Poaceae
grass family

Worldwide, the grasses provide about 7500 species and dominate the world's vegetation. Grasslands yielded our earliest civilizations and crops such as sugar, rice, corn, wheat, barley and rye are significant agricultural commodities.

As a family, they are difficult to identify. The species are variable, hybrids are common and there are many of them. Most will need magnification, even 10X aids in viewing floral structure on which the following keys depend.

Our grasses are herbaceous and the jointed culms arise from fibrous roots. The long narrow leaves are alternate, sheathing the stems. The sheaths are open. A membrane, the ligule, usually occurs adaxially at the junction of the sheath and the leaf blade. Two auricles may project from the ligule at either side of the leaf and partly encircle the culm. Ligule also may be papery, membranous or ciliate, and may be entire or variously torn. Both the ligule and the auricle provide key characters in their presence, absence or form.

The inflorescence is a spicate, paniculate or racemose arrangement of spikelets. Each spikelet has a pair of glumes subtending one or more florets alternating along the rachilla. There is a pair of bracts subtending each floret, called the lemma (lowermost) and the palea (top or distal bract). These may differ in presence, texture, size and shape. The basal portion of the lemma may be enlarged to form a callus. Awns may be present on the glumes or the lemmas. Typically there is one ovary surrounded by three stamens.

Fruits are achenes or more commonly caryopses. In the vernacular grass fruits are called grains and cultivated food grasses are often referred to as cereal crops.

Key to groups

A. Robust and tall species, exceeding 2m.	Group 1
aa. Plants various, but culms generally less than 2m.	B
B. Inflorescence of 1 or more spikes.	C
C. Spikes solitary or in a spicate panicle.	Group 2
cc. Inflorescence of multiple spikes.	Group 3
bb. Inflorescence a panicle, compressed or divaricate.	D
D. Fertile floret 1.	Group 4
dd. Fertile florets >1.	Group 5

Group 1 key

Annual aquatic emergent grasses; culms relatively pliable; florets unisexual; staminate florets and pistillate florets separate but on the same plant.	*Zizania*
Perennial wetland grases; culms hard, almost woodys; spikelets perfect.	*Phragmites*

Group 2 key Inflorescence a spike

A. Spikelets of a single floret.	B
B. Spikelets sessile.	C
C. Awns <1cm long.	*Nardus*
cc. Awns >1cm long.	*Hordeum*
bb. Spikelets pedicellate.	D
D. Spikelets subtended by at least 1 bristle.	*Setaria*
dd. Bristles absent.	*Phleum*
aa. Spikelets of >1 florets.	E
E. Inflorescence a spicate panicle.	F
F. Leaves sweet-scented; glumes unequal in size and much larger than the lemmas.	*Anthoxanthum*
ff. Leaves not sweet-scented; glumes equal to each other and the lemmas in length.	*Alopecurus*
ee. Inflorescence a true spike.	G
G. Spikelets lying edgewiser to the rachis.	*Lolium*
gg. Spikelets not lying edgewise to rachis.	H
H. Rachis with >1 spikelets per node.	I
I. Lemmas awned, or awnless and rhizomes absent; glumes <2cm long.	*Elymus*
ii. Lemmas awnless; long rhizomes present and creeping; glumes >2cm long.	*Leymus*
hh. Rachis with 1 spikelet per node.	J
J. Rachis flexuous; spikelets divergent; awnless; perennial.	K
K. Creeping rhizomes absent or <1cm long.	*Agropyron*
kk. Creeping rhizomes long and extensive.	*Thinopyrum*
jj. Rachis straight, spikelets compressed and broadside to rachis, stiffly erect; awned; annual crop not persisting.	L
L. Glumes broad, >2 veins; keels of the lemmas not ciliate.	*Triticum*
ll. Glumes linear, keeled but without veins; keels of lemmas ciliate.	*Secale*

Group 3, Inflorescence of two or more spikes

A. Spikelets not compressed; rachis ciliate, white; spikelets deciduous in 2s, with parts of the rachis. *Schizachne*

aa. Spikelets compressed; rachis smooth, not white; spikelets falling individually, without the rachis. B

B. Spikelets dorsally compressed; often with a sterile lemma below the fertile one; annuals. *Digitaria*

bb. Spikelets laterally compressed; sterile florets absent; perennials. *Spartina*

Group 4, Inflorescence a panicle, with one fertile floret per spikelet

A. Floret rigid and shining. B

B. Floret compressed, awnless. C

C. Panicle dense; floret laterally compressed, with 2 small scales at the base. *Phalaris*

cc. Panicle lax; floret dorsally compressed, solitary and scales absent. D

D. Ligule always membranous; glumes equal; lemma not involute over the palea. *Milium*

dd. Ligule usually a row of hairs; first glume very short or absent; lemma inrolled over the palea. E

E. Cauline leaves and basal leaves similar, not forming a rosette; primary and secondary panicles uniform. *Panicum*

ee. Cauline leaves and basal leaves differing in shape; basal leaves crowded forming a rosette; culms simple early, later branching and bearing axillary fascicles of leaves hiding small panicles of cleistogamous fertile florets. *Dichanthelium*

bb. Floret awned, cylindric or flattened. F

F. Ligules absent; spikelets dorsally compressed; annuals of weedy areas. *Echinochloa*

ff. Ligules present; spikelets cylindric; perennials. G

G. Awns short; florets many; mature fruit disarticulating below the glumes. *Cinna*

gg. Awns long; florets few, or fruit disarticulating above the glumes. H

H. Glumes reduced; rachilla prolonged beyond palea as a bristle. *Brachyelytrum*

hh. Glumes equal to floret; rachilla not prolonged. I

I. Basal leaves overwintering green. *Oryzopsis*

ii. Basal leaves not overwintering. *Piptatherum*

aa. Floret soft and papery, not shiny. J

J. Glumes very small or unequal in size. K

K. Glumes minute, or much shorter than the floret. L

L. Lemma with 1–3 veins. *Danthonia*

ll. Lemma with 5 veins. *Leersia*

kk. At least one glume as long as the floret. *M*

M. Lemma with 1 vein. *Sporobolos*

mm. Lemma with 3 veins. *Muhlenbergia*

jj Glumes nearly equal. N

N. Spikelet with 1–2 sterile or staminate florets below the fertile one. O

O. Lower florets reduced to minute scales. *Phalaris*

oo. Lower florets as long as the terminal one. *Hierochloë*

nn. Sterile florets absent; fertile floret solitary. P

P. Rachilla prolonged behind palea as a bristle. Q

Q. Lemmas awned. *Calamagrostis*

qq. Lemmas awnless. *Ammophila*

pp. Rachilla not prolonged. R

R. Margin of leaf blades long-ciliate; ligule a ciliate fringe. *Sporobolus*

rr. Leaf blades smooth; ligule membranous. S

S. Body of glume shorter than lemma; lemmas short-awned from the tip. *Muhlenbergia*

ss. Body of glume as long as or longer than the lemma; lemmas awnless, or awned from the back below the apex. *Agrostis*

Group 5 Panicle with 2 or more fertile florets per spikelet

A. Glumes nearly as long as entire spikelet. B

B. Spikelets about 2cm long or more, or drooping; rounded glumes with many ribs. *Avena*

b. Spikelets shorter; glumes with 5 or more ribs. C

C. Florets 2. D

D. Lower floret staminate, awn bent; upper floret perfect, awn straight. *Arrhenatherum*

dd. Florets all perfect. E

E. Rachilla not prolonged. *Aira*

ee. Rachilla prolonged beyond terminal floret as a bristle. F

F.Lemma awned, attached below the middle. *Deschampsia*

ff. Lemmas awnless, or awns attached above the *Trisetum*

middle.

cc. Florets >2. G

G. Lemmas with bent and conspicuous awns. *Danthonia*

gg. Lemmas nearly awnless. *Cynosurus*

aa. Glumes much shorter than the spikelet. H

H. Lower part of culms, sheaths and leaf bases velutinous. *Holcus*

hh. Culms, sheaths or blades, glabrous or thinly pubescent. I

I. Ligule a row of hairs. J

J. Flowers unisexual; plant a halophyte. *Distichlis*

jj. Flowers perfect; plant not a halophyte. K

K. Spikelet strongly compressed; palea shorter than the lemma. *Eragrostis*

kk. Spikelet not compressed; palea longer than the lemma. *Molinia*

ii. Ligule membranous. L

L. Florets 2. *Sphenopholis*

ll. Florets >2. M

M. Edges of leaf sheaths joined at least half their length. N

N. Panicles with few, stiff branches; spikelets sessile in dense clusters. *Dactylis*

nn. Panicles with numerous branches; spikelets pedicellate. O

O. Lemnas awnless. *Glyceria*

oo. Lemmas awned. P

P. Callus bearded; lemmas 7-ribbed. *Schizachne*

pp. Callus not bearded; lemmas 5-ribbed *Bromus*

mm. Edges of leaf sheaths free and overlapping, except at the base. Q

Q. Lemmas perpendicular to rachilla, faintly ribbed, nearly round. *Briza*

qq. Lemmas appressed to rachilla, longer than wide. R

R. Lemmas blunt, with parallel veins. S

S. Lemmas with 5 prominent ribs; plant not halophytic. *Torreyochloa*

ss. Lemmas obscurely ribbed; halophytic. *Puccinellia*

rr. Lemmas pointed or awned, with converging veins. T

T. Spikelets paired, one sterile and persistent, one fertile. *Cynosurus*

tt. Spikelets all alike and fertile. U

U. Lemmas awned. V

V.Leaf sheaths with curved auricles. *Schedonorus*

vv. Auricles absent. *Festuca*

uu. Lemmas awnless. W

W. Lemmas with veins and keels pubescent; callus with cottony hairs, apices of leaves keeled or obtuse. *Poa*

ww. Lemmas glabrous; callus glabrous; leaves acuminate. X

X. Leaf sheaths auriculate. *Schedonorus*

xx. Leaf sheaths not auriculate. *Festuca*

Agropyron Gaertn.
Wheatgrass

These plants are perennial and cespitose. The culms may reach over 1m, standing erect or geniculate. The leaf sheaths are open and auricles are present. Typified by the presence of a single pectinate spike, the spikelets are solitary at the nodes of the rachis. There are 3–16 florets per spike. Both the lemmas and glumes are keeled and awned. At maturity, the lemma and palea is adherent to the caryopsis, disarticulating above the glumes.

Agropyron cristatum (L.) Gaertn.
Crested Wheatgrass; chiendent pectiné; agropyre à crête

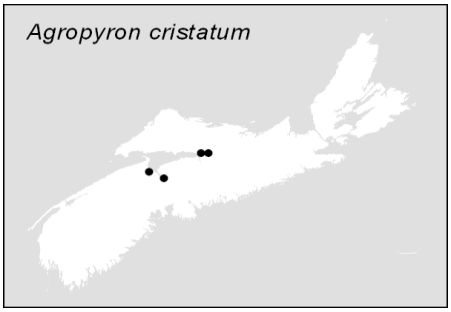
Photo by Roger Lloyd

A tall grass, it stands up to 1.1m; the culms terminate in a short dense spike. Each spikelet spreads nearly horizontally. There is a single spikelet per node, with the nodes close together. Both the glumes and lemmas are short-awned. Our material is referenced to ssp. *pectinatum* (M. Bieb.) Tzvelev.

In Nova Scotia it was planted on the dykelands where it escapes to nearby fields and wasteground.

Along the Minas and Fundy shores to Truro.

Elsewhere it is found: NS; NL to AK, south to CA, TX and KY. Introduced to North America.



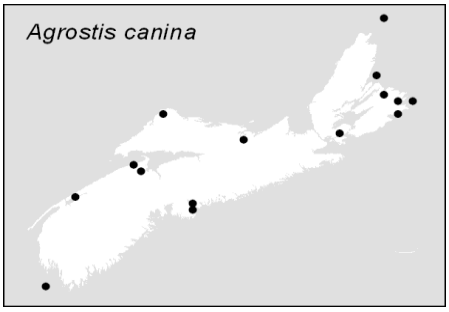
Agrostis L.
bentgrasses

Numbering about 125 species, they are generally limited to temperate or arctic and alpine areas. They are perennial grasses, with slender geniculate culms and flat or involute leaves. The inflorescence is an open diffuse panicle of many spikelets, each with a solitary floret. Glumes are thin in texture and lanceolate, acutely pointed and nearly equal in size, with 1–3 ribs. Lemma is membranous and broad, glabrous and five-ribbed. Occasionally there is a tuft of cottony hairs at the base. Awns if present, arise from below the middle of the lemma. Mature fruit is loosely encased by the lemma and palea, if present.

Key to species

A. Paleas at least 2/3 as long as the lemmas.		B
	B. Ligules of the upper leaves shorter than wide, 0.3–3mm; spikelets on the lower panicle branches only on the distal 1/3–1/2.	*Agrostis capillaris*
	bb. Ligules of the upper leaves taller than wide, 2–7.5mm, at least some of the lower panicle branches with spikelets to the base.	C
		C. Stolons absent; rhizomes present; longest lower panicle branches 4–9cm long. *A. gigantea*
		cc. Stolons present; rhizomes absent; longest lower panicle branches 2–6cm long. *A. stolonifera*
aa. Paleas absent or less than 2/3 as long as the lemmas.		D
	D. Rhizomes or stolons present; blades 1–10cm long.	*A. canina*
	dd. Rhizomes and stolons absent; leaf blades to 30cm long.	E
		E. Panicle branches widely divergent, panicle often detaching at the base at maturity; cauline nodes 1–3; blades 1–2mm wide. *A. scabra*
		ee. Panicle branches usually erect to ascending or the panicle not detaching at the base; cauline nodes 2–10; blades 0.5–5mm wide. *A. perennans*

***Agrostis canina* L.**
Velvet Bentgrass; agrostide des chiens



Arising from leafy stolons, the culms range from 30–60cm tall. The panicle is rather narrow, 5–10cm tall. Lemmas are usually long-awned protruding 1–2mm, but occasionally the awns may be absent.

Flowers and fruiting during June and July.

Escaping along golf courses and roadsides from its planting as turf. Only occasional in natural habitats.

Widespread in northern areas from Halifax and Amherst eastward. Uncommon elsewhere. Known from Seal Island.

Ranges from NF to ON variously south to MN and TN; OR. Greenland. Introduced from Europe.

***Agrostis capillaris* L.**
(=*A. tenuis* Sibth.)
Brown-top; agrostide commune

Photo by Roger Lloyd

A very fine species, no more than 60cm tall, it arises from short, fine rhizomes. The panicle is delicate 5–15cm tall comprising widely diverging branches. Spikelets are clustered towards the ends of the branches. Lemmas are twice as long as the paleas. Lower leaf sheaths form a brown ligule 0.5mm tall. Awns may be present or absent, and variable.

Found in pastures, lawns, meadows and roadsides; it is a favoured turf grass.

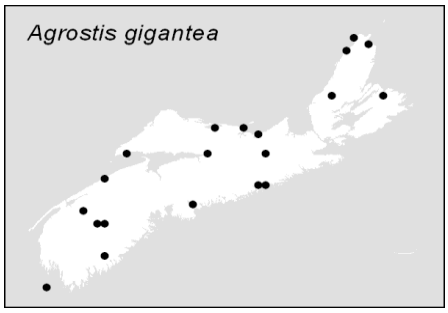
Very abundant.

Ranges from NF to ON, south to AR and SC; west coast.

Greenland. Introduced from Europe.

***Agrostis gigantea* Roth**
Red-top; agrostide blanche

Photo by Roger Lloyd



A robust species, its culms reach 50–70+cm tall. The panicle outline is lanceolate, 10–15cm long. Spikelets are numerous in the axils of the branches, as well as distally. Various strains have been introduced.

Flowers and fruits from June throughout the summer.

Commonly planted as a forage and persisting along road shoulders. The reddish hue is noticeable amongst the vegetation, midsummer. Tough and persistent.

Common throughout.

