

Salicaceae

willow family

Both willows and poplars make up this family. Both genera are found in Nova Scotia. Most noticeable character is the early timing of flowering in spring often before the leaves are expanded. Species are dioecious or at least flowers are unisexual. Both staminate and pistillate flowers are reduced in size and borne in catkins.

The pistillate flower is merely a pistil subtended by a simple or lobed bract. Staminate flowers have 1–2 stamens. Fruits are capsules, with many seeds, each bearing a tuft of villous hairs.

Leaves are alternate, simple and sometimes serrate. Stipules are present or absent. Worldwide there have been about 300 species described.

Key to genera

Buds with a single scale; bracts entire or toothed; stamens 1–5; catkins pendulous or erect. *Salix*

Buds with several scales; bracts deeply cut with linear acute lobes; stamens many; catkins pendulous. *Populus*

Populus L.

aspens, poplars

Aspens are early-successional trees of the boreal and temperate regions which bear pendulous catkins. Seeds mature before the leaves expand. There are 40 species widespread across the northern hemisphere. Staminate flowers have five or more stamens, borne on short filaments. A single ovary contains 2–4 carpels comprising the pistillate flowers. Seeds are armed with long silky tufts, useful in dispersal. Most flowers are subtended by a deeply cleft bract.

Key to species (vegetative characters)

A. Leaves persistently white-tomentose beneath; palmately lobed. *Populus alba*

aa. Leaves smooth or becoming so, or merely lightly pubescent. B

B. Petioles compressed in cross-section; buds not sticky nor very large. C

C. Leaves without translucent border; teeth rounded distally. D

D. Leaves generally wider than long; serrate or undulate; winter buds glossy and shiny. *P. tremuloides*

- | | |
|--|-------------------------|
| dd. Leaves ovate, coarsely dentate; winter buds white-hairy. | <i>P. grandidentata</i> |
| cc. Leaves with a clearly-marked translucent border. | E |
| E. Leaves wedge-shaped basally, only 4–6cm wide; branches strongly appressed, tree forming a columnar outline. | <i>P. nigra</i> |
| ee. Leaves square or broadly triangular basally, larger; branches spreading. | <i>P. X canadensis</i> |
| bb. Petioles round in cross-section, not compressed; buds very large and sticky. | F |
| F. Twigs smooth; leaves narrow, acute at the tip, smooth. | <i>P. balsamifera</i> |
| ff. Twigs pubescent; leaves long-acute, densely pubescent on the veins beneath, lightly so above. | <i>P. X jackii</i> |

***Populus alba* L.**

White Poplar; peuplier blanc; miti



Photo by Roger Lloyd

Small tree with grayish white bark, it is often densely woolly when young. Leaves have a feltlike tomentum below, but are glabrous above. Broadly ovate and irregularly lobed, their margins may also be dentate.

Early-spring flowering.

Formerly a popular ornamental. Difficult to eradicate once established, freely forms colonies from root suckering.

Several scattered localities along the Bay of Fundy coast, the Atlantic side and in Cape Breton.

Introduced from Europe and now found throughout the continent, but for the prairies.

***Populus balsamifera* L.**
Balsam Poplar; peuplier baumier



Photo by Roger Lloyd

A beautiful tree, it is most noticeable in early summer, due to the olive green to dark brown foliage. Leaves have a small sinus at the base, and are widely lanceolate and acuminate. Twigs are smooth, bearing sticky buds.

Locally common riparian species and often planted for shade.

Occasional in Cape Breton where it may be locally common; west to Digby County and Halifax County.

Ranges from NF to AK, south to CA, CO and VA.

Populus xcanadensis
Carolina Poplar; peuplier de Caroline



Photo by Ross Hall

A hybrid between *P. nigra* and *P. deltoides* it is intermediate between the two in canopy shape, leaf outline and size. It is relatively slow-growing for a poplar and does not rapidly spread vegetatively.

Established at Mill Village, Queens Co.

