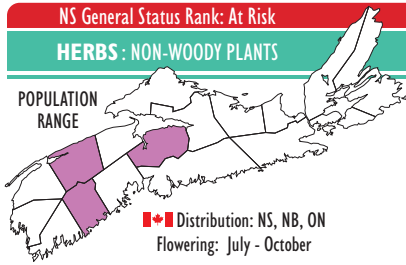
© NHES



© NHES



POPULATION  
RANGE



**SIZE:** 5 to 50 cm long.

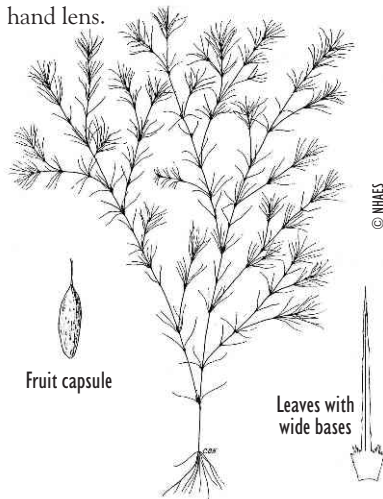
**LEAVES:** Very slender and delicate, almost translucent pale green, 5-30 mm long and 0.5 mm wide. They have wide (abruptly expanded) bases and 13-17 minute teeth along their margins. They are widely spaced along the stem and become smaller towards the top of the plant.

**STEM:** Slender and flimsy, 0.2-0.7 mm thick.

**FLOWERS:** Small, inconspicuous, usually solitary and located where the leaves meet the stem (axil).

**FRUITS:** Capsules, 2 to 3 mm long, that contain narrow light brown seeds.

**NOTES:** This plant grows underwater but entire plants or fragments are often found floating and moving freely with the water like a fine seaweed or hair. It is much easier to see if held at the water's surface and observed with a hand lens.



## Thread-like Naiad

*Najas gracillima*



© SEAN BLANEY



Branching pattern

© SEAN BLANEY



Taking a water sample to measure lake nutrient levels

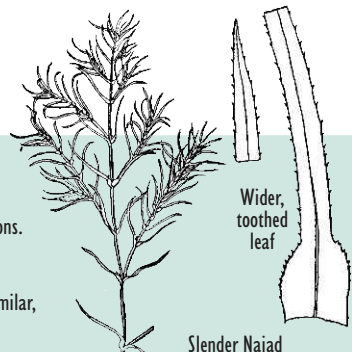
© PAT HUDSON

### Habitat:

Rooted in sandy or muddy lake bottoms in shallow to moderately deep water. This species has a low tolerance for pollution and requires waters that are low in nutrients.

**Interesting point:** Since light scatters underwater, these plants are flexible and have many leaves which allow them to absorb more light from many different directions.

**Similar species:** Slender Naiad (*Najas flexilis*) typically has wider (0.2 to 2 mm) leaves which have 20-100 minute teeth along their margins and bases that are gradually expanded. Small thin-leaved Pondweed species (*Potamogeton* spp.) can also be quite similar, but do not have leaves that are expanded at the base and have flowers that are clustered rather than solitary.





## White Fringed Orchid

*Platanthera blephariglottis*

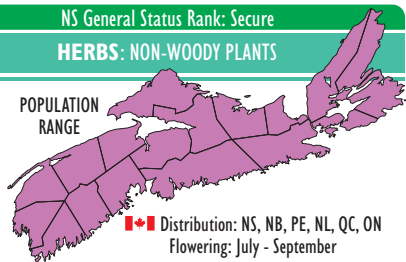
NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS



© SEAN BLANEY

POPULATION  
RANGE



✚ Distribution: NS, NB, PE, NL, QC, ON  
Flowering: July - September

**SIZE:** 20-50 cm tall.

**LEAVES:** Lower leaves lance-shaped, alternatively arranged on the stem, 20 cm long and 2 cm wide. The upper leaves are reduced.

**STEM:** Smooth and slender.

**FLOWERS:** A dense cluster of 20-30 white flowers (inflorescence) at the top of the stem, 5-15 cm long and 4-5 cm wide. Each flower has a fringed bottom lip (8-11 mm long) and a long slender spur. The flowers smell faintly of cloves.

**FRUITS:** Capsules.

**NOTES:** Also known as *Habenaria blephariglottis*.



Eyelash-like fringed bottom lip

© ALAIN BELLIVEAU



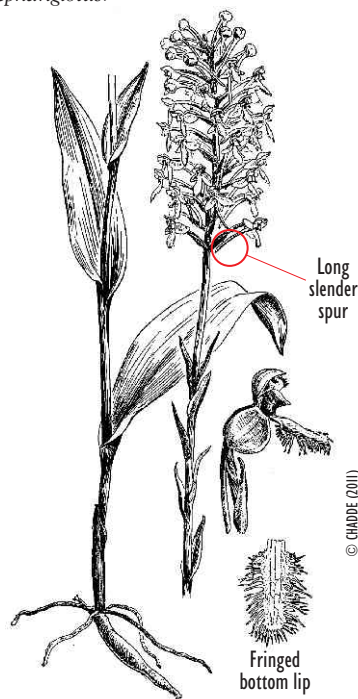
Flowers with long, slender spur



Monarch Butterfly feeding on the flowers

© ALAIN BELLIVEAU

© MARK ELDEKIN



© CHADDE (2011)

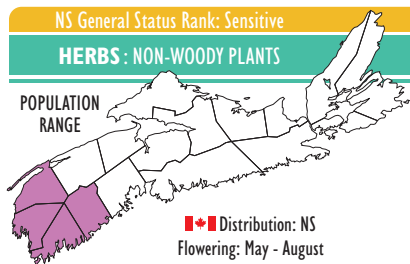
### Habitat:

Semi-open forest, peaty hollows in wetlands (bogs, acidic swamps) and dry barrens.

**Interesting point:** Part of the scientific name, *blephariglottis*, comes from the latin word "*blepharis*" which means eyelash. This is due to the fringed or ragged part of the flower resembling an eyelash.

**Similar species:** None



POPULATION  
RANGE

🇨🇦 Distribution: NS  
Flowering: May - August

**SIZE:** 10-30 cm tall.

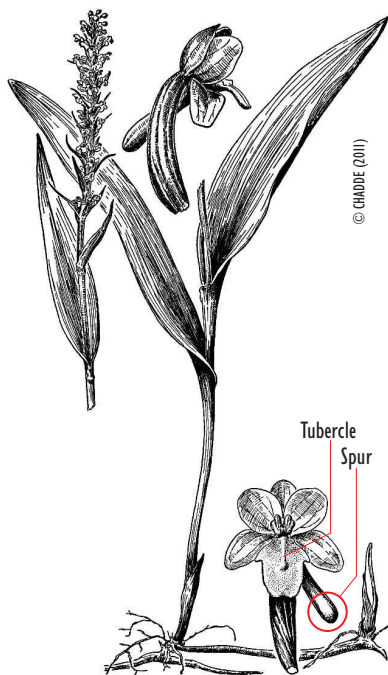
**LEAVES:** 2 or 3 (usually 2) leaves near the base that are narrow, pointed, lance-shaped, 5-20 cm long and 1-5 cm wide. The remaining leaves rapidly become smaller up the stem.

**STEM:** Smooth and green.

**FLOWERS:** A cluster of flowers (inflorescence) at the top of the stem, 5-10 cm long and 1-2 cm wide. The flowers are greenish-yellow, 4-5 mm wide, and have a small bump (tubercle) in the middle of the bottom lip. The spur is slender and 4-11 mm long. The bracts are shorter.

**FRUITS:** Capsules.

**NOTES:** Also known as *Habenaria flava*.

**Habitat:**

Sandy and gravelly lakeshores, river margins, and wetlands (bogs, swamps).

**Interesting point:** Orchids are the second largest group of flowering plants in the world; the largest group are Asters.

**Tubercled Orchid**

*Platanthera flava* var. *flava*



© ALAIN BELLIVEAU



Flowers

© ALAIN BELLIVEAU



Non-flowering plant

© MEGAN CROWLEY

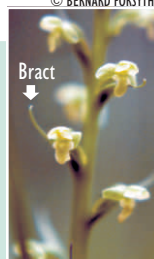


Lower leaves and reduced upper leaf

© MEGAN CROWLEY

**Similar species:**

*Platanthera flava* var. *herbiola* is generally stouter and has bracts longer than the flowers. The leaves taper only slightly at the tips and the upper leaves gradually become smaller up the stem. Other similar orchids such as Northern Green Orchid (*P. aquilonis*) and Huron Green Orchid (*P. huronensis*) tend to grow in richer soils.



*Platanthera flava* var. *herbiola*





## Mild Water-Pepper

*Polygonum hydropiperoides*

NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS



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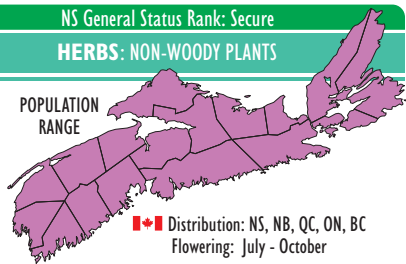
© MEGAN CROWLEY



Leaf

© MEGAN CROWLEY

POPULATION  
RANGE



Distribution: NS, NB, QC, ON, BC  
Flowering: July - October

**SIZE:** 50-100 cm tall.

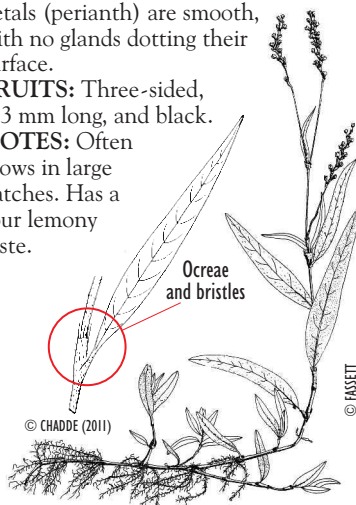
**LEAVES:** Linear to lance-shaped, green, 7-10 cm long, 1-2 cm wide and alternately arranged on the stem. They are on a short leaf stalk (petiole) or directly attached to the main stem.

**STEM:** Semi-erect, branching, and smooth or with small hairs. A covering (ocreae) wraps around the branching points and is swollen with a band of short bristles around it.

**FLOWERS:** Numerous pink to white (rarely green) flowers are clustered along a central stalk. The sepals and petals (perianth) are smooth, with no glands dotting their surface.

**FRUITS:** Three-sided, 2-3 mm long, and black.

**NOTES:** Often grows in large patches. Has a sour lemony taste.



© CHADDE (2011)

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### Habitat:

Wetlands and lake, river, or stream shores.

**Interesting point:** This species has an unpleasant and pungent flavour. It is known as Mild Water-Pepper because it lacks the peppery taste that is characteristic of other smartweeds.

**Similar species:** Dotted Smartweed (*Polygonum punctatum*) has white flowers, and the sepals and petals are dotted with small glands. Stout Smartweed (*Polygonum robustius*, page 22) is typically taller (up to 1 m), and robust with thick stems and white flowers. Marshpepper Knotweed (*Polygonum hydropiper*) is common and more weedy. Its flower clusters are more slender and the flowers are mostly greenish or whitish. All three species have a strong peppery taste.



Water Smartweed

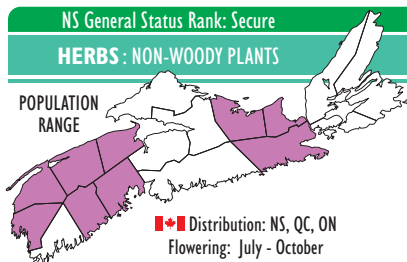
© SEAN BLANEY



Flowers

© MEGAN CROWLEY





**SIZE:** Up to 1 m tall.

**LEAVES:** Lance-shaped, green, 2-4 cm wide and alternately arranged on the stem.

**STEM:** Robust, semi-erect, up to 1 cm wide, and smooth or with small hairs. A covering (ocreae) wraps around the branching points and is swollen with a band of bristles around it.

**FLOWERS:** Showy, white and clustered along a central stalk. The petals and sepals (collectively called the perianth) are white with glands dotting the surface.

**FRUITS:** Dry, one-seeded fruits (achenes) that are shiny, black, three-sided, and 2.7-3.5 mm long.

**NOTES:** Can grow in large patches.



**Habitat:**

Wet mud or shallow water along ponds, lakeshores, and streams.

**Interesting point:** This species is in the same genus as the invasive alien species, Japanese Knotweed (*Polygonum cuspidatum*), but is native to NS.

**Similar species:** Water Smartweed

(*Polygonum punctatum*) has narrower leaves (0.5-2.5 cm). Mild Water-Pepper (*Polygonum hydropiperoides*, page 21) is typically shorter and less robust with pinkish-white flowers and no glands dotting the sepals and petals.

**Stout Smartweed**

*Polygonum robustius*



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© MEGAN CROWLEY



Flowers

© ALAIN BELLIVEAU



Lance-shaped leaves

© MEGAN CROWLEY



White flowers



Robust stem and ocreae around the branching points



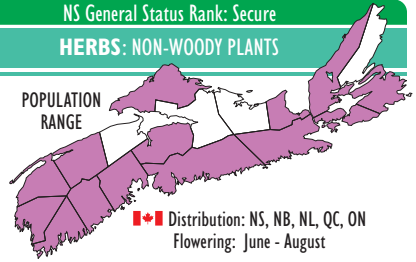
## Algae-like Pondweed

*Potamogeton confervoides*

NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS

POPULATION  
RANGE



Flowering: June - August

**SIZE:** 10-80 cm long.

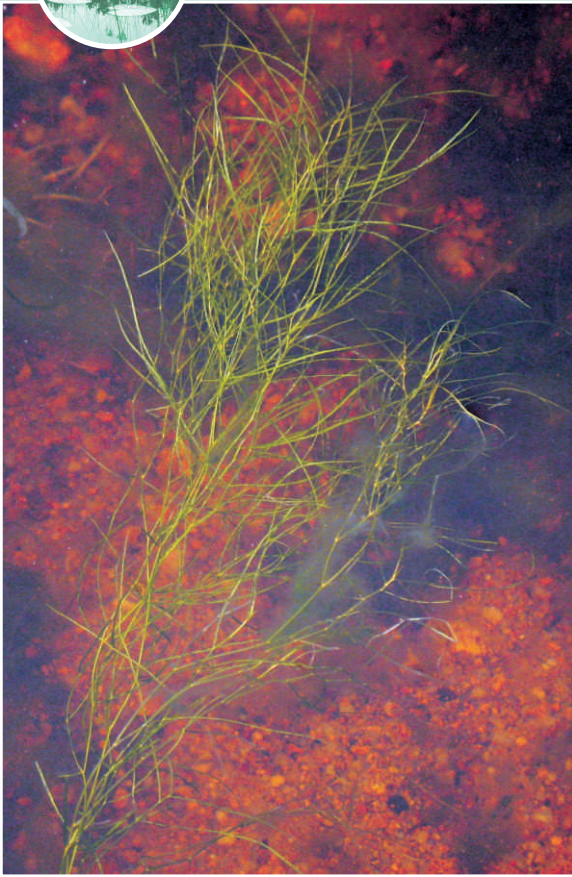
**LEAVES:** Delicate, flat, thread-like, and numerous, 2-5 cm long and 0.3 mm wide. They narrow to a fine point at the tip and are bright green. There is one vein running from the base to the tip of the leaf.

**STEM:** Slender and highly branched. The fine branches are typically widely spaced. It grows from a creeping underground stem (rhizome).

**FLOWERS:** Cylindrical greenish spikes (5-12 mm long) on flower stalks 5-25 cm long.

**FRUITS:** Egg shaped seeds, 2-3 mm long with three ridges running from base to tip, one of which is much more obvious than others.

**NOTES:** This plant grows in the water (aquatic) and has no floating leaves. Pieces of this plant can break off and be observed floating freely.

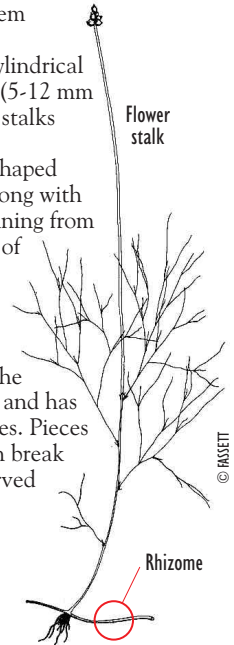


© DAVID MAZEROLLE

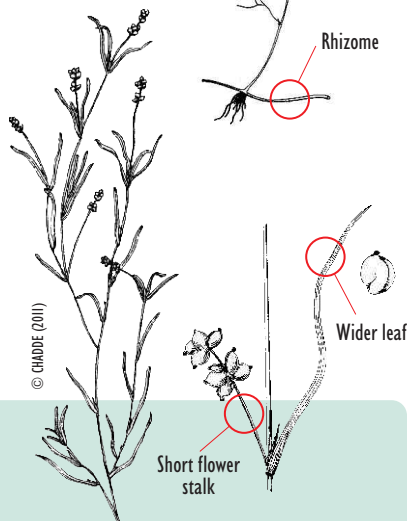


Flower stalk and greenish spikes

© SEAN BLANEY



© FASSETT



© CHADDE (2011)

Small Pondweed

### Habitat:

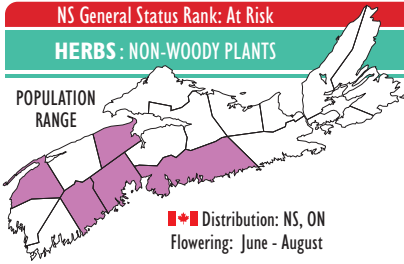
Bog pools, acidic lakes, and slow-flowing acidic streams.

**Similar species:** Small Pondweed (*Potamogeton pusillus*) has wider leaves (0.5-2 mm) and up to 3 veins in each leaf. The center of the leaf has a clear line of cells (lacunae) running from the tip to the base. The very long flower stalks of Algae-like Pondweed distinguish this species from other pondweeds.

**Interesting point:** The word *Potamogeton* means "river neighbour".



POPULATION  
RANGE



✚✚ Distribution: NS, ON  
Flowering: June - August

**SIZE:** Up to 60 cm long.

**LEAVES:** Two types. Submersed leaves are narrow, green, lance-shaped, and have wavy edges. They are 8-15 cm long, 1-3 cm wide and have 9-15 veins.

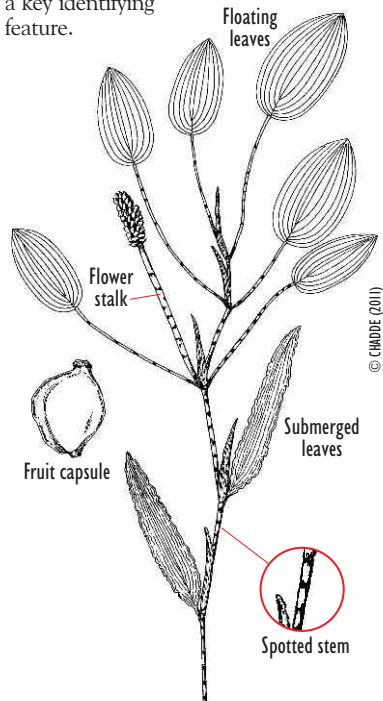
Floating leaves are stout, oval or heart-shaped (indented at the base), 4-8 cm long, 2-5 cm wide, and with 21-35 veins.

**STEM:** Simple, green, rarely branching, and with black spots on the stem and leaf stalks.

**FLOWERS:** Cylindrical spikes (2-4 cm long) at the top of 5-12 cm long flower stalks (peduncles). The spikes are composed of dense greenish flowers. The flower stalk is slightly thicker than the stem and attaches directly to it.

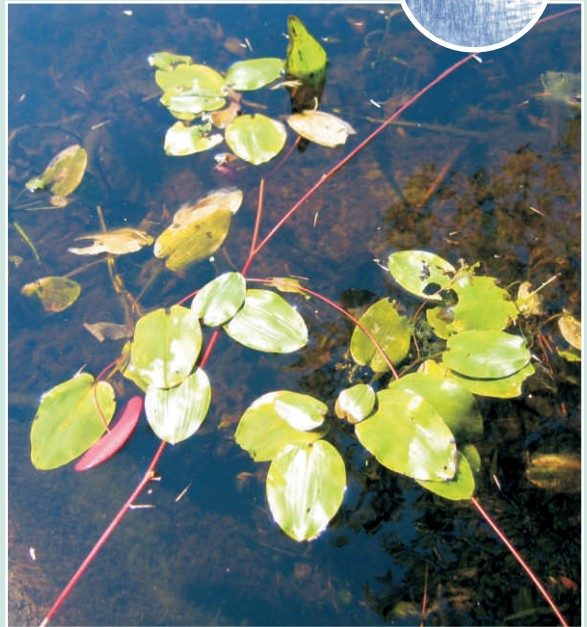
**FRUITS:** Egg-shaped seeds, 3-5 mm long with a small beak on one end, flattened sides, and three raised lines (keels) running from the base to the tip.

**NOTES:** This plant grows in the water (aquatic). Its name comes from its noticeable black spots, a key identifying feature.



## Spotted Pondweed

*Potamogeton pulcher*



Spotted Pondweed and Watershield (red stems)

© NC DIVISION OF PARKS & RECREATION

© SEAN BLANEY



Flower spike



Floating leaves

© DAVID MAZEROLLE



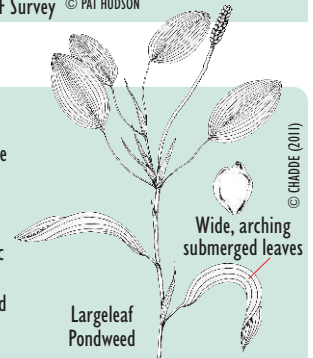
MTRI ACPF Survey © PAT HUDSON

### Habitat:

Open shallow water in muddy lakes and brooks.

**Interesting point:** This plant is rare throughout much of its range and is thought to be "critically imperilled" or "imperilled" in many states. Outside of NS, the only Canadian record is a historic collection from Lake Erie, Ontario.

**Similar species:** Largeleaf Pondweed (*Potamogeton amplifolius*) has wider submersed leaves (4-6 cm) which are strongly arching, with 25-50 veins.





## Mermaid-Weeds *Proserpinaca* spp.

### HERBS: NON-WOODY PLANTS



Comb-leaved  
Mermaid-Weed with fruits © MEGAN CROWLEY



Comb-leaved  
Mermaid-Weed flowers and fruit © MEGAN CROWLEY

### Comb-leaved Mermaid-Weed *Proserpinaca pectinata*

NS General Status Rank: Sensitive

■ ■ Distribution: NS, NB, NL

Leaves growing above the water are deeply dissected (comb-like or pectinate), 1.5-3 cm.



Marsh Mermaid-Weed © ALAIN BELLIVEAU

### Marsh Mermaid-Weed *Proserpinaca palustris* var. *palustris*

NS General Status Rank: At Risk

■ ■ Distribution: NS

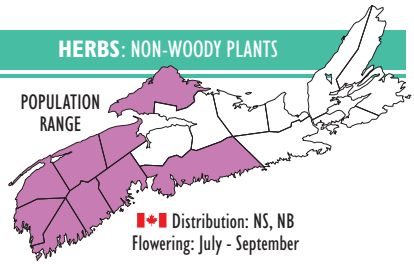
Leaves growing above water are toothed (serrate) or leaf-shaped (pinnatifid), 2-8 cm.

### Intermediate Mermaid-Weed *Proserpinaca intermedia*

NS General Status Rank: At Risk

■ ■ Distribution: NS

Named "intermedia" because it is considered a hybrid with characteristics between Comb-leaved and Marsh Mermaid-Weed. It can be found growing with these species or alone.



**SIZE:** 10-40 cm tall.

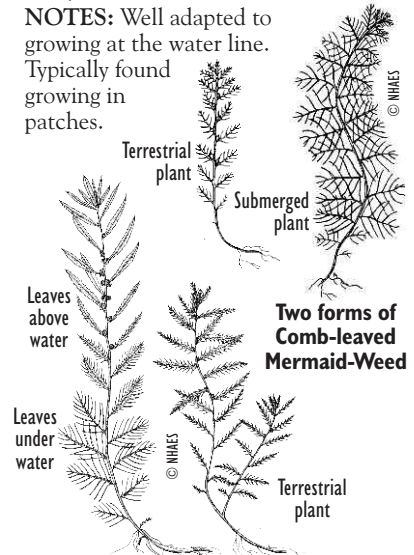
**LEAVES:** Plants completely out of the water (terrestrial) have similar leaves throughout. Plants growing in the water have different leaves above and below the water. The leaves below the water are deeply cut almost to the midline (pinnatisect), while the leaves above differ between species (see below). The leaves are alternately arranged.

**STEM:** Weak and grows off a horizontal plant stem (rhizome).

**FLOWERS:** Single flowers with no petals found where the leaf attaches to the stem (leaf axil).

**FRUITS:** Whitish, 3-angled and 2.5-4 mm wide.

**NOTES:** Well adapted to growing at the water line. Typically found growing in patches.



### Two forms of Marsh Mermaid-Weed

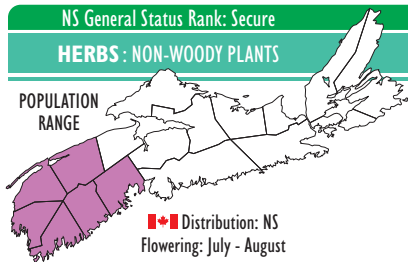
#### Habitat:

Wetlands (bogs, marshes, swamps), stream edges and lakeshores.

**Interesting point:** Small fish and aquatic insects use this plant for food and shelter and it is often cultivated for use in aquaria and ponds.

**Similar species:** *Proserpinaca palustris* var. *creba* is likely the prevalent variety in NS. It is very similar looking and distinguished by subtle differences in fruit shape. The full distribution of var. *palustris* in NS is likely incomplete.



POPULATION  
RANGE

■ ■ Distribution: NS  
Flowering: July - August

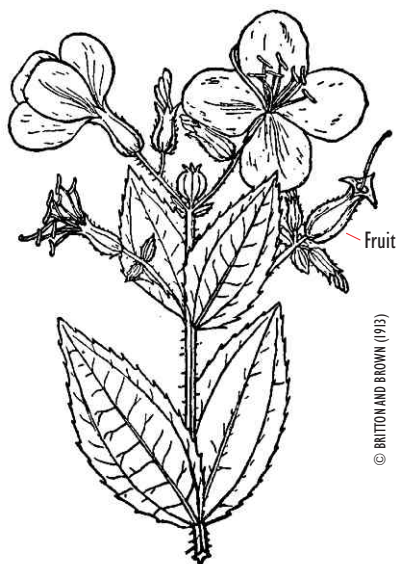
**SIZE:** 30-60 cm tall.