Ranges across the continent and southward. Greenland. Introduced from Europe.

***Agrostis perennans* (Walt.) Tuckerm.**
agrostide pérennante

Photo by Roger Lloyd

More delicate than the introduced species, this one generally only reaches 40cm tall. Panicles may reach up to 20cm, with long spreading branches, forking at or below the middle. Spikelets are barely 2mm long. The lemma is awnless; paleas are absent. The several cauline leaves separate it from *A. scabra*. It is a variable species.

Moist sites in forests, roadsides, lake margins and streamsides.

Common throughout.

Ranges from NS to ON, south to TX and FL; WA to CA.

***Agrostis scabra* Willd.**
(=*A. hyemalis* (Walter) BSP var. *scabra* (Willd.) Blomq.)
Ticklegrass; Hairgrass

A cespitose grass, 40–50cm tall, with a very broad diffuse panicle of at least 10cm tall. Spikelets are clustered only towards the ends of the filiform branches. The absence of a palea helps to confirm its identity. Most of our material has the spikelets 3–4mm long and the lemmas awnless. A variable species.

Usually found in burned land, flooded areas, roadsides and headlands.

Scattered.

Ranges across the continent and south to CA and FL.

***Agrostis stolonifera* L.**

Creeping Bentgrass; agrostide stolonifère

Photo by Sean Blaney

Photo by Roger Lloyd

A fine species, it may reach 60cm tall, bearing narrow panicles to 12cm long. It arises from leafy stolons, which may be as long as 2m under ideal growing conditions. Inflorescence has many short erect branches with clusters of spikelets carried in the axils. Spikelets reach 1.5mm long and the florets have delicate paleas, about half the length of the lemmas. Another variable species with numerous strains introduced as turf grasses.

Flowers and fruits in summer.

Moist sites in fields, pastures, ditches and marshes or sand dunes.

Common.

Ranges from NF to AK, south to CA and FL; Greenland. Absent from YT and NU. Many introduced forms from Europe.

Aira L.
hairgrasses

Native to southern Europe, they are now widespread on disturbed sites. Of the 10 species, two reach Nova Scotia. Cespitose, the culms terminate in a panicle, open and divaricate or contracted to the rachis. Glumes are equal in length and generally longer than the lemma and obscurely ribbed. The lemma is firm, with a twisted awn, tapering to a bristle-like tip. The proximal lemma in each spikelet may be awnless.

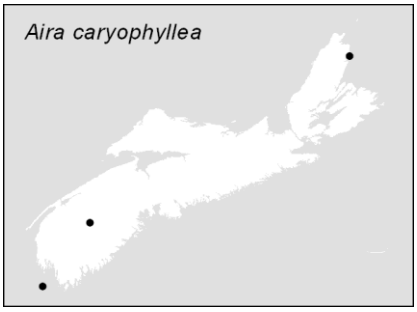
Key to species

Panicle open and diffuse, to 7cm long. *Aira caryophyllea*

Panicle narrow, a spicate panicle, 1–3cm long. *A. praecox*

Aira caryophyllea L.
canche caryophyllée

Photo by Roger Lloyd



Panicles may reach 7cm tall and diffuse, nearly as wide as tall. Spikelets are silvery, each about 3mm long and clustered distally on the filiform branches.

Fruiting from May to July.

Open sandy locations on dry sites.

Seal Island, Yarmouth Co., and several campgrounds on the mainland and in Cape Breton.

Found from NS; VT to TX; AK to CA. Introduced from Europe and established near the coasts.

***Aira praecox* L.**
canche printanière

Photo by Roger Lloyd

A small slender species, its culms reach only 20cm tall. The inflorescence is a spicate panicle, contracted to the rachis.

Fruiting from May and early June.

Frequents dry sandy soils.

Found on Seal and Mud Islands, Yarmouth Co. and at several southwestern campgrounds.

Ranges from NS; MA to NC; Pacific coast. Introduced from Europe.

Alopecurus L.
foxtails

Temperate grasses, there are 25 species mostly of the northern hemisphere. Cespitose, the culms bear dense cylindric spicate panicles. There is a single floret per spikelet, disarticulating at maturity below the glumes. The pair of glumes are nearly equal in size and united along their lower margins. The keels are

ciliate. Lemmas are equal to the glumes in size, firm and marked by five ribs. The awn arises from below the middle. Margins of the lemma are also united.

Key to species

A. Spikelets >4.5mm long. *Alopecurus pratensis*

aa. Spikelets <2mm long. B

B. Awn inserted near base of the lemma, jointed. *A. geniculatus*

bb. Awn inserted about midway along the lemma, straight. *A. aequalis*

Alopecurus aequalis Sobol

Photo by David Mazerolle

Photo by Roger Lloyd

A slender erect grass, it produces tall narrow panicles, 3–4mm across and 5–7cm long. The early florets soon shatter, leaving the rachis bare. Spikelets are 3–3.5mm long. The awns are inserted just above the middle of the lemmas, with most barely exceeding the length of the glumes. Usually an annual, it may be a short-lived perennial at some sites.

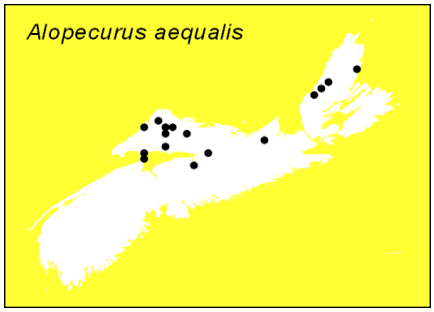
Fruiting in summer.

Grows in muddy edges of streams and ponds, gravelly lacustrine settings where competition is low.

Rare and northern: Kings and Cumberland counties to central Victoria Co.

Ranges from NF to AK, south to TN, NM and CA; Greenland.

STATUS: YELLOW-listed in Nova Scotia.



***Alopecurus geniculatus* L.**

Water Foxtail; vulpin géniculé

Photo by David Mazerolle

Photo by Roger Lloyd

Arising from extensive creeping rhizomes, it roots from the nodes. The culms are often recumbent at the base. Panicles are broader than the previous species, 4–7mm wide and to 7cm tall. Each spikelet is 2.5–3mm long. Glumes are obtuse. Lemmas are awned, with awn jointed, projecting sideways for 2–3mm.

Fruiting from May through August.

Grows in wet soils, in ditches, pastures, fields, streamsides, dykes, marshes. It is an early colonizer of bare saturated sites.

Common throughout.

NF to AK, south to CA, TX and VA; Greenland. Absent from MB, NU and NT. Introduced from Europe.

***Alopecurus pratensis* L.**
Meadow Foxtail; vulpin des prés

Photo by Roger Lloyd

A tall erect grass, its culms may reach 80cm. The panicles are soft, 4–5cm long and nearly 1cm wide. Spikelets are ovoid and compressed, about 5mm long, subtended by acute glumes. The lemma is awned from the base, the awn twists and projects sideways. Superficially it resembles *Phleum*, but flowers much earlier and the spikelets soon shatter.

An early-flowering species, fruiting in May and June.

Frequents meadows, roadsides and clearings.

Throughout the province. Naturalized and established, from NF to AK, south to CA, NM and GA.

Ammophila Host

Four species comprise this genus which is limited to the northern hemisphere. Tall, coarse and perennial, the culms arise from long stout creeping rhizomes. Leaves are generally revolute and sharply acute. Inflorescence is a spicate panicle, with many densely packed spikelets, each of a single floret. The rachillas extend to form a pubescent bristle. The firm glumes and the lemmas are nerved. Our species is an early dune stabilizer, colonizing the bare sand and forming tangled subterranean mats that allow sand to accrete.

Key to species

Culms 70–100cm; leaf blades scabrous; ligule 1–3mm long; lemmas with 5 ribs.	*Ammophila breviligulata*
Culms 50–120cm; leaf blades pubescent; ligule 10–30mm long; lemmas 5–7 ribbed.	*A. arenaria*

Ammophila arenaria has been reported from NS, based on a single specimen from Canso, by J. Fowler 1901. The species is unconfirmed at present for NS. It is slightly larger and its leaves are pubescent not scabrous, the ligule much larger, 10–30mm rather than 1–3mm. The species is widely introduced as a dune stabilizer and could be expected here. Elsewhere it is reported from MD and along Lake Erie shores. (S. Blaney, pers. comm.).

Ammophila breviligulata Fern.
Beach Grass; Marram; ammophile à ligule courte

Photo by David Mazerolle

Photo by Roger Lloyd

Culms are stout and borne stiffly erect to 1m in height. The densely-packed panicle is 20–30cm long. Spikelets are flat, subtended by glumes 1cm long. The palea and lemma are subequal, with a ciliate callus. It is straw-coloured and resembles *Elymus mollis*, but differs in having a panicle with slender branches.

Fruits from July through September.

Low dunes and sandy coastal beaches.

Common on Sable Island and around the entire coast. May be absent from the inner Bay of Fundy.

Ranges from NF to ON, south to IL and NC; BC to CA.

Anthoxanthum L.
sweet vernalgrass

The four species comprising *Anthoxanthum* contain coumarin, which imparts a pleasing aroma. Native to Eurasia and North Africa, a single species has been naturalised in Nova Scotia. A tall perennial, its culm

terminates in a spicate panicle of spikelets, each spikelet bearing three florets. Lemmas and paleas are awned and the glumes are distinctly unequal in size and pilose.

Anthoxanthum odoratum L.
Sweet Vernalgrass; flouve odorante

Photo by David Mazerolle

Photo by Roger Lloyd

Culms may reach 1m tall, bearing short leaves and brownish panicles, 3–5cm long. The upper glume is twice as long as the lower one and wraps around the floret. There are two sterile florets in each spikelet, both of which are pubescent and larger than the fertile one.

Fruiting during early summer.

Found roadsides and in fields and similar habitats.

Widely distributed and common.

Ranges from NF to ON, south to GA and TX; AK to CA. Introduced.

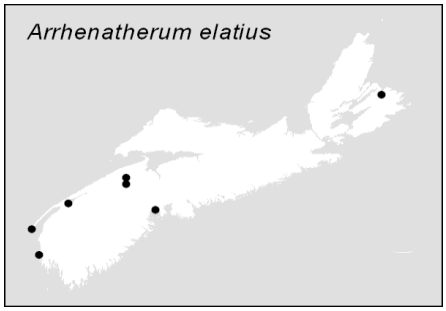
Arrhenatherum Beauv.
Oatgrass

Another Eurasian genus, there are only six species within. A single species has been introduced to Nova Scotia as a forage crop. Tall perennial grasses, they have narrow panicles and flat leaf blades. Each spikelet comprises two florets, the distal one perfect and the proximal one staminate. The extension of

the rachilla on the back of the upper floret forms a bristle. The staminate floret is awned and is larger than the perfect floret above it.

Arrhenatherum elatius (L.) Beauv.
Tall Oatgrass; fenasse

Photo by Roger Lloyd



Erect, its culms reach more than 1m. The panicle is loose and diffuse and silvery in colour, although the branches contract at maturity to become nearly erect. Spikelets each are 6–7mm long, bearing unequal glumes. The lower glume is nearly as long as the lemma. The two florets are visible, the staminate one with an exerted twisted awn arising from its base. The callus is tufted with stiff hairs.

Fruiting from June to early July.

Found along the edges of fields, and escaping into orchards and roadsides.

Scattered throughout.

Ranges from NF to BC, south to GA and CA. Absent from the arctic and prairies, TX. Introduced from Eurasia, though not invasive.

Avena L
oats

Including 10–15 species, they are all natives of Eurasia. The inflorescence is a large diffuse and drooping panicle, with 2–6 florets in each spikelet on filiform pedicels. The thin glumes are nerved, equal in size. They are longer than the lowermost floret, often reaching the top of the uppermost too. Lemmas are marked by 5–7 ribs and are hardened in texture. Callus is sometimes pubescent. Awns are jointed,

arising from below the notch on the lemma, a character not always visible on cultivated material. Long-cultivated, they are both food and forage.

Key to species

Spikelets awned.	*Avena fatua*
Spikelets awnless.	*A. sativa*

***Avena fatua* L.**
Wild Oats; folle avoine

Photo by Roger Lloyd

The awns are conspicuous and geniculate, arising from the backs of the lemmas. Usually the keel of the lemma is ornamented by long hairs. The callus is brown-ciliate. At maturity the florets readily disarticulate from each other and the rachis, above the glumes. Ligules are about 5mm long. The remaining straw is whitish.

Fruiting from july through October.

Found in fallow soils and may become invasive in grain fields, dykelands.

Occasionally collected from Kings and Halifax counties northward.

Ranges across the continent, absent only from Labrador and Nunavut in Canada.

***Avena sativa* L.**
Cultivated Oats; avoine cultivée

Photo by Roger Lloyd

A tall annual species, producing spikelets 2cm long on pendulous pedicels. Its florets are awnless. It is readily identified based on the size and habit of the spikelets. Also, the long glumes, exceed the florets in length.

Fruiting from July to September.

Commonly planted as a cereal crop and escaping, although not persistent.

Frequently collected.

Found across the continent, and southward.

***Beckmannia syzigachne* (Steud.) Fern., American Sloughgrass** has potential to establish in Nova Scotia. A leafy annual, to 1m, it has an inflorescence 10–15cm tall, with a few ascending branches crowded with plump green spikelets along their length. Spikelets are globose and 2mm long. Perhaps it may be seen around feedmills or along weedy roadsides. Ranges from NL to AK, south to CA, NM and PA; Greenland.

Brachyelytrum Beauv.

A small genus, there are only three species included, two found in eastern North America. The other is found in eastern Asia. Erect perennials, they have slender culms and broad flat leaves. Panicles are contracted and few-flowered. Each spikelet contains only one floret, disarticulating above the glumes, at maturity. The distal extension of the rachilla forms a bristle. First glume is absent or vestigial.

Key to species
Lemmas hispid. *Brachyelytrun erectum*

Lemmas puberulent or glabrous. *B. aristosum*

***Brachyelytrum aristosum* (Michx.) Trel.**
(=*B. erectum*, var. *septentrionale* Babel; *B. erectum*, var *glabrata* (Vasey) Koyama & Kawano)
brachyélytre du Nord


Photo by Sean Blaney


Photo by Sean Blaney

Formerly included as a variety of the next species, it has now been given species status based on the character of pubescence on the lemma. In this species, the lemmas are at most puberulent, the hairs less than 0.2mm long.

Flowering and fruiting from June through August.

Grows in bottomlands and moist forests.

Our material may need examination to determine provincial distribution.

Ranges from NF to ON, variously south to IA and GA.

***Brachyelytrum erectum* (Schreb.) Beauv**.
brachyélytre du Sud


Photo by Marian Munro

Reaching from 59–100cm tall, this species forms colonies, from knotted rhizomes. The lower leaves are 8–10cm long and 1–1.5cm wide. Panicles are nodding 8–10cm long and few-flowered. Green spikelets are 8–10mm long, the lemma long-awned. Florets are soon deciduous, leaving the tiny glumes attached to the rachis.

Flowering and fruiting from June through August.

Photo by Roger Lloyd

Wet woods and streamsides.

Scattered localities.

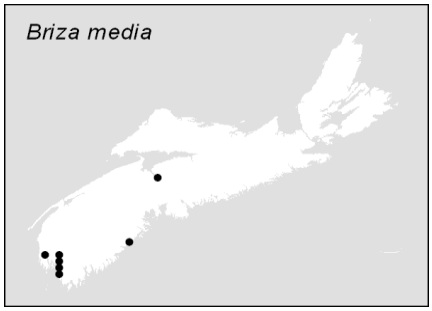
From NF to ON, south to TX and FL.

Briza **L.**

Grasses of Europe, Central and South America, they number 20 species. A single European native has been introduced sporadically here. A perennial grass, it is clump-forming. The panicles are open and showy, the spikelets include several florets. Both lemmas and glumes are awnless but ribbed, with up to nine nerves.