Scattered in NS; QC to ON and variously south to CA and GA



Photo by Ross Hall

***Populus grandidentata* Michx.**

Large-toothed Aspen; Bigtooth Aspen; peuplier à grandes dents



Photo by Roger Lloyd

Broadly ovate leaves are irregularly dentate on the edges, rather than serrate. Leaves are larger than those of *P. tremuloides*. This, like *P. tremuloides*, is a pioneer species. It is considered to be short-lived for a deciduous tree.

Once only a small component of our forest, now expanded over large areas on lighter soils. Readily suckers.

Common throughout the mainland; less frequent in Cape Breton.

NS to MB, south to NC and MO: BC.

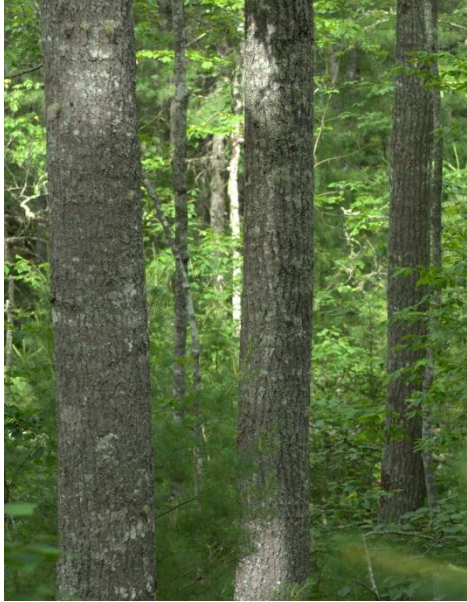


Photo by Ross Hall

Crosses with *P. tremuloides*, forming the hybrid known as *P. x smithii*. It was once collected at St. Croix, Hants Co.

Populus xjackii

Balm of Gilead



Photo by Martin Thomas

A natural hybrid between *P. balsamifera* females and *Populus deltoides* males. It readily forms suckers and may reach 20m in height. The buds are strongly aromatic and sticky. Pistillate catkins reach 7-16cm, appearing before the leaves. Leaves are cordate and serrate.

Catkins appear in April and May.

In NS, local from Shelburne and Kings counties, to Pictou Co.

NS to MB, south to NC and MO: BC.

Found in northern America, from NL to AB, south to CO and GA. Introduced to NS.



Photo by Martin Thomas

***Populus nigra* L.**
Lombardy Poplar



Photo by Roger Lloyd

A tall tree, it is columnar in outline with smooth stems, branches and leaves, although the latter may be puberulent when newly emerged. Leaves are finely dentate and dimorphic. Leaves on short shoots are ovate, angular and long tapering at the base. Leaves on long shoots are triangular and truncate at the base.

Limited to roadsides and around dwellings and fields.

A few collections exist of this infrequently escaping ornamental.

An early introduction from Europe now found in the east from NS to ON south to LA and FL; BC south to TX.

***Populus tremuloides* Michx.**
Trembling Aspen; peuplier faux-tremble



Photo by Roger Lloyd

A common tree, it has gray bark. Its leaves are broadly ovate, serrated on the edges and with prominently raised palmate veins. Terminal buds are shiny brown and smooth.

Pioneer species, tolerant of wetter soils than *P. grandidentata*.

Common throughout Nova Scotia as a successional species; especially numerous in cutovers or after fire.

Ranges across the continent, to AK, south to CA, TX and VA.

Salix L.

willow

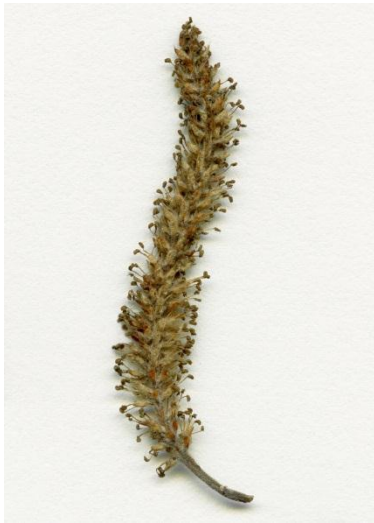
Of all our tree or shrub genera, the willows are amongst the most difficult to identify to species. Hybrids are common, further complicating determination. Spring and early summer provide the best opportunity to study the willows, when catkins are still present. Catkins are erect and spreading, rarely pendulous. Winter buds are covered by a single scale.