**LEAVES:** Ovate to lance-shaped and finely toothed along the leaf edge. Coarse hairs cover the surface. Leaves are paired (opposite), attached directly to the stem (sessile), and 2-7 cm long.

**STEM:** Sparsely hairy (especially near leaves), four sided, relatively fibrous, and not branched.

**FLOWERS:** One or more purple-pink flowers with long, yellow stamens in the centre. The back of the petals is often bristly.

**FRUITS:** Purple and pitcher shaped with four triangular teeth at the opening, 7-10 mm long and bristly to smooth.



© BRITTON AND BROWN (1913)

**Habitat:**

Moist open places and rocky lakeshores.

**Interesting point:** This beautiful plant is also known as Handsome Harry. Its distinctive urn-shaped fruit has been compared to a little cream pitcher by the famous poet and naturalist Henry David Thoreau.

**Similar Species:** Plymouth Gentian (*Sabatia kennedyana*, page 27) and Pink Coreopsis (*Coreopsis rosea*, page 4) both have pinkish flowers with yellow centers. Pink Coreopsis has 8 petal-like rays and no yellow stamens, and Plymouth Gentian has 9-11 petals that are yellow at the base.

**Virginia Meadow-Beauty**

*Rhexia virginica*



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Bristles on the back of the petals



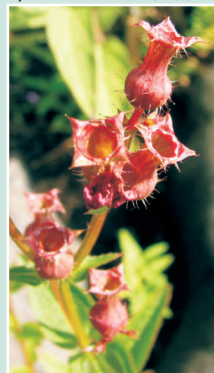
Bristly flower bud

© MEGAN CROWLEY



Opposite leaves

© MEGAN CROWLEY



Pitcher shaped fruits

# Plymouth Gentian

*Sabatia kennedyana*

NS General Status Rank: At Risk

HERBS: NON-WOODY PLANTS



Flowers showing the forked yellow style

© MEGAN CROWLEY



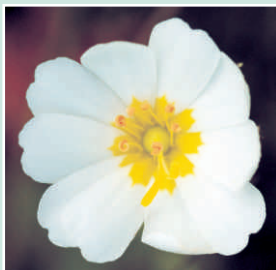
Stem and narrow leaves

© MEGAN CROWLEY



Petals with yellow at the base and yellow stamens

© MEGAN CROWLEY



White flower

© MARK ELDERKIN



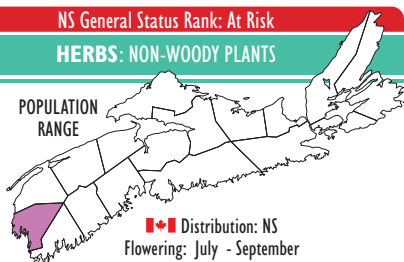
Fruit capsule

© ALAIN BELLIVEAU



Cluster of basal rosettes

© MEGAN CROWLEY

**STATUS**

Threatened



Endangered

**SIZE:** 20-35 cm tall.**LEAVES:** Paired on the stem (opposite), narrow, and lance-shaped with smooth leaf edges.**STEM:** Narrow and unbranched.**FLOWERS:** 1-4 flower stalks per plant with one flower at the top of each stalk. Flowers have 9-11 pink petals with yellow near the base (2-3 cm long), yellow stamens and a forked yellow style. White flowers are sometimes observed.**FRUITS:** Capsules containing seeds.**NOTES:** When not in flower this species is observed as a cluster of leaves on the ground (basal rosette).

© NS MUSEUM COLLECTIONS

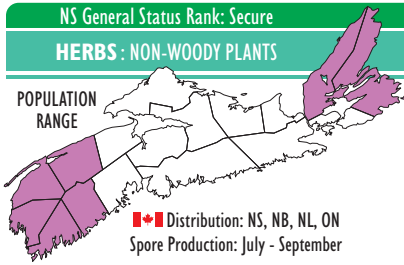
**Habitat:**

Gently sloping lake and river shorelines.

**Similar species:** Pink Coreopsis (*Coreopsis rosea* - page 4) and Virginia Meadow-Beauty (*Rhexia virginica* - page 26) both have pinkish flowers with yellow centers. Pink Coreopsis has narrower petals with no yellow at the base. Virginia Meadow-Beauty has four all-pink petals.**Interesting point:** This species is only found on 11 lakes in NS (and Canada).



POPULATION  
RANGE



☐ Distribution: NS, NB, NL, ON  
Spore Production: July - September

**SIZE:** 8-12 cm tall.

**LEAVES:** Two types of leaves (fronds). Non-reproductive (sterile) fronds are short, curly, unbranched, and grass-like (2-6 cm long, 0.3 mm wide), and emerge together in a cluster (basal rosette). Reproductive (fertile) fronds are straight, green and tall with comb-shaped reproductive structures at the top. Fertile fronds from the previous year can be persistent and brownish.

**STEM:** Short, slender creeping stem (rhizome).

**NOTES:** This species does not look like other ferns in NS. The word pusilla means "very small" which is true for this fern! It takes a careful eye to spot it on the shoreline.



© BRITTON AND BROWN (1913)



Reproductive (fertile) fronds

© ALAIN BELLIVEAU



Curly non-reproductive (sterile) fronds

© BRAD TOMS



Sterile fronds basal rosette

© BRAD TOMS



Comb-shaped reproductive structure (with finger for scale)

© BRAD TOMS

**Habitat:**

Peaty lakeshores and wetlands (acidic sphagnum bogs).

**Interesting point:** The Curly-grass Family (*Schizaceae*) contains 150 species that are mostly found in the tropics. Curly-grass Fern is the only species from this group that is found in NS, and is common on Brier Island!

**Similar Species:** None.

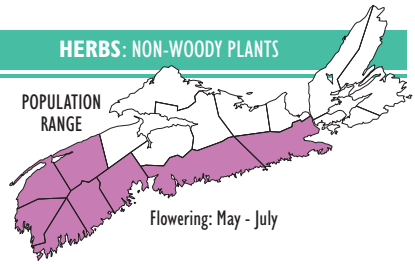


## Blue-Eyed Grasses

*Sisyrinchium* spp.

HERBS: NON-WOODY PLANTS

POPULATION  
RANGE



Flowering: May - July

**SIZE:** 10-50 cm tall.

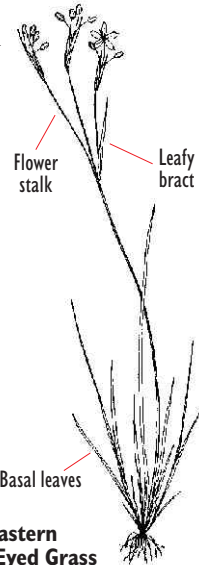
**LEAVES:** Long, narrow (linear), grass-like, 1-3 mm wide and arise from the bottom of the plant (basal). Modified leaves (bracts) are found at the top of the plant; the flower stalk arises from the base of these leaves where it joins with the stem.

**STEM:** Wiry (thin and flexible), flattened, forks at the top into 2-4 thin flowering stalks. Some stem features differ between species (below).

**FLOWERS:** Violet blue with yellow centers and a yellow spike in the middle. They have 6 petals with narrow points at the tips and are surrounded by two leaves (spathe).

**FRUITS:** Brown oval capsules, 4-7 mm wide, containing seeds.

**NOTES:** The 3 ACPF Blue-Eyed Grass species in NS cannot be distinguished by the appearance of the flower alone.



Two leaves  
(spathe)  
that surround  
the flowers

Basal leaves

### Eastern Blue-Eyed Grass

#### Habitat:

Damp peaty, gravelly, or sandy lakeshores, wetlands (marshes), fields, and estuaries.

**Interesting point:** Despite its name, this plant is not a grass. It is a member of the Iris family and gets its name from its grass-like leaves.

**Similar species:** Common Blue-Eyed Grass (*Sisyrinchium montanum*) is 10-50 cm tall with winged stems 1.5-3 mm wide. Unlike the other three species, the top of the stem is simple and not branched. Found in open areas and meadows.



© JEROME D'EON



Fruit capsules and seeds © MEGAN CROWLEY

### Eastern Blue-Eyed Grass *Sisyrinchium atlanticum*

NS General Status Rank: Secure

☛☛ Distribution: NS

Stems narrowly winged, 0.5-2 mm wide. Leaves at the base dry to a light green and are not persistent.

### Pointed Blue-Eyed Grass *Sisyrinchium angustifolium*

NS General Status Rank: Secure

☛☛ Distribution: NS, NB, QC, ON

Stems flatter and broadly winged, 2.5-4 mm wide.



© DANIELLE O'DELL, NCF

### Coastal Plain Blue-Eyed Grass

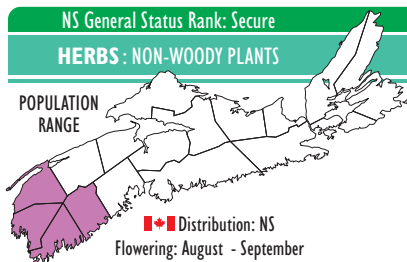
### Coastal Plain Blue-Eyed Grass *Sisyrinchium fuscum*

NS General Status Rank: At Risk

☛☛ Distribution: NS

Stems narrowly winged, 0.5-2 mm wide. Old leaves at the base are persistent (stay attached to the plant), fibrous, and are a brown colour when dry. Typically in drier, sandy habitats such as sand barrens.





**SIZE:** 40-150 cm tall.

**LEAVES:** Elliptical or lance-shaped with a rounded base, 6-15 cm long, and 1.5-3.5 cm wide, with many veins. The leaf edges are smooth or serrated. They are alternately arranged on the stem and have very short or absent leaf stalks. The leaves at the base of the plant (basal) and lower leaves wither before flowers are produced.

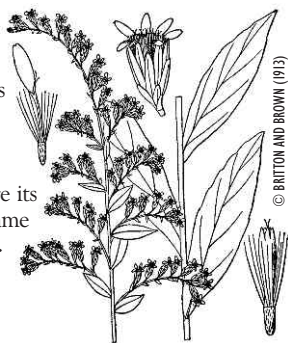
**STEM:** Smooth, erect and unbranched.

**FLOWERS:** Arranged in a 5-10 cm elongate and often downward-arching branched cluster (inflorescence) at the top of the stem. The cluster contains a large number of small yellow daisy-like flower heads that are 5-10 mm wide. Each head is composed of approximately 10-20 miniature flowers or florets.

**FRUITS:** Dry, one seeded fruits (achenes), 1-2 mm long. This species is in the same family as dandelions and produces similar fruits which are attached to long hairs that allow them to easily be carried by wind.

**NOTES:**

The former scientific name of this species is *Solidago elliotii* and that is where its common name comes from.



© SEAN BLANEY (ALL)



Flower cluster



Leaf

**Habitat:**

Lakeshores, wet thickets, open or partially shaded wetlands such as maple and spruce swamps.

**Interesting point:** Goldenrods have long been unfairly blamed for causing hayfever because many species bloom at the same time as Ragweed (*Ambrosia* spp.) which commonly causes allergic reactions in people with pollen allergies.

**Similar species:** A total of 15 species in the *Solidago* genus are known to occur in NS. Rough Goldenrod (*Solidago rugosa*) most resembles Elliott's Goldenrod but has a stem which is covered in hairs, tends to be found in drier areas, and is more widely distributed. Canada Goldenrod (*Solidago canadensis*) and Smooth Goldenrod (*Solidago gigantea*) are similar in size and appearance but both have upper stem leaves that are narrower (<1.4 cm wide) with 3 veins.



Rough Goldenrod



Rough Goldenrod stem



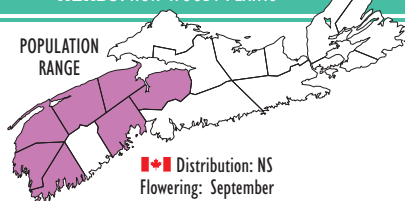
## Nova Scotia Ladies'-tresses

*Spiranthes casei* var. *novaescotiae*

NS General Status Rank: Sensitive

HERBS: NON-WOODY PLANTS

POPULATION  
RANGE



**SIZE:** 20-40 tall.

**LEAVES:** 2-4 lance-shaped leaves that attach to the stem at the base of the plant (basal). They are smooth, 5-15 cm long, and 8-12 mm wide with parallel veins running from base to tip. The leaves do not wither during flowering.

**STEM:** Bright green, smooth, slender, and erect.

**FLOWERS:** Tubular flowers arranged in a twisted spiral at the top of the plant. They are creamy white, curved downwards, and are six-parted. The bottom petal (lip) is pointed, fleshy, and its edges curve inward. The top 'petal' (dorsal sepal) does not flare outward.

The sepals are 5-7 mm long.

**FRUITS:** Small seeds.

**NOTES:** Nova Scotia Ladies'-tresses is not found anywhere else in the world! It is more common than Case's Ladies'-tresses in NS which is only known from a few locations (including Brier Island). Nova Scotia Ladies'-tresses is scattered over a larger area but still relatively uncommon.

© S. LAURIE BOURQUE, J. M. REDDOCH AND A. H. REDDOCH



Flower spiral showing gaps without flowers

© BERNARD FORSYTHE (ALL)



Nodding  
Ladies'-tresses



Yellow  
Ladies'-tresses



Pointed bottom lip  
of Nova Scotia  
Ladies'-tresses



Case's  
Ladies'-tresses



Case's Ladies'-tresses

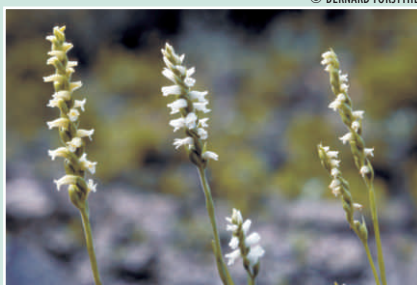
### Habitat:

Acid and sandy soils, roadsides, dry fields, and open barrens.

**Interesting point:** The genus *Spiranthes* is Latin for "spiral flower", which refers to the spiraling or twisted nature of the flowers.

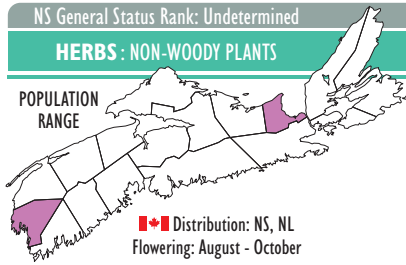
**Similar species:** There are four *Spiranthes* orchids that flower in the fall. Case's Ladies'-tresses (*Spiranthes casei* var. *casei*) is more slender with smaller flowers, the bottom petal (lip) is wide and has a ruffled edge, and the top 'petal' (dorsal sepal) flares out. Its leaves are withered during flowering. Nodding Ladies'-tresses (*Spiranthes cernua*) is typically shorter with immaculate white flowers and a wide bottom petal (lip). It is the most common of the four species. Yellow Ladies'-tresses (*Spiranthes ochroleuca*) is taller with larger yellowish flowers that have mouths that flare open. Nova Scotia and Case's Ladies'-tresses have gaps in their flower spirals with areas that are absent of flowers. Nodding Ladies'-tresses and Yellow Ladies'-tresses have uniform flower spirals with no gaps.

© BERNARD FORSYTHE



From left to right: Yellow, Nodding, and Case's Ladies'-tresses





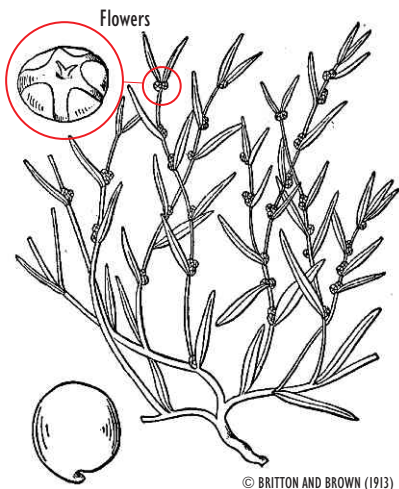
**SIZE:** Stems 10-50 cm in length, reclining and usually forming mats on the ground.

**LEAVES:** Numerous, pale green, soft and thick (fleshy), round or flat with the smaller ones sometimes cone-shaped. They are arranged alternately along the stem, are typically 1-5 cm long and gradually reduce to 5 mm near the tip of the stem.

**STEM:** Straight, smooth, green, typically trailing on the ground and mat-forming.

**FLOWERS:** Flowers are composed of 5 green petal-like modified leaves (sepals) and clustered in groups of 1 to 4 where leaves meet the stem (axils). The sepals are curved inwards, all of equal length, smooth and rounded, without horns or hood-like projections.

**FRUITS:** Round seeds, 1-1.5 mm wide, that are reddish-brown or black.



Leaves

© MARTIN THOMAS

## Rich's Sea-Blite

*Suaeda maritima* ssp. *richii*



© MARTIN THOMAS



Sea-Blite habitat

© MARTIN THOMAS

### Habitat:

Salt marshes and saline mudflats. This species is difficult to distinguish from ssp. *maritima* which has led to uncertainties surrounding its distribution. It likely has a scattered range in salt marshes along the NS coast.

**Interesting point:** Sea-Blites are halophytic, meaning they are able to grow in salty environments. They are among the first species to colonize bare sand following storm disturbance.

### Similar species:

Can be difficult to distinguish from other more common Sea-Blite species.

Maritime Sea-Blite (*Suaeda maritima* ssp. *maritima*) is very similar. It generally has larger leaves (10-30 mm long) and larger seeds (1.5 to 2 mm wide). American Sea-Blite (*Suaeda calceoliformis*) has sepals that are unequal in size and often bear horns or hood-like projections.



American Sea-Blite

© SEAN BLANEY

## Tradescant's Aster

*Symphyotrichum tradescantii*

NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS



© MEGAN CROWLEY

© SEAN BLANEY



© ALAIN BELLIVEAU



Leaf

© MEGAN CROWLEY

© ALAIN BELLIVEAU

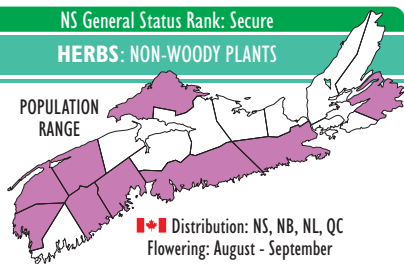


Long hairs of the seeds



Flower head with yellowish-purple center

POPULATION RANGE



Distribution: NS, NB, NL, QC  
 Flowering: August - September

**SIZE:** 20-40 cm tall.

**LEAVES:** Narrow, linear or lance-shaped, smooth (no hairs), 3-10 cm long and 3-10 mm wide. The leaf edges are smooth (entire) or with shallow teeth. They have a line down the center (midrib).

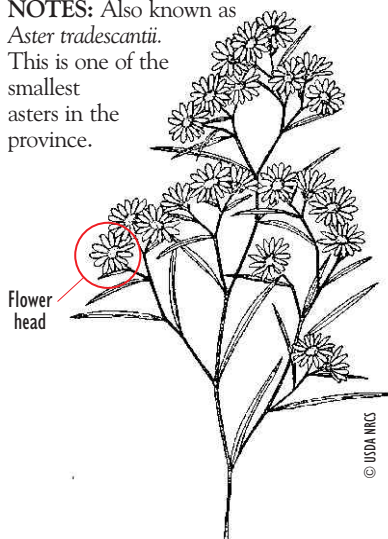
**STEM:** Slender and fine.

**FLOWERS:** There are numerous flower heads on short branches either at the top of the plant or where the leaves attach to the stem (leaf axils). The center of the flower head is made up of many smaller flowers (disc florets) which range in colour from purple to yellow. They are surrounded by 15-20 whitish, narrow petal-like rays, each 4-8 mm long.

**FRUITS:** Small, dry, flattened fruits (achenes) containing a single seed. The seeds are attached to long hairs that allow them to easily be carried by wind.

**NOTES:** Also known as*Aster tradescantii*.

This is one of the smallest asters in the province.



Flower head

© USDA WKS

**Habitat:**

Gravelly and sandy lakeshores and streams.

**Interesting point:** The field of study dedicated to Asters is called *synanthology*.

**Similar species:** New York Aster (*Symphyotrichum novi-belgii*) has wider flower heads with pale violet petals (rays) and is generally taller with longer leaves. New York Aster plants in southwest NS look different than the pictures in plant guides and have narrower leaves. Calico Aster (*Symphyotrichum lateriflorum*) is infrequent on lakeshores (though common in disturbed areas like cottage lawns near lakeshores). It has similar small, white flower heads but tends to have main branches starting low on the plant and densely hairy midveins on the leaf undersides.



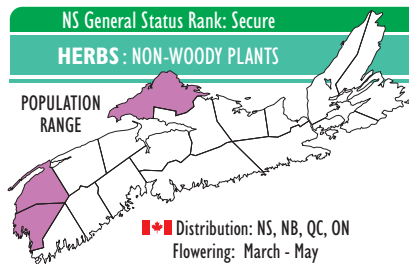
New York Aster flowers

© SEAN BLANEY



NS General Status Rank: Secure

HERBS : NON-WOODY PLANTS



Distribution: NS, NB, QC, ON  
Flowering: March - May

**SIZE:** Up to 60 cm long leaves.

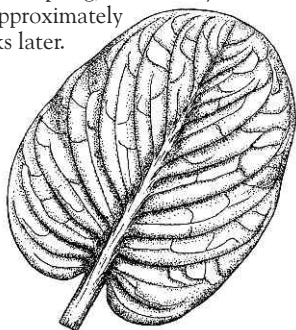
**LEAVES:** Large, bright green, oval to heart-shaped, 30-60 cm long and up to 30 cm wide. They grow in a cluster at the base (basal) and have a short leaf stalk. The veins on the leaf branch and rejoin.

**STEM:** The plant grows from a thick underground stem (rhizome).

**FLOWERS:** A spongy stalk composed of many small flowers (spadix) that is enclosed by a large, curved specialized leaf called a spathe. The spathe is 8-15 cm tall, fleshy, oval, and ends in a point. It is greenish-purple and often spotted and striped.

**FRUITS:** Large, round, 8-12 mm wide, and contains 1 mm wide seeds.

**NOTES:** The flowers appear first very early in the spring, followed by the leaves approximately six weeks later.



© WIAES

**Habitat:**

Wetlands (open bogs, swamps) and mossy, wet woods.

**Interesting point:** Skunk Cabbage flowers have the ability to generate heat and can break through frozen soil and melt the snow and ice around them when they emerge in the spring. Its name comes from the unpleasant odour of the leaves and flowers.

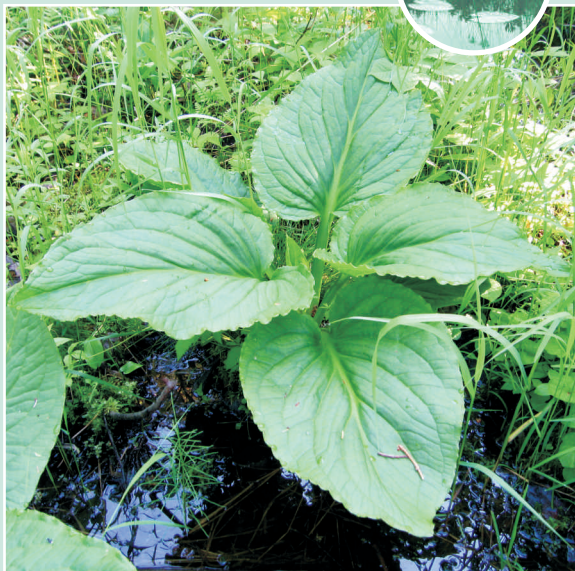
**Similar species:** None.

## Skunk Cabbage

*Symplocarpus foetidus*



34



© SEAN BLANEY



© CHARLES CRON (NS WILD FLORA SOCIETY)



Large leaf

© ALAIN BELLIVEAU



Spadix

© CHARLES CRON



Fleshy purple spathe enclosing the spadix

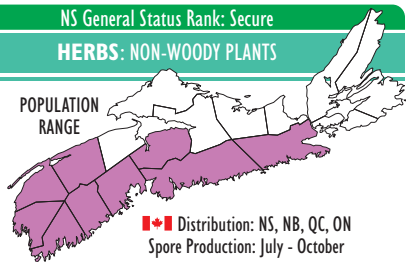
© CHARLES CRON

# Massachusetts Fern

*Thelypteris simulata*

NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS

POPULATION  
RANGE**SIZE:** Up to 80 cm tall.

**LEAVES:** Fern blades are 15-35 cm long and 7-20 cm wide, on 12-45 cm long straw coloured stalks. The lowest leaflets (pinnae) generally point downwards. The leaflets (pinnae) on the fronds are divided into pinnules. The secondary veins on the pinnules that run from the center to the edge are unbranched. Reproductive (fertile) fronds are very similar to non-reproductive (sterile) fronds but can be slightly taller with narrower leaflets.

**STEM:** The stalk of the frond emerges from an underground root (rhizome), 2-3 mm wide.

**NOTES:** Also known as Bog Fern, this species is fairly common in NS but extremely rare in all other Canadian provinces where it occurs.



© ALAIN BELLIVEAU



Leaflet composed of many pinnules

© KERRY WIXTED



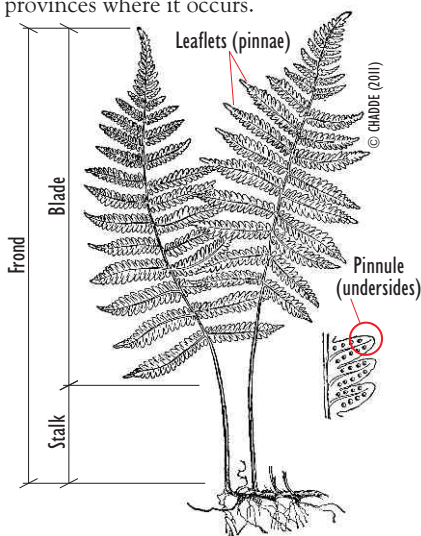
Pinnules with unbranched secondary veins

© KERRY WIXTED

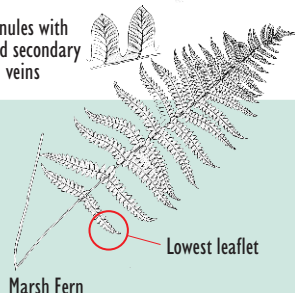


Downward pointing lowest leaflets

© ALAIN BELLIVEAU



Pinnules with forked secondary veins



Marsh Fern

© CHADDE (2011)

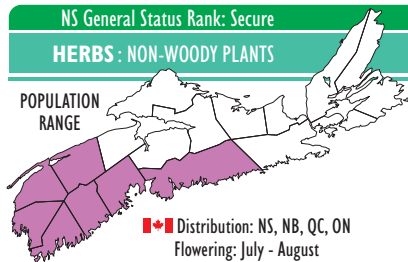
**Habitat:**

Wet shaded areas such as wooded swamps and floodplains.