Briza media L.
Quaking Grass; amourette commune

Photo by Roger Lloyd



Reaching from 30–60cm in height, the simple culms bear few leaves, and these mostly basal. Panicles are open, 4–10cm long with filiform branches and globose spikelets. Each spikelet is about 3–4mm long. The glumes and the lemma are similar and tightly packed. There are no other similar grasses.

Fruiting from June to August.

Escaping from gardens to nearby moist soils.

Yarmouth Co. to Queens and Hants Co. Several well-established localities but doesn't appear to be spreading.

Introduced from Europe to NF to ON, south to MD and elsewhere.

Bromus L.
bromegrasses

Temperate and boreal in habitats these approximately 100 grasses are found worldwide. Eight species reach Nova Scotia. The spikelets are from 13–45mm long arranged in an ample panicle, rarely a raceme. Glumes are unequal in size, each with 1–5 ribs, but awnless. Lemmas are also ribbed and may or may not be awnless.

Key to species

A. Proximal glumes with a single rib.	B
B. Lemmas keeled.	*Bromus tectorum*
bb. Lemmas not keeled.	*C*
C. Panicle branches flexuous; lemmas awned, silky ciliate or with tufts at the base.	*Bromus ciliatus*
cc. Panicle branches ascending or stiffly spreading; lemmas awnless, or awned and without silky hairs.	D
D. Cespitose plants; awns 5–6mm long.	*B. erectus*
dd. Stoloniferous; awns absent, or <3mm.	*B. inermis*
aa. Proximal glumes with 3-5ribs (one rib in *B. tectorum*).	E
E. Lower glumes with one rib; second glume with 3 ribs; lemmas acuminate, keeled.	*B. tectorum*
ee. Lower glumes with 3–5 ribs; second glume 5–9 ribs; lemmas elliptic or ovate, rounded on the back.	F
F. Pedicels shorter than spikelets; ribs prominent on lemmas.	*B. hordeaceus*
ff. Pedicels nearly all equal to or longer than spikelets; ribs not prominent on lemmas.	G
G. Rachilla exposed at maturity.	*B. secalinus*
gg. Rachilla remains covered.	*B. racemosus*

***Bromus ciliatus* L.**

Fringed Bromegrass; brome cilié

Photo by David Mazerolle

Standing up to 1m tall, the panicle is a large nodding one, 15–30cm long. Spikelets are 2–3cm in height and long-awned. There are tufts of silky hairs present at the base of the lemmas. Stems and leaves are also puberulent. The leaf sheaths easily lacerate. Glumes have a single main rib. The plants are variable with respect to pubescence. All former named varieties are now included under var. *ciliatus.*

Photo by Roger Lloyd

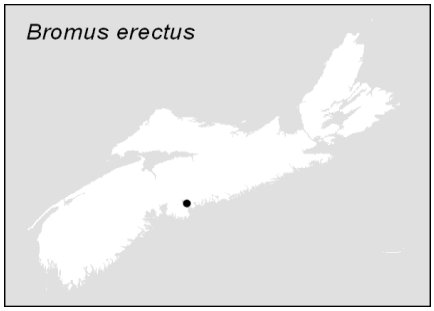
Fruiting from July through October.

Found on fallow soils, streamsides and around cultivated fields.

Scattered from Yarmouth and Shelburne counties to northern Cape Breton and more frequent along the northern side.

Ranges from NF to AK, south to CA, NE, AL and VA.

***Bromus erectus* Huds.**
brome dressé



A perennial species reaching 120cm, it forms large clumps. Basal leaves are often tufted and slender, plicate and pubescent. Cauline leaves are flat.

Fruiting during May and June.

Found roadside and in fallow fields.

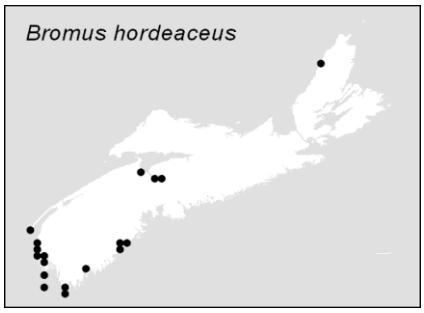
Only collected from Halifax and perhaps an historic occurrence.

Local; NS; QC and ON and variously south to AL; western. An adventive from Europe.

***Bromus hordeaceus* L.**

Soft Chess

Photo by Roger Lloyd



An annual species and the only one to be softly pubescent on both the leaves and in the inflorescence. Panicles are compact, the proximal branches shorter than the spikelets borne upon them.

An early-maturing species from May until early July.

Frequents open soils as in gardens, roadsides and embankments.

Found from NF to BC, variously south to CA, SC and TX; absent from NU, MB and SK. Introduced from Europe.

***Bromus inermis* Leysser**
smooth Bromegrass; brome inerme

Photo by David Mazerolle

A stout plant, sometimes reaching 1m in height, its erect culms arise from creeping rhizomes. Spikelets may reach 2.5cm long; if awned, the awns are very short. Lemmas are variable with respect to pubescence.

Fruiting in June and July.

Cultivated and used as green cover on dykelands. Persisting in roadside colonies.

Scattered from Yarmouth to eastern and western Cape Breton.

Ranges from NF to AK and south to CA and NS. Absent only from FL and AL, after its introduction from Europe.

***Bromus racemosus* L.**
(includes *B. commutatus* Schrader)
Hairy Chess; brome à grappes

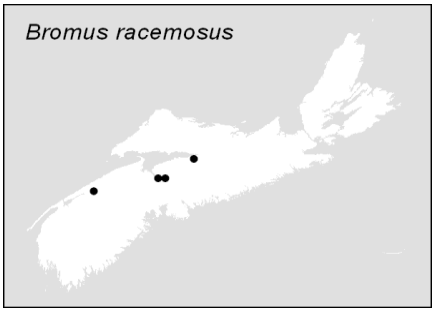
Photo by Roger Lloyd

An annual, it may sometimes reach 80cm tall, forming dense patches. Leaves and sheaths are lightly pubescent; the panicles are glabrous. Lustrous spikelets are only 15mm tall, easily shattering at maturity and with 6–10 florets. Upper lemmas on the panicle are awned, the awns may be 1cm long. The similar *B. racemosus* has a more erect, compact panicle.

Fruiting as early as June until August.

A common weedy species of dykelands, roadsides and fallow soils.

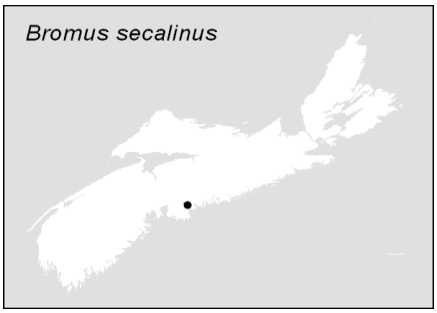
Mostly northern, from Digby Co. to Inverness Co., with a few port localities on the Atlantic.



Ranges from NF to AK, south. Introduced from Europe.

***Bromus secalinus* L.**

Chess; Cheat; brome des seigles



Annual in habit, the sheaths of its upper leaves are glabrous, a key character. Spikelets too are usually smooth. Margins of the lemmas become involute, exposing the rachilla.

Fruiting throughout the summer.

Historic occurrences at Five Mile River, Hants Co and from Sable Island. No recent reports.

Elsewhere, NF to AK, south to the Gulf of Mexico. Absent from MB and SK. Can become troublesome in agricultural lands.

***Bromus tectorum* L.**

Downy Chess; brome des toits

Photo by Sean Blaney

Growing as an annual or biennial, this weedy grass reaches 30–60cm tall. The smooth erect culms are cespitose and bear large pubescent leaves, 2–4mm wide and up to 16cm long. Ligules are lacerate, to 3mm long and membranous. Panicles are densely flowered, pale green and purplish. Spikelets are soft and drooping, pubescent and with awns, 10–15mm long. Lemmas are toothed, the teeth 2–5mm long, a character which separates it from *B. racemosus*. A selfer, it matures 1–2 weeks earlier than other annual

Photo by Roger Lloyd

bromegrasses.

Found on dry sites in gravelly soils.

A recent introduction and collected from Kings and Halifax counties.

Ranges from NF to AK, south to CA and VA. From Eurasia.

Calamagrostis Adans.

Cool, temperate grasses numbering more than 100 species, only 4–5 are found in Nova Scotia. Most are perennials arising from creeping rhizomes bearing ample panicles of spikelets. There is but a single floret in each spikelet. The rachilla is reflexed as a bristle. Glumes are nearly equal in size and larger than the floret. The first has one midrib, the second has three ribs. Both are acute. Lemmas are ribbed, bear an awn dorsally and have an obtuse or ragged tip. Callus is pilose. Generally these plants are more robust than *Agrostis*, with larger spikelets.

The reports of *Calamagrostis epigeios* growing in NS are unsubstantiated by collections.

Key to species

A. Awns twisted or geniculate; lemma firm and rough; callus sparsely pubescent, hairs half the length of the lemma. *Calamagrostis pickeringii*

aa. Awns straight; callus abundantly pubescent, hairs as long as lemma. B

B. Leaves flat, 4–8mm wide; panicle loose and open at flowering, later ascending. *C. canadensis*

aa. Leaves rolled, <4mm wide; panicle contracted. C

C. Spikelets 6–7mm long; rachilla with a tuft of hairs at the top and prolonged; awn inserted above the middle of the lemma. *C. coarctata*

cc. Spikelets <5mm long, rachilla barely prolonged; awn medially attached. *C stricta*

***Calamagrostis canadensis* (Michx.) Beauv.**

Blue-joint; calamagrostide du Canada

Photo by David Mazerolle

Photo by Roger Lloyd

Forming dense beds, the culms stand up to 1m. The straight awns are delicate and the callus is copiously tufted with hairs, equal to the length of the floret. Panicles are purplish, with very thin branches bearing spikelets 2.5–4.5mm long. The species is variable with respect to spikelet size. Two varieties are reported from NS. Our material should be examined to separate into var. *macouniana* (Vasey) Stebbins (with spikelets 2.8mm long) and var. *canadensis* (with spikelets more than 2.8mm long).

Fruiting in summer.

Grows in wet sites such as roadside ditches, swales and freshwater marshes.

Common throughout.

Ranges from NF to AK, south to CA, NM and NC; GA.

Calamagrostis coarctata (Torr.) Eaton
(=*C. cinnoides* W. Bartram)

Bluish in colour as is *C. pickeringii*, but this species is much taller, at 1.8m. The leaves are scabrous and may even be coarsely pubescent. Glumes are also scabrous, and keeled, the apices reflexed. Callus hairs as long as the floret. The caryopsis is also pubescent, especially at the apex.

Fruiting from mid-July to October.

Grows in damp sandy or peaty soils.

The only record is a collection from Halifax in 1912. Perhaps best to consider it historic.

Ranges from NS; ME south to GA, AL and LA.

Calamagrostis pickeringii Gray
calamagrostide de Pickering

Photo by David Mazerolle

Tall plants, they may reach 60cm, but on nutrient-poor soils of peat bogs, they are much smaller and bluish in colour. The callus of the lemma is puberulent. The twisted awns project sideways, in some of the spikelets. After anthesis, the short branches of the inflorescence become erect and appressed. Spikelets 3.5–4.5mm long. Var *debilis* is no longer recognized.

Fruiting from June through September.

Photo by Roger Lloyd

Found on barrens, in bogs, headlands, and similar habitats.

Most common along the Atlantic, but found throughout.

Ranges from NL; ON, NS south to NJ.

***Calamagrostis stricta* (Timm) Koeler**
calamagrostide raide

Photo by David Mazerolle

The scattered culms, 40–80cm tall have smooth, narrow leaves, 1–3mm wide and slightly revolute. Ligules are variable. Panicles are brownish, to 12cm long, and short-branched. Callus pubescence is about half as long as the lemma. Awns are about the same length.

We have two subspecies: ssp *inexpansa* (A. Gray) CW Greene is rare and local in Cape Breton. Ssp. *stricta* is found in Cumberland Co. Ssp *inexpansa* has longer ligules, at more

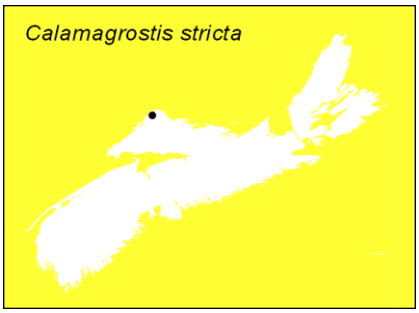
Photo by David Mazerolle

than 3mm, with the leaves scabrous below. Ssp. *stricta* has smooth leaves and shorter ligules, less than 3mm long.

Found in a variety of habitats such as lakeside, bogs, streamsides and cliff-faces.

As ssp. *inexpansa*, it is limited to Lockhart Brook, Salmon River, Victoria Co. Ssp. *stricta* has been reported from Yarmouth Co. and collected only from Cumberland Co., in the Amherst area.

Ranges from NF to AK, south to CA, NM and WVA; Greenland.



Cinna L.
reedgrass

All perennial, there are only four species included in this genus of the northern hemisphere. Typically they have an open drooping panicle, with appressed spikelets, each having a single floret. The rachilla extends behind the palea to form a short bristle. Glumes are of similar size, scabrous and keeled. They are marked too by ribs. Lemmas are awned and also have ribs.

Key to species

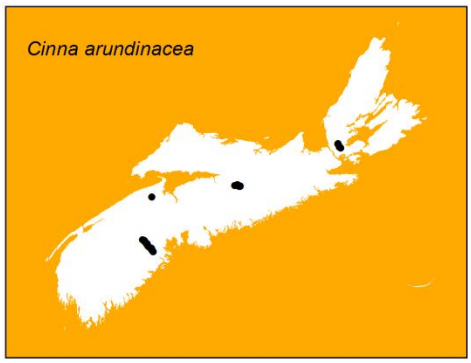
A. Upper glumes prominently marked by 3 veins, spikelets mostly >4mm long. *Cinna arundinacea*

aa. Upper glumes prominently marked by a single vein, rarely 3; spikelets mostly <4mm long. *C. latifolia*

***Cinna arundinacea* L.**

Sweet Woodreed; cinna roseau

Photo by Sean Blaney



The culms of this grass tend to be somewhat bulbous at the base, with more nodes than the more common species. Their leaves range from 3–19mm wide. Panicles are sometimes 55cm long. Spikelets are also taller at mostly 4mm or more. The upper glumes slightly exceed the lemma in length, while the lower glumes are slightly shorter.

Flowering and fruiting in late summer to fall.

Found in moist woodlands and meadows; riparian.

Limited to 2 localities, Coldbrook, Kings Co. and Port Hawkesbury.

Elsewhere known from NS to ON, south to TX and GA; MT.

STATUS: ORANGE-listed in NS.

***Cinna latifolia* (Trev.) Griseb.**

Woodreed; cinna à larges feuilles

Photo by Sean Blaney

Photo by Roger Lloyd

Scattered individuals, they may reach 1.5m in height. The leaves range from 3–10mm wide. Culms bear a light green panicle, 10–30cm tall, with slender flexuous branches. The glabrous lemmas are nearly equal in length to the paleas. The single floret is borne on a short pedicel.

Fruiting in summer.

Grows in wet soils in woods, swamps, and as single plants in alluvial soil.

Scattered throughout.

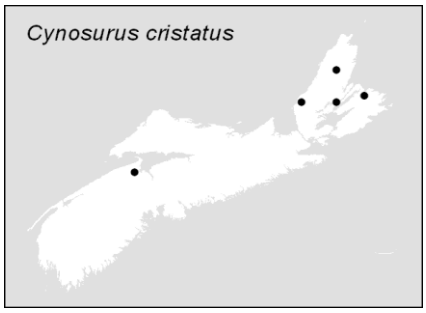
Ranges from NF to AK, south to SC and CA; Eurasia.