Key to species

- A. Prostrate or creeping shrubs restricted to alpine habitats on the Cape Breton Highlands. B
 - B. Branches rooting at the nodes, above or below ground; leaves wrinkled below, smooth above. *Salix reticulata*
 - bb. Branches not rooting at the nodes; leaves not wrinkled beneath. C
 - C. Branchlets or leaves smooth or glabrescent; ovary and capsule smooth. *S. uva-ursi*
 - cc. Branchlets densely silky pubescent; ovary and capsule not smooth. *S. glauca*
- aa. Erect shrubs or trees; not restricted to alpine or northern localities. D
 - D. Shrub to 1m; branches and leaves white-woolly, even at maturity. *S. candida*
 - dd. Taller shrubs and trees; branches and leaves not as above, but variously pubescent. E
 - E. Fruit smooth; scales of catkins usually pale; stamens 2 or more. F
 - F. Leaves acute; stamens 3–8. G
 - G. Leaves acute; stipules on young leaves absent or very small; young leaves and branchlets glabrous. *S. pentandra*
 - gg. Leaves attenuate; stipules on young leaves foliaceous; young leaves with white hairs; branchlets usually hairy. *S. lucida*
 - ff. Leaves not acute; stamens 2. H
 - H. Leaves entire. I

I. Leaves strongly revolute, glaucous and smooth beneath.	<i>S. pedicellaris</i>
ii. Leaves only slightly revolute; gray tomentose below.	<i>S. caprea</i>
hh. Leaves toothed.	J
J. Scales deciduous, yellowish.	K
K. Teeth <6 per cm of leaf margin.	<i>S. x rubens</i>
kk. Teeth >6 per cm of leaf margin.	<i>S. alba</i>
jj. Scales persistent, dark.	L
L. Leaves fragrant, smooth.	<i>S. pyrifolia</i>
ll. Leaves scentless, pubescent.	M
M. Plant <1m tall, arctic; leaves dark green, rugose, silky villose below.	<i>S. vestita</i>
mm. Plants >1m tall; not arctic; leaves grey-villous, upper and/or lower surfaces.	<i>S. eriocephala</i>
ee. Fruit pubescent; scales of catkins usually dark; stamens 1–2.	N
N. Scales pale yellow, red-tipped.	<i>S. bebbiana</i>
nn. Scales dark brown or black.	O
O. Leaves nearly opposite; stamens united at the base.	<i>S. purpurea</i>
oo. Leaves clearly alternate; stamens not united.	P

P. Twigs glaucous.	<i>S. pellita</i>
pp. Twigs not glaucous.	Q
Q. Leaves with few teeth.	R
R. Blade length up to 2–3X the width.	S
S. Peeled wood with striae to 62mm; capsule <6mm.	<i>S. cinera</i>
ss. Peeled wood with striae sparse, to 6mm; capsules 6–12mm.	<i>S. caprea</i>
rr. Blade length up to 4–9X the width.	T
T. Leaves smooth or puberulent early.	<i>S. discolor</i>
tt. Leaves persistently pubescent.	<i>S. humilis</i>
qq. Leaves with numerous teeth..	U
U. Leaves becoming smooth, white beneath.	<i>S. petiolaris</i>
uu. Leaves persistently silky beneath.	<i>S. viminalis</i>

Salix alba* L.*White Willow; French Willow; saule blanc***Photo by Roger Lloyd**Photo by Roger Lloyd*

Branches and branchlets are variable in colour and pubescence. Generally it is a tree to 20m with olive-brown branches. Leaves are silky villous beneath, lanceolate to nearly linear in outline. Their margins are serrulate. Petioles may have glandular spots or lobes distally. Catkins may be as long as 6cm, their pedicels leafy, and 1–4cm in length. The floral bracts of the pistillate catkins are deciduous in fruit. Stamens number 2.

Early flowers in April and May.

Formerly treasured as an ornamental and now naturalized.