**Interesting point:** The Greek translation of *Thelypteris* is "female fern".

**Similar Species:** The three ferns of this genus in NS can be distinguished by differences in the lowest leaflet on the frond. The lowest leaflet on New York Fern (*Thelypteris noveboracensis*) is much smaller and rudimentary (less than 2 cm long), and for Marsh Fern (*Thelypteris palustris*) it points straight out rather than down. In both New York Fern and Marsh Fern, the veins running from the center to the edge of the pinnules are forked.



POPULATION  
RANGE

**SIZE:** 20-60 cm tall.

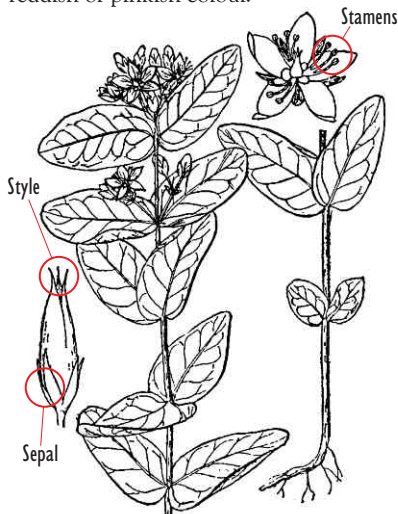
**LEAVES:** Arising directly from stem, 3-6 cm long, and 1-3 cm wide. Oval-shaped with a rounded tip and heart shaped base. There are transparent bumps (glands) on the undersides.

**STEM:** Smooth and mostly unbranched.

**FLOWERS:** Pink to greenish-purple, star-shaped with 5 petals, and 8-10 mm long. The sepals are 5-7 mm long and lance-shaped. There are 9 yellow filaments (stamens) in the center of the flower in bunches of three. Flowers grow at the top of the plant and where the leaves arise.

**FRUITS:** Reddish-purple, cylindrical, and 8-12 mm long. Tapers at the end to a 2-3 mm long point (style).

**NOTES:** The entire plant can have a reddish or pinkish colour.

**Similar species:**

Fraser's Marsh St. John's-Wort (*Triadenum fraseri*) is very similar. Its sepals are blunter and 2.5-5 mm long and the tip of its fruit (style) is shorter (0.5-1.5 mm long). Its leaves also tend to be slightly rounder and broader. This species is mainly found in northern NS and is uncommon in southwest NS.



© SEAN BLANEY

**Habitat:**

Wetlands (bogs, marshes) and wet lakeshores.

**Interesting Point:**

The hairs on the leaves of this plant prevent the leaf surface from becoming wet when submerged in water.



Fruit and leaves

© SEAN BLANEY



Purplish red leaves with no leaf stalks (sessile)

© MEGAN CROWLEY



Flower close-up

© MEGAN CROWLEY

## Purple Bladderwort

*Utricularia purpurea*

NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS

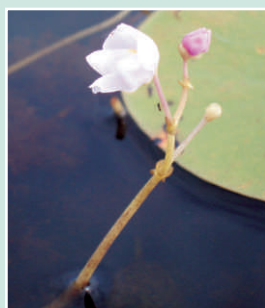


© BRUCE MACINNIS



© ALAIN BELLIVEAU

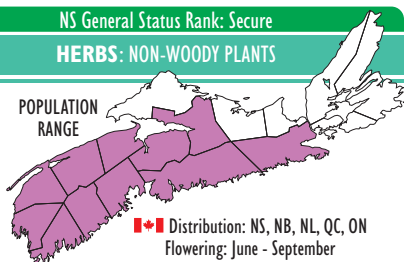
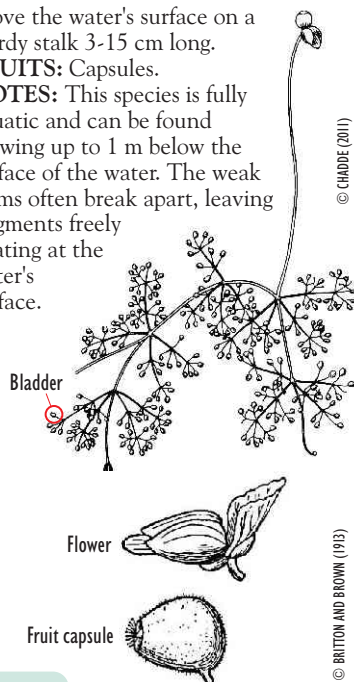
Whorled leaves with bladder-like insect traps



Purple two-lipped flower © BRUCE MACINNIS



Yellow spot on lower lobe © ALAIN BELLIVEAU

**SIZE:** Underwater stem up to 1 m long.**LEAVES:** Branch-like and circularly arranged around the stem (whorled) in groups of 5-7. Each section branches into thin, fine segments, many with small bladder-like insect traps at the tip.**STEM:** Long and thin.**FLOWERS:** Purple and two-lipped with 1 cm long petals (look similar to snapdragons). The lower lip is divided into 3 lobes and has a yellow spot near the base. One to four flowers are found above the water's surface on a sturdy stalk 3-15 cm long.**FRUITS:** Capsules.**NOTES:** This species is fully aquatic and can be found growing up to 1 m below the surface of the water. The weak stems often break apart, leaving fragments freely floating at the water's surface.

© CHADDE (2011)

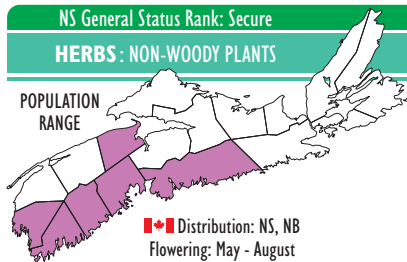
© BRITTON AND BROWN (1913)

**Habitat:**

Lakes, ponds and slow streams.

**Interesting point:** Bladderworts are carnivorous plants! They obtain extra nutrients and energy by trapping insects in the bladder-like sacs on their leaves.**Similar species:** Small Swollen Bladderwort (*Utricularia radiata*, page 38), Hidden-fruited Bladderwort (*Utricularia geminiscapa*), and Greater Bladderwort (*Utricularia macrorrhiza*) can appear similar, however Purple Bladderwort is the only species with consistently whorled leaves along the entire stem.





**SIZE:** Long underwater stem.

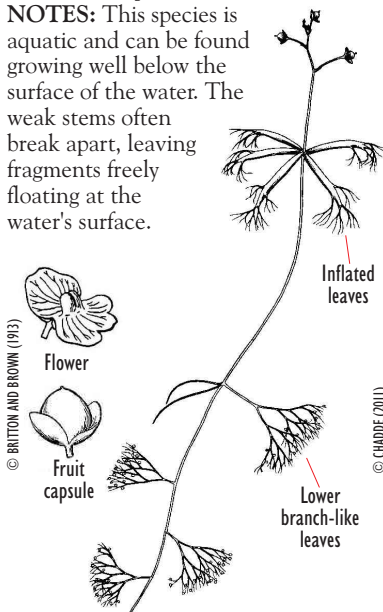
**LEAVES:** Two types. The lower branch-like leaves are submerged in the water, divided into very fine segments, and bear numerous bladder-like insect traps. At the top of the stem just below the flowers is a single whorl of 4 to 7 inflated leaves which allow the flower stalk to rise above the water surface. The inflated leaves are only present when the plant is in flower.

**STEM:** Long and slender.

**FLOWERS:** Small, yellow and two-lipped. The lower lip is divided into 3 lobes. The flowers grow above the water on an erect flower stalk, 3-5 cm high. Three-five flowers branch off this on 1-2 cm long stalks.

**FRUITS:** Capsules.

**NOTES:** This species is aquatic and can be found growing well below the surface of the water. The weak stems often break apart, leaving fragments freely floating at the water's surface.



#### Habitat:

Lakes and ponds.

**Interesting point:** Insects are trapped inside the bladder-like sacs of bladderworts when they touch the sensitive hairs on the outside of the bladder. This causes the bladder to rush open and suck water and the prey inside where it can be digested. Very cool!

## Small Swollen Bladderwort

*Utricularia radiata*



© SEAN BLANEY



© SEAN BLANEY

#### Similar species:

Purple Bladderwort (*Utricularia purpurea*, page 37), Hidden-fruited Bladderwort (*Utricularia geminiscapa*) and Greater Bladderwort (*Utricularia macrorhiza*) can appear similar, however Small Swollen Bladderwort is the only one that bears a whorl of strongly inflated branches at the top of the stem.



Flowers

© SEAN BLANEY

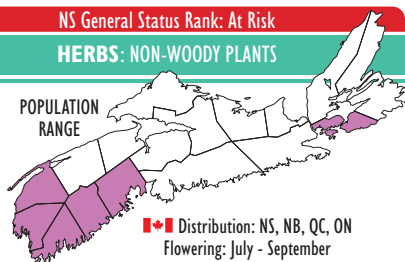
## Northeastern Bladderwort

*Utricularia resupinata*

NS General Status Rank: At Risk

HERBS: NON-WOODY PLANTS

POPULATION  
RANGE



🇨🇦 Distribution: NS, NB, QC, ON  
Flowering: July - September



← Tube-like  
leaf

© MARTIN THOMAS

© ALAIN BELLIVEAU



Purple two-lipped flower



Flowers

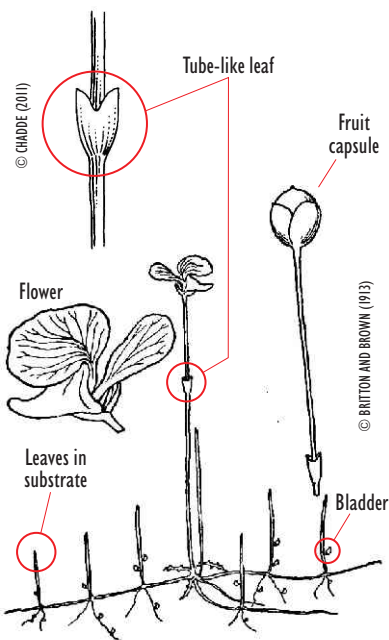
© ALAIN BELLIVEAU

### Habitat:

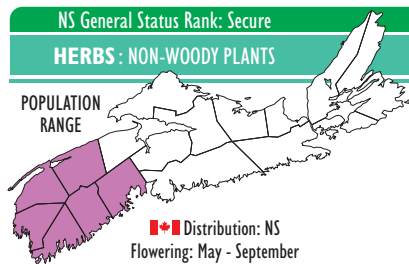
Sandy, muddy or peaty lakeshores and often in shallow water.

**Similar species:** Purple Bladderwort (*Utricularia purpurea*, page 37) also has purple flowers but it is an aquatic species with long floating stems.

**Interesting point:** There are over 200 bladderwort species worldwide and they are found on every continent except Antarctica.







**SIZE:** Flower stalks can vary from 3-20 cm in size but are typically only 3 to 5 cm tall.

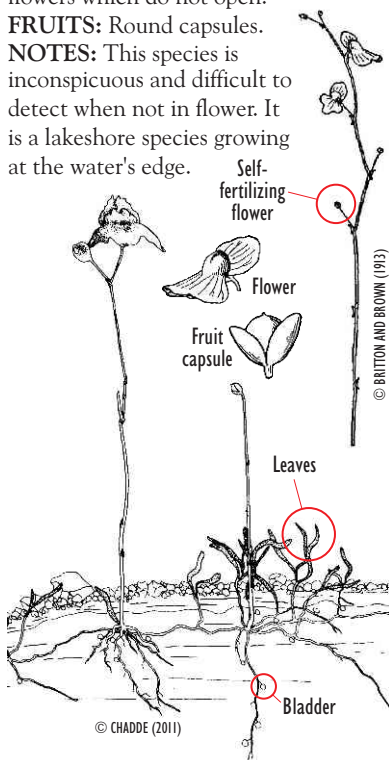
**LEAVES:** Very small and inconspicuous, forming a tiny turf of thin weak leaves up to 1 cm long near the base of the flower stalk in the substrate.

**STEM:** Flower stalk small and slender and mostly leafless. The upper section is somewhat zigzagged when bearing several flowers. The underground root-like branches bear small bladder-like insect traps which are difficult to observe.

**FLOWERS:** Small, yellow and two-lipped (lower lip 4-7 mm long). One to ten flowers can be found alternately arranged along each stem on 0.5-1.5 cm long stalks. However, it is most common for plants to bear only tiny whitish self-fertilizing flowers which do not open.

**FRUITS:** Round capsules.

**NOTES:** This species is inconspicuous and difficult to detect when not in flower. It is a lakeshore species growing at the water's edge.



## Zigzag Bladderwort

*Utricularia subulata*



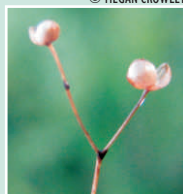
© SEAN BLANEY

© ALAIN BELLIVEAU



Leaves

© MEGAN CROWLEY



Opened fruit capsules

© ALAIN BELLIVEAU



Yellow two-lipped flower

### Habitat:

Wet peaty or sandy lakeshores

**Interesting point:** Before the carnivorous nature of the bladders was discovered, it was thought that the bladders were used for flotation purposes.



Small and slender

© SEAN BLANEY



Horned Bladderwort

© MEGAN CROWLEY

### Similar species:

Horned Bladderwort (*Utricularia cornuta*) also has yellow flowers and grows along the lakeshore. The flower stalks in this species are up to 25 cm high, do not bear whitish self-fertilizing flowers and can form dense patches of yellow flowers.



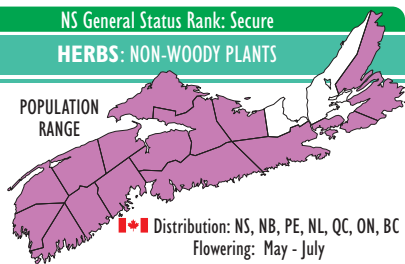
## Lance-leaved Violet

*Viola lanceolata*

NS General Status Rank: Secure

HERBS: NON-WOODY PLANTS

POPULATION  
RANGE



© MEGAN CROWLEY

© SEAN BLANEY



Narrow lance-shaped leaf



Fruit

© MEGAN CROWLEY



Flower front view

© MEGAN CROWLEY



Flower side view

© MEGAN CROWLEY

**SIZE:** 10-15 cm tall.

**LEAVES:** Narrow, lance-shaped, and 2-3 times longer than wide. Leaves that arise in the summer are sometimes wider than those in the spring. They have mostly smooth surfaces, teeth around the edges and grow from the base (basal).

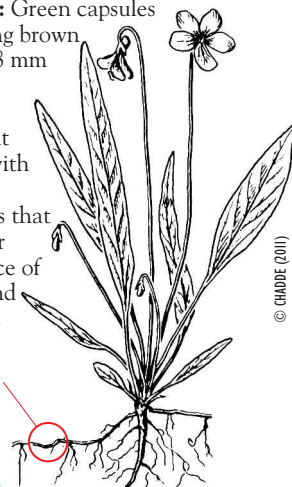
**STEM:** Smooth, and slender.

**FLOWERS:** White with 5 petals and at the top of a flower stalk that emerges from the base of the plant. The bottom three petals typically have purple veins.

**FRUITS:** Green capsules containing brown seeds, 5-8 mm long.

**NOTES:**

This plant spreads with root-like structures that grow over the surface of the ground (stolons).



© CHADDE (2011)

**Habitat:**

Sandy or rocky low-lying ground near the edges of lakes, ponds and bogs.

**Interesting point:** This species also produces small self-pollinating flowers that do not open and appear later in the season on short flower stalks.

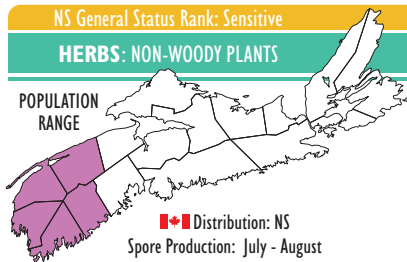
**Similar species:** Lance-leaved Violet frequently hybridizes with Northern White Violet (*Viola macloskeyi*) to form Primrose-leaved Violet (*Viola x primulifolia*). It grows in similar lakeshore habitats but has leaves intermediate between lance shaped and the typical heart-shaped violet leaves of Northern White Violet.



Primrose-leaved Violet leaf

© ALAIN BELLIVEAU



POPULATION  
RANGE

Distribution: NS

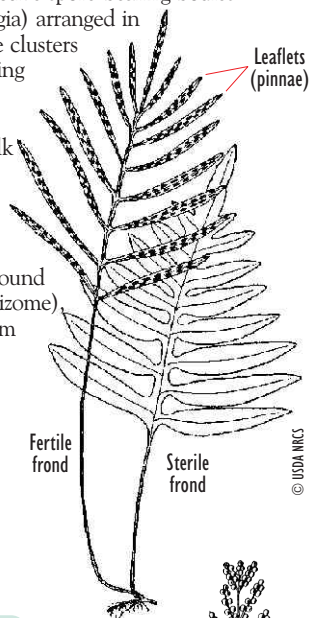
Spore Production: July - August

**SIZE:** 30-80 cm tall.

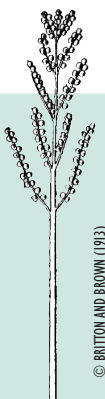
**LEAVES:** Two types of leaves (fronds). Each plant has several non-reproductive (sterile) fronds arising from the same root system. Some plants also have narrower reproductive (fertile) fronds. Sterile fronds are 10-17 cm wide and divided into 14-20 leaflets (pinnae), 7-10 on each side of the stalk. The leaflets are 1-2 cm wide and are finely toothed along their edges. Fertile fronds are taller, shiny, and have much narrower leaflets with reproductive spore-bearing bodies (sporangia) arranged in elongate clusters resembling chains.

**STEM:**

The stalk of the frond emerges from an underground root (rhizome), 2-3.5 mm thick.



© USDA NIKS



Sensitive Fern sterile frond

© BRITTON AND BROWN (1913)

## Dwarf Chain Fern

*Woodwardia areolata*



Sterile frond

© ALAIN BELLIVEAU



Fertile frond leaflet

© MEGAN CROWLEY



Fertile frond © MEGAN CROWLEY

© ALAIN BELLIVEAU

**Habitat:**

Stream edges, wetlands (swamps and bogs) and along lakeshores.

**Interesting point:** Its name comes from the chain-like appearance of the spore-bearing bodies on the fertile frond leaflets.

**Similar Species:** Sensitive Fern (*Onoclea sensibilis*) sterile fronds look similar to Dwarf Chain Fern but the leaflets (pinnae) have wavy margins. The fertile fronds, which persist over winter, are coarse and dark with hardened bead-like segments.



Sensitive Fern sterile frond



Finely toothed leaflet

© ALAIN BELLIVEAU

## Brookside Alder

*Alnus serrulata*

NS General Status Rank: Sensitive

SHRUBS : WOODY PLANTS



© SEAN BLANEY

© MEGAN CROWLEY



Leaf wide at top and narrow at the base



Leaves can be variable

© MEGAN CROWLEY

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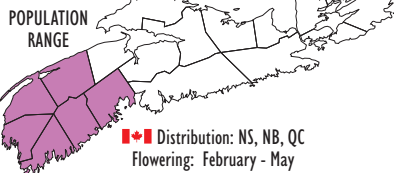


Dark brown and speckled stem

© ALAIN BELLIVEAU



Female catkins



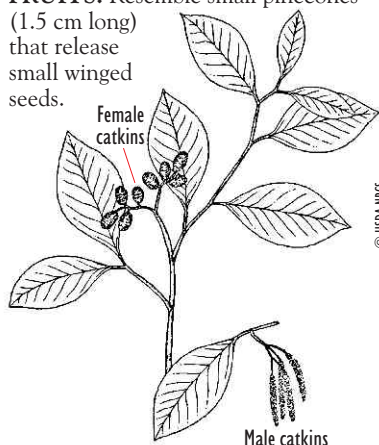
**SIZE:** 2-3 m tall.

**LEAVES:** 4-5 cm long, widest near the tip and strongly narrowing from the middle toward the base. The leaf edges are serrated with many sharp, irregular teeth (not double toothed) and there are straight and parallel veins running from the central vein towards the edges. They are glossy above and green, smooth and slightly sticky below. Winter buds are on 5 mm stalks. Individual leaves can be variable, examining multiple leaves is recommended.

**STEM:** Smooth, woody, dark brown with few white speckles, and up to 5 cm wide.

**FLOWERS:** Male catkins are long, narrow, 2-5 cm long, and in clusters at the tips of branches. Female catkins are round, woody, 1-2 cm long, and on short stalks (up to 3 mm long).

**FRUITS:** Resemble small pinecones (1.5 cm long) that release small winged seeds.



© USDA NRCS

### Habitat:

Lake and river shores in southwestern NS.

**Interesting point:** All alders can produce nitrogen in their roots via symbiotic bacteria housed in special nodules to help them grow.

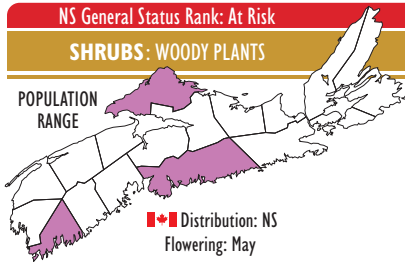
**Similar species:** Speckled Alder (*Alnus incana* ssp. *rugosa*) leaves do not strongly narrow from the middle toward the base, the leaf edges are double toothed (the large teeth have fine small teeth) and the leaf undersides are whitish and not very sticky. It is abundant in moist habitats throughout NS. Green (or Downy) Alder (*A. viridis* ssp. *crispa*) is generally shorter and the leaves are broadly rounded with finely toothed leaf edges (not double toothed). The leaf undersides are also green and sticky but the female catkins are on 1-5 cm stalks. Winter buds have stalks less than 1 mm long. Found on rocky lakeshores or open disturbed areas.



Male catkins and winter buds on stalks

© MEGAN CROWLEY





**SIZE:** Up to 2.5 m tall (usually shorter).

**LEAVES:** Green, oval to lance-shaped and with toothed leaf edges (serrate).

They have silvery hairy undersides when they first emerge that later become dark green and hairless. The leaf stalks are smooth with no hairs, 10-15 mm long.

**STEM:** Pale grey, and spindly.

Numerous erect stems arise from a horizontal underground stem (stolon) and can form a patch of upright stems up to 10 m across. Branches tend to occur toward the upper part of each stem.

**FLOWERS:** In groups of 7-10, ivory-coloured, and 4-5 mm long. The flowers have five petals that are narrow and spoon shaped. They branch off a smooth flower stalk 0.7-1.4 cm long. At least somewhere on the plant, the flowers may produce pollen on the petal, near the petal margin (andropetaly).

**FRUITS:** Juicy, berry-like, dark purple-blue, edible pomes that are 7.5-10 mm long.

**NOTES:** Shadbush species are in flower when the American Shad fish migrates up coastal rivers to spawn, hence the name "shadbush".



**Similar species:** Shadbush species are difficult to tell apart, especially when they are not in flower. They can hybridize with one another, so puzzling intermediates might be found. Other Shadbush species in southwest NS include Mountain Shadbush (*A. bartramiana*), Downy Shadbush (*A. arborea*), Smooth Shadbush (*A. laevis*), Wiegand's Shadbush (*A. interior*), and Running Serviceberry (*A. spicata*). Visit <http://sbe.umaine.edu/amelanchier/> to view a key for these species.

## Nantucket Shadbush

*Amelanchier nantucketensis*



© KELLY OMAND, NANTUCKET CONSERVATION FOUNDATION



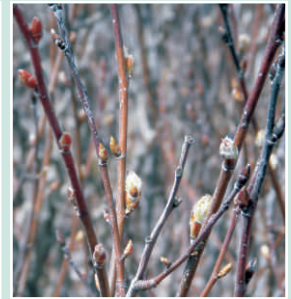
Nantucket Shadbush

© KELLY OMAND, NCF



Flowers

© KELLY OMAND, NCF



Branches and buds

© KELLY OMAND, NCF

### Habitat:

Dry habitats such as fields, disturbed areas and along roadsides. Also in meadows (such as at Peggy's Cove) and along forest edges and river shores.

**Interesting point:** Nantucket Shadbush has a specialized feature known as "andropetaly". This means that some of the flowers have petals that bear pollen at their edges and this gives the petals a yellowish colour. It is the only shadbush species that does this and production of pollen in petals is highly unusual. Without these flowers, one cannot reliably separate this species from Running Serviceberry, which is common and might occur in the same habitat or even right next to it.



## Red Chokeberry

*Aronia arbutifolia*

NS General Status Rank: Secure

SHRUBS : WOODY PLANTS

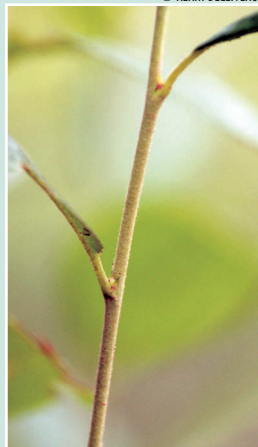


Red Chokeberry with ripe fruits

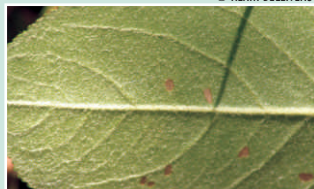
© ALAIN BELLIVEAU

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Furry young stem and alternate leaves



Fuzzy leaf underside

© DAVID PATRIQUIN

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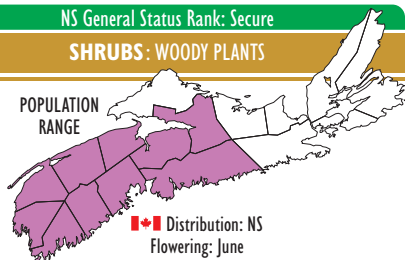


Flowers



Leaf

POPULATION  
RANGE



Distribution: NS  
Flowering: June

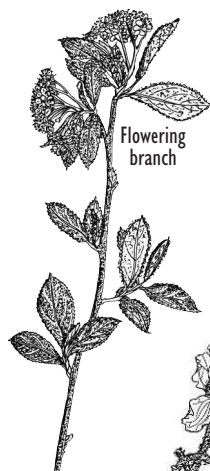
**SIZE:** Typically 1-2 m tall (can grow up to 4 m).