Cynosurus L.
crested dogstail grass

Ours is a perennial species, introduced from Europe in forage mixtures. Cespitose, its culms bear narrow flat leaves. Dense clusters of sterile and fertile florets form a secund spikelike panicle. The fertile spikelets have 1–5 florets. Glumes are marked by a single rib; lemmas have five, less conspicuous.

Cynosurus cristatus L.
Crested Dogstail Grass; crételle des prés

Photo by Roger Lloyd



A perennial from 30–80cm tall, it forms large clumps. The spicate panicle is up to 8cm long. Spikelets are borne in pairs, one sterile, on very short pedicels. Fertile spikelets have 2–4 florets. Scabrous lemmas are convex on the back and also strongly ribbed, bearing a short terminal awn.

Fruiting throughout the summer.

Found along roads and in old fields.

Occasionally seen: Kentville, Baddeck and Glendyer; Sydney.

Ranges from NF to ON, south to TN and NC; absent from NB; western North America. Introduced from Europe.

Dactylis L.
orchardgrass

A genus of only three species, they are widespread in the temperate and colder Eurasian landmass. One species has gained favour as a forage crop. A tall leafy species, its leaves have keeled sheaths. Panicles

are sparsely branched, the branches spreading and soon becoming erect and appressed. Spikelets are clustered distally.

Dactylis glomerata L.
Orchard Grass; dactyle pelotonné

Photo by David Mazerolle

Photo by Roger Lloyd

A tall species, reaching 120cm, its culms stand in coarse tufts. Ligules are long and membranous. Panicles are 8–10cm long with each spikelet about 1cm long. Lemmas bear short awns from the apices. A variable species with numerous subspecies. Ours is the typical form.

Fruiting from June through September.

Clump-forming in hay and oldfields, escaping to nearby roadsides.

Widely scattered.

Ranges from NF to AK, south throughout the US. Introduced from Europe.

Danthonia Lam & DC.
wild oatgrass

More diverse in the southern hemisphere, there are more than 100 species worldwide. Three are known from Nova Scotia. Perennials generally, the panicles or racemes are sparsely populated. The spikelets

are comprised of several florets. Glumes are subequal with 15 ribs, exceeding the length of the rounded lemmas. The lemmas are bitoothed (tritoothed in one species) and pubescent on their backs. The ribs are faint, with the midrib exerted as a bent and twisted awn. The ligule is a set of radiating hairs.

Key to species

A. Lemma tritoothed at apex. *Danthonia decumbens*

aa. Lemma bitoothed at apex. B

B. Culm straight, sometimes erect, the panicle branches stiffly erect; basal leaves shorter than the culm. *D. spicata*

bb. Culms geniculate at the nodes, panicle branches often spreading; basal leaves from half as long as to equal the height of the culm. *D. compressa*

Danthonia compressa **Aust.**
danthonie comprimée

Photo by Roger Lloyd

A tall plant, to 80cm, it has an open sparse panicle, the horizontal branches often lax. Spikelets have bare awned lemmas, the awns twisted and bent. The teeth are narrow, 2–3mm long.

Grows in fertile damp soils in thickets and at the edges of trails and paths.

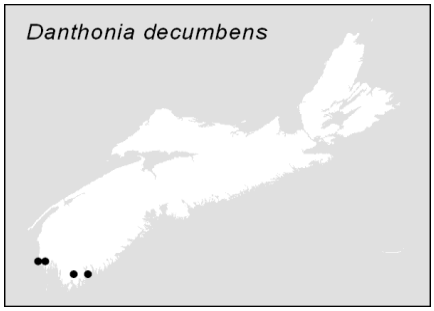
Common in the southwest counties, becoming less frequent in Colchester and Cumberland counties.

Ranges from NS; QC to ON, south to AR and GA; AK.

***Danthonia decumbens* (L.) DC**

Common Heathgrass; danthonie décombante

Photo by Roger Lloyd



A compact plant with a few-flowered panicle. The few spikelets each contain 3–5 florets. Glumes are nearly equal to the florets in length, or longer. Lemmas have three tiny teeth at their apices, but are awnless. The ligule is a row of hairs.

Frequents peaty wetlands and old pastures, other sites of moist soils.

Limited to Digby, Yarmouth and Shelburne counties.

Found only in NF and NS; BC to CA, where it has become introduced from the heathlands of Europe.

***Danthonia spicata* (L.) Beauv.**
Wiregrass; Povertygrass; danthonie à épi


Photo by Roger Lloyd

Densely cespitose, this perennial grass is only 20–50cm tall. The panicle is small, with short ascending branches which soon become erect. Each culm has 4–5 curly revolute basal leaves. Ligules are ciliate, and there are tufts of hairs on either side of the sheaths. Ovate lemmas bear long awns and sometimes they may also be puberulent. Their teeth are only about 1mm long. Glumes are 8.5–13mm long.

This species is quite variable and several varieties formerly used are no longer separable.

Fruiting from May through August.

Grows in poor or sterile soils, blueberry fields, clearcuts, dry banks and cliffs.

One of our most common grasses.

Ranges from NF to BC, south to OR, AZ and FL.

Deschampsia Beauv.
Hairgrasses

Of the 40 worldwide species, Nova Scotia has two slender species. Leaves are revolute or narrow. The inflorescence is a contracted or open panicle of small spikelets. Each spikelets contains two pedicellate florets. Glumes are equal to the florets in size, or larger, and ribbed. Lemmas are shiny, rounded and with obscure ribs. Their apices are cleft and bear awns. Paleas may be keeled and scabrous.

Key to species
Leaves filiform; awns 1–3mm long and twisted. *Deschampsia flexuosa*

Leaves flat, scabrous; awns straight, as long as the lemma. *D. cespitosa*

***Deschampsia cespitosa* (L.) Beauv.**
Tufted Hairgrass

Photo by Sean Blaney

Photo by Roger Lloyd

Taller than the following species, reaching 1.5m, its panicle is also erect and more compact. The leaves tend to be flat, less frequently inrolled. The straight awn scarcely exceeds the length of the smooth lemma. Membranous ligules are 4–5mm long. A variable species, the varieties and subspecies once separated are no longer recognized.

Forms tussocks in damps soils and gravels, marshes and brackish marshes.

Local, but found from Yarmouth Co. to Cape Breton.

Ranges from NF to AK, south to CA, NM, SD and NC; Greenland.

***Deschampsia flexuosa* (L.) Trin**

Common Hairgrass; deschampsie flexueuse

Photo by Roger Lloyd

A slender species, this hairgrass rarely exceeds 60cm in height. The leaves are mostly basal and about 1mm wide. The open panicle is delicate, bearing many small spikelets, 4–5mm long. Each has two florets, readily separating above the glumes at maturity, leaving the pair of glumes attached. Lemmas are puberulent, their apices obtuse and irregularly toothed. Awns are twisted, arising from near the base of the lemma. Callus bears a ring of short white hairs. Panicle branches and spikelets have a whitish sheen. Var. *montana* (L.) Ducomm. has the spikelets mostly longer than 5mm, while the typical variety has the spikelets mostly shorter than 5mm.

Grows in dry barren soils, headlands, sand plains and coastal cliffs, where it is usually conspicuous.

Common throughout.

From NF to AK, variously south to GA and OK; AK and BC; Greenland.

Dichanthelium (Hitchc. & Chase) Gould

Similar to *Panicum*, these grasses were recently segregated based on dissimilarity in leaves and panicles in early and late parts of the growing season. The blades of the basal leaves differ from the cauline leaves in being much shorter, more densely crowded and forming a cushion or rosette. Early in the season the stems are simple, bearing a single terminal panicle. Later in the season the stems branch, bearing fascicles of leaves. Secondary lateral panicles of cleistogamous florets arise, hidden amongst the clusters of leaves.

Key to species

A. Leaves elongate >20times longer than wide, <6mm wide.	B
B. Spikelets <2.8mm long; apices obtuse or rounded.	*Dichanthelium linearifolium*
bb. Spikelets >2.7mm, acute or beaked.	*D. depauperatum*
aa. Leaves not elongate, or if long, than >5mm wide.	C

C. Ligule with a conspicuous fringe of hairs, at least 2mm long. D

D. Stems and leaf sheaths glabrous or merely sparsely pilose. E

E. Panicle twice as long as its width or less, lateral spikelets longer than their pedicels or equalling their length. *D. spretum*

ee. Panicle width 2/3 of length or equal; lateral spikelets mostly shorter than their pedicels. *D. acuminatum*, in part

dd. Stems and leaf sheaths strongly pubescent. F

F. Axis of the panicle glabrous or puberulent. *D. meridionale*

ff. Axis of the panicle pilose. *D. acuminatum*, in part

cc. Ligule absent or inconspicuous, the tufts of hairs shorter. G

G.Stem leaves cordate, auriculate and clasping the stem. *D. clandestinum*

gg. Cauline leaves narrowed and rounded at the base or nearly cordate. H

H. Spikelets <1.4mm wide. *D. boreale*

hh. Spikelets >1.3mm wide. *D. xanthophysum*

***Dichanthelium acuminatum* (Sw.) Gould & CA Clark**
(=*Panicum lanuginosum* Ell.)

Photo by Sean Blaney

The species is highly variable. Our material separates as follows:

var. *fasciculatum* (Torr.) Freckmann is most common here. Its sheaths and stems are both papillose and pubescent or mostly so. Our material previously included under *P. subvillosum* Ashe belongs here.

Var. *lindheimeri* (Nash) Gould & CA Clark has the stems and leaf sheaths glabrous or sparsely pilose. Its spikelets tend to be a bit larger as well.

Var. *acuminatum* has the leaf sheaths strongly pubescent but not papillose.

Grows in open sites and sandy soils.

Widespread and common species.

Ranges from NS to BC, south to CA and FL.

Dichanthelium boreale (Nash) Freckmann
panic boréal

A glabrous species, bright green, it grows in small clumps, no more than 50cm tall. It is often purplish. Leaf blades are 8–12mm wide and nearly glabrous, strongly ascending. Ligules are absent, or minute. Panicles 5–10cm long, the branches are spreading. Spikelets are only 1.6–2mm long and puberulent.

Flowers and fruits from June to September.

Frequents well-drained soils as on grassy slopes.

Found throughout and our most common species in northern and Atlantic shores in suitable habitat.

Ranges from NF to ON, south to GA and MO.

Dichanthelium clandestinum (L.) Gould
panic clandestin

Photo by David Mazerolle

A conspicuous species, its leaves are very broad, from 15–25mm. Cordate at the base, they may also reach 20cm in length. A sprawling plant, its culms are decumbent and form large patches. They range from 30–40cm long and are glabrous. The panicles are large, up to 10cm long with many spikelets.

Flowering and fruiting from July to November.

Open areas of alluvial soil.

Occasional from Yarmouth to Guysborough Co.

Found from NS; QC to ON, south to TX and FL; absent from NB.

Dichanthelium depauperatum Muhl.
panic appauvri

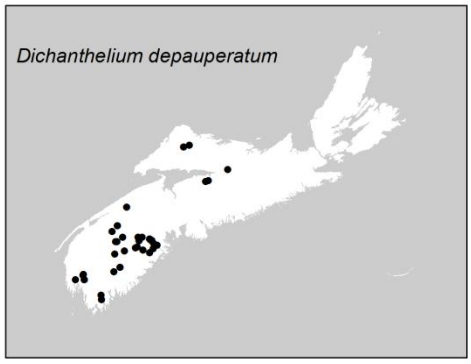
Photo by David Mazerolle

A densely cespitose species, it rarely exceeds 20cm in height. The narrow leaves are about equal in length. Panicles are only 3–5cm tall, their branches ascending and bearing only a few spikelets 2.5–3mm long, on short filiform pedicels. The glume and sterile lemma exceed the fertile lemma in length, forming a beak.

Plants prefer sandy sterile soils.

Very common in the western half and scattered to Colchester Co.

Elsewhere from NS to MB, south to TX and GA.



Dichanthelium linearifolium Scribn.
panic à feuilles linéaires

Photo by David Mazerolle

A densely cespitose species, resembling the previous species, with long narrow leaves. Each spikelet is rounded at the apex, a character which distinguishes it from the other species. The upper glume and the sterile lemma are obtuse and nearly equal in length to the fertile lemma. Both spring and fall panicles may be produced.

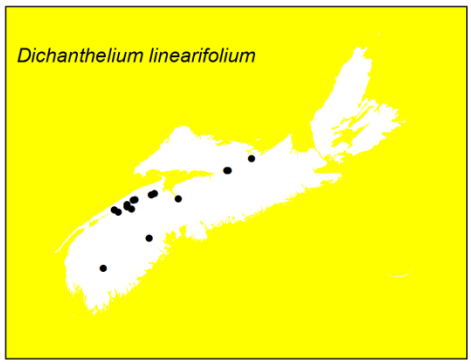
Flowers and fruiting from July to October.

Soils both dry and sandy.

Ranges along the northern part of mainland NS from

Annapolis to Pictou.

Elsewhere found from NS to SK, south to FL and TX.



***Dichanthelium meridionale* (Ashe) Freckmann** is another cespitose species, rarely taller than 45cm. The culms are erect and ascending. They are also hirsute or pilose near the base, puberulent above. Leaves are more numerous basally and form pilose sheaths. Now considered HISTORIC in Nova Scotia and collected but once by Fernald in 1920s from Yarmouth Co. Of coastal plain affinity, it is only known from NS and ON in Canada. Elsewhere ranges from NH to MN, south to GA and MS.

Dichanthelium spretum (Schultes) Freckmann
panic dédaigné

Photo by Sean Blaney

A tall plant reaching 80cm, arising on erect culms and producing autumn basal rosettes of leaves. Blades and culms are glabrous; the ligule is a fringe 2mm long. Panicle is 5–7cm long, its branches strongly ascending. Spikelets are small finely pubescent, 1.5–1.8mm long.

Flowers and fruits from June to October.

Grows in damp peat as on sandy gravelly lakeshores, pools and even in ditches.

Scattered from Halifax to Annapolis and most common in southwestern NS, along coastal-plain lakes.

Ranges from NS; ON; ME south to GA and TX.

Photo by David Mazerolle

***Dichanthelium xanthophysum* (Gray) Freckmann**

panic jaunâtre

Photo by David Mazerolle

Loosely cespitose its culms reach only 20–50cm tall. Leaf blades may be as wide as 2cm, narrowing at the base or rounded, but never cordate like *D. clandestinum*. The panicles are erect and very narrow, 5–10cm long.

Flowering and fruiting from June to September.

Found in open thickets on dry soils of sand or gravel.

Collected only from Bridgewater area.

Ranges from NS to SK, south to IA and WVA.

STATUS: ORANGE-listed in NS.

Photo by Roger Lloyd

Digitaria Haller
crabgrasses

Of both temperate zones and the tropics, there are about 300 species included in this genus. Two weedy annuals reach Nova Scotia. Distally on the culm are 4–6 spicate branches, palmately arranged, and unique to this genus. The second glume and lemma of the fertile floret are thin and leathery.

Key to species

Panicle branches 2–5, more or less separated. *Digitaria ischaemum*

Panicle branches 4–6; closely palmate in attachment. *D. sanguinalis*

***Digitaria ischaemum* (Schreb.) Muhl.**
Small Crabgrass; digitaire astringente

Photo by Roger Lloyd

Decumbent at the base, the culms rarely exceed 40cm. There are 2–4 spicate racemes, 3–5cm long and 1–2cm apart. Spikelets are reddish and only about 2mm long, subtended by a very tiny first glume. Second glume and lemma of the sterile floret are nearly equal in size, both prominently ribbed. This subtropical adventive grows as an annual here.

Seeds produced from August to October.

Found on the edges of trails, gardens, roadsides and cultivated fields. Can become troublesome.

Common in most urban centres.

Found from NS to BC, south to CA and FL. Introduced from Eurasia.