Frequently reported from most settlements in the province.

Widely introduced from Europe from NS to SK and variously south to CA and GA; AK.

Salix bebbiana* Sarg.*Beaked Willow; saule de Bebb***Photo by Sean Blaney*

A shrub or small tree, it may reach 10m in height. Its leaves and branchlets are softly pubescent. Older branches have transverse lines on the peeled wood. Leaves obovate to elliptic, their lower surfaces bluish green or glaucous. The staminate catkins measure 0.5–1.5cm long arising on short bracteate peduncles. Pistillate catkins measure 2.8–5cm



Photo by Roger Lloyd

long. Pistils are light green and puberulent.

Flowers from late April to early June.

Wide-ranging habitats, from wet to dry.

Our most common native willow, found throughout.

Across the continent and south to CA, NM and MD

***Salix candida* Fluegge**

Hoary Willow; saule tomenteux



Photo by Sean Blaney

Usually a shrub, it rarely reaches 1m tall. Branchlets and the lower surfaces of the leaves remain densely white woolly, even as fruit matures. Leaves generally are linear or narrowly lanceolate. Peeled wood of branches show transverse lines.

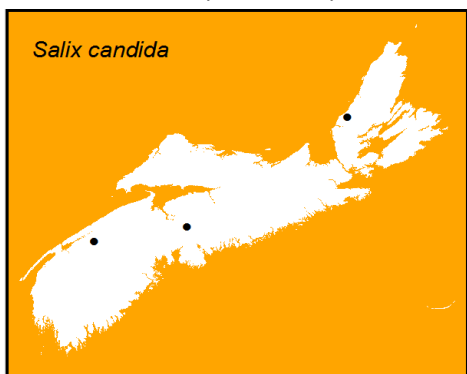
April to June flowers, appearing as the leaves emerge.

Associated with calcareous wet sites, such as bogs or in thickets.

Known only from Black River bog of Inverness Co. and Two Rivers Wildlife Park.

Found from NL to AK, south to CO and NJ.

RED-listed species.



***Salix caprea* L.**

Goat Willow; saule marsault



Photos by Roger Lloyd



A cultivated shrub, it rarely exceeds 6m in height. It closely resembles *S. discolor*, but for the pubescence. Noticeable is the gray rather than white tomentum on the lower surfaces of the leaves. They may be 3–12cm long and 3–8cm wide, broader than most willows.

Flowers early, before the leaves appear.

Frequently found on wet sites.

Spreading from cultivation around Sydney.

May form hybrids with *S. viminalis*.

Introduced from northern Europe and now spreading in NS and BC; from ON south to AL.

***Salix cinerea* L.**

Large Gray Willow; saule cendré

Another introduced shrub that resembles *S. discolor*. Reaching to 15m in height, its leaves may reach 9cm long and 1–3cm wide. They are pubescent below. The staminate catkins are silvery turning yellow at anthesis. Pistillate catkins are greenish gray releasing seeds in early summer.

Flowers early spring.

Open sites.

Spreading from cultivation in Yarmouth and on Seal Island of the same county.

Introduced from Europe in NS to ON, south to LA and GA; UT.

***Salix discolor* Muhl.**

Pussy Willow; saule discoloré



Photo by Roger Lloyd



Photo by Roger Lloyd

A conspicuous and common shrub, this species has smooth dark-brown stems. Leaves are glabrous and glaucous beneath. They are elliptic to oblanceolate. Stipules are present, ovate. Buds and catkins are sessile, with catkins ranging from 2–10cm in length, although the pistillate catkins are shorter than the staminate ones. Under optimal conditions, plants may form small trees.

The earliest to flower, often in February, until May.

Wet soils in damp woods, pastures, roadsides and along the margins of wetlands.

Common throughout NS.

Across Canada, variously south to CO and NC.

A hybrid with *S. bebbiana* has been reported from Annapolis Royal region.

***Salix eriocephala* Michx.**
saule à tête laineuse



Photo by Sean Blaney



Photo by Roger Lloyd

This is a complex and variable species, with respect to pubescence and leaves. Generally reaching only 1–4m in height, its leaves are glabrous and lanceolate, their margins serrulate. Older branches show points or projections on peeled wood.