**LEAVES:** Wide near the tip and narrowing toward the base (obovate) with a sharp pointed tip and finely toothed edges. Alternately arranged along the stem and 3-7 cm long. The upper surface is smooth and dark green and the underside is covered in small woolly hairs and feels soft. They turn bright red in the fall.

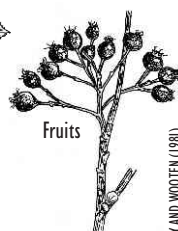
**STEM:** Older branches are smooth with dark brown bark. Younger branches are covered in furry hairs.

**FLOWERS:** Small (1 cm long) and with 5 white petals. They are numerous, clustered at the tips of the upper branches and grow off long, narrow, hairy flower stalks (raceme).

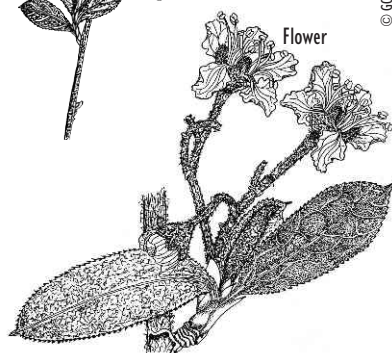
**FRUITS:** Small, round, berry-like pomes, 5-6 mm wide. They are red when ripe (darker when developing), mature late in the season and stay on the plant well into the winter.



Flowering  
branch



Fruits



Flower

© GODFREY AND WOOTEN (1981)

### Habitat:

Wet sandy or rocky lakeshores and wetlands (acidic bogs and swamps).

**Interesting point:** Both Red and Black Chokeberry fruits are inedible and may be somewhat poisonous.

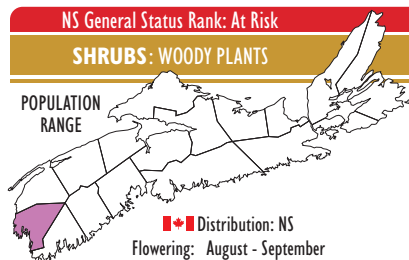
**Similar species:** Black Chokeberry (*Aronia melanocarpa*) has dark black fruit. Its leaf undersides, flower stalks and young branches are smooth and hairless.



Black Chokeberry

© SEAN BLANEY





**SIZE:** 1-3 m tall.

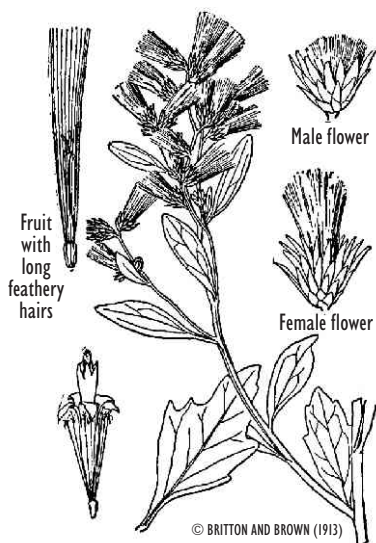
**LEAVES:** Greyish green, up to 6 cm long and 4 cm wide, with a short leaf stalk, and alternately arranged on the stem. The leaf shape is narrow at the base and widens towards the tip. The upper half has a few large teeth.

**STEM:** Woody with many branches. Branches have no hairs but can be sticky to the touch and sometimes flaky.

**FLOWERS:** In branched clusters. The male (staminate) flowers are yellowish with slender, threadlike petals. The female (pistillate) flowers are whitish and have prominent straight, white bristles (pappus) that extend beyond the petals.

**FRUITS:** Small, ribbed achenes (seed-like fruit, 1.2 mm long) with one seed inside. The tip has long feathery hairs (pappus), about 10 mm long.

**NOTES:** This species is dioecious, which means it has only male or only female flowers on an individual plant.



**Habitat:**

Salt marsh edges.

**Similar species:** None.

**Interesting point:** The leaves of this plant are sometimes boiled to make a hot drink that is used to treat cold symptoms.



Female (left) and male (right) flowers on two separate shrubs growing close together



Leaf



Woody branch





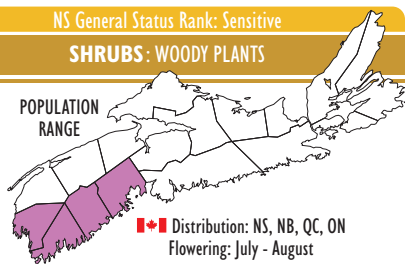
## Buttonbush

*Cephalanthus occidentalis*

NS General Status Rank: Sensitive

**SHRUBS : WOODY PLANTS**

POPULATION  
RANGE

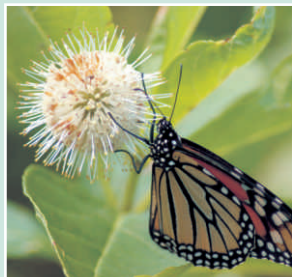


Distribution: NS, NB, QC, ON  
Flowering: July - August



Flowers and whorled leaves

© ALAIN BELLIVEAU



Monarch feeding on flowers

© ALAIN BELLIVEAU

© MEGAN CROWLEY



Small shrub

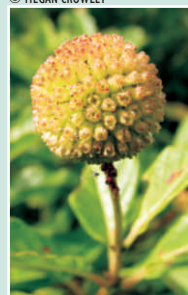
© MEGAN CROWLEY



Unopened flower button



Sphere of flowers



Spent flowers

**SIZE:** 1-3 m tall.

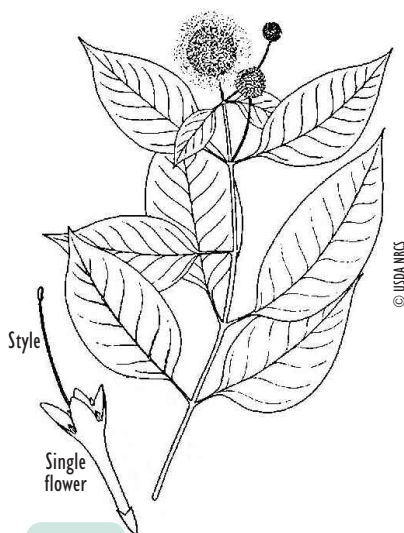
**LEAVES:** Bright green and shiny above, paler below, 8-15 cm long and up to 7 cm wide. Egg-shaped (ovate) with smooth or wavy leaf edges that narrow to a point. Paired (opposite) or circularly arranged (whorled) around the stem.

**STEM:** Gray-brown coloured (green-brown when young). Twigs round and marked with light, slightly raised pores (lenticels).

**FLOWERS:** On flower stalks (pedicels) that emerge from where the leaf attaches to the stem (axil). At the top of the flower stalk there is a sphere (2-4 cm wide) covered with many small, white 4-petaled flowers (5-8 mm long petals) that have long styles with swollen yellow tips (stigmas).

**FRUITS:** Round, 5 mm wide, splits into 2 or 4 brown nutlets.

**NOTES:** The top of this shrub can get chopped off by ice scour. Look for small plants along the shore as well.



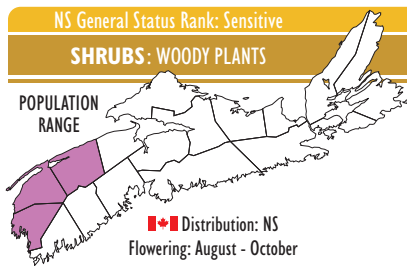
### Habitat:

Lake and river shorelines and wetlands (swamps, bogs).

**Interesting point:** Its name comes from the unopened flowers looking like buttons.

**Similar species:** None.



POPULATION  
RANGE

 Distribution: NS  
 Flowering: August - October

**STATUS**Special Concern Vulnerable **SIZE:** Up to 2 m tall.

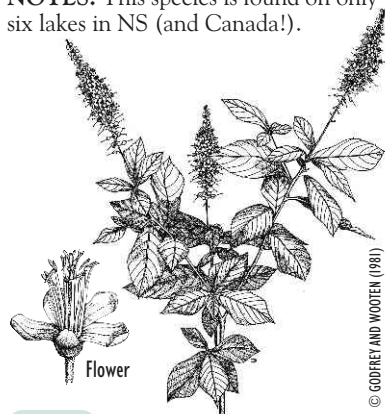
**LEAVES:** Shiny, 5-10 cm long, and widest above the middle (obovate). The leaf edges are generally finely toothed from the middle to the tip. They are alternately arranged along the stem with 1-2 cm long leaf stalks that are slightly hairy.

**STEM:** Young branches are covered with woolly hairs and older branches are smooth.

**FLOWERS:** An elongate cluster (raceme) of fragrant flowers (5-15 cm long). The flowers are attached by short stalks (2-5 mm) to a central hairy axis and bloom from the base upwards. Each flower is small and white with 5 petals (each 5-7 mm long).

**FRUITS:** Dry, rounded capsules, 3 mm wide, containing numerous winged seeds. The dried fruits persist on the stem and resemble peppercorns.

**NOTES:** This species is found on only six lakes in NS (and Canada!).



© GODFREY AND WOOTEN (1981)

**Habitat:**

River and lake shores.

**Interesting point:** The sweet, fragrance of this plant can be detected from quite a distance. It has been cultivated as an ornamental shrub in Europe for over 250 years.

**Similar species:** Canada Holly (*Ilex verticillata*) has larger, blunter teeth around the entire leaf edge, white flowers that are single or paired, and bright red berries.



© MEGAN CROWLEY



Flowers

© MEGAN CROWLEY



Shiny leaves

© MEGAN CROWLEY



Flower progression from buds to flower clusters to dried fruits

© MEGAN CROWLEY



## Broom Crowberry

*Corema conradii*

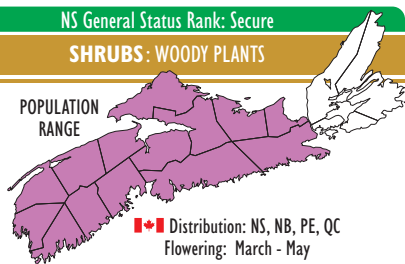
NS General Status Rank: Secure

SHRUBS: WOODY PLANTS



© MEGAN CROWLEY

POPULATION  
RANGE



🇨🇦 Distribution: NS, NB, PE, QC  
Flowering: March - May

**SIZE:** Up to 50 cm tall and 2 m wide.

**LEAVES:** Long and narrow (linear), no clear middle line on the undersides, and 3-6 mm long. They turn reddish brown in the winter.

**STEM:** Brown, woody, branched, and slender. The branching pattern is distinctive, with many branches coming off near the same point creating a multiple circular (whorled) appearance.

**FLOWERS:** In clusters at the ends of branches. Petals are absent. Male flowers are purplish and have 3-4 anthers with long stalks (filaments). Female flowers are small, brownish red and with 2-9 protruding stigmas.

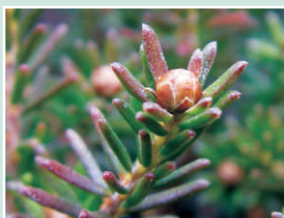
**FRUITS:** Dry, 3-seeded fleshy berry-like fruits (drupes), 1.5 mm wide.

**NOTES:** This species is dioecious, which means that it has only male or only female flowers on an individual plant. It is a low growing, heather-like shrub.



Female flowers

© DAVID PATRIQUIN



Flower bud

© DAVID PATRIQUIN



Woody branches

© MEGAN CROWLEY



Fruit

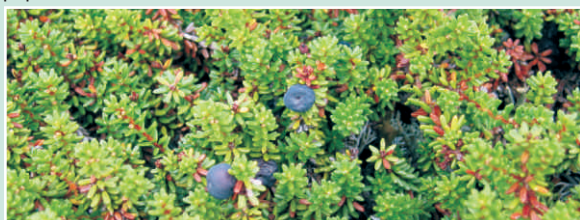
© DAVID PATRIQUIN

### Habitat:

Dry barrens on sandy or rocky soils; often on rock outcrops along lakeshores.

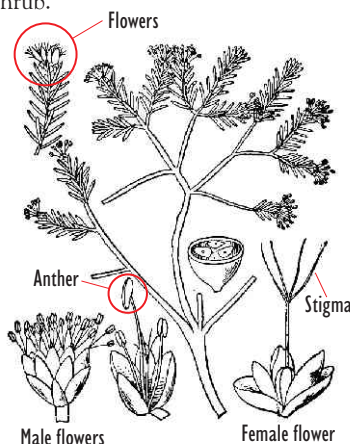
**Interesting point:** This species is linked to habitats historically associated with fire.

**Similar species:** Golden Heather (*Hudsonia ericoides*, page 52) has solitary yellow flowers and soft hairs on the stem and leaves. Black Crowberry (*Empetrum nigrum*) has spreading stems up to 40 cm long, needle-like leaves with a deep middle line underneath, purplish flowers where the leaf attaches to the stem, and dark black fruits.



Black Crowberry

© SEAN BLANEY



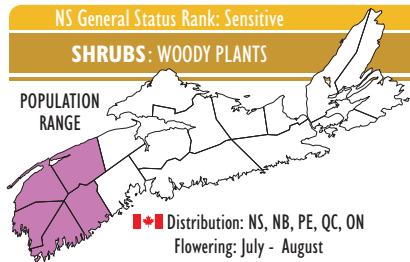
© BRITTON AND BROWN (1913)



Male flowers

© DAVID PATRIQUIN



POPULATION  
RANGE

🇨🇦 Distribution: NS, NB, PE, QC, ON  
Flowering: July - August

**SIZE:** 1-3 m tall.

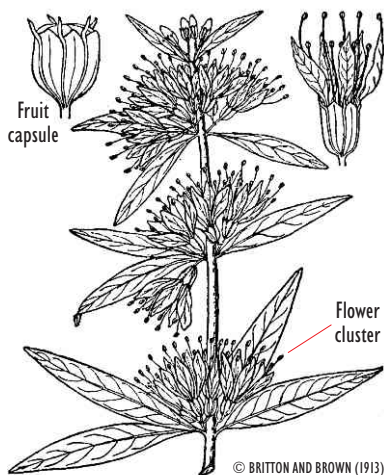
**LEAVES:** Lance-shaped, 5-15 cm long and 1-4 cm wide with smooth edges and short pinkish-purple stalks. They are paired on the stem (opposite) or in groups of 3-4 in a circle around the stem (whorled). Leaves are bright green, gradually turning red in late summer and fall.

**STEM:** Slender with lengthwise ridges and somewhat woody near the base. The base is underwater or in saturated soil and is distinctly spongy. Stems are highly flexible, typically strongly arching and will often root at the tips. They are yellowish or greenish-brown gradually turning red later in late summer.

**FLOWERS:** Pinkish-purple, in clusters, and with conspicuous 10-15 mm long petals. Clusters are located where the leaves meet the stem (axil).

**FRUITS:** Round pink capsules approximately 5 mm in length.

**NOTES:** Also known as Swamp Loosestrife.

**Habitat:**

Wet boggy or rocky lakeshores and stream margins.

**Interesting point:** Despite its name, this plant does not belong to the Willow family but to the Loosestrife family.

**Similar species:** None.



Late summer colours and arching stems

© ALAIN BELLIVEAU



Regrowth after ice scour

© ALAIN BELLIVEAU



Circularly arranged leaves

© ALAIN BELLIVEAU



Flowers

© ALAIN BELLIVEAU



Spent flowers

© ALAIN BELLIVEAU



Flower clusters in leaf axils

© SEAN BLANEY





## Dwarf Huckleberry

*Gaylussacia bigeloviana*

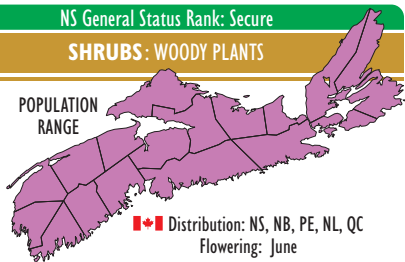
NS General Status Rank: Secure

SHRUBS: WOODY PLANTS



© SEAN BLANEY

POPULATION  
RANGE



🇨🇦 Distribution: NS, NB, PE, NL, QC  
Flowering: June

**SIZE:** 10-50 cm tall.

**LEAVES:** Inversely egg-shaped (obovate), dark green, thick, 2-4 cm long and end in a fine pointed tip. The leaf edges are smooth (entire) and small shiny resin glands dot the leaf surface. They are alternately arranged along the branches.

**STEM:** Smooth, dark, and branching. Young branches have many fine hairs covering their surface.

**FLOWERS:** White to pinkish, 6-9 mm long and bell shaped with five lobes. The flowers, which point downwards, are arranged in elongate and sometimes drooping clusters.

**FRUITS:** Blue to black, round, edible, berry-like drupes with soft hairs, 5-8 mm wide.

**NOTES:** Spreads using long horizontal roots (rhizomes) which run below ground and send up new shrubs. Also known as Bog Huckleberry (*Gaylussacia dumosa* var. *bigeloviana*)



© BRITTON AND BROWN (1913)



Fruits with soft hairs

© ALAIN BELLIVEAU



© SEAN BLANEY

### Habitat:

Open acidic sphagnum bogs and barrens.

**Interesting point:** The juicy berries look like larger and darker blueberries with larger seeds but are even sweeter!

**Similar species:** Black Huckleberry (*Gaylussacia baccata*) is taller (50 to 200 cm), has smooth fruits and much shinier leaves with rounded ends.



Black Huckleberry

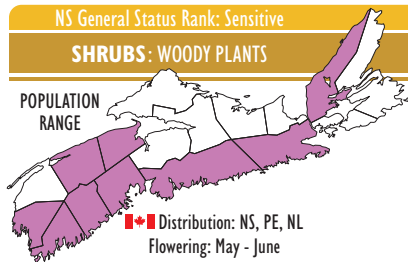
© SEAN BLANEY



Bell-shaped flowers

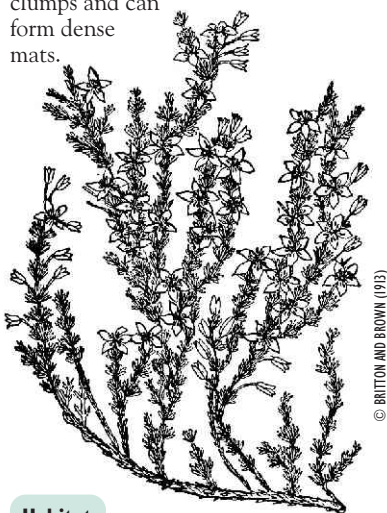
© SEAN BLANEY



POPULATION  
RANGE

Distribution: NS, PE, NL

Flowering: May - June

**SIZE:** Up to 30 cm tall and 1 m wide.**LEAVES:** Long and narrow (linear), scale-like evergreen leaves with soft hairs, 3-6 mm long. They are alternately arranged and spread outward and overlap on the stem. The leaves closest to the ground may be dead and brownish but stay attached to the stem. They turn a brownish orange colour in the fall and winter.**STEM:** Slender twigs with long soft hairs.**FLOWERS:** Numerous and yellow with 5 petals and 8-20 stamens. A single flower is found at the end of a short flowering stalk, 5-15 mm long.**FRUITS:** Capsules with 1-3 cylindrical seeds.**NOTES:** A low growing, bushy, heather-like shrub that often grows in clumps and can form dense mats.

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© DAVID PATRIQUIN, NS WILD FLORA SOCIETY



Growing in clumps © SEAN BLANEY

© DAVID PATRIQUIN



Scale-like leaves

© MEGAN CROWLEY



Flower and leaves

**Habitat:**

Dry barrens on sand or rock outcrops.

**Interesting point:** Despite its name Golden Heather is not a true heather and belongs to the Rock Rose family (*Cistaceae*). Included in this family is the beautiful yellow-flowered Rockrose (*Helianthemum canadense*) which is also found in sand barrens and is endangered in NS.**Similar species:** Sand Heather (*Hudsonia tomentosa*) has shorter or absent flower stalks (0-3 mm long) and 1-3 mm long leaves that are very hairy and tightly pressed against the stem. It is known in NS only from the dunes of the Northumberland Strait. Broom Crowberry (*Corema conradii*, page 49) frequently co-occurs with Golden Heather but has fruit and flowers on shorter stalks with fleshy looking leaves with no hairs and purplish or reddish flowers.

Sand Heather

© SEAN BLANEY





## Inkberry

*Ilex glabra*

NS General Status Rank: Secure

SHRUBS: WOODY PLANTS



© DAVID PATRIQUIN, NOVA SCOTIA WILD FLORA SOCIETY



Leaf

© ALAIN BELLIVEAU



Ripe, black fruits

© ANNE MILLS



Female flowers in leaf axils

© ALAIN BELLIVEAU



Cluster of male flowers

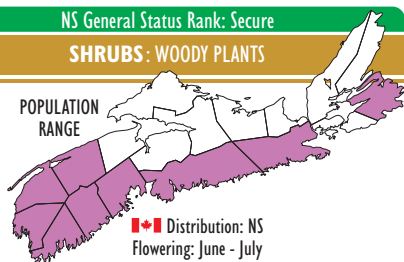
© DAVID PATRIQUIN



Immature, green fruits

© MEGAN CROWLEY

POPULATION  
RANGE



🇨🇦 Distribution: NS  
Flowering: June - July

**SIZE:** 1-3 m tall.

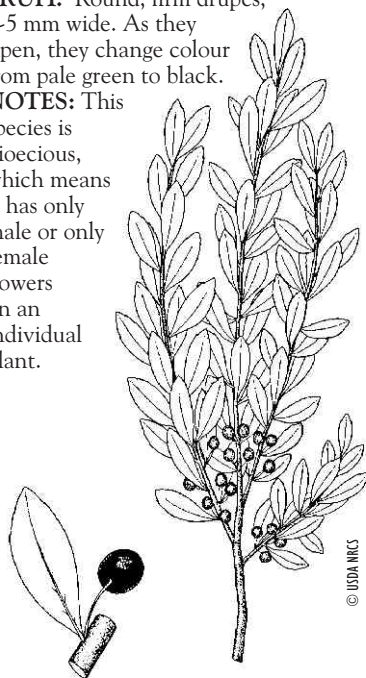
**LEAVES:** Leathery, evergreen, inversely lance-shaped, and 2-5 cm long. They have a shiny upper surface, 1-3 teeth on each side near the tip, and are alternately arranged on the stem.

**STEM:** Greyish brown except new growth which is green. Twigs, especially new growth, may have short, coarse hairs on them.

**FLOWERS:** White with 6-8 petals. The male (staminate) flowers are in clusters and the female (pistillate) flowers are singular and located where the leaf attaches to the stem (axil).

**FRUIT:** Round, firm drupes, 4-5 mm wide. As they ripen, they change colour from pale green to black.

**NOTES:** This species is dioecious, which means it has only male or only female flowers on an individual plant.



© USDA NRCS

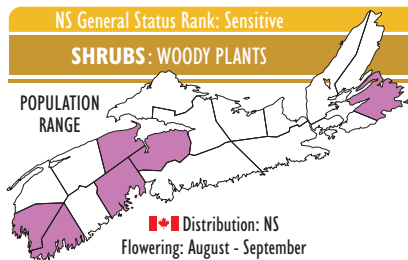
### Habitat:

Wetlands (bogs, swamps), lakeshores, and rocky barrens.

**Interesting point:** Part of this species scientific name *glabra* translates to "smooth" and refers to the smooth upper surface of the leaves. In NS, this is the only species in the Holly family that retains its leaves all winter.

**Similar Species:** None.





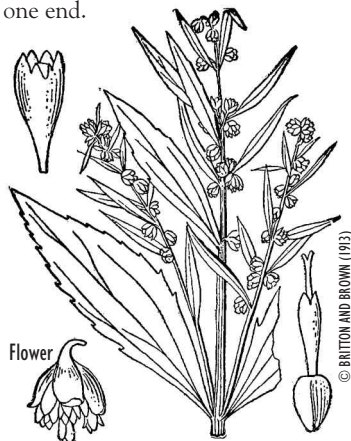
**SIZE:** Up to 2 m tall.

**LEAVES:** Lance-shaped or elliptical, 4-10 cm long with a rough upper surface and toothed edges. They attach to the stem by a short leaf stalk (petiole). They are paired (opposite) on the stem except near the tips of flowering branches where they are reduced and alternately arranged.

**STEM:** Branched and woody. The tips of the branches are green with upward-pointing hairs.

**FLOWERS:** Purple-pink flower heads that hang from flower stalks (peduncles) where the leaves attach to the stem (leaf axils). The base of each flower is surrounded by 4-5 modified oval leaves (bracts) that are green.

**FRUITS:** Spotted, oval, seeds (achenes) that are smooth and purple-brown with a tube (corolla) on one end.



© BRITTON AND BROWN (1913)

#### Habitat:

In salt marshes and on road embankments near the coast.

**Interesting point:** This is the only species in the *Iva* genus that is native to NS. Giant Sumpweed (*Iva xanthifolia*) is also found here but is an introduced species.

**Similar species:** Groundseltree (*Baccharis halimifolia*, page 46) is also found in salt marshes but has smaller leaves (up to 6 cm long) with a few large teeth on the upper half. Its leaves are alternately arranged on the stem. Southern Maritime Marsh Elder (*Iva frutescens* ssp. *frutescens*) is not found in NS.

## Marsh Elder

*Iva frutescens* ssp. *oraria*



© MARTIN THOMAS



Hanging flower heads

© MARTIN THOMAS



© SEAN BLANEY



Toothed (serrate) leaf

© SEAN BLANEY



## Northern Bayberry

*Myrica pensylvanica*

NS General Status Rank: Secure

SHRUBS: WOODY PLANTS



© MEGAN CROWLEY



Leaf upper and undersides © MEGAN CROWLEY



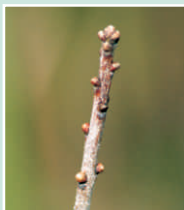
Fruits

© ALAIN BELLIVEAU



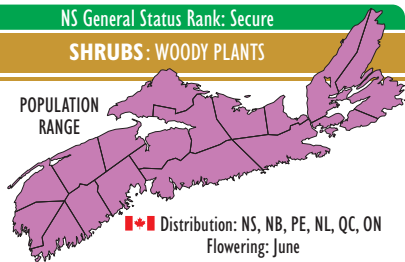
Larger shrub

© MARTIN THOMAS



Twig and buds © ALAIN BELLIVEAU

POPULATION  
RANGE



✶ Distribution: NS, NB, PE, NL, QC, ON  
Flowering: June

**SIZE:** 0.5-2.5 m tall.

**LEAVES:** Oblovate to elliptical with smooth leaf edges or a few teeth near the tip, 4-8 cm long and 1.5-3 cm wide. The upper surface is glossy and smooth (generally with white hairs), and the underside is dull.