***Digitaria sanguinalis* (L.) Scop.**
Crabgrass; digitaire sanguine

Photo by Roger Lloyd

Erect in habit, reaching only from 30–60cm. Panicle branches are 4–10cm long, radiating from a short rachis. The first glume is small or absent, the second is nearly as long as the sterile lemma. Similar to the previous species, it is taller and more robust, and conspicuously pubescent.

Fruiting from July to October.

Found in fallow soils, gardens, even roadsides.

Collected from Kings, Halifax and Colchester counties and probably throughout.

Widespread from NS; QC to BC and throughout the US; introduced into Canada from further south.

Distichlis Raf.
saltgrasses

Limited to North and South America, the genus includes only four species; a single species occurs in Nova Scotia. It is a low creeping perennial with smooth leaves and culms. The culms have many nodes and are covered by the leaf sheaths nearly to the inflorescence. Ligules are membranous and fringed. Our species is dioecious. The spikelets are laterally compressed and arranged in panicles. Glumes are unequal in size and marked by 3–5 ribs. Lemmas are indistinctly ribbed, laterally compressed and awnless. Paleas are large and two-keeled.

Distichlis spicata (L.) Green
Spikegrass; Alkali-grass; Seashore Saltgrass; distichlis dressé

Photo by David Mazerolle

Photo by David Mazerolle

Ranging in height from 20–40cm, the culms bear revolute leaves. Ligules are very short. Panicle only 2–4cm in height and is tightly packed with spikelets, each 5–8mm long on very short pedicels. There are 5–8 florets in each spikelet. Plants are either staminate or pistillate, forming unisexual patches.

Fruiting in summer.

Found on sandy seashores or saltmarshes where it forms horizontal zones with salthay above the cordgrass zone. Common around the coast and along the shores of Lake Ainslie.

Ranges from NS to NT and BC; south to CA and FL. Absent from states in the upper Mississippi River regions.

Photo by Roger Lloyd

Echinochloa **Beauv**.

Only about 20 species comprise this genus of warm regions; two in Nova Scotia. Annuals, they are robust, nearly succulent plants. The inflorescence is a panicle of secund racemes. The spikelets bear trichomes and occasionally awns. The lemma of the fertile floret is hard and shiny. Spikelets have one sterile and one fertile floret disarticulating below the glumes. There is no ligule on the leaf sheath.

Key to species

Leaves 3–6mm wide; racemes few and simple; fertile lemma rounded, wrinkled at the tip and puberulent to just below the tip.	*Echinochloa crusgalli*
Leaves 5–30mm wide; racemes numerous; fertile lemma acuminate; glabrous.	*E. muricata*

***Echinochloa crusgalli* (Link) Beauv.**

Barnyard Grass; échinochloa pied-de-coq

Photo by Roger Lloyd

Photo by Roger Lloyd

Stout plants, they may reach 75cm tall, freely branching from the base. Leaves 10–15mm wide, inrolled at emergence and forming keeled but glabrous sheaths. Panicles are 5–15cm long, scabrous and compact. The crowded spikelets are each 1.5–3mm tall, lying along one side of the rachis. Trichomes are scattered amongst the spikelets. Glumes are unequal and acute; the lemma of the sterile floret may be awned.

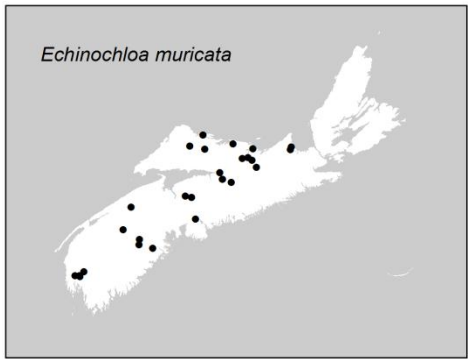
Preferring disturbed but fertile soils of gardens and roadsides.

Common and widespread throughout NS.

Ranges from NF to BC, south to CA and FL Introduced from Eurasia.

Echinochloa frumentacea Link, Japanese Millet, is planted as an ornamental and sometimes collected. It is not persistent here.

***Echinochloa muricata* (P. Beauv.) Fern.**



Two varieties are found here. The typical variety has the spikelets 3.5mm long to the base of the awn and the sterile lemmas have awns to 2.5cm long. It is found in Truro at a feedmill and is possibly not extant. Var. *microstachya* Wieg. has smaller spikelets, less than 3.5mm long and no awn or only a tiny one on the sterile lemmas, to 1.0mm long. This may be an old record, unsubstantiated by collections.

Fruiting during the summer.

Found in damp muddy soils in fallow ground.

Collected from Truro and in Kings Co.

Ranges from NS to SK, south to CA, TX and FL.

Elymus L.
Wild Rye

This genus has undergone extensive study and the classical genus has been split into three or more genera. In the narrower sense, the species may be described as tall perennials, some lacking creeping rhizomes. The leaves are flat, the sheaths with membranous ligules. Terminal spikes bear spikelets with 2–6 florets, disarticulating above the glumes and between the lemmas. Spikelets are alternating on opposite sides of the rachis producing a bilateral spike. Uppermost florets may be imperfect. Glumes are equal and usually rigid, acute and sometimes awn-tipped or sometimes reduced to awns with the first glume absent. Lemmas are rounded and acute or awned.

Key to species

A. Spikes loose, the rachis visible between the spikelets; glumes absent, or reduced to bristles.	*Elymus hystrix*
aa. Spike dense, the rachis concealed; glumes well-developed.	B
B. Plants without long-creeping rhizomes.	C
C. Axis of rachilla densely hairy; internodes of rachis >8mm long.	*E. trachycaulus*
cc. Axis of rachilla glabrous or puberulent; internodes <8mm long.	*E. virginicus*

bb. Plants with long creeping rhizomes. D

D. Leaves coarse; bluish. *E. wiegandii*

dd. Leaves soft and green. *E. repens*

***Elymus hystrix* L.**
(=*Hystrix patula* Moench)
Bottlebrush Grass; élyme étalé

Photo by Sean Blaney

A slender species, reaching 60–80cm tall. The leaves are long-acuminate and about 1cm wide. The unusual inflorescence is 6–25cm long with only about dozen nodes, 5–10mm apart. The spikelets lie nearly horizontal, 1–3 per node, each about 1cm long. The glumes are reduced or absent. The lemmas are long awned.

Fruiting from June to August.

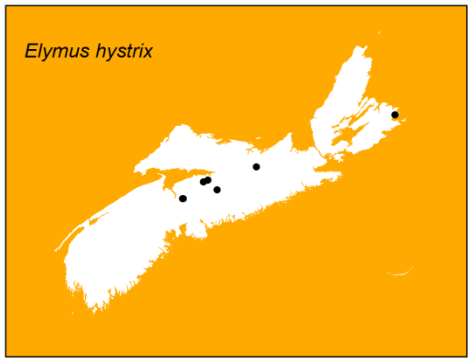
Wooded lowlands and terraces.

Rare and local: Meander River and Five Mile River, Hants Co. and East River of Pictou.

Ranges from NS to MB south to OK and GA; NM.

STATUS: ORANGE-listed in NS.

Photo by Roger Lloyd



***Elymus repens* Gould**

Couchgrass; witchgrass; Quackgrass; chiendent commun

Photo by David Mazerolle

Photo by Sean Blaney

Arising on relatively slender culms, reaching up to 1m tall, the spikelets alternate in two rows along either side of the rachis, dorsiventral sides proximal to it. The erect spikes may be 8–15cm tall. Both the lemmas and the glumes are acute and are often awned. The rachilla is glabrous or puberulent. Spikelets fall completely at maturity, leaving the rachis bare. Leaves are often glaucous and scabrous along the margins and on the upper surface.

Fruiting from June to August.

A common weedy grass of gardens and other disturbed soils. Difficult to eradicate due to the rhizomatous nature.

Collected from throughout the province.

Ranges from NF to AK, south to CA, TX and NC; Greenland. Introduced from Europe.

***Elymus trachycaulus* (Link) Gould**
Slender Wheatgrass; élyme à chaumes rudes

Photo by Roger Lloyd

A tall cespitose species, this one has no creeping rhizomes. The slender spikes may be 25cm long and cylindric. The spikelets soon disarticulate after maturity, leaving the glumes attached. The rachilla is densely pubescent, a key character on collected material without roots. The typical var. has the awns of the lemma no more than half as long or awns absent.

Ssp. *subsecundus* (Link)A. Löve & D. Löve has been collected from Halifax to Cumberland Co. and Cape Breton. The awns on the lemmas are at least as long as the body of the lemma, sometimes longer.

Fruiting during July and August.

Grows in gravelly beaches, talus, cliffs, rocky floodplains and dry banks.

Found throughout NS.

Throughout the continent.

***Elymus virginicus* L.**
Wild Ryegrass; élyme de Virginie

A robust cespitose species, reaching 80cm in height. The compact spikes are 8–12cm long. Spikelets are 8–12mm long and awned, the awns twice that in length. Glumes soon become hard and shiny, becoming convex at the base. There is considerable variation in the size and placement of the inflorescence in relation to leaves.

Former varieties are now included in the typical form, with

Photo by David Mazerolle

Photo by Sean Blaney

the exception of var. *halophilus* (E. Bicknell) Wieg. It has the spikelets glaucous and the leaves involute, while the typical variety has the leaves flat and spikelets green. This form is found only in NS; ME to NC. Our material should be checked to determine provincial spread.

Fruiting from June through August.

Grows in shade and/or moisture, often growing along streams or in the upper reaches of saltmarshes.

Common around the mainland coast. Not as widespread in Cape Breton.

Ranges from NF to BC, mostly south to FL and AZ.

***Elymus wiegandii* Fern.**
élyme de Wiegand

Photo by Sean Blaney

Tall, reaching 2 m and coarse in texture this perennial is also cespitose. The flat leaves are softly pubescent on their upper surfaces. Spikelets are generally paired along the axis, although the lower ones may be 3–4 per node. The awns are 2–3cm exerted. Spikes are often pendulous and extend 10–20cm.

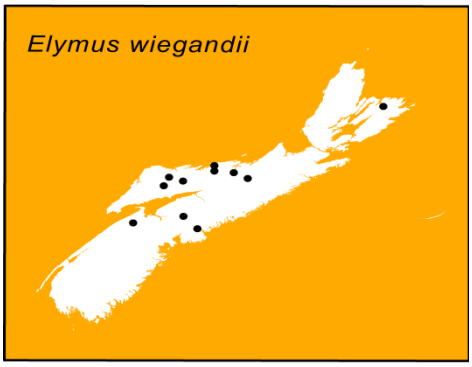
Fruiting from July and August.

Grows in alluvial soils and intervales.

Limited to the Northumberland Plains east to Sydney.

Elsewhere it is found from NS to ON; SK, variously south to PA and WY.

Photo by Roger Lloyd



STATUS: ORANGE-listed in NS.

Eragrostis Wolf.
Lovegrasses

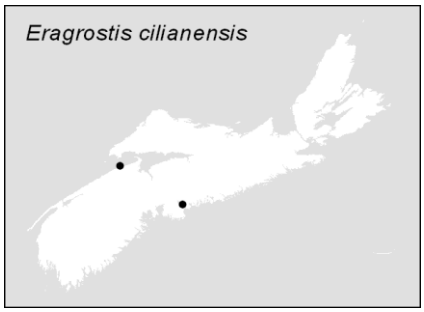
Tropical and temperate species are both found among the 250 species described worldwide although Nova Scotia has only four. Some are weedy. Some are annual. Spikelets have at least three florets and are awnless. The glumes are unequal in size, with 1–3 ribs. Lemmas are longer than the glumes, also with 1–3 ribs and keeled or rounded. Paleas are strongly two-nerved and may have ciliate keels. All but the palea are soon-deciduous.

Key to species

A. Leaves glandular, or scabrous along the edges; inrolled when dry; 8–40 florets per spikelet, 5–17(25)mm long.	B
B. Spikelets >2.5mm broad; second glume about 2mm long.	*Eragrostis cilianensis*
bb. Spikelets <2mm wide; second glume <1.6mm long.	*E. minor*
aa. Leaves not glandular, nor scabrous along the edges; spikelets with fewer florets, <5mm long.	C
C. Lowest branches of the panicle 1–2; glumes scabrous on the ribs.	*E. pectinacea*
cc. Lowest branches of panicle whorled; glumes glabrous.	*E. pilosa*

Eragrostis cilianensis (All.) Janchen

Stinkgrass; éragrostide fétide



A tall species exceeding 40cm, it also has pale green or lead-coloured spikelets. There are from 8–40 florets per spikelet, each spikelet 1.5cm long. The plant exudes a strong unpleasant odour.

Fruiting summer into fall.

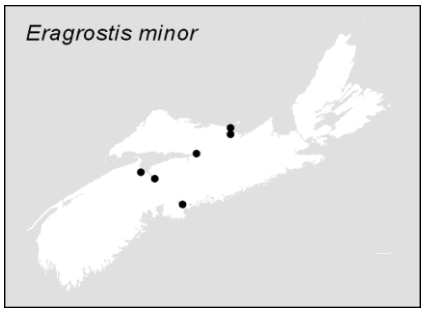
Annual and weedy in disturbed soils.

Fundy shore and Halifax.

Ranges from NS; QC to BC south to FLA and CA; absent from arctic Canada and NL. An introduction from Europe.

***Eragrostis minor* Host**
éragrostide faux-pâturin

Photo by Roger Lloyd



A sprawling decumbent plant, from 10–40cm tall, it produces compact panicles to 7cm long. Pedicellate spikelets are often purplish, with 3–9 florets. Well-developed spikelets are plump, lanceolate to ovoid. The ligule is ciliate.

Fruiting from summer into fall.

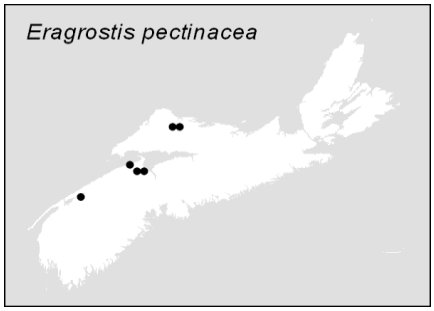
Disturbed habitats such as building lots, roadsides, railways and old cinder piles.

Associated with railways Halifax to Windsor and Wolfville; Truro to the Northumberland Strait. There have been no recent collections.

Ranges from NS to ON; SK; BC south to CA, TX and FL. Introduced from Europe.

Eragrostis pectinacea (Michx.) Nees
Tufted Lovegrass; éragrostide pectinée

Photo by Roger Lloyd



Another weedy species, smaller than the previous species at 20–40cm culms. Panicles are open and diffuse, with small spikelets on filiform pedicels, several mm long. Each spikelets contains 5–10 florets. Ligule is pilose.

Fruiting from June to October.

Urban disturbed areas, such as old ballast and cinder piles.

Collections from Annapolis, Kings and Cumberland counties.

Ranges from NS to ON; BC, south to FL and CA. Absent from the Prairies.

Eragrostis pilosa (L.) P. Beauv.
éragrostide poilue

Standing 10–50cm tall, the panicle is open, the branches spreading. Spikelets are small, borne on pedicels only 1–3mm long. The ligule is free from pubescence.

Grows in the edges of coastal beaches.

A single collection from Halls Harbour, Kings Co. belongs here.

Known from NS to ON, south to TX and FL; west coast. Naturalized from eastern Asia.

Festuca L.
fescues

Of the more than 100 species worldwide only six reach Nova Scotia. They are all perennial species; their spikelets comprise several florets. Usually the plants are glabrous, or may be puberulent only on the lemmas and lower leaf sheaths. Lemmas are convex, marked by obscure ribs, acutely pointed or awned. The ligules may be absent. If present they are less than 3mm long. Auricles are absent, one character which segregates this genus from *Schedonorus*.