Flowers in late March into April.

Habitat is limited to streamsides, even gravel bars.

Scattered throughout the province, but especially common in the central counties.

Ranges from NF to SK, variously south to LA and FL

***Salix glauca* L.**
saule à beaux fruits



Photo by Roger Lloyd

This species is a small prostrate shrub, with sprawling branches. It resembles *S. uva-ursi*, except it has only two stamens, and ovary and capsule are densely pubescent. Floral bracts are persistent in fruit. Leaves and branchlets while young are silky-villous. Only ssp, *callicarpaea* (Trautv.) Böcher reaches Nova Scotia, with the typical ssp. in the west and northern part of the continent.

Alpine habitats such as windswept barrens.

Saint Paul Island is our only locality.

Greenland west to the NT, south to MB, ON, QC and NS, east to NL.

STATUS: ORANGE-listed.

***Salix humilis* Marshall**
Small Pussy-willow; saule à beaux fruits



Photo by Sean Blaney

Resembling *S. discolor*, it may be separated on the presence of woolly branchlets and gray tomentum on the lower leaf surfaces. Like the other Pussy-willow, it has elliptic to oblanceolate leaves, although dark green in colour. Catkins range from 1.5–3cm in length, the staminate catkins smaller than the pistillate ones.

Flowers before the leaves appear. Reproduces vegetatively



Photo by Roger Lloyd

***Salix lucida* Muhl.**

Shining Willow; saule brillant



Photo by Sean Blaney



by layering.

Look for pussy willows from March through June.

Limited to clay soils, especially in low-lying areas.

Throughout Nova Scotia.

Eastern North America in range, from NF to MB, south to TX and FL.

Either a shrub or small tree in habit, it ranges from 4–6m tall with smooth and shiny bark. Lanceolate or ovate leaves are finely serrate, shiny and acutely pointed. Stipules, if present, are kidney-shaped, 2–5mm long. Staminate flowers have 3–6 stamens; catkins are 2–7cm long.

Flowers from late April until June.

Favours wet ground streamsides and lacustrine habitats, even in ditches.

Most common from Digby to northern Cape Breton, scattered to frequent elsewhere.

Photo by Roger Lloyd

Ranges from NL to AK, south to CA, KS and VA.

***Salix pedicellaris* Pursh**
saule pédicellé



Photo by Sean Blaney



Photo by Roger Lloyd

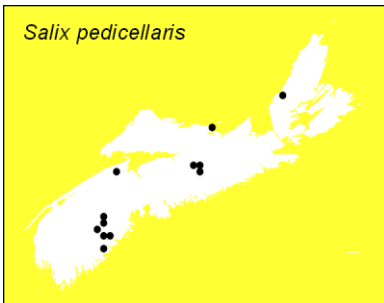
A small and slender shrub, it is usually less than 1m in height. Leaves are smooth, obovate or oblanceolate rarely elliptic. They are glaucous beneath and with margins entire. Bud scales are very small. Catkins range from 2–5cm in length. Pistillate catkins are loosely flowered. Staminate flowers have two stamens. May form colonies by layering.

Flowers from May to July.

Grows in acidic substrate as in bogs; nutrient-rich marshes and in sphagnous lacustrine habitats.

Local, but may be common where found: Queens County, occasionally seen along Sharpe Brook in Kings County. Collections from South Branch, Stewiacke River, Colchester Co., Black River fen, Inverness Co. and several Queens Co. localities are recent. A Northumberland collection and report from Halifax County require substantiation.

Northern in range, from NL to YT, south to OR, IL and NJ.



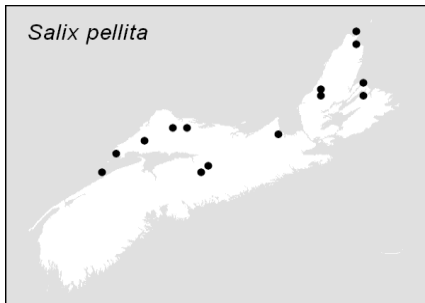
***Salix pellita* Andersson**
saule satiné



Photo by Sean Blaney



Photo by Roger Lloyd



It is similar to *S. viminalis*, but is a native species. Branches are glaucous. Catkins develop earlier in this species, before the leaves expand, unlike those of *S. viminalis*. Stipules are soon deciduous. Ovary is covered in short silky hairs.