**STEM:** Mostly smooth bark. There may be small, white hairs on younger stems.

**FLOWERS:** Male flowers (catkins) are cylindrical and 6-15 mm long. Female flowers (catkins) are slender and 5-10 mm long. The flowers emerge on older stems with the leaves in the spring.

**FRUITS:** Small, round, waxy nutlets on the stem, 3.5-5 mm wide, in small clusters.

**NOTES:** This plant is very fragrant when you crush any part of it. It has only male or only female flowers on an individual plant (dioecious). Also known as *Morella pensylvanica*.



© NS MUSEUM COLLECTIONS

### Habitat:

Lakeshores, wetlands (bogs), along the coast (including salt marsh edges) and in upland forests and old fields.

**Interesting point:** Tea can be made from the roots of this plant, candles from the waxy fruits, and the leaves can be used as a substitute for bay leaves.

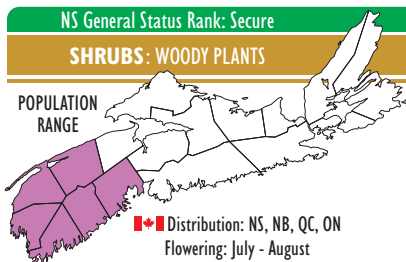
**Similar species:** Sweet Gale (*Myrica gale*) has dull leaves and flowers (catkins) that appear before the leaves in the spring. The fruit is not waxy. Leatherleaf (*Chamaedaphne calyculata*) has smaller leathery leaves (1.5-5 cm long) that are green with pale undersides, and small, round teeth along the edges. Its flowers are small, white, and bell-shaped.



Sweet Gale

© SEAN BLANEY





**SIZE:** Up to 2 m tall.

**LEAVES:** In groups of 7 leaflets along a finely-hairy branch off the main stem (rachis). The undersides are minutely hairy and there are 12-25 teeth along the leaf edges. The base of the rachis has two long, narrow leaf-like structures (stipules) with their edges rolled around the rachis.

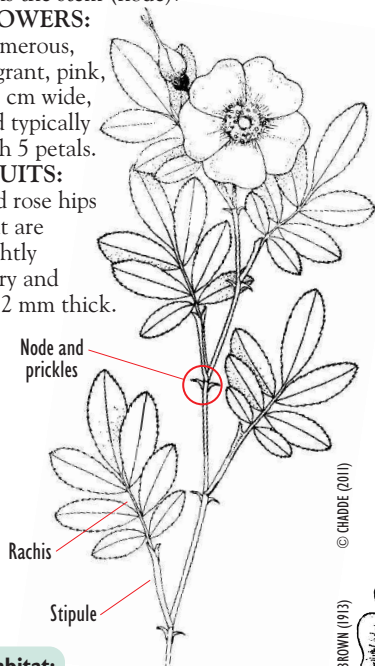
**STEM:** Woody with short (3-6 mm), flattened, recurved prickles that are mostly restricted to where the rachis joins the stem (node).

**FLOWERS:**

Numerous, fragrant, pink, 4-5 cm wide, and typically with 5 petals.

**FRUITS:**

Red rose hips that are slightly hairy and 7-12 mm thick.



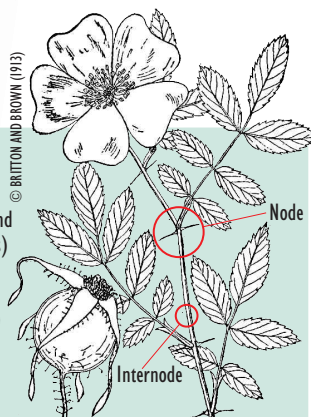
Stem showing prickles and stipules

**Habitat:**

The wet ground around lakeshores and in open wetlands (primarily peatlands).

**Similar Species:** Common Wild Rose (*Rosa virginiana*) has fewer larger teeth on the leaves and more prickles between the branching points (nodes) of the stem. Shining Rose (*Rosa nitida*) is shorter (up to 1 m) with dense, straight, narrow prickles covering the stems at the branching points (nodes) and in between (internodes). Carolina Rose (*Rosa carolina*) has fine, straight prickles at the nodes and is unlikely in wetlands.

**Interesting point:** Rose hips are high in vitamin C and make delicious jellies and wines.



Common Wild Rose





## Silky Willow

*Salix sericea*

NS General Status Rank: At Risk

SHRUBS : WOODY PLANTS



© SEAN BLANEY



Catkins

© WILL COOK



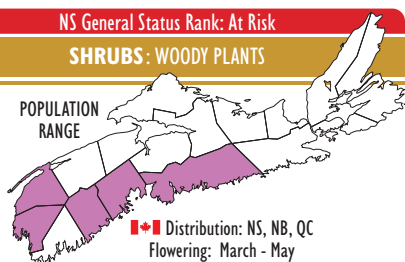
Lance-shaped leaves

© MARTIN THOMAS



Silvery undersides

© MARTIN THOMAS



**SIZE:** Up to 4 m tall.

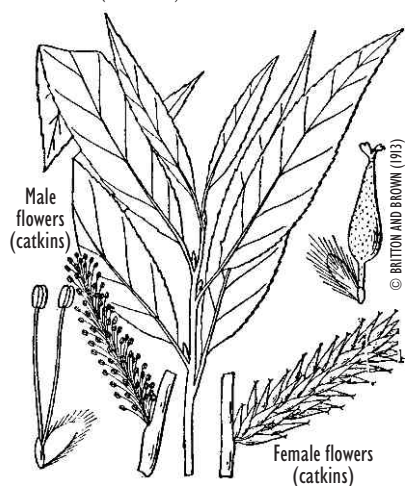
**LEAVES:** Lance-shaped with small teeth along the edges, 6-10 cm long and 1-2.5 cm wide. The upper surface is dark green with a few small hairs and the lower surface is densely covered in short, straight, silvery hairs.

**STEM:** Stems and branches are brittle, hairy or smooth, and grey-brown to violet. Twigs vary in color from red-brown to violet to mottled yellow-brown and are sparsely to densely hairy.

**FLOWERS:** Appear just before the leaves in the spring. Male and female flowers (catkins) are typically 1.5 to 4 cm long.

**FRUITS:** Short, hairy capsules, 1 mm wide.

**NOTES:** Willows are dioecious, which means that individual plants exclusively bear male or female flowers (catkins).



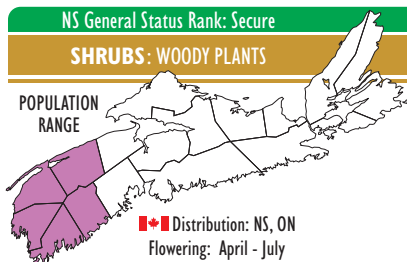
### Habitat:

Wet to moist riverbanks, lakeshores, thickets and bogs.

**Interesting point:** Willow bark and sap contains salicylic acid, which has long been used to alleviate pain and served as the inspiration for Aspirin. It is also a common ingredient in acne medication.

**Similar species:** There are several other willow species and hybrids that can appear similar. Silky Willow is most distinguishable from other species by its leaves which are densely covered in silky silvery hairs on their lower surface.





**SIZE:** Up to 10 m long.

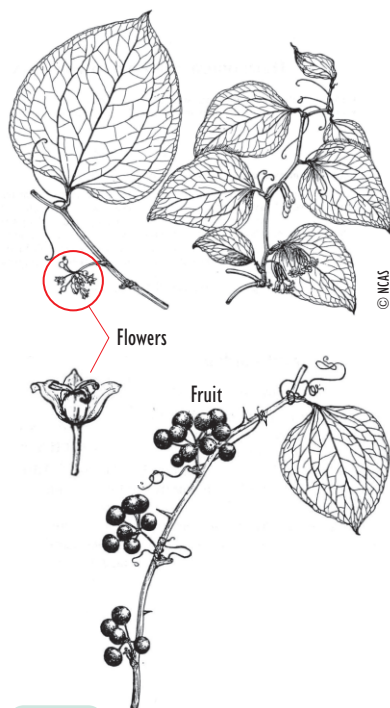
**LEAVES:** Shiny, smooth, and arranged alternately along the length of the vine. They are round to heart-shaped, with a pointed end (up to 13 cm long and smooth leaf edges).

**STEM:** Highly branched, climbing vine with many bent thorny prickles and curling strands.

**FLOWERS:** Clusters of greenish-brown flowers (umbel) hang from where the leaves branch from the stem. Each plant is either male or female and flowers are not typically observed.

**FRUIT:** Waxy bluish-black berries, 6 mm wide.

**NOTES:** Also known as Catbrier.



**Habitat:**

Lakeshores and along the edge of rivers and streams.

**Similar Species:** None.

**Interesting point:** This species can grow into dense patches, and is also known as Catbrier due to its claw-like thorns and the cat-like scratches you can get while trying to walk through it.



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© ALAIN BELLIVEAU

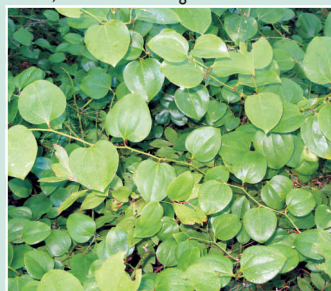


Climbing a tree

© MEGAN CROWLEY



Leaves, thorns and curling strands



Round-leaved Greenbrier patch

© SEAN BLANEY



## Eastern Poison-Ivy

*Toxicodendron radicans* ssp. *radicans*

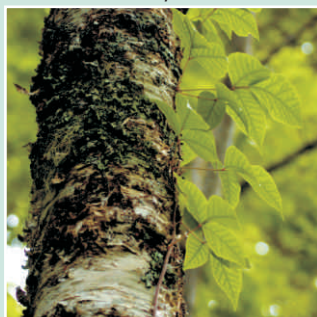
NS General Status Rank: Secure

SHRUBS : WOODY PLANTS



Ground-level Poison Ivy

© DAVID MAZEROLLE



Climbing vine

© ALAIN BELLIVEAU



Grape-like drupes

© ALAIN BELLIVEAU

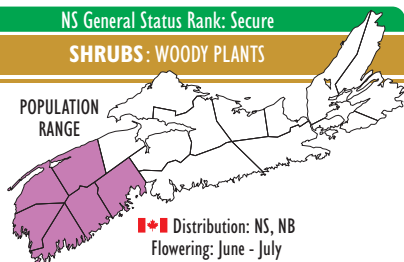


Red fall leaves

© ALAIN BELLIVEAU



© ALAIN BELLIVEAU



**SIZE:** Grows as a climbing vine or shrub, up to 1 m tall. Can reach heights of 2 m or taller, especially near southern NS salt marshes.

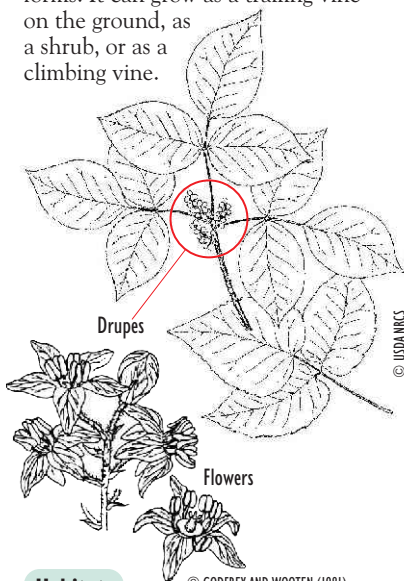
**LEAVES:** Three oval leaflets with pointed tips that branch from a single stem, typically 5-15 cm wide. The center leaf has a longer stalk. Leaf edges are typically smooth but may have irregular teeth near the end.

**STEM:** Smooth, woody, reddish-brown and up to 3 cm wide.

**FLOWERS:** Greenish-white with 5 petals, 1-2 cm wide. Flowers are in clusters of 25 or greater.

**FRUITS:** Greyish-white, grape-like hanging clusters (drupes).

**NOTES:** This species has variable forms. It can grow as a trailing vine on the ground, as a shrub, or as a climbing vine.



© GODFREY AND WOOTEN (1981)

### Similar Species:

Western Poison Ivy (*Toxicodendron rydbergii*) is quite similar but has broader leaves and the middle leaf is on a shorter stalk. It is found in stony or rocky damp areas. There are no other *Toxicodendron radicans* ssp. in NS.

Hog-peanut (*Amphicarpaea bracteata*) has groups of three leaves and is a trailing vine along river banks, but never has a woody stem or irregular teeth around the leaf edges. It is not common in southwest NS.



Hog-peanut

© SEAN BLANEY

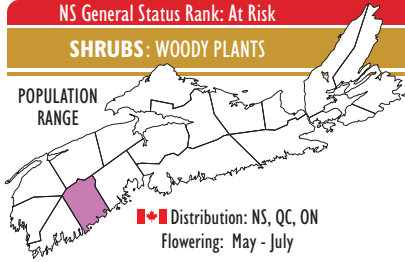
### Habitat:

Low-lying areas, shrub or forest margins along lakeshores and stream banks, salt marsh margins and red maple swamps.

**Interesting point:** "Leaves of three let it be!" This plant can cause severe skin irritation because it produces a skin-irritating oil called urushiol. Do not burn or mow this plant because the oil can become airborne. If you do come in contact, the leaves of Spotted Touch-me-not (*Impatiens capensis*) can be crushed and rubbed on the skin for relief.



POPULATION  
RANGE



Distribution: NS, QC, ON  
Flowering: May - July

**SIZE:** Up to 5 m tall, mainly 1-3 m in NS.

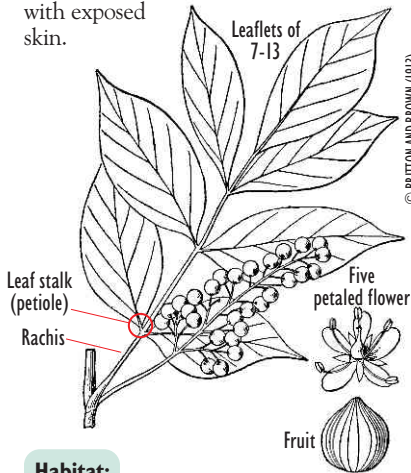
**LEAVES:** In groups of 7-13 leaflets, each 4-5 cm long. Leaflets are on smooth reddish stalks (petioles), have smooth edges, are inversely egg-shaped (obovate) or elliptical and are paired (opposite) along a common branch (rachis). They gradually become purplish red in the fall.

**STEM:** Smooth, greyish brown and spotted with slightly raised visible pores (lenticels). Often branched from the base and typically highly branched in the upper portion.

**FLOWERS:** Small, greyish white, 4-5 mm long and arranged in drooping clusters.

**FRUITS:** Grape-like clusters of small, pale green or grey round berry-like fruits (drupes) 4-5 mm in length.

**NOTES:** This species is usually dioecious, meaning that an individual plant will exclusively produce male or female flowers. It is related to Poison Ivy and can cause severe dermatitis if any part of the plant comes into contact with exposed skin.



© BRITTON AND BROWN (1913)

**Habitat:**

Wet boggy or swampy lakeshores and stream margins.

**Interesting point:** This species, which is believed to be more toxic than Poison Ivy, is only known to occur at one location in NS.

**Similar species:** None.



© SEAN BLANEY (ALL)



Clusters of fruit



Leaflets



Leaflet undersides



David by Poison Sumac





## Highbush Blueberry

*Vaccinium corymbosum*

NS General Status Rank: Secure

SHRUBS : WOODY PLANTS



© MEGAN CROWLEY © MEGAN CROWLEY © MEGAN CROWLEY



Ovate leaves

© ALAIN BELLIVEAU



Old and new twig growth



Ripe black and unripe, green fruits



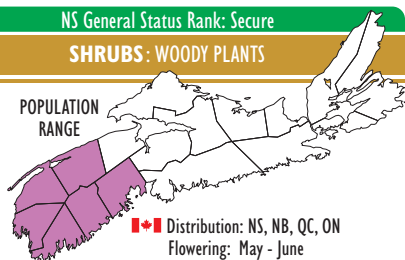
Flowers

© SEAN BLANEY



Highbush Blueberry shrub that is taller than Megan

© JEROME D'EON



**SIZE:** 1-4 m tall.

**LEAVES:** Ovate, 3-8 cm long, 1.5-4 cm wide, with smooth edges (entire) or small, sharp teeth (serrate). They are alternately arranged on the stem with a short leaf stalk (petiole) and are mostly smooth but sometimes have small hairs on the veins or leaf edges.

**STEM:** Highly branched. Young twigs are smooth, greenish-brown and have small hairs. Older growth is darker, rougher and reddish-brown to dark-grey.

**FLOWERS:** White or pinkish-white, urn-shaped, 6-10 mm long and with 5 petal-like lobes at the tip. They are in numerous clusters.

**FRUITS:** Round, edible, blue or bluish-black and full of many tiny, dark seeds. They have a waxy covering and are 7-12 mm wide.

**NOTES:** The flowers and the leaves open around the same time in the spring.



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### Habitat:

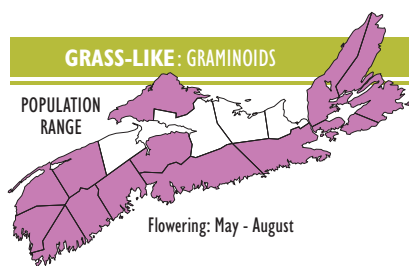
Bogs, swamps, wet soils in pastures, rocky barrens and lake shorelines.

**Interesting point:** These tasty berries are sometimes called star berries because of the five parted blossom on one end.

**Similar species:** Velvet-leaf Blueberry (*Vaccinium myrtilloides*) is shorter (less than 75 cm tall), and covered in small hairs with sparse, straight hairs covering the leaf surface. Lowbush Blueberry (*Vaccinium angustifolium*) is much shorter (10-60 cm tall) and has elliptical leaves, 1.5-3 cm long, which are sharply toothed (serrated) along the edge.



## GRASS-LIKE: GRAMINOIDS



**SIZE:** 10-110 cm tall.

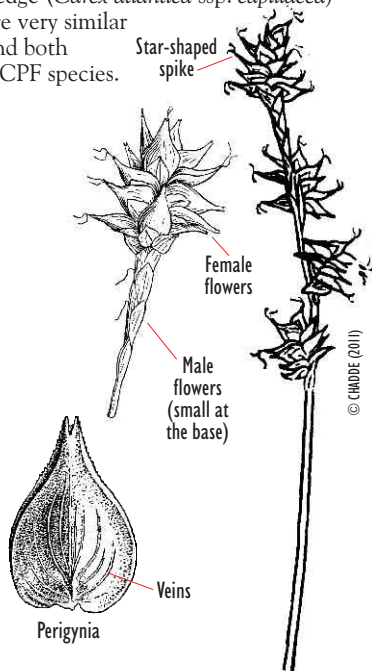
**LEAVES:** Very narrow and elongate, 3.5-25 cm long, and located along the bottom third of the stem.

**STEM:** Triangular, mostly erect and often with rough edges along the upper section. They often form dense clumps.

**FLOWERS:** Arranged in 2-8 irregularly star-shaped spikes (clusters) at the top of the stem. Each spike is attached directly to the stem (not stalked) and contains a large number of male and female flowers. The total length of the flower cluster (inflorescence) is 0.8 to 4.5 cm.

**FRUITS:** Small, dry, one-seeded fruits (achenes) that are enclosed by a specialized sac-like covering called the perigynia. The perigynia is green or brown with several veins, broad at the base, narrows to a point at the tip, 2-3.5 mm long and 1-3 mm wide. The tip (beak) is sharply notched.

**NOTES:** Atlantic Sedge (*Carex atlantica* ssp. *atlantica*) and Howe's Sedge (*Carex atlantica* ssp. *capillacea*) are very similar and both ACPF species.



## Atlantic Sedge &amp; Howe's Sedge

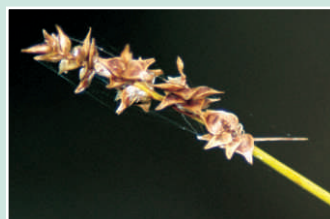
*Carex atlantica*

© ALAIN BELLIVEAU



Perigynia

© ALAIN BELLIVEAU



© ALAIN BELLIVEAU

**Habitat:**

Bogs, peaty barrens, and acidic, open, forested swamps.

**Interesting point:** There are an estimated 2000 *Carex* species worldwide and nearly 500 in North America. It represents by far the most diverse plant genus in Canada. The study of *Carex* is known as caricology.

**Similar species:** Sedges represent the largest group of vascular plant species in NS, with over 115 in the province. They are distinguished mostly by their height, leaves, and the size and shape of the flower spikes. Inland Sedge (*Carex interior*), Little Prickly Sedge (*Carex echinata*) and Wiegand's Sedge (*Carex wiegandii*) are similar, but the broad-based and distinctly veined perigynia (and very thin leaves in the case of Howe's Sedge) are useful in distinguishing *Carex atlantica*.

**Atlantic Sedge**

*Carex atlantica*  
ssp. *atlantica*

NS General Status Rank: Secure

🇨🇦 Distribution: NS, NB, ON

25-110 cm tall. It is more robust, has wider leaves (1.5-4.5 mm) and a longer flower cluster (1.8-4.5 cm long) with 3-8 spikes.

**Howe's Sedge**

*Carex atlantica*  
ssp. *capillacea*

NS General Status Rank: Undetermined

🇨🇦 Distribution: NS, QC, ON

10-60 cm tall. It is a smaller and more slender species with narrower leaves (0.5-1.5 mm wide) and a shorter flower cluster (0.8-2 cm long) with 2-5 spikes.

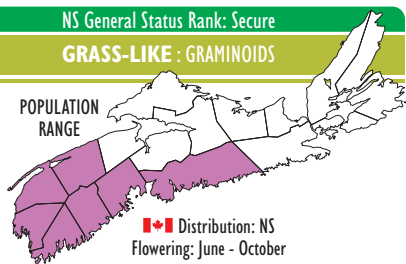


## Button Sedge *Carex bullata*

NS General Status Rank: Secure

GRASS-LIKE : GRAMINOIDS

POPULATION  
RANGE



🇨🇦 Distribution: NS  
Flowering: June - October



© MEGAN CROWLEY



Male flower spike

© MEGAN CROWLEY



Sallow Sedge

© MARTIN THOMAS

**SIZE:** 30-90 cm tall.

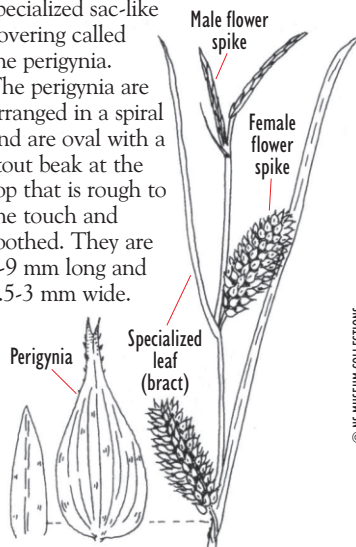
**LEAVES:** Specialized leaves (bracts), 2-5 mm wide, attach to the stem under the female flower spikes. They are typically not much higher than the elongated male flower spike at the top of the stem.

**STEM:** Slender and straight.

**FLOWERS:** Female flower spikes are cylindrical, yellow, and covered in points. There are 1-3 (most commonly one) per plant and they attach to the stem near the middle. Male flower spikes are elongated and light brown. They are located at the top of the stem (all on same stem), 1-3 per plant.

**FRUITS:** Small dry one-seeded fruits (achenes) that are enclosed by a specialized sac-like covering called the perigynia.

The perigynia are arranged in a spiral and are oval with a stout beak at the top that is rough to the touch and toothed. They are 6-9 mm long and 2.5-3 mm wide.



© NS MUSEUM COLLECTIONS

### Habitat:

Wetlands (swamps, bogs, marshes), lakeshores, and stream edges

**Interesting Point:** Sedges look similar to rushes and grasses and are tricky to tell apart. A saying that could help is: "Sedges have edges, rushes are round, grasses are hollow right up from the ground". The stem of a sedge is generally triangular in cross-section (you can feel this by rolling it) and its leaves come off the stem in three planes. This saying can help but there are always exceptions.

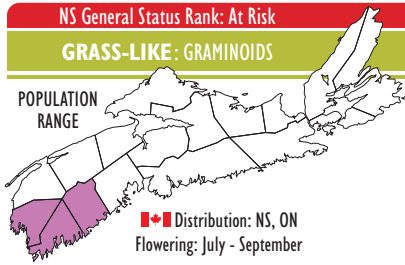
**Similar Species:** Sallow Sedge (*Carex lurida*) is around the same size and has similar looking female and male flowers. Its leaves are generally 4-7 mm wide and higher than the top of the stem. The stem is purplish at the base. It has one male terminal flower spike and 1-4 (typically 2-3) slightly larger female flower spikes.



Female flower spike

© MEGAN CROWLEY





**SIZE:** 30-120 cm tall.

**LEAVES:** Shorter than the stem, 2-3 mm wide.

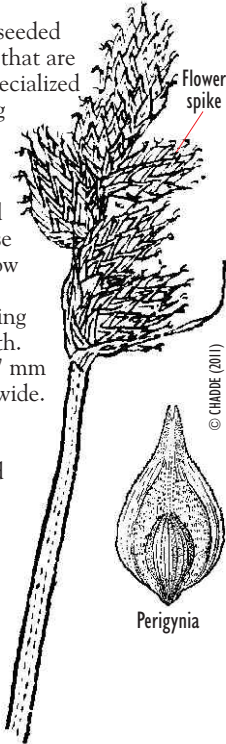
**STEM:** Stiff and longer than the leaves.

**FLOWERS:** 3-10 long, narrow, oval-shaped spikes (5-15 mm long) are clustered together at the top of the stem. They attach directly to the stem (no stalk) and the male flowers are directly below the female flowers.

**FRUITS:**

Small, dry, one-seeded fruits (achenes) that are enclosed by a specialized sac-like covering called the perigynia. The perigynia are teardrop-shaped with a broad base and a long narrow tip (beak) with thick lines running along their length. They are 1.3-1.7 mm long and 1 mm wide.