Key to species

A. Leaf blades flat, at least 3mm wide; lemma awnless.	*Festuca subverticillata*
aa. Leaf blades very narrow or plicate; lemma awned or merely acute.	B
B. Plants with spreading ramets, forming a uniform turf; lemma about 5mm long, usually awned.	*F. rubra*
bb. Plants densely cespitose, without spreading ramets.	C
C. Lemma about 3mm long, awnless or with an acute tip less than 0.5mm long.	*F. filiformis*
cc. Lemma>3mm long, usually awned.	*F. trachyphylla*

Festuca filiformis Pourret
Hair Fescue; fétuque chevelue

Photo by Sean Blaney

A slender and cespitose grass, its culms only reach from 20–40cm tall. The leaves are very narrow, almost filiform. The densely packed inflorescence is 3–5cm long, with numerous florets in each spikelet, each to 3mm long. Spikelets are nearly or mostly awnless. Spikelets shatter easily, and the plants become dry and yellowish early in the summer.

Matures early summer.

Found on dry sterile soils of roadsides, lawns and fallow fields.

Found throughout and sometimes common.

Known from NF to ON south to MS and SC; western North America. Introduction from Europe.

***Festuca rubra* L.**

Red Fescue; fétuque rouge

Photo by Sean Blaney

Photo by Sean Blaney

Photo by Roger Lloyd

Plants are densely cespitose, arising 40–100cm from creeping rhizomes and forming an open turf. They are highly variable with respect to colour, awn length and degree of pubescence on the lemma. Spikelets are about 10mm long, each with 4–7 florets and awned 1–3mm. The lower leaf sheaths are early-deciduous and disintegrate into loose fibres.

Both ssp. *arctica* (Hack.) Govor and ssp*. rubra* are known from Nova Scotia. Our material should be assessed for inclusion here. The typical form now includes var. *prolifera* Piper, which may not be as rare and local as once thought.

The ssp. may be separated on the basis of: ssp. *arctica*: inflorescence branches are scabrous or pubescent; lemmas are pilose, their awns <1.8mm. The preferred habitats are alpine or subalpine, littoral or inland. Ssp. *rubra* has the branches of the inflorescence scabrous, lemmas are usually glabrous, their awns to 5mm long and of various habitats.

Fruiting during June and July.

A variety of habitats including pastures, exposed coastal sites, sand and gravel beaches and upper saltmarshes.

Common throughout.

Ranges from NF to AK, south to CA, NM and FL; Greenland. Absent only from southern arid lands.

***Festuca subverticillata* (Pers.) E. Alexeev.**

Nodding Fescue; fétuque obtuse

Photo by Sean Blaney

Photo by Roger Lloyd

A slender grass, reaching over 1m in height. The leaves are 5–7mm wide. The long slender branches of the panicle are erect becoming lax and bearing a few small spikelets distally. Each spikelet carries only a few florets, about 5–6mm long.

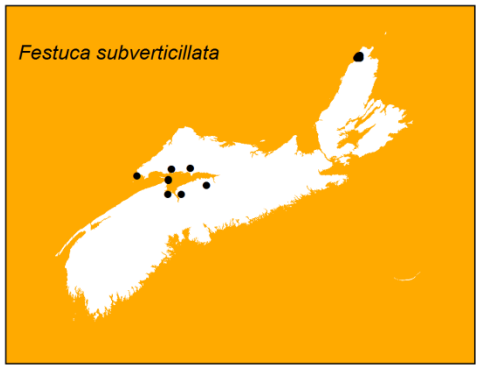
Fruiting early in June and July.

A woodland species of fertile deciduous forested slopes and alluvial soils.

Local about Cape Blomidon, Kings Co.; Five Mile River, Hants Co., Economy River, Colchester Co. and southern Cumberland Co.

Elsewhere known from NS to MB, south to TX and FL.

STATUS: ORANGE-listed in NS.



Festuca trachyphylla Schult.
Sheep Fescue; fétuque à feuilles rudes

Photo by Roger Lloyd

Slightly more robust than the previous species, it reaches 50cm in height. Densely cespitose, it produces clumped sods. The basal leaves are narrow. Panicles reach 10cm in length/ The lemmas are about 5mm long, with long awns.

Fruiting in early summer.

Sterile sandy soils in old lawns and blueberry fields.

Scattered and found throughout, where habitat is suitable.

Introduced from Europe in forage seed mixtures. Our *Festuca ovina* collections need to be checked as neither Flora North America nor NatureServe include NS in its range. They probably belong here.

Glyceria R. Br.
manna-grasses

Generally native species of wetlands, the manna-grasses are typified by having closed leaf sheaths, almost to the top. Leaf blades are flat and the ligule is membranous. Panicles are ample with many spikelets, each comprising up to 16 florets. The convex lemmas are awnless and obtuse at the apex. There may be seven ribs marking them, conspicuous or obscure.

Key to species

A. Spikelets >10mm long, inflorescence branches appressed or strongly ascending.	B
B. Lemmas 2.4–5mm long; leaves 2–4mm wide.	C
C. Lemmas usually acute, sometimes obtuse, entire or nearly so; mid-cauline leaves densely papilose on adaxial surface, glabrous.	*Glyceria borealis*
cc. Lemmas usually truncate, sometimes obtuse, crenate; adaxial leaf surface of mid-cauline leaves rarely papilose, sometimes sparsely hairy.	*G. notata*
bb. Lemmas >5mm long; leaves >4mm wide.	*G. fluitans*
aa. Spikelets <7mm long; branches ascending or drooping.	C
C. Panicle contracted, the branches tightly ascending.	D
D. Panicle linear and nodding, >15cm long; lemmas <2.3mm long.	*G. melicaria*
dd. Panicle oblong, dense and erect, <12cm long; lemmas >3mm long.	*G. obtusa*
bb. Panicle diffuse, the branches spreading.	E
E. Lemmas marked with faint ribs; palea bowed outward, visible.	F
F. Florets 5–10; lemmas 3–4mm long.	*G. canadensis*
ff. Florets 3–6; lemmas 2–2.5mm long.	*G. laxa*
ee. Lemmas marked with strong ribs; palea not bowed, nor visible.	G
G. Panicle <20cm long; spikelets 3–4mm long.	*G. striata*
gg. Panicle 15–40cm long; spikelets 5–6mm long.	*G. grandis*

Glyceria borealis (Nash) Batchelder

Northern Mannagrass; glycérie boréale

Photo by David Mazerolle

Tall or long-trailing this slender grass is often found floating or reclining on the water surface. The spikelets are very narrow and held tightly along the rachis. Resembling *G. fluitans* and *G. notata*, it is separated on the basis of narrower leaves and smaller spikelets.

Fruiting from June to August.

Shallow waters of ponds, pools, streams and even ditches.

Common around the province.

Ranges across the continent and south NJ, NM and CA.

***Glyceria canadensis* (Michx.) Trin**
Rattlesnake-grass; glycérie du Canada

Photo by David Mazerolle

Photo by Roger Lloyd

Culms are solitary and reaching 1m in height. Leaves 3–6mm wide. Panicles are lax or drooping, the spikelets measure 4–5mm long. Florets 5–8, are diverging. Lemmas are broadly ovate, their tips projecting beyond the rigid palea, about 0.5mm beyond.

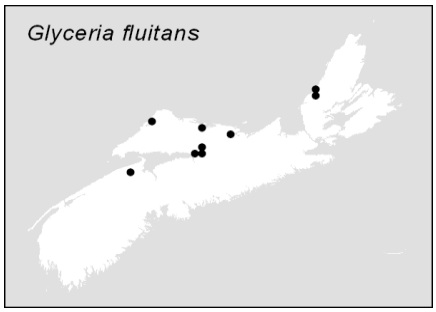
Grows in swamps, meadows, ditches and grassy edges of ponds and streams; bogs.

Found throughout.

Ranges from NF to SK; BC south to OR in the west; IL and NC in the east.

***Glyceria fluitans* (L.) R. Br.**

Floating Mannagrass; glycérie flottante



More generous in overall size and habit than *G. borealis*, this floating species also has more lax panicles. Flowering and fruiting from late June through to August.

Found in meadows and ditches.

Locally common in Colchester Co and Kenloch, Inverness Co; also reported from Kings, Cumberland and Pictou counties.

Found only in NF and NS and in a few scattered US jurisdictions. Introduced from Eurasia.

***Glyceria grandis* S. Wats.**

Reed Mannagrass; glycérie géante

Photo by David Mazerolle

A stout tall species reaching 2m, it produces leaves up to 10mm wide. The erect panicle may be 25cm long or longer, freely branching. Branches terminate in narrow spikelets to 3.5mm long. Lemmas are about 2.5mm long, convex and with prominent ribs. The colour of the spikelets is variable.

Flowering and fruiting from June to August.

Conspicuous in wet meadows, marshes, streamsides and

Photo by Roger Lloyd

ditches.

Common especially along the northern side.

Ranges from NF to AK, south to CA, NM, MS and NC.

***Glyceria laxa* (Scribn.) Scribn.**
glycérie lâche

Photo by Sean Blaney

Colonial, the culms tend to be uniform in height., to 1.6m. Panicles are large but the spikelets are relatively small and drooping, unlike those of *G. canadensis*. The lemmas are faintly marked.

Flowering and fruiting from July and August.

Grows in waterlogged soils and wooded swamps or wet woods.

Photo by Roger Lloyd

Scattered from Yarmouth Co. to Cumberland Co. Most common in the southwest.

Ranges from NS; ON, south to WI, TN and NC.

***Glyceria melicaria* (Michx.) FT Hubbard**
glycérie mélicaire

Photo by Sean Blaney

On stiffly erect culms 1m tall, this species bears bright green leaves. The panicle is long and linear, strongly contracted to the rachis with ovoid spikelets.

A dominant species where found as in fertile wet sites in forests.

Cape Blomidon and through the Cobequids to Truro and Cumberland Co. Rare elsewhere.

Photo by Roger Lloyd

Ranges from NS to ON, south to GA and MS, through Appalachia.

***Glyceria notata* Chevall., Catgrass,** was once reported as being present in Digby Co. As this locality and specimen cannot be verified, it is given only a mention here. A Eurasian species, its North American range has not been determined.

Glyceria obtusa (Muhl.) Trin
glycérie obtuse

Photo by David Mazerolle

Culms stiffly erect, they may reach 80cm in height. Panicles are conspicuous, long and narrow, to 10cm, with many densely crowded spikelets on branches 5–6mm long. There are 5–6 florets in each spikelet. Lemmas are broadly round at the apex and equal to or very slightly shorter than the palea.

Flowers and fruits from late July to September.

Lakeshores and streamsides, in mucky soils.

Photo by Sean Blaney

Common from Digby along the coast to Lunenburg Co; scattered and local to Halifax's Shubenacadie Grand Lake and coastal Guysborough Co.

Ranges from NS to SC along the coastal plain.

Photo by Roger Lloyd

***Glyceria striata* (Lam.) AS Hitchc.**
Fowl Mannagrass; glycérie striée

Photo by Roger Lloyd

Another slender species, it may reach 1m in height. The leaves are 3–5mm wide. Panicles are diffuse, and up to 20cm long. The spikelets are barely 2mm long, and have 4–5 florets. Glumes are small, less than 1mm long with the lemmas strongly ribbed.

Flowers and fruits throughout the summer.

Found throughout but less frequent in southwestern counties and along the Atlantic.

Absent only from Nunavut and Greenland.

Hierochloë R. Br.

Limited to the northern hemisphere, there are 20 species worldwide. Nova Scotia has a single species, a tall perennial whose culms bear thin flat leaves at the base, and an open panicle of few spikelets. The spikelets have three florets, only the terminal one is perfect. The lower pair are staminate. Glumes are awnless and membranous, equal in length to the florets. Lemmas of the staminate florets are round and not keeled, marked by five ribs. Lemmas of the perfect florets have short hairs at the apex.

Hierochloë odorata (L.) Beauv.
Sweet-grass

Photo by David Mazerolle

Photo by Roger Lloyd

An erect species, the culms are 30–50cm tall and brownish. Leaves are short and mostly basal. Panicle is ovoid and tidy, 3–7cm long, its branches short and twisting, spreading outward. Spikelets are spherical, 4–5mm subtended by a pair of equal glumes, hardly obscuring the lemmas beneath.

Flowering and fruiting early, in June.

Specialist of the upper saltmarsh zone where freshwater seeps meet tidal zone.

Around the entire coast.

Ranges from NL to AK, south to BC and NY; Eurasia.

Holcus L.
velvetgrass

Eight species comprise this Eurasian genus, while a single species has been introduced to Nova Scotia. A distinctive grass, it has soft downy pubescence on the culms, a character not seen in any other grass here. Nearly succulent, the culms are weakly erect. Leaves are broad, flat and may be pilose or villous. The panicles are contracted, bearing spikelets of two florets. The upper one is staminate or sterile; the lower one perfect. Both glumes and lemmas are variously ribbed and only the lemma of the upper floret is awned.

***Holcus lanatus* L.**

Velvetgrass; holque laineuse

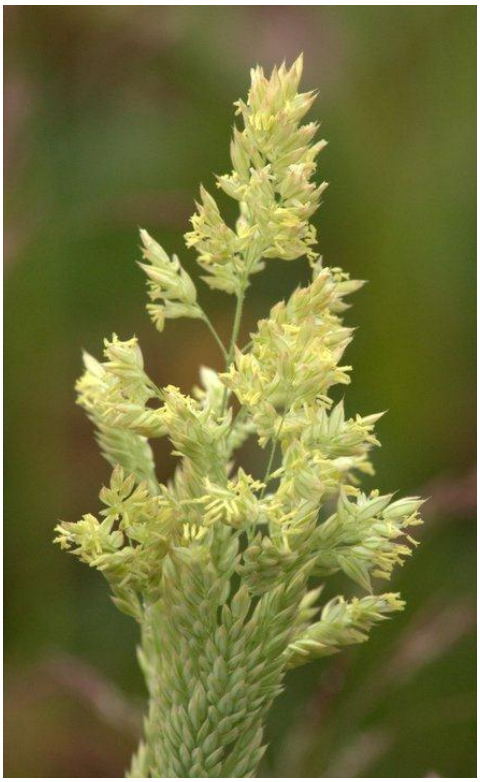


Photo by Alain Belliveau

A tall white-tomentose perennial to 1m in height, it is also loosely cespitose. Leaves are greyish green and pilose, their sheaths split almost to the base. The panicle is narrow, 4–6cm long, with crowded greyish-green spikelets. The florets are enclosed by a pair of glumes. Caryopses are produced only in the lower floret, the upper one sterile and armed with a hooked awn, scarcely exerted.

Flowers and fruits in early summer.

Found in open damp areas, such as meadows and fields; typical of gull nesting areas.

Common in Digby, Yarmouth and Shelburne counties and scattered to Halifax and Kings counties. Occasionally seen elsewhere.

Ranges from NF to ON, southward; BC to CA. Adventive from Europe.

Photo by Roger Lloyd

Hordeum L.
barley

While there are 25 species worldwide only two introductions reach Nova Scotia. Annuals or perennials these tall grasses arise from fibrous roots, not creeping rhizomes. The leaves are broad and often lax, although flat. The inflorescence is a densely flowered spicate raceme. There are three spikelets at each node, with the central one perfect and the lateral pair staminate or sterile. Cultivated strains may exhibit fertility in all florets. The glumes are narrow and awned. Lemmas rigid and globose and also awned.

Key to species

Plant >1m in height; rachis not easily shattering; leaf sheaths auriculate.	*Hordeum vulgare*
Plant <40cm tall; rachis easily shattering; leaf sheaths without auricles.	*H. jubatum*

Hordeum jubatum L.
Foxtail Barley; orge queue-d'écureuil

Photo by David Mazerolle

A slender perennial, the stems are rarely more than 40cm tall. The spike resembles a squirrel or fox tail, with long green or purple awns. The lateral spikelets are reduced to awns. Once mature the spike easily disarticulates, with seven bristles in each cluster. Auricles are absent on the leaf sheaths.

Flowers or fruits in summer.

Photo by Roger Lloyd

Weedy in nature, this plants is found on roadsides, in saltmarshes and dooryards.

Scattered throughout the province and sometimes common.