Flowers May and June.

Found in riparian habitats.

Scattered from Annapolis and Cumberland counties to Colchester Inverness and Victoria counties.

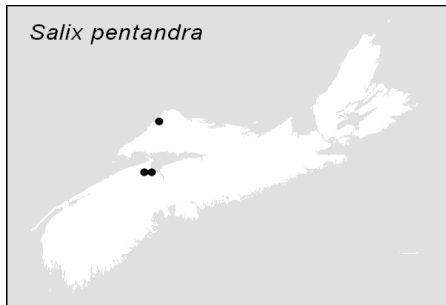
Ranges from NL to northern SK, south to MN and VT.

***Salix pentandra* L.**

Bay-leaved Willow; saule laurier



Photo by Roger Lloyd



Another shrub or small tree, this one reaches 7m in height. Ovate or lanceolate leaves are glossy, dark green in colour, with finely serrate margins. Petioles have glandular lobes or spots. Staminate flowers have five stamens. The pistillate catkins persist until autumn.

Flowers appear from May to early June.

Flowers May and June.

Spreading from cultivation although perhaps not established. Collections on file from Kings and Cumberland counties only.

NF to BC and AK, south to CO and NC, after its introduction from Europe.

***Salix petiolaris* JE Smith**

saule laurier



Photo by Sean Blaney

Reaching 7m, this shrub or small tree is typified by having yellow to dark brown branchlets, which may be smooth or puberulent. The leaves are narrowly lanceolate. Margins of the leaves are entire or serrate and with dense silky hairs as they unfurl. At maturity leaves become dark-green above, glaucous below.



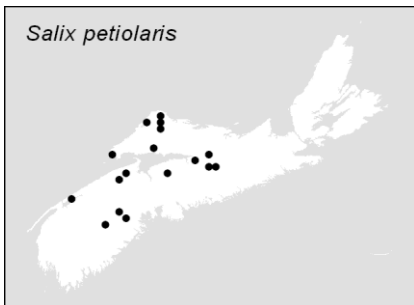
Photo by Roger Lloyd

Flowers in May and June.

Wet soils as in meadows.

Known from the western part of the province, from Digby to Lunenburg Co., east to Cumberland and Colchester counties. Page | 910

Ranges from NS to NT and BC; south to WA, CO and NJ.



***Salix purpurea* L.**

Purple osier; purple willow



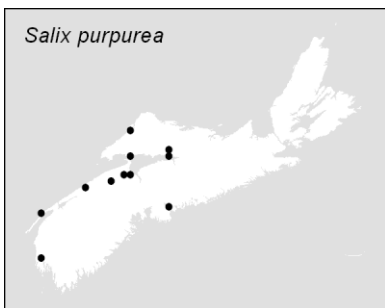
Photo by Roger Lloyd

Reaching up to 3m (5), this willow has purple-brown to yellowish shoots, which turn grey as they age. The leaves range from 2-8 or 12cm long, with the upper surfaces dark green. They are glaucous green below, usually arranged in opposite pairs and not alternate along the stem. Flowers are small, the catkins up to 4.5cm long and purplish or red, rather than the usual white or green of most willows, the character for which they are commonly called. Filaments of the stamens are fused.

Catkins produced in early spring.



Photo by Roger Lloyd



Salix purpurea

Soggy soils in low-lying areas.

A former ornamental naturalized throughout the western half of the province.

Cultivated from NF to ON, south to GA and a few western states after its introduction from Eurasia and Africa for basketry.