**NOTES:** This species grows densely clumped together.



**Habitat:**

Acidic red maple swamps, bogs, river and lakeshores, and coastal wetlands.

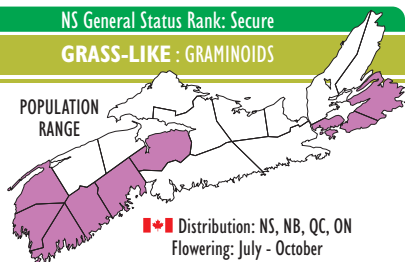
**Interesting point:** This species was unintentionally introduced into Hawaii and New Zealand.

**Similar species:** Broom Sedge (*C. scoparia*) is the only similar species that is reasonably common in the same habitats as Long's Sedge. Clustered Sedge (*C. cumulata*) is typically in quite dry habitats. Marsh Straw Sedge (*C. hormathodes*) is typically found in salt marsh margins. Proper identification requires a magnifying lens and a good key (such as Flora of North America, [www.fna.org](http://www.fna.org)). One can suspect Long's Sedge in the field based on habitat, smallish size, erect and relatively small spikelets, oval-shaped cluster of flowers at the top of the plant and the thick lines along the fruit (perigynia).

# Toothed Flat-Sedge *Cyperus dentatus*

NS General Status Rank: Secure

GRASS-LIKE : GRAMINOIDS

POPULATION  
RANGE

**SIZE:** 10-50 cm tall.

**LEAVES:** At the base they are numerous, long, and narrow (2-5 mm wide). Near the top there are 3-5 smaller leaves (bracts) that are 2-5 cm long.

**STEM:** Triangular, 2-5 mm wide, with numerous branches (rays) at the top.

**FLOWERS:** Called spikelets and are clustered at the tip of the rays. The spikelets are flat, 3-15 mm long, and contain 8-25 miniature flowers (florets) that appear hairy.

**FRUITS:** Each floret bears one small seed, 1 mm or less long.

**NOTES:** This species spreads using root-like stems that run along surface of the ground (called rhizomes) that end in a bulge called a tuber.

© DAVID MAZEROLLE



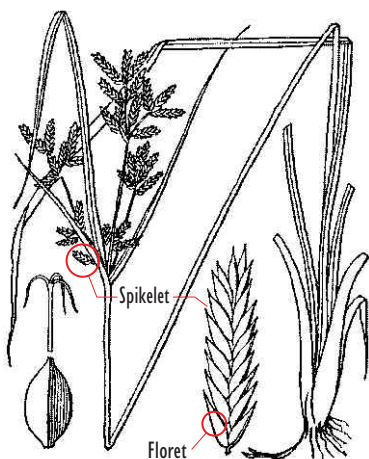
Flattened  
spikelets at the tip of the ray

© ALAIN BELLIVEAU



Spikelets sometimes develop into leafy shoots.

© SEAN BLANEY



© BRITTON AND BROWN (1913)

**Habitat:**

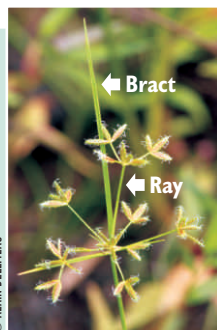
Sandy and gravelly lakeshores.

**Interesting point:**

Some *Cyperus* species are cultivated for their tubers, which are an energy-rich food source.

**Similar species:**

None



© ALAIN BELLIVEAU

Flower spikelets



NS General Status Rank: Secure

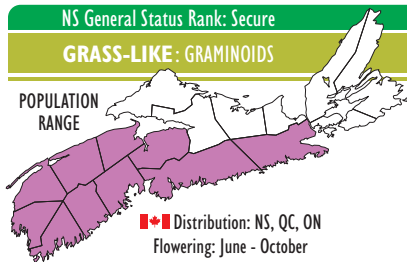
GRASS-LIKE: GRAMINOIDS

## Deer-tongue Panic Grass

*Dichanthelium clandestinum*

66

POPULATION  
RANGE



Distribution: NS, QC, ON

Flowering: June - October

**SIZE:** 60-150 cm tall.

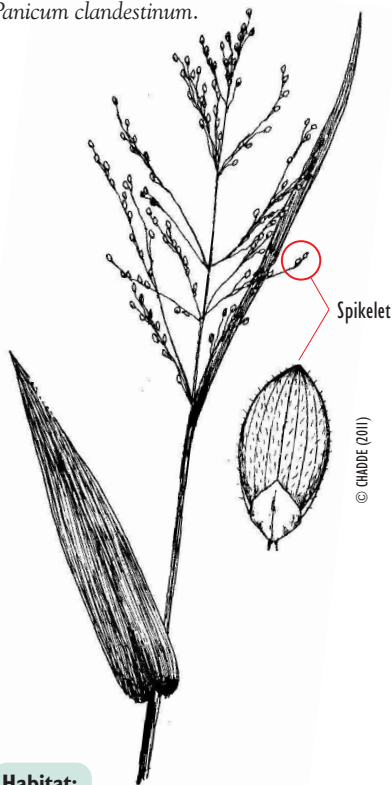
**LEAVES:** Very wide (1.5-3 cm), 10-25 cm long (up to six times longer than wide), heart-shaped, hairy at the base and pointed at the tip.

**STEM:** Stout and erect with fine hairs.

**FLOWERS:** Pyramid-shaped branched cluster of flowers (panicle), 7-14 cm long, composed of many small spikelets. The spikelets are 2.5-3.5 mm long with scattered hairs.

**FRUITS:** Small dry grains enclosed in the spikelets.

**NOTES:** Often grows in large dense patches. Formerly known as *Panicum clandestinum*.



### Habitat:

Moist woods, thickets, river banks and lakeshores.

**Similar species:** This species is easily distinguished from other Panic Grasses in NS by its very wide leaves with heart-shaped bases.

**Interesting point:** Its name comes from its wide leaves which can resemble a tongue.



© SEAN BLANEY



Stem and clasping heart-shaped leaves

© ALAIN BELLIVEAU



Young plant

© ALAIN BELLIVEAU

# Eaton's Panic Grass

*Dichanthelium spretum*

NS General Status Rank: Secure

GRASS-LIKE : GRAMINOIDS



Eaton's Panic Grass with panicles that have dropped their spikelets © ALAIN BELLIVEAU  
© MEGAN CROWLEY © DAVID MAZEROLLE



Upward pointing leaves and smaller leaves



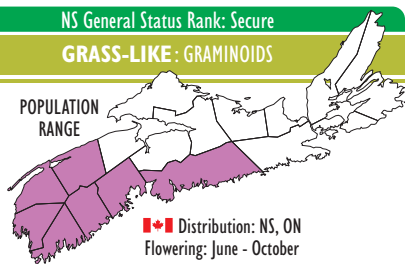
Late summer panicle in the leaf axil

© MEGAN CROWLEY



Panicle after the fruit has fallen off

POPULATION  
RANGE



🇨🇦 Distribution: NS, ON  
Flowering: June - October

**SIZE:** 30-80 cm tall.

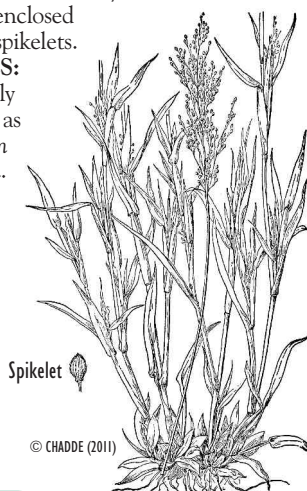
**LEAVES:** Close to the stem and pointing upwards (ascending), 6-10 cm long and 3-6 mm wide. Several smaller leaves are often found on the lower stem and on branches off the main stem, particularly in late summer and fall.

**STEM:** Smooth and sometimes branched near the base in late season.

**FLOWERS:** Pyramid-shaped branched cluster of flowers (panicle) that is 3-10 cm long and very narrow (3-4 times longer than wide). It is composed of many small spikelets (1-1.8 mm long) with fine hairs. In late summer and fall, several smaller panicles are formed along the lower stem where the leaves meet the stem (leaf axils).

**FRUITS:** Small dry grains enclosed in the spikelets.

**NOTES:** Formerly known as *Panicum spretum*.



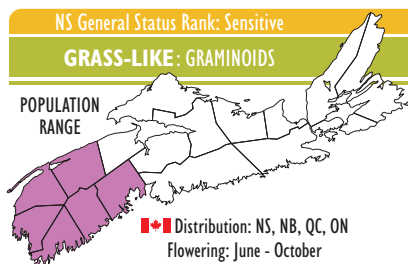
## Habitat:

Rock, boulder, sand, gravel or peaty lakeshores.

**Similar species:** Old Switch Panic Grass (*Panicum virgatum* var. *spissum*, page 79) and Spreading Panic Grass (*Panicum dichotomiflorum* var. *puritanorum*, page 77) have much larger panicles. Redtop Panic Grass (*Panicum rigidulum* var. *pubescens*, page 78) has a flattened stem at the base.

**Interesting point:** The name *Panicum* comes from the latin name for millet. The species Millet (*Panicum miliaceum*) also grows in Nova Scotia. Millet is an edible grain used in breads, cereals and other dishes. It is also in bird food mixes.





**SIZE:** 3-15 cm tall.

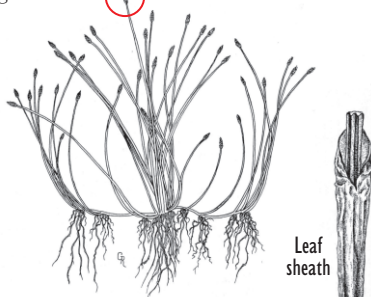
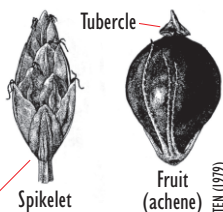
**LEAVES:** Appear leafless. The leaves are reduced to sheaths that surround the base of the stem. The leaf sheaths are loose at the base and have white tips.

**STEM:** Small, tufted, widely spreading stems (culms). They grow from a slender and delicate underground stem (rhizome).

**FLOWERS:** Single oval spikelets (2-7 mm long) at the tip of the stems (culms). Each spikelet contains less than 20 flowers and is covered by brownish scales. There are bands running from the tip to the base of the scales.

**FRUITS:** Each flower in the spikelet turns into a dry, one seeded fruit (achene), 1 mm long. They have a short pale tubercle at the tip with a swollen base. White or pale green bristles emerge from the base and are usually shorter than the achene.

**NOTES:** The stems (culms) of this species are often bent over allowing the fruiting spikelets to touch the ground.



© GODFREY AND WOOTEN (1979)



Grows close to the ground

© SEAN BLANEY

## Capitate Spikerush

*Eleocharis flavescens* var. *olivacea*



© SEAN BLANEY



Spikelets

© SEAN BLANEY



© SEAN BLANEY

### Habitat:

Sandy lakeshores and wetlands (peaty bogs).

**Interesting point:** Spikerushes are a type of sedge and there are over 250 species in this family worldwide.

**Similar species:** Ovate Spikerush (*Eleocharis ovata*) and Blunt Spikerush (*Eleocharis obtusa*) have leaf sheaths that are tight to the stem and without white tips. Blunt Spikerush also has bristles that are higher than the top of the tubercle. There are 12 spikerush species in NS which all look very similar and are typically identified by comparison of the mature fruit. *Eleocharis flavescens* var. *flavescens* is not found in NS.



Blunt Spikerush

© SEAN BLANEY



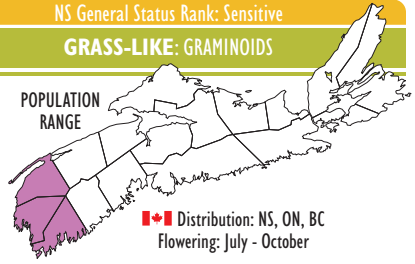
## Beaked Spikerush

*Eleocharis rostellata*

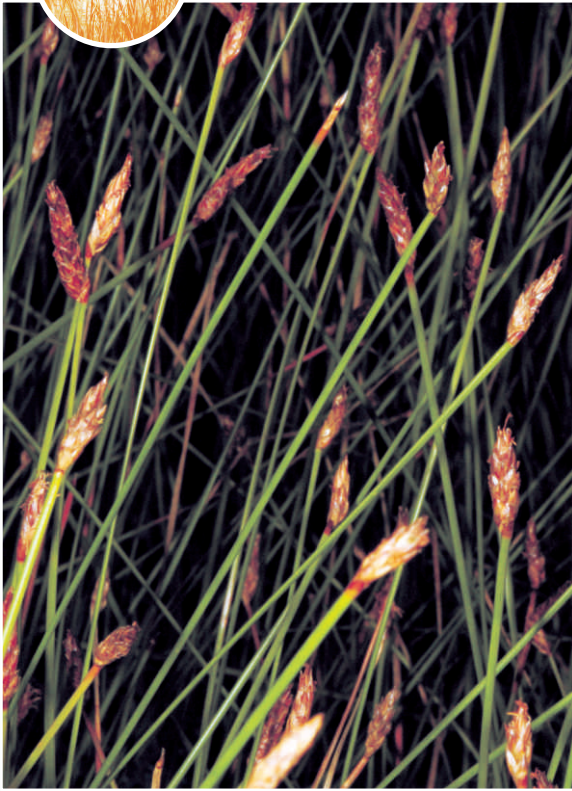
NS General Status Rank: Sensitive

GRASS-LIKE: GRAMINOIDS

POPULATION  
RANGE



🇨🇦 Distribution: NS, ON, BC  
Flowering: July - October



© MARTIN THOMAS



Curving stems

© MARTIN THOMAS



Spikelet

© MARTIN THOMAS

### Habitat:

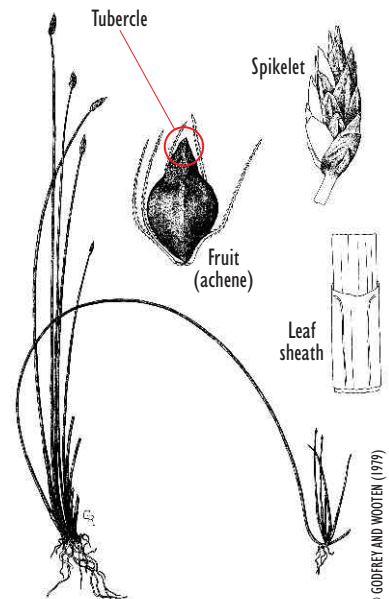
Salt marshes and coastal swales.

**Interesting point:** The tips of this plant will re-root if they come in contact with moist ground.

**Similar species:** Saltmarsh Spikerush (*Eleocharis halophila*), and Common Spikerush (*Eleocharis palustris*) both have tubercles that look separate from the achene (do not appear continuous). There are 12 spikerush species in NS which all look very similar and are typically identified by comparison of the mature fruit.

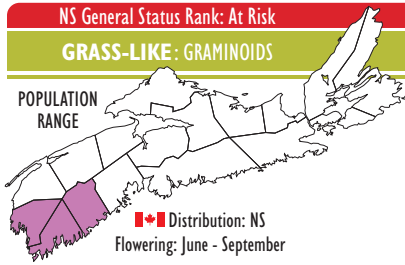




Saltmarsh Spikerush



© GODFREY AND WOOTEN (1979)





<b>STATUS</b>	Special Concern 
	Threatened 

**SIZE:** 10-50 cm tall.

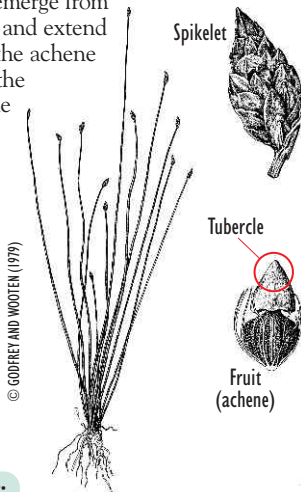
**LEAVES:** Appear leafless. They are reduced to sheaths that surround the base of the stem.

**STEM:** Erect, stiff stems (culms) 0.5-1 mm wide, and growing in dense clumps. The culms grow from an underground stem (rhizome).

**FLOWERS:** Single large, oval spikelets (5-15 mm long) at the tips of the stems (culms). Each spikelet is composed of 10-30 small flowers that are covered by brownish scales.

**FRUITS:** Each flower in the spikelet turns into a dry, one seeded fruit (achene). There is a large, knob-like tubercle on the top that is about the same size and width as the achene.

Bristles emerge from the base and extend beyond the achene but not the top of the tubercle.



**Habitat:**

Peaty or sandy areas along lakeshores, including peaty wetlands that border the lake. It can be found floating on vegetative mats that have dislodged from the shoreline.

**Interesting point:** This species is only found along 5 lakeshores in NS (and Canada!).

**Similar species:** There are 12 spikerush species in NS which all look very similar and are typically identified by comparison of the mature fruit.

Tubercled Spikerush can be distinguished from other spikerushes due to its large, wide fruit.





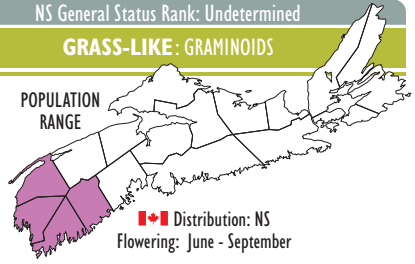
## Saltmarsh Virginia Wild Rye

*Elymus virginicus* var. *halophilus*

NS General Status Rank: Undetermined

**GRASS-LIKE : GRAMINOIDS**

POPULATION  
RANGE



✶ Distribution: NS

Flowering: June - September



© ALAIN BELLIVEAU



Leaves

© ALAIN BELLIVEAU



Dense spike

© ALAIN BELLIVEAU

**SIZE:** 30-80 cm tall.

**LEAVES:** Flat and elongated, 2-9 mm wide, smooth to slightly rough and with edges often rolled inward. They are often noticeably blue or grey-green in colour and tend to point upwards. Stems typically have 4 to 6 evenly spaced leaf blades.

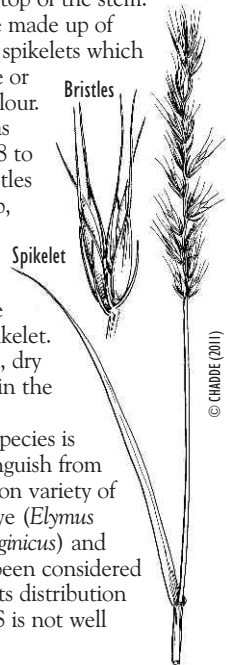
**STEM:** Stout and erect, typically growing in dense patches (cespitose) and sometimes a blue or grey-green colour.

**FLOWERS:** Arranged in a coarse, dense and erect spike (3.5-11 cm long) at the top of the stem. These spikes are made up of numerous small spikelets which are strongly blue or grey-green in colour. Each spikelet has several straight 8 to 20 mm long bristles (awns) at the tip, giving it a spiny appearance.

The bristles are almost twice the length of the spikelet.

**FRUITS:** Small, dry grains enclosed in the spikelets

**NOTES:** This species is difficult to distinguish from the more common variety of Virginia Wild Rye (*Elymus virginicus* var. *virginicus*) and has not always been considered a valid variety. Its distribution and status in NS is not well understood.



© CHADDE (2011)

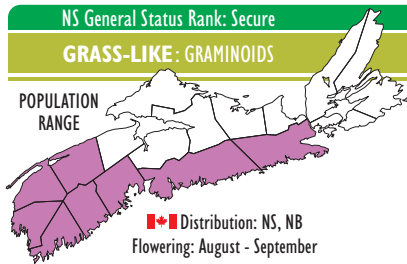
### Habitat:

Edges of salt marshes, brackish marshes and moist to damp dune slacks.

**Interesting point:** Wild Rye grasses are eaten by many animals including ducks and geese, livestock, and many insects (including leaf hoppers, beetles, and stink bugs).

**Similar species:** The more common variety of Virginia Wild Rye (*Elymus virginicus* var. *virginicus*) is very similar. It has flowering spikes that are green and slightly wider leaves (3-15 mm) with margins that are not rolled inward.



POPULATION  
RANGE

■ Distribution: NS, NB  
Flowering: August - September

**SIZE:** 50-100 cm tall.

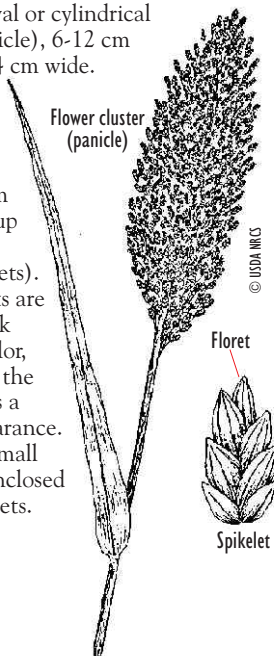
**LEAVES:** Long blades, 3-8 mm wide, and rough above.

**STEM:** The stem is stiff, stout and unbranched. It can be reclining at its base but is otherwise erect.

**FLOWERS:** A dense, straight branched oval or cylindrical cluster (panicle), 6-12 cm long and 1-4 cm wide.

The cluster contain many spikelets, each 4-7 mm long, made up of 4-7 small flowers (florets). The spikelets are green to dark purple in color, often giving the flower heads a showy appearance.

**FRUITS:** Small dry grains enclosed in the spikelets.



© SEAN BLANEY

**Habitat:**

Lake and river shores, open wetlands.

**Interesting point:** Manna Grass seeds can be dried and ground into flour. The name *Glyceria* comes from the Greek word *glyceros* which means "sweet" and refers to the sweet taste of the grain.

**Similar Species:** Canada Manna Grass (*Glyceria canadensis*), Fowl Manna Grass (*Glyceria striata*), Northern Manna Grass (*Glyceria laxa*) and American Manna Grass (*Glyceria grandis*) have loose and spreading flower clusters (panicles). When not in flower, Blunt Manna Grass can be difficult to distinguish from other tall wetland grasses. When in flower, the species is easily distinguished by its dense, stiff and often dark purple flower cluster.



Northern Manna Grass

© SEAN BLANEY

© MEGAN CROWLEY



Flower cluster

© MEGAN CROWLEY



Spikelets



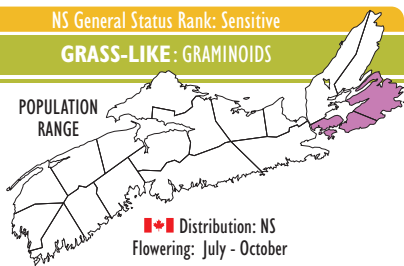
## New Jersey Rush

*Juncus caesariensis*

NS General Status Rank: Sensitive

GRASS-LIKE : GRAMINOIDS

POPULATION  
RANGE



🇨🇦 Distribution: NS  
Flowering: July - October

**STATUS**

Special Concern 🇨🇦

Vulnerable 🇬🇧

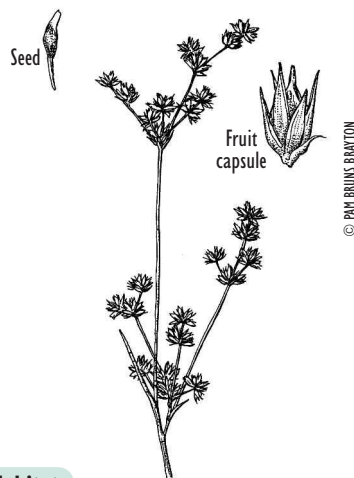
**SIZE:** 40-70 cm tall.

**LEAVES:** Elongated, grass-like, and rough to the touch with noticeable horizontal lines (septa). Lower leaves up to 30 cm long, upper leaves much shorter.

**STEM:** Round and rough to the touch (like fine sandpaper).

**FLOWERS:** A widely spreading and branched cluster (inflorescence) at the top of the stem, containing small, green flowers.

**FRUITS:** Brown capsules that are pointed and 4.5-6 mm long. Seeds have well developed tails (appendages).



© PAH BRUNS BRAYTON



New Jersey Rush with small, green flowers

© KERRY WIXTED



Close-up of fruit capsules

© KERRY WIXTED



Fruit capsules

© KERRY WIXTED

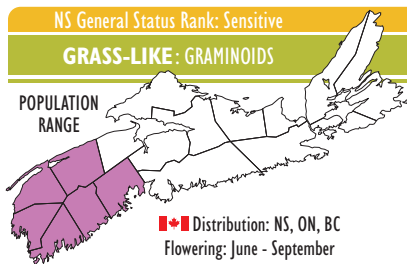
### Habitat:


Wetlands (bogs and fens).

**Interesting point:** Although most ACPF species are found in southwest NS this species is located entirely in Cape Breton. The habitat in NS represents some of the largest remaining and most intact worldwide.

**Similar species:** There are over 25 species of rushes in NS that are often distinguished by differences in the leaves, fruit capsules and seeds. Canada Rush (*J. canadensis*), Narrow Panicle Rush (*J. brevicaudatus*), and Woodland Rush (*J. subcaudatus*, page 76) are similar but have smooth leaves. Jointed Rush (*J. articulatus*) is 20-40 cm tall and has seeds without tails. These species are common throughout NS.



POPULATION  
RANGE

 Distribution: NS, ON, BC  
 Flowering: June - September

**SIZE:** 20-50 cm tall.

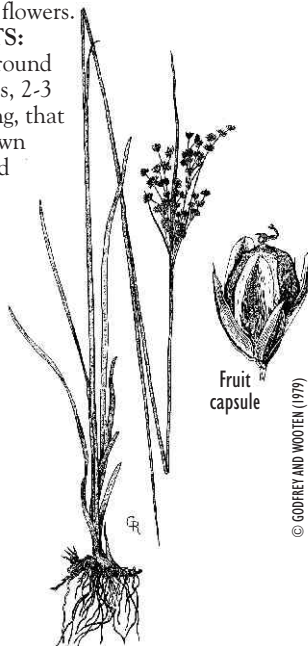
**LEAVES:** Flat and elongated, up to 30 cm long and 1-3 mm wide. There is also a shorter and widely spreading modified leaf (involucral) just below the flowers.

**STEM:** Flattened, erect and slender. Can grow as single isolated stem or in dense, low tufts.

**FLOWERS:** A branched cluster (inflorescence) at the top of the stem, 2-8 cm long and 1-6 cm wide. The cluster contains 5-20 heads, each of them 3-6 mm wide and containing several flowers.

**FRUITS:**

Shiny, round capsules, 2-3 mm long, that are brown with red spots.