Ranges throughout the continent, south to South America; native to Eurasia.

Hybrids are known with *Elymus virginicum*. This form is known as *Elyhordeum montanense* (Scribn.) Bowden. It has been collected from Truro area. A leafy plant, it produces two plump green caryopses per spikelet which do not readily break off. The inflorescence is a bit smaller and the awns much shorter than in the parent species.

***Hordeum vulgare* L.**
Barley; orge commune

Photo by Roger Lloyd

An annual cereal crop, 1–2m tall, producing a spike of flowers with long awns on both the lemmas and glumes. Three spikelets are borne at each node, although the lateral ones may be reduced to awns. The leaf sheaths bear conspicuous auricles.

Fruiting during the summer.

Widely cultivated and found as a casual escape nearby. Short-lived and not persisting.

Scattered on the mainland from Yarmouth to Pictou counties.

Widespread on the continent; from Europe.

Leersia Sw.

A genus of 10 species of creeping perennials; only one species is found in Nova Scotia. Leaves are broad and flat, the culms bear open panicles. Leaf sheaths have a short firm ligule, extending laterally to form auricles. Spikelets are laterally compressed and crowded distally. Glumes are absent.

Leersia oryzoides (L.) Sw,
Rice Cutgrass; léersie faux-riz

Photo by Roger Lloyd

Forming tangled masses of culms and leaves 1m in height, this plant is noticeably prickly with rough recurved barbs on the leaves and culms. The flattened spikelets are about 5mm long and ciliate. They are borne on filiform branches, within panicles 15cm long. There are also fringes of white hairs around the nodes on the culm.

Fruiting from June through to October.

Found in wet soils or even emergent in shallows of ditches and ponds, lakeshores.

Scattered throughout the province.

Elsewhere ranges from NS to BC, south to WA and FL; absent from AB.

Leymus Hockst.

Perennial grasses, they may be cespitose and are often rhizomatous. Culms may reach more than 3m. Leaves are basal or evenly cauline with open sheaths. Ligules are usually auriculate. Blades are veined, with some veins prominently ribbed. Inflorescences are distichous spikes, with 1–8 spikelets per node. The rachis may be ciliate or scabrous. Spikelets are usually sessile, with 2–12 florets, the distalmost reduced. Spikelets disarticulate above the glumes and between the florets. Lemmas are glabrous or pubescent, usually ribbed 5–7 times, and sometimes awned. Glumes are equal or subequal, the lowermost sometimes absent. Of the 50 species of north-temperate grasses here, Nova Scotia has one.

***Leymus mollis* (Trin.) Pilg.**
(=*Elymus mollis* Trin)
American Dune Grass; élyme des sables d'Amérique

Photo by Martin Thomas

A tall stout species, arising from creeping rhizomes, it may reach 120cm tall. Leaves are long and coarse. The spikes are erect, 10–30cm long and crowded with spikelets 1–2cm long arranged in pairs at each node. Plants resemble *Ammophila* but the spikes are much softer and the spikelets are pedicellate in this species. Those of *Ammophila* are sessile.

Flowers and fruits in June and July.

Grows in beaches and sandy coastlines.

General, around the coast.

Ranges from NF to BC, south to CA; south to IL and PA in the east; eastern Asia.

Photo by Martin Thomas

Photo by Sean Blaney

Lolium L.
ryegrass

A single species of this genus has been introduced to Nova Scotia from Europe. It grows as an annual or short-lived perennial and bears sessile spikelets alternating up the rachis. The internodes look relatively long. Each spikelet is oriented laterally to the spike, or the backs of one row of lemmas lies adjacent to the rachis.

***Lolium perenne* L.**

Perennial Ryegrass; ivraie vivace

Photo by Roger Lloyd

Typically a slender grass, it reaches 30–60cm in height. Spikes are long and the spikelets conspicuously alternate with narrow edge along the axis. Rachis is smooth. The leaves are folded in the bud.

Ssp. *multiflorum* (Lam.) Husnot or Italian Ryegrass resembles ssp. *perenne* but for the presence of awns on the lemmas and scabrous rachises of the spikes.

Flowers and fruits from May until August.

Planted as a good quality cover crop and turf grass, it is short-persistent in nearby habitats.

Collected from throughout.

Ranges from NS to AK and southward. Absent only from Labrador and NU. Introduced from Europe.

Milium L.

Only six species comprise this genus of temperate grasses, mostly in Europe and Asia. Nova Scotia has one species, one of our rarer grasses. Typically the plants have membranous ligules, sometimes exceeding 1cm in length. Inflorescence is an open panicle, with many small spikelets sparsely arranged along filiform branches. Spikelets are compressed dorso-ventrally and contain only a single awnless floret. Disarticulation is above the pair of equal glumes. The smooth shiny lemma is marked by five ribs, turning dark brown at maturity, slightly obscured by the three-ribbed glumes.

***Milium effusum* L.**

Milletgrass; millet diffus

Photo by Sean Blaney

Photo by Roger Lloyd

A perennial species, its culms may reach 90cm in height. The leaves are narrow, 5–10mm wide. Panicles are erect, stretching 15cm tall, bearing spikelets no more than 3mm long, subtended and enclosed by the glumes.

Flowers and fruits from June to August.

Found only in fertile soils of alluvial forests.

Occasional atop Cape Blomidon, Cape Chignecto and southern Cumberland Co. as well as northern Cape Breton.

Ranges from NF to MB, south to TN and NC. Eurasia.

Molinia Schrank
Moor Grass

The five species included here are native to Europe and Asia, with one being introduced to northeastern North America. Cespitose perennials, they have slender leafy culms. The ligule is ciliate. Spikelets are wide spaced, borne on slender pedicels, each with 2–4 florets. The terminal floret is abortive. Glumes have a single rib and are shorter than the lemma, with three ribs. The palea is equal to or longer than the lemma.

Molinia caerulea (L.) Moench
Purple Heathgrass; molinie bleue

Photo by Roger Lloyd

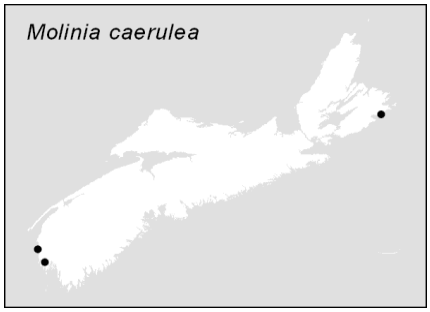
A coarse tussock-forming grass, it reaches 1m in height. The roots are extremely fibrous. Leaves are mostly basal, flat and about 5mm wide. The ligule is a fringe of short hairs. Lemmas are smooth, convex on the back and about 4.5mm long. Acute, they are also three-ribbed.

Fruiting during August and September.

Found in fields and meadows.

Known and collected since the 1940s from Louisbourg and more recently in the Yarmouth area.

Ranges in North America from St. Pierre et Miquelon; NS; QC to ON, south to WI and NJ; OR.



Muhlenbergia Scribn.
Muhly

Mostly a genus of the Americas, of the 125 species included, only a few are native to the Eurasian continents. Similar to *Agrostis,* their lemmas have three ribs. The ligule is membranous and never ciliate. Spikelets contain only a single floret with the lemma exceeding the length of the palea.

Key to species

A. Panicle open and diffuse; spikelets long-pedicellate.	*Muhlenbergia uniflora*
aa. Panicle contracted; spikelets sessile, or nearly so.	B
B. Glumes shorter than the lemmas or nearly equal; branches of the panicle arcuate; spikelets absent at the base.	*M. mexicana*
bb. Glumes much longer than the lemmas; branches short and stiff, florets or spikelets numerous at the base.	*M. glomerata*

Muhlenbergia glomerata (Willd.) Trin
muhlenbergie agglomérée

Slender in stature, this species reaches 30–70cm in height, arising from scaly rhizomes. The purplish panicle is 3–5cm long, spikelets borne on short branches and to the base of the panicle. Proximal branches tend to be distant and smaller. Glumes are awned, 1–2mm long; the shorter lemmas are not, and often are pubescent basally.

Flowering and fruiting from August to October.

Various open habitats including cliff ledges, fens, bogs and cobbly shores.

Often common in southwestern counties, from Digby to

Photo by Sean Blaney

Photo by David Mazerolle

Photo by Roger Lloyd

Halifax; less frequent eastward.

Elsewhere from NF to YT, south to NC and NV.

***Muhlenbergia mexicana* (L.) Trin**

Arising from conspicuously knotted rootstocks, this more robust grass produces a panicle to 12 cm long. The long

Photo by Roger Lloyd

branches are contracted or strongly ascending. Lower branches are often devoid of spikelets at the base. There are very short awns on both glumes and lemmas.

Flowering and fruiting from August to October.

Grows in slopes and streamsides in alkaline soils; moist cliff bases and crevices.

Scattered from the Minas Basin to northern Cape Breton.

Ranges from NS to YT, south to CA, TX and NC; AL. Absent from AB and southeast US.

***Muhlenbergia uniflora* (Muhl.) Fern.**

Photo by Sean Blaney

A delicate graceful grass, 20–40cm tall, it has a diffuse panicle of divergent branches. The tiny purplish spikelets shimmer distally on filiform branches, each about 1.5mm long. Glumes are slightly unequal, the longer about half the length of the lemma. The widely divergent branches superficially resemble those of *Agrostis hyemalis*, but it is dissimilar to the other *Muhlenbergia* species.

Flowers and fruits from late summer to October.

Grows in poor soils in open fens and between sedge tussocks in wetlands.

Common in southwestern Nova Scotia and scattered to Cape Breton.

Photo by Roger Lloyd

Ranges from NF to James Bay, south to NJ and MN; west coast.

Nardus L.
matgrass

A monotypic genus , originating in Europe. Matgrass is perennial and cespitose. The culms may reach 60cm in height. Leaves are mostly basal with open ligulate sheaths. The blades are filiform and tightly convolute. Inflorescence is a one-sided spike, the spikelets in two rows and imbricate. Disarticulation is below the solitary floret. Glumes are greatly reduced or vestigial. The lemmas are awned and three-ribbed, tightly enveloping the paleas, which have two keels.

Nardus stricta L.
Moor Matgrass; nard raide

As descibed above. The strongly convolute leaves are stiffly ascending and the culms are tightly tufted.

Here, flowers and fruits throughout the summer.

Grows in sandy peaty soils.

4-16 Poaceae

Uncommon in southwestern Nova Scotia. Collected from Clyde River and Seal Island, Shelburne Co.

NF; NS; QC to ON, south to MI and NY; OR and ID; Greenland. Introduced from Europe.

Oryzopsis Michx.
Ricegrasses

These are perennial grasses forming loose or dense clumps. Their culms range from 25–65cm tall, usually erect or spreading. Leaves are mostly basal, with glabrous open sheaths. The ligules are membranous and ciliate and longest at the sides. Leaves usually remain green overwinter. The inflorescence is a contracted panicle, of spikelets to 7.5mm long. There is but a single floret. Glumes have 6–10 ribs that are not quite equal; their apices are mucronate. Lemmas are awned and pubescent at the base, covering the paleas. Disarticulation occurs above the glumes, the lemmas and paleas remaining attached to the caryopses.

Oryzopsis asperifolia Michx.
Ricegrass; oryzopsis à feuilles rudes

Photo by Martin Thomas

A cespitose species, the culms emerge before the leaves unfurl. Panicles are contracted, 3–7cm long bearing awned spikelets 6–8mm long. Glumes are ovate and thin, and only slightly exceeding the lemmas. Leaves are tufted, stiff and shining, persistent over winter. They measure 5mm wide and up to 50cm long.

Flowering begins in April and fruiting continues to early June, one of our earliest.

Found on dry barrens and in forests.

Scattered and not abundant, from Digby and Shelburne counties to northern Cape Breton.

Elsewhere, from NF to YT, south to WA, NM and VA.

Photo by Martin Thomas

Panicum L.
panicgrasses

A large genus of more than 450 species, it is best developed in the subtropics and tropical regions, with a few extending into the northern temperate areas. Usually tall, 1–3m, they may be annual or perennial. Florets are borne in a panicle in two-flowered spikelets. Only the upper floret is fertile. Neither is awned. Both glumes are well developed, although the first glume is much shorter than the second glume. Lemma and palea are both hard and shiny.

Key to species

A. Annual, from shallow fibrous roots.		B
	B. Leaf sheaths glabrous.	*Panicum dichotomiflorum*
	bb. Leaf sheaths more or less pubescent.	C
		C. Spikelets 4.5–5.5mm long; panicle lax. *P. milaceum*
		cc. Spikelets 2mm long; panicle erect, diffuse. D
		D. Panicle equal in length and width at maturity, exceeding half the total length of the plant. *P. capillare*
		dd. Panicle width only half the length, less than half of the total length of the plant. *P. philadelphicum*
aa. Perennials, deep-rooted.		E
	E. Culms soft, compressed; spikelets diffuse and not secund; anthers about 2mm long.	*P. longifolium*

ee. Culms round, densely cespitose; spikelets secund; anthers about 0.5mm long. *P. virgatum*

***Panicum capillare* L.**
Witchgrass

Photo by Roger Lloyd

An annual species, its culms stand from 30–80cm, bearing leaves 5–12mm wide. Plants are generally pubescent. Panicles are large, more than half the length of the plant. They have long filiform branches with spikelets 2mm tall. The glumes and sterile lemmas are acutely pointed at the apices.

Flowers and fruiting from July to October.

Found along roadsides, in gardens and most disturbed and sandy sites.

Scattered from Annapolis to Cumberland and east to Halifax and Cape Breton.

Ranges from NS to BC, south to FL and TX. Considered to be an introduced species in NS although native in some parts of eastern North America.

***Panicum dichotomiflorum* Michx.**
Fall Panicgrass; panic d'automne

Photo by David Mazerolle

A coarse annual, its culms may reach more than 1m, from a reclining base. The leaves are glabrous. Panicles 10–20cm long, bearing spikelets 2.5mm high and clustered distally.

The two varieties var. *puritanorum* Svenson and var. *dichotomiflorum* are no longer recognized.

Flowering and fruiting from June through October.

Photo by Roger Lloyd

Ranges from NS to ON; BC south to FL and CA.

***Panicum miliaceum* L.**

Millet; Proso; panic millet

Photo by David Mazerolle

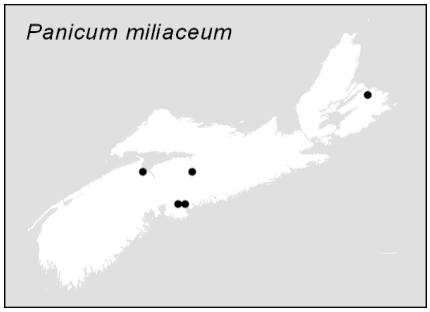
A stout species from 40–80cm tall. The leaf blades are wider than 1cm; their sheaths are pubescent. Panicles are large, drooping at maturity. Spikelets are numerous and large, 4–5.5mm long. The caryopses vary from white to orange.

Found around old gardens and on roadsides. Formerly cultivated and occasionally introduced in birdseed. Not long-persistent.

Photo by Roger Lloyd

Collections from Wolfville, Halifax and Sydney area.

Scattered across Canada and southward. Introduced from Eurasia.



***Panicum philadelphicum* Bernh.**
panic de Philadelphie

Photo by Sean Blaney

Photo by Roger Lloyd

Resembling Witchgrass, this species has more slender, long tenuous branches. It branches freely from the base. The spikelets are shorter and nearly sessile or on very short pedicels distally on the branches.

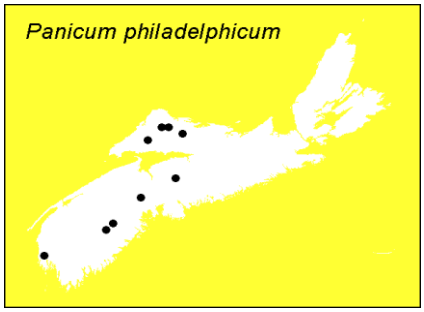
Flowering and fruiting from June to October.