***Salix pyrifolia* Andersson**
Bog Willow; saule baumier



Photo by Sean Blaney

Shrub or tree, it grows to about 5m in stature. Bark is generally smooth and sometimes shiny. Leaves are ovate, puberulent when young, becoming smooth. Leaf margins are finely serrate or entire. There is a distinctive reddish colour to the leaves in early spring. Wood on older branches has no conical projections. Catkins are carried on leafy branchlets. Staminate catkins are 2–4cm long, while the pistillate catkins may reach 9cm.

Flowers from mid-May throughout August.

Bogs, swamps and generally poorly drained soils.

Occasional throughout northern NS, although absent from northern Cape Breton. Not common on the Atlantic side.

Ranges from NL to NT, south to BC, MN and NY.

***Salix X rubens* Schrank**
Hybrid Crack Willow



Photo by Sean Blaney

A hybrid resulting from *S. alba* X *fragilis* L. it has yellow branches, the branchlets less fragile at the base than *S. fragilis*. The narrowly lanceolate leaves are silky when young, becoming glabrous with age. In all respects it is intermediate to the parent species.

Early-spring flowering.

Grows on riparian sites.



Photo by Roger Lloyd

Scattered localities

Ranges from NF to BC; south to CA and GA. Introduced.

Argus (2007) considers all of our material, formerly identified as *S. fragilis* L. as belonging here. While *S. fragilis* may be found here, it is doubtful.

***Salix sericea* Marshall**
Silky Willow; saule soyeux



Photo by Martin Thomas



Another species of restricted distribution in Nova Scotia, this small tree or shrub has lanceolate leaves with nearly smooth upper surfaces. They are covered below with a silky silver pubescence. Younger branches are gray-brown to violet. The young branchlets are covered with erect hairs.

Flowers late March until May.

Low-lying ground as in riparian zones.

Rare and only reported from western NS. Parr Lake and Lake Fanning, Yarmouth Co.; Queens and Lunenburg counties to Halifax County,

Ranges from NS to WI, south to SC and MO.

STATUS: ORANGE listed.

***Salix uva-ursi* Pursh**
saule raisin-d'ours



Photo by Jamie Ellison



Dwarf and creeping, this shrub bears small staminate flowers with a single stamen. The pistil and ovary are smooth or merely puberulent as are the branchlets and leaves.

Later flowering than most willows, in June and July.

Calcareous ledges; sub-arctic barrens.

Rare in NS and only known from Saint Paul Island and the Corney Brook gorge, within the National Park, Inverness Co.

Greenland, NS to QC, south to MN and GA.

***Salix vestita* Pursh**
saule pubescent



Photo by Roger Lloyd

Another northern species, this one bears leathery rugose leaves covered in long white appressed hairs. Bark is dark gray on the branches whose internodes are relatively short. The nodes swell upward and are sometimes winged. Capsules are 5–7mm long, pubescent.

Favours seepy, dark crevices of calcareous rocks.

Known from a single locality, at Corney Brook gorge, Cape Breton Highlands National Park.

Found from NF to MB and NU; AB to BC south to OR.

STATUS: ORANGE-listed in NS

***Salix viminalis* L.**
Common Osier; saule des vanniers



Photo by Roger Lloyd

Taller than many willows, these trees may reach 15m in height. Leaves are long and narrowly lanceolate or linear, with inrolled margins and gray or white-villous beneath. Catkins are 2–6cm in length.

April to June flowers.

Near habitation as an escape.

Isolated trees scattered throughout the province although most collections originate from Cape Breton.

NF to ON south to WI, IN and VA. Native to Europe

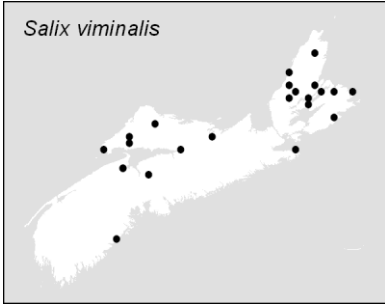


Photo by Sean Blaney

Hybrids: Baddeck, Victoria Co. hosts frequent shrubs or small trees of a hybrid between this and *S. caprea*. It is found also in Antigonish Co. It has been named *S. X smithiana*. There are also reports of *S. X sericans* (*S. caprea x viminalis*) from Nova Scotia.