Fruit capsule

© GODFREY AND WOOTEN (1979)



© SEAN BLANEY



© LARRY ALLAIN



Flower cluster

© SEAN BLANEY

**Habitat:**

Mainly open disturbed areas such as fields and roadsides, also brook margins and lakeshores.

**Interesting point:** In the 1600's some Rush species were dipped in fat or grease and burned as an inexpensive alternative to candles.

**Similar species:** There are over 25 species of rushes in NS that are often distinguished by differences in the leaves, fruit capsules and seeds. Common species most similar to Grassleaf Rush and found in similar habitats include Canada Rush (*J. canadensis*), Narrow Panicle Rush (*J. brevicaudatus*), Jointed Rush (*J. articulatus*), Tapertip Rush (*J. acuminatus*) and Slender Rush (*J. tenuis*). These species do not have a flattened stem and most (with the exception of Slender Rush) have leaves that are round in cross-section with many horizontal divisions (septa).



Canada Rush

© SEAN BLANEY



ACPF plant survey

© MEGAN CROWLEY



## Bayonet Rush

*Juncus militaris*

NS General Status Rank: Secure

GRASS-LIKE : GRAMINOIDS



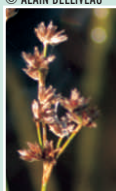
© ALAIN BELLIVEAU

© SEAN BLANEY



Flowers in full bloom

© DAVID MAZEROLLE



Mature fruit capsules



Red base of stem

© MEGAN CROWLEY



Immature fruit capsules

© MEGAN CROWLEY

### Habitat:

In open water along lake edges, typically on peaty, muddy or sandy bottoms.

**Interesting point:** Some species of rushes have been used traditionally to weave baskets.

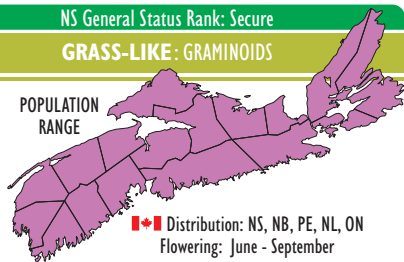
**Similar species:** Canada Rush (*Juncus canadensis*) is shorter (to 1 m), does not typically grow in open water, has fewer flowers overall and does not turn reddish at the base. Twig Rush (*Cladium mariscoides*) is shorter (to 1 m), has a smaller branched cluster of flowers (inflorescence) with fewer flower heads and does not have a tall erect leaf that greatly surpasses the flowers.



Twig Rush

© SEAN BLANEY

POPULATION RANGE



🇨🇦 Distribution: NS, NB, PE, NL, ON  
Flowering: June - September

**SIZE:** Up to 150 cm tall.

**LEAVES:** Typically one stiffly erect hollow cylindrical leaf, 50-70 cm long that attaches near the middle of the stem and appears like a continuation of the stem. It is often much taller than the top of the flowers and there are many noticeable partitions (septa) along its length. Plants also produce clumps of underwater leaves which are long and hair-like.

**STEM:** Round, erect, and 30-120 cm tall. Stem bases often turn reddish later in the season.

### FLOWERS:

Highly branched cluster of flowers (inflorescence) 1-7 cm long, with 50 or more flower heads that each contain several small flowers.

**FRUITS:** Capsules that are typically 2 to 3 mm long and contain a large number of small seeds.

**NOTES:** This plant grows from underwater roots that run along the surface of the substrate (rhizomes). It often grows in large patches.



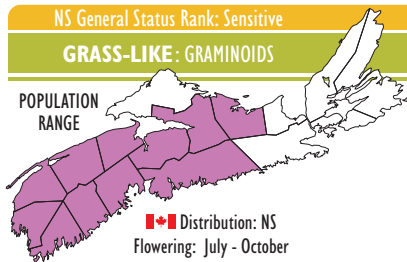
© FASSETT



Growing in the water along the shore

© ALAIN BELLIVEAU



POPULATION  
RANGE

Flowering: July - October

**SIZE:** 30-80 cm tall.

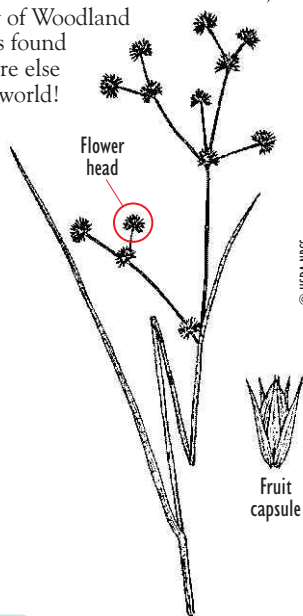
**LEAVES:** Cylindrical (round in cross-section), smooth, 1 mm wide, and with many horizontal divisions (septa).

**STEM:** Erect, round and slender.

**FLOWERS:** An open, widely spreading branched cluster (inflorescence) at the top of the stem, with nearly horizontal lower branches. The cluster can contain few or many heads, with each head made up of 5-20 small flowers.

**FRUITS:** Oval-shaped capsules, 3-3.6 mm long, containing seeds that are 1 mm long with short tails on each end (about 1/3 the length of the seed).

**NOTES:** Endemic to Nova Scotia, this variety of Woodland Rush is found nowhere else in the world!

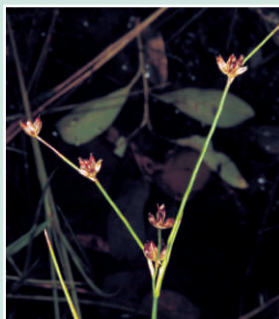


© USDA NIKS

Fruit capsule



© MARTIN THOMAS



Flower cluster

© MARTIN THOMAS



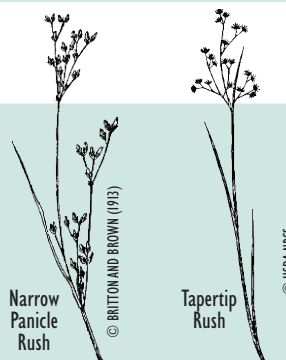
© MARTIN THOMAS

**Habitat:**

Wet boggy woods, spruce swamps, lakeshores and streamside wetlands.

**Interesting point:** In Japan the leaves of rushes are used to weave tatami mats, a traditional form of Japanese flooring.

**Similar species:** There are over 25 species of rushes in NS that are often distinguished by differences in the leaves, fruit capsules and seeds. Canada Rush (*J. canadensis*) has larger seeds (1.3-1.8 mm long) with tails at least 2/3 the length of the seed. Narrow Panicle Rush (*J. brevicaudatus*) has a narrower flower cluster with 2-7 heads on upward pointing branches. Jointed Rush (*J. articulatus*) is generally shorter (20-40 cm tall) and has tailless seeds. Tapertip Rush (*J. acuminatus*) has tailless seeds and flower cluster branches that usually point upwards. These species all have round leaves like Woodland Rush.

Narrow  
Panicle  
Rush

© BRITTON AND BROWN (1913)

Tapertip  
Rush

© USDA NIKS

## Spreading Panic Grass

*Panicum dichotomiflorum* var. *puritanorum*

NS General Status Rank: At Risk

GRASS-LIKE : GRAMINOIDS



*Panicum dichotomiflorum* © JOHN HILTY

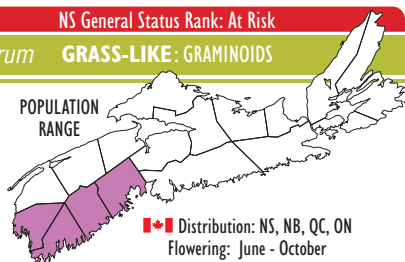


Leaf and stem © JOHN HILTY



Flowering spikelets

© JOHN HILTY



**SIZE:** Up to 1 m tall.

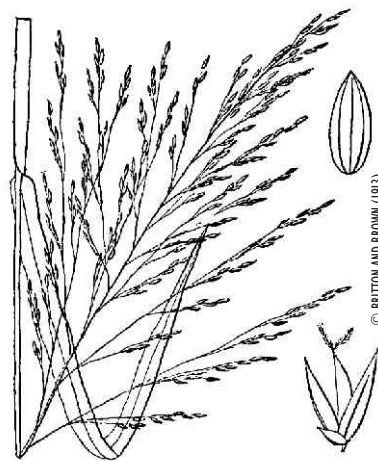
**LEAVES:** Long, narrow, smooth, often drooping, 10-50 cm long and 0.5-2 cm wide.

**STEM:** Smooth, round, erect or often reclining or lying on the ground.

**FLOWERS:** Pyramid-shaped cluster of flowers (panicle) that is widely branched, feathery in appearance, up to 40 cm long, and composed of many small spikelets. The spikelets are narrow, 2 mm long and green or purplish.

**FRUITS:** Small dry grains enclosed in the spikelets.

**NOTES:** Also known as Fall Panic Grass.



© BRITTON AND BROWN (1913)

### Habitat:

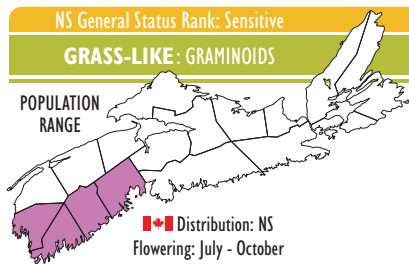
Sandy or gravelly lakeshores.

**Similar species:** *Panicum dichotomiflorum* var. *dichotomiflorum* tends to be slightly larger, is most often erect, has slightly longer spikelets (2.5-3 mm) and is most often found in disturbed habitats.

Old Switch Panic Grass (*Panicum virgatum* var. *spissum*, page 79) has oval spikelets and is usually erect. Redtop Panic Grass (*Panicum rigidulum* var. *pubescens*, page 78) and Eaton's Panic Grass (*Dichanthelium spretum*, page 67) both have much shorter and narrower panicles.

**Interesting point:** There are 14 species of panic grasses in Nova Scotia (not including varieties or subspecies) and 475 globally!



POPULATION  
RANGE

🇨🇦 Distribution: NS  
Flowering: July - October

**SIZE:** 30-50 cm tall.

**LEAVES:** Long and slender, 2-4 mm wide (same width as leaf sheath) and up to 30 cm long. The leaf sheath (base of leaf that wraps around stem) is smooth and flattened at the bottom.

**STEM:** Erect and flattened at base.

**FLOWERS:** Straight pyramid-shaped branched cluster of flowers (panicle), 10-20 cm long, and composed of many small spikelets. The spikelets are 2-3.5 mm long and green or purplish.

**FRUITS:** Small dry grains enclosed in the spikelets.

**NOTES:**

Formerly known as *Panicum longifolium*.



© CHADDE (2011)

Spikelet

Leaf sheath

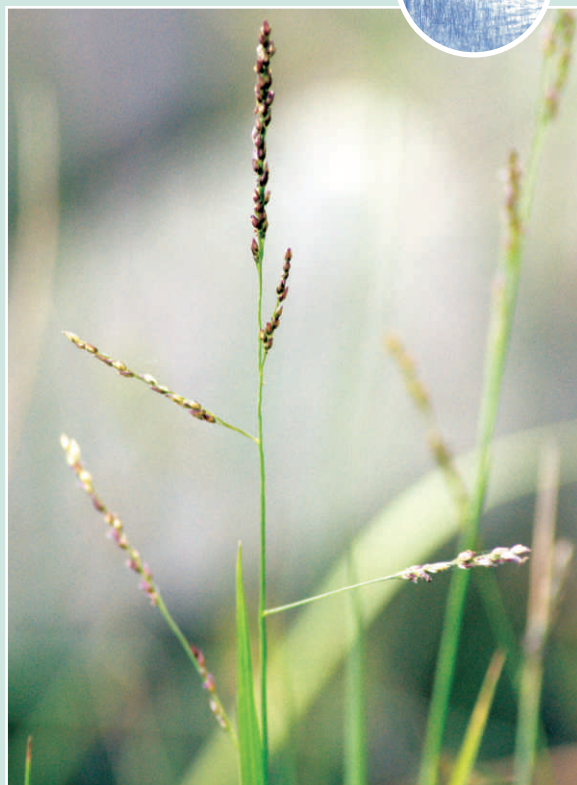
**Habitat:**

Sand, peat, rock and gravel lakeshores.

**Similar species:** Eaton's Panic Grass

(*Dichanthelium spretum*, page 67), Old Switch Panic Grass (*Panicum virgatum* var. *spissum*, page 79) and Spreading Panic Grass (*Panicum dichotomiflorum* var. *puritanorum*, page 77) all have a round stem at the base of the plant.

**Interesting point:** The name *rigidulum* refers to this species' straight and rigid flower panicle.



© MEGAN CROWLEY

© ALAIN BELLIVEAU



In front of a clipboard for contrast



Flat stem at base

© MEGAN CROWLEY



Spikelets

© MEGAN CROWLEY



## Old Switch Panic Grass

*Panicum virgatum* var. *spissum*

NS General Status Rank: Secure

GRASS-LIKE : GRAMINOIDS



© SEAN BLANEY



© ALAIN BELLIVEAU



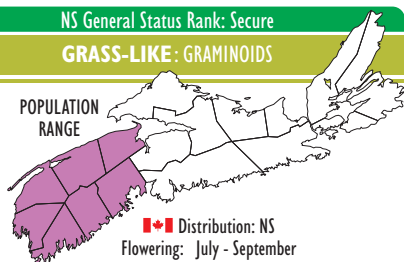
Flowering spikelets

© MEGAN CROWLEY



Spikelets

© ALAIN BELLIVEAU



**SIZE:** 60 cm to over 1 m tall.

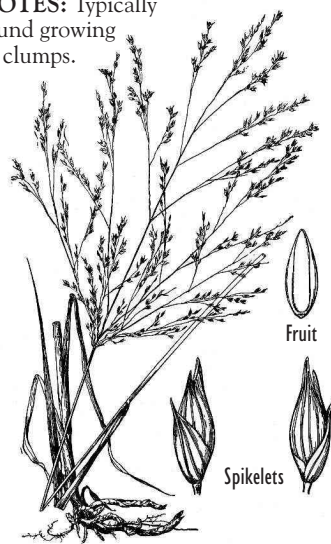
**LEAVES:** Long and narrow, 20-50 cm long and up to 1.5 cm wide. Dense silky hairs are present at the base of the leaf where it touches the stem.

**STEM:** Straight, green, and smooth.

**FLOWERS:** Pyramid-shaped branched cluster of flowers (panicle) that is two to three times as long as wide, 20-50 cm long, and composed of many small spikelets. The spikelets are oval and 2.2-5.5 mm long.

**FRUITS:** Small dry grains enclosed in the spikelets

**NOTES:** Typically found growing in clumps.



© HITCHCOCK AND CHASE

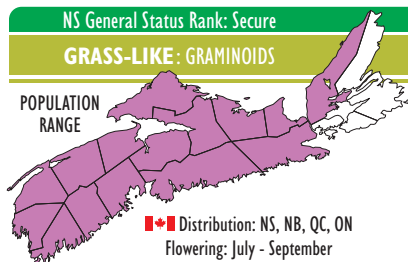
### Habitat:

Sand or gravel lakeshores, wetlands (bogs) and the upper edges of salt marshes.

**Similar Species:** Redtop Panic Grass (*Panicum rigidulum* var. *pubescens*, page 78), Eaton's Panic Grass (*Dichanthelium spretum*, page 67) are both smaller and have shorter and much narrower panicles. Redtop Panic Grass also has a flattened stem at the base. Spreading Panic Grass (*Panicum dichotomiflorum* var. *puritanorum*, page 77) has narrower spikelets with stems that are most often reclining. *Panicum virgatum* var. *spissum* is the only confirmed variety in NS.

**Interesting Point:** The seeds (grains) from panic grasses are often an important food source for birds such as sparrows and blackbirds.





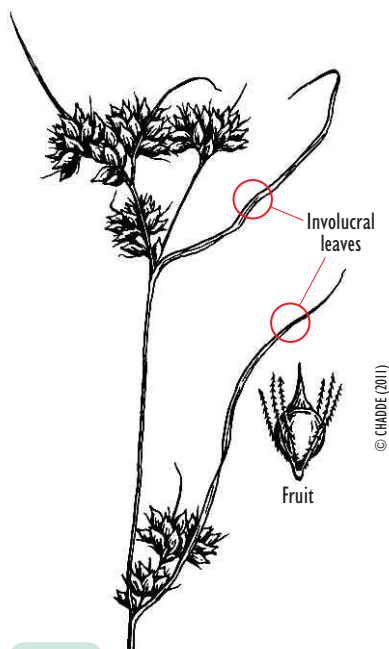
**SIZE:** 30-50 cm tall.

**LEAVES:** Short, flat, 2-4 mm wide, shorter than the stem, and with rough edges. Near the top of the plant there are specialized narrow, green leaves (involucral) that typically grow from the point where the flowers arise.

**STEM:** Green, 3-sided, slender, erect, and with little branching overall.

**FLOWERS:** Dark brown spikelets, 3-5 mm long. They are grouped into clusters, 1-1.5 cm wide, near the top of the plant.

**FRUITS:** Small, dry, and oval shaped with a small beak on the end. Each has 6 bristles surrounding it which are about 2-3 mm long and don't extend past the end of the beak.



**Habitat:**

Wet, mucky, or sandy lakeshores, cracks in shoreline rock outcrops, and rivershore seeps.

**Interesting point:** Beakrushes are a type of sedge and there are over 250 species in the *Rhynchospora* genus worldwide. Their name comes from the beak-like protrusion at the tip of the fruit.

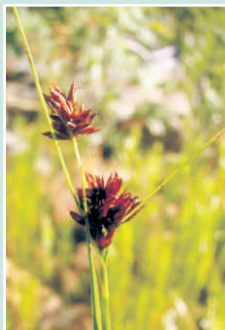
**Similar species:** Brownish Beakrush (*Rhynchospora fusca*) has larger spikelets which are fewer in number and a lighter brown.

## Blackish Beakrush

*Rhynchospora capitellata*



© SEAN BLANEY



© MEGAN CROWLEY



Spikelets

© SEAN BLANEY



Brownish Beakrush spikelets

© SEAN BLANEY

## Tall Beakrush

*Rhynchospora macrostachya*

NS General Status Rank: At Risk

GRASS-LIKE : GRAMINOIDS



© DAVID MAZEROLLE

© SEAN BLANEY



Spikelets

© DAVID MAZEROLLE



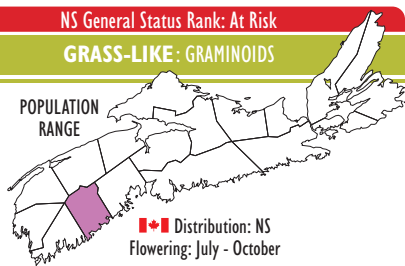
Growing along the lakeshore



David by Tall Beakrush

© SEAN BLANEY

POPULATION  
RANGE



🇨🇦 Distribution: NS  
Flowering: July - October

**SIZE:** 0.5-2 m tall.

**LEAVES:** Flat and 1 cm wide.

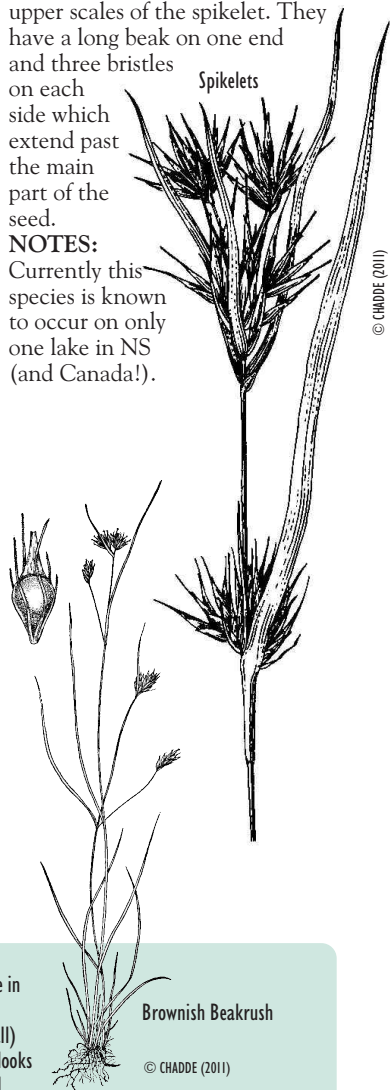
**STEM:** Green, three-sided, slender and erect, with one or a few per plant.

**FLOWERS:** 15-20 mm long spikelets which grow in a cluster at the tip of the stem. The scales on the spikelet are light brown and lance-shaped.

**FRUITS:** Dry, flat, oval and within the upper scales of the spikelet. They have a long beak on one end and three bristles on each side which extend past the main part of the seed.

### NOTES:

Currently this species is known to occur on only one lake in NS (and Canada!).



Brownish Beakrush

© CHADDE (2011)

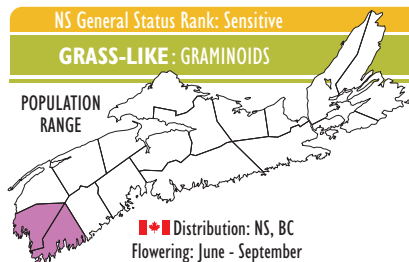
### Habitat:

Wet and exposed sandy or mucky lakeshores.

**Interesting point:** This species was discovered in NS (and Canada) for the first time in 2009 by botanists David Mazerolle and Sean Basquill, and identified by Sean Blaney.

**Similar species:** Brownish Beakrush (*Rhynchospora fusca*) is shorter (15-40 cm tall) and has smaller spikelets (4-6 mm long). Tall Beakrush is a very distinctive species that looks like a gigantic Brownish Beakrush plant. Since it is much larger it can be easily identified.





**SIZE:** 0.3-2.5 m tall.

**LEAVES:** Few (1-3), stiffly erect and restricted to the base and the lower portion of the stem. They are 3 to 15 cm long, less than 1 cm wide and are deeply channelled or v-shaped (particularly near the base).

**STEM:** Straight, sharply triangular stem (culm), 3-10 mm wide, often with deeply concave sides which give the stem three pronounced ridges.

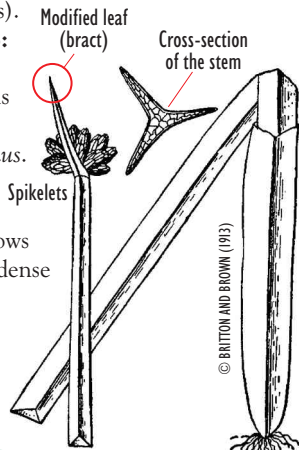
**FLOWERS:** 2-20 spikelets in a compact cluster, each 6-15 mm long. The spikelets are surpassed by a modified leaf (bract), 1-5.5 cm long, which is stiffly erect and looks like a continuation of the stem.

**FRUITS:** Dry, one-seeded fruits (achenes).

**NOTES:**

Also known as *Scirpus americanus*.

This species often grows in large dense stands.



**Habitat:**

Salt marshes, typically in wet brackish soils at the edge of the marshes.

**Interesting point:** This species was traditionally used to make woven baskets, bags, and hats. Its seeds are high in protein and can be ground and mixed with flour for baking.

**Similar species:** Three-square Bulrush (*Schoenoplectus pungens*) has a triangular stem that is not concave and does not have pronounced ridges. Hard-stemmed Bulrush (*Schoenoplectus acutus*) and Soft-stemmed Bulrush (*Schoenoplectus tabernaemontani*) can occur in brackish wetlands but are taller with round stems. Other similar bulrushes do not occur in salty or brackish habitats.

## Olney's Bulrush

*Schoenoplectus americanus*

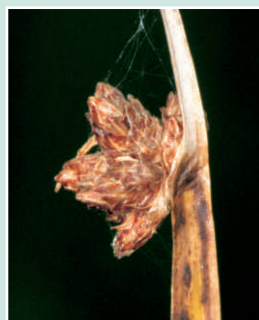


©MARTIN THOMAS



Flowering spikelets

©MARTIN THOMAS



Spikelets

©ALAIN BELLIVEAU



Dense stand of Olney's Bulrush

©SEAN BLANEY



## Long's Bulrush *Scirpus longii*

NS General Status Rank: Sensitive

GRASS-LIKE : GRAMINOIDS



Circular colony

© JENNIFER MCKINNON



Base of plant

© MEGAN CROWLEY



V-shaped leaves

© MEGAN CROWLEY



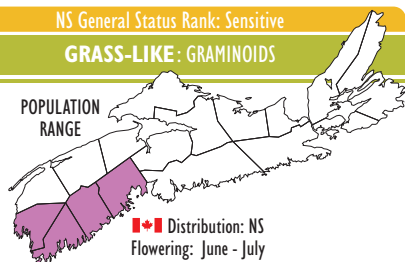
Long's Bulrush along lakeshore

© MEGAN CROWLEY



Flower cluster

© MEGAN CROWLEY



### STATUS

Special Concern 🇨🇦

Vulnerable 🇨🇦

**SIZE:** Up to 80 cm tall leaves.

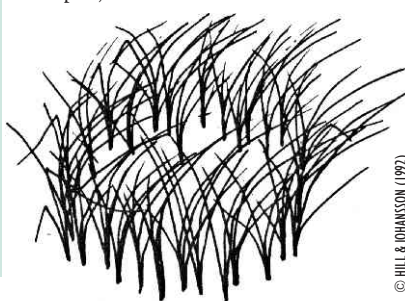
**LEAVES:** The leaves are tough, narrow, elongate, 40-80 cm long and 5-9 mm wide. They have rough margins and are keeled or v-shaped. The top of the leaves usually arch backwards towards the ground. They can form large circular (or half circular) colonies.

**STEM:** The leaves emerge from a thick, long, horizontal, underground stem (rhizome).

**FLOWERS:** An open branched cluster of flowers (inflorescence) at the top of a tall, erect stem (up to 2 m tall) with 4-7 leaves. The cluster is composed of long and often drooping branches with oval, blackish spikelets (3-10 mm long) at their tips. The base of the specialized leaves just below the flower cluster (involucral bracts) is black and sticky. Flowering is very uncommon.

**FRUITS:** Dry, one-seeded fruits (achenes), 1 mm long, that are reddish-brown when mature and have 5 bristles emerging from the base.

**NOTES:** This species spreads almost exclusively by its long and stout horizontal stems (rhizomes) and typically forms circular or semicircular colonies which can be hollow (donut-shaped) or filled-in.



© HILL &amp; JOHANSSON (1992)

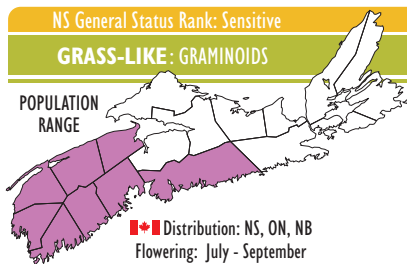
### Habitat:

Wet, peaty, open bogs or fens, peaty lakeshores and shoreline wetlands.

**Interesting point:** This globally rare species is found from New Jersey to NS and is imperilled everywhere it occurs. Its circular colonies can be 5-10 m wide and 150-400 years old!

**Similar species:** A total of 5 other bulrush species in the genus *Scirpus* occur in NS. Though they can be quite similar in appearance, no other grows in circular colonies. Northwest Territory Sedge (*Carex utriculata*) has similar looking keeled leaves and grows in similar habitats, but has very different flowers (2-10 cm long spikes) and does not form circular colonies.



POPULATION  
RANGE

Distribution: NS, ON, NB  
Flowering: July - September

**SIZE:** 10-50 cm tall.

**LEAVES:** Stiff, erect, flat, 10-25 cm long, 2-15 mm wide, and with a smooth surface. They grow in a fan-like cluster (rosette) at the base of the plant and are usually at least half the height of the plant.

**STEM:** The flower stalk (scape) is straight, round at the bottom, and flattened near the top with two prominent ridges. It grows directly from the ground and bears no leaves.

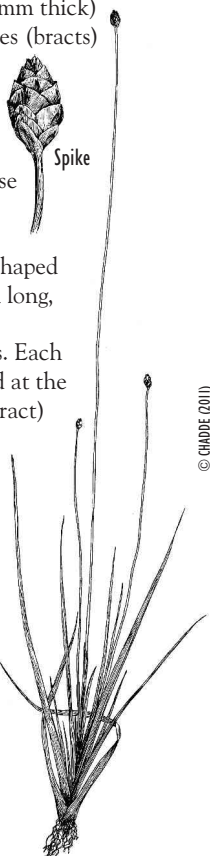
**FLOWERS:** Small, yellow and found at the top of the flower stalk (scape). They are three parted, with 3 showy wedge-shaped petals (4 mm long) and 3 finely frayed stamens. The flowers emerge one (or few) at a time from an oval spike (8-10 mm thick) composed of scales (bracts) that are light brown with greenish centers.

Each flower is located at the base of a scale (bract) in the spike.

**FRUITS:** Oval shaped capsules, 0.5 mm long, containing small translucent seeds. Each capsule is located at the base of a scale (bract) in the spike.

**NOTES:**

The base may be slightly reddish or purple. It can often be found growing with the very similar Northern Yellow-eyed Grass (*Xyris montana*).



© ALAIN BELLIVEAU

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Flower emerging from the spike



Yellow flower

© ALAIN BELLIVEAU



Brown scales with greenish centers

**Habitat:**

Sand, peat or gravel lakeshores, floating bog mats, peaty wetlands and barrens.

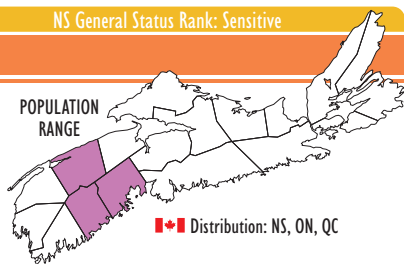
**Interesting point:** The genus *Xyris* contains about 250 species, but only 21 occur in North America and only 2 are found in Canada. The plant is highly variable in leaf size and flower shape and is even referred to by another common name: Variable Yellow-eyed Grass!

**Similar species:** The very similar Northern Yellow-eyed Grass (*Xyris montana*) is usually less than 25 cm tall and has shorter, narrower leaves (5-15 cm long and 1-2 mm wide). The flowering spikes are smaller (3-6 mm thick) and have scales (bracts) that are uniformly brown lacking a central greenish stripe.



## Eastern Ribbonsnake *Thamnophis sauritus*

NS General Status Rank: Sensitive



### STATUS

Threatened 🇨🇦

Threatened 🇳🇸

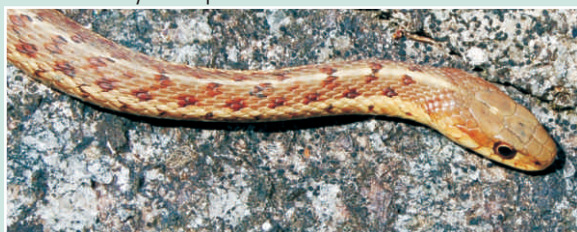


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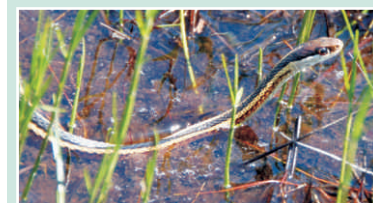
© JEFFIE MCNEIL

Slender with three yellow stripes



© JEFFIE MCNEIL

Garter snake



© JEFFIE MCNEIL



© JEFFIE MCNEIL

Eastern Ribbonsnake survey

### Habitat:

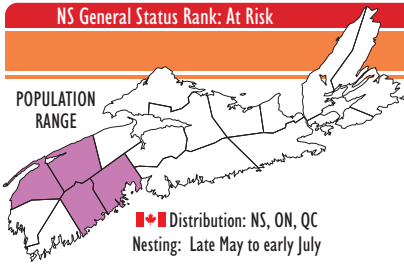
Vegetated freshwater wetlands, lake shorelines and shallow coves; may overwinter in adjacent terrestrial habitats.

**Similar Species:** There are five species of snakes in Nova Scotia. Only the Garter snake (*Thamnophis sirtalis*) is similar to the ribbonsnake. The Garter snake is usually larger and thicker bodied. Garter snakes have many different colorations but are most often lighter with a more checkered pattern. Garter snakes lack the white line in front of the eye. Ribbonsnakes are typically darker and more vividly striped.

**Interesting Point:** Ribbonsnakes are ovoviparous, meaning they give birth to live young.

There are over 40 species at risk in Nova Scotia. Some share habitats with ACPF and face many of the same threats including habitat loss and fragmentation. The ACPF Recovery Team works closely with recovery teams for other species to help coordinate efforts where species distributions overlap. For information on other species at risk in Nova Scotia and how you can help, check out the Species at Risk field guide (page 90). Two species at risk, Blanding's turtle and Eastern Ribbonsnake, are included in this guide because they occur in similar wetland and lakeshore habitats as ACPF and have limited ranges in southwest NS. Please report any sightings to 1-866-727-3447; you may help to identify a new population of these species.





<b>STATUS</b>	Endangered 🇨🇦
	Endangered 🇺🇸

**ADULT SHELL:** 18-25 cm long.  
**DESCRIPTION:** Long neck with bright yellow throat and high-domed top shell (carapace) that is grey to black with yellow flecks. The flecks are typically brighter in younger turtles and most visible when the shell is wet. The lower shell (plastron) is orange-yellow with irregular black patches.

**HATCHLINGS:** Toonie-sized with pale yellow throats, long thin tails and a solid grey upper shell. Their lower shell is yellow with a central black blotch.

**NOTES:** There are likely no more than 350 adults in NS. Only 3 sizable populations are known in the province.



Blanding's turtle

© COLIN GRAY

#### Habitat:

Vegetated freshwater wetlands, lake shorelines and shallow coves. They may nest considerable distances from water.

**Similar Species:** There are three other species of freshwater turtles in NS. Painted turtles (*Chrysemys picta*) are smaller with flatter shells, red markings on shell and limbs and yellow stripes on neck. Wood turtles (*Glyptemys insculpta*) are a similar size and have a rough grey-brown shell and red-orange armpits and throats. Snapping turtles (*Chelydra serpentina*) are larger (up to 60 cm shell length) with a grey-brown shell that is jagged at the back, large head, and spiked tail.

**Interesting point:** Blanding's turtles don't mature until they are approximately 20 years old and they can live for over 70 years!



© JEFFIE MCNEIL



Hatchling

© MEGAN CROWLEY



Painted turtle

© JEFFIE MCNEIL



Radio tracking Blanding's turtles

© BRENNAN CAVERHILL



Wood turtle

© WENDY HOLMAN



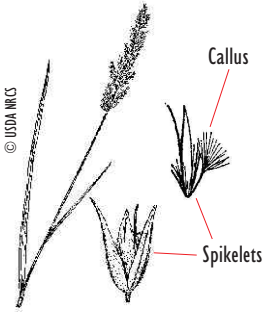
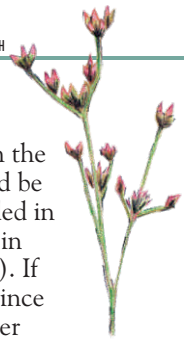
Snapping turtle

© MEGAN CROWLEY

<b>STATUS</b>	Threatened 🇨🇦
	Vulnerable 🇺🇸

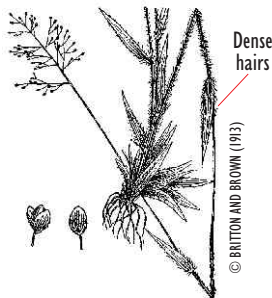
<b>STATUS</b>	Special Concern 🇨🇦
	Not Listed 🇺🇸

The following species have been assessed by the NS General Status Assessment Process and given an 'extirpated/extinct' status (blue-ranked) meaning they once occurred here but are no longer thought to be present in the province (extirpated). Since these species are not easily identified and could be overlooked, it is possible that they are still present but have not been recorded in many years. It would be a valuable contribution to rediscover these species in NS (records can be submitted to MTRI or AC CDC with supporting details). If these species are truly gone it would be a loss to the biodiversity of this province and highlights why it is so important to work together to ensure that no other ACPF species in this guide become added to this list.



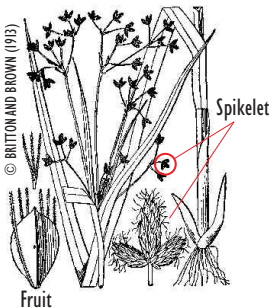
**Nuttall's Reed Grass** (*Calamagrostis cinnoides*)

is a tall grass (60-180 cm in height) with rough leaves. It has a branched flower cluster (panicle) composed of many spikelets (each composed of a single floret). There are long hair-like structures (callus) under the flowers, making them appear hairy. It grows in damp, sandy, or peaty soils. It was last reported in Halifax in 1912 and this is the only record for this species in Canada. It is still present in the more southern portion of its range but is considered rare and been extirpated in some locations in the northern parts of its range.



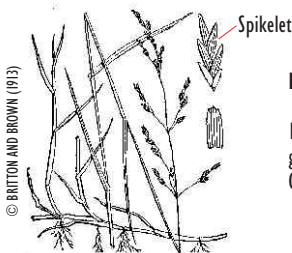
**Matting Panic Grass** (*Dichanthelium meridionale*)

is 5-45 cm tall with dense hairs covering its lower leaves. It has a branched cluster of flowers (panicle) composed of many small spikelets (1.3-1.6 mm long). Since 2003, Flora of North America no longer recognizes this plant as a separate species but has grouped it with the abundant Western Panic Grass (*Dichanthelium acuminatum* var. *implicatum*) which occurs throughout NS and with which it may hybridize. Matting Panic Grass was last reported at Gavelton Lake (Butler's Lake) in Yarmouth County in 1922. It is still present in the eastern USA; the northern part of its range.



**Woodland Bulrush** (*Scirpus expansus*)

is up to 2 m tall and has leaves 1-2 cm wide. It has a large, bushy, branched cluster of flowers (inflorescence) composed of many spikelets (present in August to early September). Its dry, one-seeded fruits (achenes) are three-angled. It is typically found in swamps and river shores and potentially could be overlooked and misidentified as Red-sheathed Bulrush (*Scirpus microcarpus*) which is very common. The species was last reported in NS at Sandy Cove and Lily Lake on Digby Neck around 1950. It is still present in Ontario and in the southern part of its range; the eastern USA.

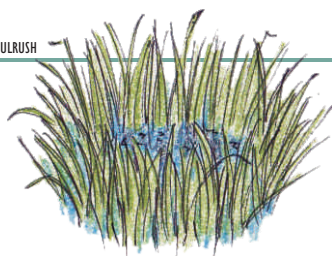


**Pale Manna Grass** (*Torreyochloa pallida* var. *pallida*)

is 50-110 cm tall. It has broad leaves (2-4 mm wide) and a branched flower cluster (panicle), less than 10 cm long, which contains spikelets composed of 4-7 florets. It can be found in shallow water, open-grassy areas with scattered trees as well as boggy areas. Within Canada, it is still present in Manitoba, Ontario, and Quebec, as well as in the southern part of its range in the USA.



The information in this guide was obtained from the following sources:



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Barkworth, M.E. 2007. *Elymus* In: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 12+ vols. New York and Oxford. Vol. 24.

Chadde, S.W. 1998. A Great Lakes Wetland Flora: A complete, illustrated guide to the aquatic and wetland plants of the Upper Midwest. Pocketflora Press, Michigan.

Crow, G.E. and C.B. Hellquist. 2000. Aquatic and Wetland plants of Northeastern North America. Volume 1. Pteridophytes, Gymnosperms, and Angiosperms: Dicotyledons. The University of Wisconsin Press, Madison.

Crow, G.E. and C.B. Hellquist. 2000. Aquatic and Wetland plants of Northeastern North America. Volume 2. Angiosperms: Monocotyledons. The University of Wisconsin Press, Madison.

Environment Canada and Parks Canada Agency. 2010. Recovery Strategy and Management Plan for Multiple Species of Atlantic Coastal Plain Flora in Canada. Species at Risk Act Recovery Strategy Series. 107 pp. Environment Canada and Parks Canada Agency, Ottawa.

Gleason, H.A. and A. R. Cronquist. 1991. Manual of Vascular Plants of Northeastern United States and Adjacent Canada. Second Edition. The New York Botanical Garden, New York.

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Godfrey, R.K. and J. W. Wooten. 1981. Aquatic and Wetland Plants of Southeastern United States: Dicotyledons. The University of Georgia Press, Athens.

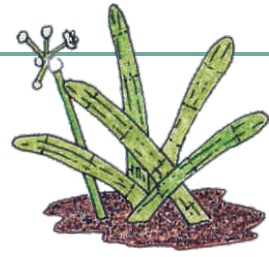
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Roland, A.E. and M. Zinck. 1998. Roland's Flora of Nova Scotia. Nimbus Publishing and Nova Scotia Museum, Halifax.

Tiner, R.W. 2009. Field Guide to Tidal Wetland Plants of the Northeastern United States and Neighbouring Canada: Vegetation of Beaches, Tidal Flats, Rocky Shores, Marshes, Swamps and Coastal Ponds. University of Massachusetts Press, Amherst.

Many individuals, landowners and community members, have been involved in activities related to the conservation of these species and their habitats, including stewardship, monitoring and education. The following organizations, along with these individuals, form a strong group that is involved in ACPF work in NS.



The Atlantic Coastal Plain Flora Recovery Team, established in 1995, is a group of individuals that provides advice and guidance on all aspects of the conservation and recovery of the ACPF species at risk. Team membership consists of representatives from provincial and federal government departments, several different non-government organizations, industry, and academics. This group of dedicated individuals has assisted in the development of a multiple species recovery strategy and action plan that identifies everything that we need to do to ensure that these unique plant species do not go extinct and that other ACPF do not get added to the list of species at risk.



The Mersey Tobeatic Research Institute (MTRI) is a non-profit research co-operative based in Kempt, Nova Scotia whose mission is to promote collaborative research, monitoring and management of natural resources in the Southwest Nova Biosphere Reserve through research and education. MTRI researchers and volunteers are undertaking a project to better understand ACPF populations and their habitats. For more information or to learn how to get involved visit our website: [www.merseytobeatic.ca](http://www.merseytobeatic.ca), email: [info@merseytobeatic.ca](mailto:info@merseytobeatic.ca) or call 902.682.2371.



Parks Canada, particularly Kejimikujik National Park and National Historic Site, supports recovery and conservation actions for ACPF throughout the Southwest Nova Biosphere Reserve. Kejimikujik Lake is home to one of only two lakes in all of Canada with Water-pennywort, and staff and volunteers monitor this population annually. Kejimikujik works collaboratively with MTRI and other partners to increase the stewardship, science and education efforts for these rare and special plants. To learn more about stewardship opportunities and to get involved and leave your mark on conservation, visit the Kejimikujik Southwest Nova Volunteer Programs Facebook page, [www.speciesatrisk.ca](http://www.speciesatrisk.ca), or email [leave.yourmark@pc.gc.ca](mailto:leave.yourmark@pc.gc.ca).



The Atlantic Canada Conservation Data Centre (AC CDC), based in Sackville, NB, is a non-profit organization founded by federal, provincial and non-governmental partners to provide data and expertise about species and ecological communities of conservation concern in support of decision-making, research, and education in Atlantic Canada. AC CDC follows methods used by similar organizations (which are generally within provincial or state governments) across North America and southward. AC CDC conducts an extensive program of biological inventories to further the understanding of species and plant community distribution and status and has worked for over 10 years documenting Nova Scotia's ACPF.



Nova Scotia Department of Natural Resources co-chairs the Atlantic Coastal Plain Flora Recovery Team, convened the first meeting in 1995, developed the multispecies recovery planning framework, actions and drafts of the recovery strategy, that were later used by Environment Canada and Parks Canada Agency under SARA. NS DNR oversees the listing process for species under the *Nova Scotia Endangered Species Act* and has produced posters, brochures and a website about ACPF. To learn more about ACPF visit [www.speciesatrisk.ca](http://www.speciesatrisk.ca).



Environment Canada — Canadian Wildlife Service is responsible for the delivery of the *Species at Risk Act (SARA)* as it related to ACPF (Parks Canada is responsible for Water-pennywort). The Canadian Wildlife Service worked with the NS Government, Parks Canada, and other partners in the development of the recovery strategy and action plan. Current co-chair of the ACPF Recovery Team, Samara Eaton, is a species at risk biologist with the Canadian Wildlife Service. Environment Canada provides support for recovery implementation for ACPF species at risk.



Nova Scotia Department of Environment (NSE) manages several nature reserves and wilderness areas with important ACPF habitats in southwest NS, and is working to ensure that 12% of NS is legally protected by 2015. NSE provides scientific support to the Nova Scotia Crown Share Land Legacy Trust which was set up by the province to help land trusts secure high-priority conservation lands. NSCSLLT has supported acquisitions by NCC and NSNT of several key ACPF properties in Southwest NS. NSE also purchases land for protection, and has been a long-serving partner of the ACPF Recovery Team.





The Tuskent River Environmental Protection Agency (TREPA) was formed in 1986 and is involved in environmental protection in southwest NS, particularly Yarmouth County and the Tuskent River catchment area. Part of their work includes the protection of ACPF, with an emphasis on species at risk. They work with local landowners and own and operate the CRK Allen Nature Reserve on Gillfillan Lake, which was established to protect rare ACPF species. For more information visit [www.trepa.com](http://www.trepa.com) or contact John Sollows at [nhungjohn@eastlink.ca](mailto:nhungjohn@eastlink.ca) or 902.742.2802.



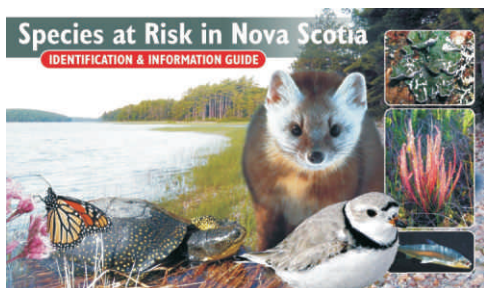
The Nova Scotia Nature Trust (NSNT) is a non-government, charitable organization dedicated to protecting ecologically significant private land. Since 1994, the NSNT has worked with landowners to protect over 5500 acres of conservation lands in NS, including unspoiled lakeshores, old-growth forests, pristine coastal islands, and important wildlife habitat for ACPF and other species at risk. NSNT staff and volunteers monitor rare plants and their habitats in southwest NS to maintain the health of the species and habitats on these properties. For more information, or to join the NSNT volunteer team, visit [www.nsnt.ca](http://www.nsnt.ca) or contact [nature@nsnt.ca](mailto:nature@nsnt.ca) or (902) 425-5263.



The Nature Conservancy of Canada (NCC) is a not-for-profit, private land conservation organization, working to protect our most important natural areas and the species they sustain. Since 1962 NCC and its partners have helped to protect more than 2 million acres (800,000 hectares), coast to coast. NCC currently stewards over 4,000 acres of important ACPF habitat in southwest Nova Scotia. To learn more visit: [www.natureconservancy.ca](http://www.natureconservancy.ca)

Universities have played an important role of researching ACPF to learn about distribution, genetics, and reproduction. Researchers such as Paul Keddy (University of Guelph) and Irene Wisheu (McGill University) published many scientific papers on ACPF in the 1980s and early 1990s. Professors and honours and masters students at universities in NS have studied many aspects of these species including the impact of dams (Nick Hill-Mount St. Vincent and Ed Reekie- Acadia), population genetics (Sara Goodavila - Acadia, Liette Vasseur - St. Mary's, Ron MacKay- Mount St. Vincent) and well as New Jersey Rush research at Cape Breton University.

## Companion Resources



### Species at Risk in Nova Scotia: Identification and Information Guide

Learn about (including how to help) the 40+ species at risk that share our province with us and the 15+ marine species at risk that are found in our coastal and offshore waters.

### Healthy Lakes and Wetlands for Tomorrow: A Landowner Stewardship Guide for Species at Risk in Nova Scotia

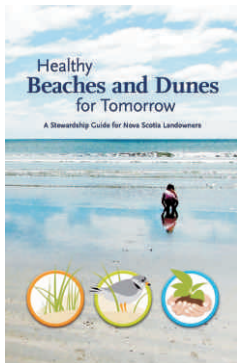
This guide provides ways to protect and preserve our wetlands and water resources and suggests actions that people can take to help species at risk and the habitats they depend on.

To request a copy of the Species at Risk or Healthy Lakes and Wetlands guides contact Parks Canada (Kejimikujik, 902-682-4006) or MTRI (902-682-2371) or view and download an electronic version online at [www.speciesatrisk.ca](http://www.speciesatrisk.ca).

### Healthy Beaches and Dunes for Tomorrow: A Stewardship Guide for Landowners

This guide is part of a series of stewardship guides for Nova Scotians and is a resource for anyone who owns, cares for, and cares about beach and dune property.

View a copy of this guide online at the Bird Studies Canada website: <http://www.birdscanada.org/volunteer/nslover/NSHealthyBeaches.pdf>





This guide is full of hundreds of beautiful photos, many of which were specifically taken for this guide. Many thanks to the following who donated their photos and/or time:

Martin Thomas, Alain Belliveau, Sean Blaney, David Mazerolle, Brad Toms, Bruce MacInnis, Jerome D'Eon, Pat Hudson, John Hilty, Kelly Omand, Danielle O'Dell, Sherman Boates, Mark Elderkin, Jennifer McKinnon, Will Cook, Christopher Campbell, Kerry Wixted, Anne Mills, David Patriquin, Charles Cron, Alison Dibble, Bernard Forsythe, Jeffie McNeil, Steve Chadde, Garrett Crow, Samara Eaton, Ed Reekie, Nick Hill, Mil Nickerson, Randy Cleveland, Andrew Trant, Charlie Peek

**This guide was completed with the assistance, advice and edits from the following botanists:**



Sean Blaney is Senior Botanist and Assistant Director of the Atlantic Canada Conservation Data Centre in Sackville, NB, where he oversees status ranking and tracking locations of rare species in the three Maritime provinces, as well as an extensive program of field inventories to further the understanding of the distribution and conservation status of the region's flora. Southern Nova Scotia's Atlantic Coastal Plain Flora has been one of his main areas of focus over the past 11 years. He is a member of the COSEWIC Vascular Plant Species Specialist Committee and the Atlantic Coastal Plain Flora Recovery Team.



David Mazerolle has been a botanist at the Atlantic Canada Conservation Data Centre in Sackville since 2007. After acquiring a Master's degree from the Université de Moncton during which he studied the geography and control of exotic invasive plants in protected areas, he went on to work in various positions as a field botanist, focusing mostly on the survey and monitoring of rare plants. He has over ten years experience working on various research, survey and monitoring projects and has authored and coauthored numerous status reports and technical reports pertaining to rare plants in Atlantic Canada.



Ruth Newell is the Curator of the E.C. Smith Herbarium at Acadia University where she is responsible for the care of approximately 200,000 dried botanical specimens including vascular plants, fungi, mosses, lichens and algae. In addition to her curatorial duties, she is a member of the ACPF Recovery Team, conducts wild flora surveys and has authored and co-authored a number of COSEWIC and provincial status reports on rare plant species. Prior to the start of her career, she received a Master's of Science degree from the University of Guelph where she studied variation in three species of clubmosses in Ontario.



Megan Crowley and Lindsey Beals teamed together to produce this guide.

Megan is a Species at Risk Stewardship Biologist at Kejimikujik National Park and National Historic Site and works to engage Canadians in hands-on species at risk recovery actions (including ACPF, which hold a special place in her heart). She is the author of *Healthy Lakes and Wetlands for Tomorrow*, co-author of *Species at Risk in Nova Scotia: Identification and Information Guide* and a member of the ACPF Recovery Team. She received a Master's in Resource and Environmental Management from Dalhousie and a BScH in Wildlife Biology from Guelph.

Lindsey is an Aquatic Health Researcher at the Mersey Tobeatic Research Institute where she carries out research on freshwater ecosystems, changes within them, and the impact of those changes. Her interest in lakes, rivers, and wetlands developed during her time at Saint Francis Xavier University where she received a BScH in Biology. Research on lake water quality led Lindsey to discover the beautiful Atlantic Coastal Plain Flora on the lakeshores and beyond, where they rely on clean, healthy water to survive.

Lindsey Beals (left) and Megan Crowley (right)





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## ATLANTIC COASTAL PLAIN FLORA

In Nova Scotia

Atlantic Coastal Plain Flora (ACPF) are a unique group of unrelated plants that are primarily found along the Atlantic Coast from Florida to Nova Scotia. There are over 90 species in this province, of which many are rare and special, and for some of these species Nova Scotia contains the best remaining habitat in the world! They are concentrated in the southwest, mainly along inland lake and river shores, in wetlands and along coastal salt marshes. Unfortunately, almost half of these species are listed as 'at risk' or 'sensitive' by the NS General Status Ranks and need help to make sure they are not lost from this province. Many individuals, landowners and community members have been involved in stewardship activities for these species and their habitats. Join with them and use this guide to learn about the ACPF species that share this province with you and the actions you can take to help them.



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