Found on streamsides, in bogs, often in sandy soil.

Ranges from southwestern part of the province to Cumberland Co.

Ranges from NS to MB, south to TX and AL and GA.

STATUS: YELLOW-listed in NS.



***Panicum longifolium* Torr.**
(=*Panicum rigidulum* Bocs. ex Nees, var. *pubescens*)
panic fausse-agrostide


Photo by David Mazerolle

Densely cespitose, the flattened culms reach from 30–50cm from a knotty crown. Leaves are long and narrow, 2–4mm wide and smooth along the sheaths. Panicles are erect and sparsely branched. The long spreading branches bear spikelets about 2.5mm tall. Lower glumes are about half as long as the sterile lemma.

Fruiting from July to late fall.

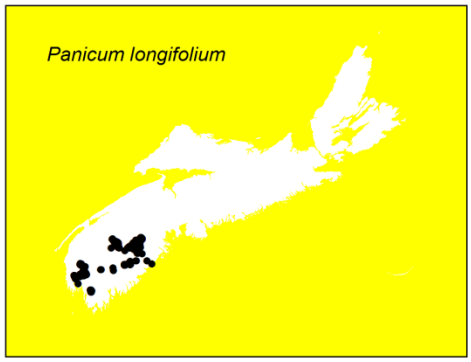

Photo by Roger Lloyd

Grows in sand and peat substrates and gravelly lakeshores. A coastal plain species.

Found from Yarmouth Co. to Lake Kejimkujik National Park, where it is common along the Mersey River at the outlet to the lake.

Ranges from NS; ON, south to FL and TX; west coast.

STATUS: YELLOW-listed in NS.



***Panicum virgatum* L.**
Switchgrass; panic raide


Photo by David Mazerolle


Photo by Roger Lloyd

A tall cespitose plant, 60–100cm bearing long, narrow leaves 3–4mm wide. Panicles may be as much as 50cm long, bearing spikelets 3mm long.

Some of our material belongs to var. *spissum* Linder. These plants arise from short knotty rootstocks. It is restricted to NS and QC, south to NY.

Flowers and fruits from July to September.

Grows in sandy, gravelly lakeshores and thickets.

Restricted to southwestern counties, from Halifax to Yarmouth.

Ranges from NS; ON to SK, southward to NV, TX and FL

Phalaris L.
canarygrass

Tall perennials or annuals, these densely cespitose or creeping species form coarse colonies. Fifteen species occur in total; two reach Nova Scotia. Leaves are mostly glabrous and bear membranous ligules. Inflorescence is a spicate panicle. Each spikelet contains three florets, only the uppermost is perfect. The lower two are reduced, the proximal one may be reduced to a scale. Glumes are equal in size and large, dorsally flattened and awnless, but keeled. Keels may also be winged. Fertile lemma is glossy and firmer than the glumes, sometimes pubescent.

Key to species

Creeping perennial, with an elongated spikelike panicle. *Phalaris arundinacea*

Annual, cespitose, with a contracted elliptic panicle. *P. canariensis*

Phalaris arundinacea L.
Reed Canarygrass; alpiste roseau

Photo by Sean Blaney

A tall leafy grass, its culms reach 1.5m tall. The panicle is erect, lanceolate, 8–15cm long, sometimes some of the branches may be distant. Wide glumes are papery, 4–5mm long, exceeding the florets. Sterile florets are much-reduced, about 1mm long, pubescent and inconspicuous.

Ribbongrass is a cultivar sometimes seen as an ornamental. Its leaves are striped white and green.

Common and becoming more frequent; invasive of disturbed marshes.

Photo by Roger Lloyd

***Phalaris canariensis* L.**

Canarygrass; alpiste des Canaries

Photo by Roger Lloyd

An erect grass to 1m in height, it bears leaves 5–8mm wide. The panicles are densely packed into an ovoid inflorescence. The broad flat glumes are 7–8mm long. Sterile florets are narrow barely 2mm long. It is an unusual species and rather attractive.

Found beneath bird feeders and occasionally seen roadside when spread by birds.

Occasional. Collections from Halifax and Wolfville to Sydney.

Found from NF to AK and southward. Introduced to North America.

Phleum L.

A genus of 10 species, limited to the temperate zones of both hemispheres. Two are found in Nova Scotia. Leaf blades are flat, with a membranous ligule to 6mm long. The dense panicles are soft and spicate, with each spikelet of a single floret. Glumes are equal in length, laterally flattened and with three ribs. The awn is very short. Lemmas are also membranous, marked by 3–7 ribs. They are broad, obtuse and awned, but exceeded in length by the glumes.

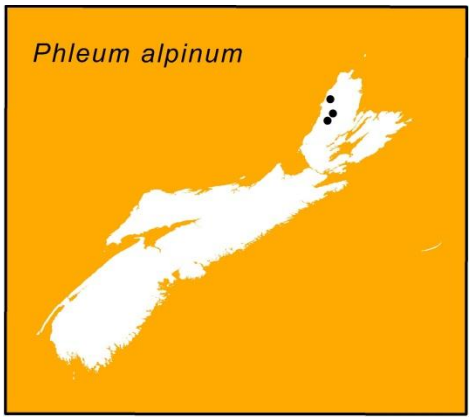
Key to species

Plant widespread; exceeding 50cm in height; panicle cylindric.	*Phleum pratense*
Plants northern or alpine; less than 30cm high; panicle contracted to an ovoid or ellipsoid panicle.	*P. alpinum*

***Phleum alpinum* L.**

Mountain Timothy; fléole alpine

Photo by Roger Lloyd



This neat plant resembles the next species, but in miniature. A native grass, it barely reaches 50cm tall. The inflorescence is shorter, ovoid in outline. Spikelets are similar but the longer awns to 2mm, lend a more ragged appearance.

Flowers and fruits during July and August.

Cliff ledges along northern streams.

So far know from the Cheticamp River, LeBlanc Brook and the Northeast Margaree River in Inverness Co.

Elsewhere, known from NF to ON, south to MI and NH; AK to CA; South America; Eurasia.

STATUS: ORANGE-listed in NS.

***Phleum pratense* L.**

Timothy; fléole des prés

Photo by David Mazerolle

Photo by Roger Lloyd

One of our most familiar grasses, standing 50–100cm tall. The soft cylindric panicles are 7–8mm thick. The inflorescence sometimes persists through the winter. Occasional fasciculation occurs in the florets, producing leaflike structures.

Flowering and fruiting throughout the summer.

Desirable as forage and escaping to nearby fields, roadsides and fallow soils.

Abundant and common.

Introduced from Europe and now throughout Canada and the US.

Phragmites Adans.

Reed

A genus of only 2–3 species, they are stoloniferous perennials. Our single species sometimes surpasses 3m in height, its leaves up to 3cm wide. The large panicle is densely packed with tawny spikelets, each with 3–7 florets on pilose rachillas. Glumes are unequal in size and the lemma is acuminate.

***Phragmites australis* (Cav.) Trin.**
Common Reed; roseau commun

Photo by Sean Blaney

Photo by Roger Lloyd

This species is easily our largest grass, averaging at more than 2m. The inflorescence is plumose, 20–30cm long and crowded. The long pubescence on the axes is apparent. We have two distinct varieties found here, one native and one introduced and invasive.

Shiny red-purple lower stem internodes; ligule membranous, 0.4-1mm long; lower glume 4-7mm long. Native.	ssp. americanus
Dull yellow-ochreous brown lower stem internodes; sheaths persistent after culm senescence; ligule <0.4mm long; lower glume 2.6-4.8 mm long; introduced.	ssp. australis

(after Voss & Reznicek, 2012).

Flowering and fruiting from late July to September.

Native subspecies found in upper saltmarshes, bogs; introduced subspecies scattered colonies roadside.

Scattered throughout the mainland: introduced subspecies colonies along 100 series highways and at Annapolis Royal.

Ranges across the continent and south to the Gulf of Mexico.

There has been wide concern about invasive ssp. australis that is appearing across North America.

Piptatherum P.aBeauv.

A genus of perennial grasses, they were formerly included with *Oryzopsis*. Ranging in height from 10–140cm, the erect culms are smooth and glabrous, branching from the base. Cauline leaves are sometimes absent. Leaf sheaths are open and ligulate, with no auricles. The terminal panicles may be open or contracted, 1–40cm tall. Spikelets contain a single floret, disarticulating above the glumes. Of 30 species of this predominantly Eurasian genus, only two reach Nova Scotia.

Key to species

Awns 5–10mm long.	*Piptatherum canadense*
Awns 1–2mm long, or lacking.	*P. pungens*

Piptatherum canadense (Poir.) Dorn
(=*Oryzopsis canadensis* (Poir.) Torr.)
Canadian Ricegrass; oryzopsis du Canada

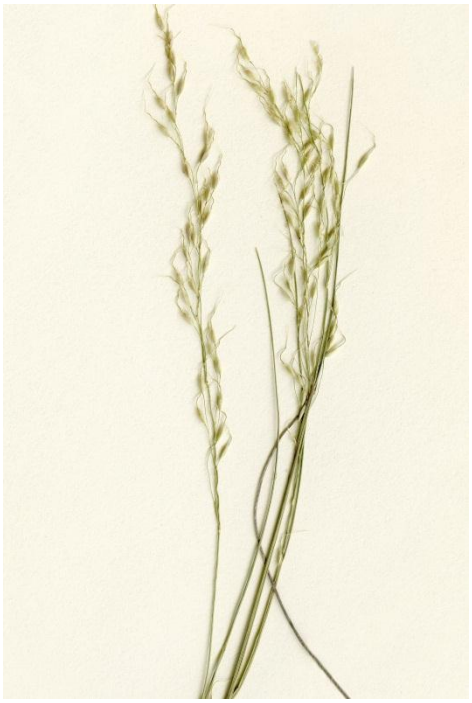


Photo by Roger Lloyd

A slender species, its stiff narrow leaves may be 10–30cm long but only 2–3mm wide. The loose panicle is open, the spikelets borne singly at the ends of filiform branches. The long contorted awns are at least 5mm long. Glumes are thin textured and enclose the floret. Lemmas are pubescent.

Early flowering and fruiting.

Grows in dry sandy soils.

Local and scattered from Shelburne to Halifax and Colchester counties.

Ranges from NF to AB, south to NY and MN; WVA.

STATUS: YELLOW-listed in NS.

Photo by Sean Blaney

***Piptatherum pungens* (Torr.) Dorn**
oryzopsis piquant

Photo by Roger Lloyd

Generally smaller than the species above, it also has involute leaves, whose length is only half of that of the culm. Awns are barely 1–2mm long and usually straight.

Flowers and fruits in May and June.

Frequents dry woods and clearings in sandy soils.

So far only collected from Shelburne and Queens counties although historic reports indicate it grows in Cape Breton.

Ranges from NS to YT, south to CO and NJ.

STATUS: YELLOW-listed in Nova Scotia.

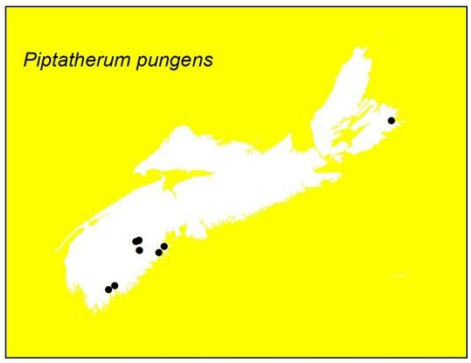


Photo by Sean Blaney

Poa L.
bluegrasses

The species of *Poa* are both native and introduced. Some are cultivated for turf or forage and their variability makes identification complicated. The best characters are of the spikelets and not vegetative characters. Both glumes and lemmas are flattened, forming a dorsal keel, along the midribs. Lemmas are never awned in this genus, but in perennial species, the callus bears a tuft of coiled pubescence.

Key to species

B. Annual; webby hairs absent from callus; last year's leaves not persistent. — *P. annua*

bb. Perennial; callus with or without webby hairs; old leaves persistent. — C

C. Webby hairs absent; rare arctic-alpine species. — *P. glauca*

cc. Webby hairs present; habitat not as above. — D

D. Stoloniferous, or with basal offshoots. — E

E. Lemma faintly ribbed; culms strongly flattened; panicles stiff. — *P. compressa*

ee. Lemmas with 5 strong ribs; culms not strongly flattened; panicles flexuous. — *P. pratensis*

dd. Cespitose or not stoloniferous; basal offshoots absent. — F

F. Marginal veins of lemma ciliate, at least basally. — G

G. Ligules of cauline leaves <1.5mm long; truncate. — *P. nemoralis*

gg. Ligules 2–5mm long, ovate. — *P. palustris*

ff. Marginal veins of lemma smooth. H

H. Panicle branches solitary or paired; keel of lemma smooth. *P. saltuensis*

hh. Panicle branches whorled, 4–8; keel of lemma pubescent or scabrous. I

I. Leaf sheaths smooth; ligules <2.5mm long. *P. alsodes*

ii. Leaf sheaths scabrous; ligules >2.5mm long. *P. trivialis*

***Poa alpina* L.**

A densely cespitose perennial now considered to be EXTIRPATED from NS. A single collection exists from Ciboux Island, Victoria Co.It is a circumboreal arctic-alpine species, ranging from NF to AK, south to NV, NM and MI; Greenland.

***Poa alsodes* Gray**
pâturin des bosquets

Photo by Roger Lloyd

Loosely cespitose, this species produces large open panicles borne well above the leaves. Branches numbering three or more, arise at each node soon spreading or reflexed. Most spikelets contain three florets. Lemmas are pubescent on the keels, but the marginal ribs are smooth. Ligules are short. Resembles no other *Poa* in its habitat.

Flowers and fruits early, during May and June.

Riparian zones, thickets, deciduous forests in pockets of loamy soils.

Infrequent and local, from Digby to northern Cape Breton.

Ranges from St. Pierre and Miquelon to ON, south to SC and TN.

***Poa annua* L.**

Annual Speargrass; pâturin annuel

Photo by Roger Lloyd

A low-growing weedy annual, 20–40cm tall. Culms are tightly cespitose, soon decumbent, bearing short leaves. There is no web of cottony hairs on the callus, although the marginal ribs and midrib keel are pubescent. Lemmas are also marked by five distinct ribs. Light green in colour and the multiple panicles separate this introduced turf species.

Fruiting from spring through fall.

Found in lawns, gardens, edges where soil is compacted.

Scattered throughout the province.

In North America absent only from NU. Introduced from Europe.

Poa bulbosa L. was collected once recently from a disturbed section of lawn in Wolfville. It is unknown yet if this species is persisting in NS.

***Poa compressa* L.**

Canada Bluegrass; pâturin comprimé

Photo by Roger Lloyd

Long stoloniferous, this species produces strongly flattened culms. Panicles are narrow and only 4–10cm tall, typically with pairs of short branches. Callus of the lemma has only scant pubescence, although the keel and marginal ribs are ciliate.

Flowers and fruits throughout the summer.

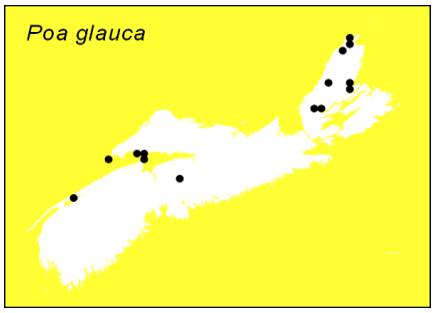
Grows in open dry soils of sand and gravel; roadside banks, fallow fields. Produces an open sod.

Found from Digby to northern Cape Breton, with fewer Atlantic coastal collections.

Absent only from FL and NU. Introduced from Europe.

***Poa glauca* Vahl.**
pâturin glauque

Photo by Roger Lloyd



This is a slender species, only reaching 30cm in height. Leaves are narrow and the ligule is only 1mm long. Plants have a glaucous blue cast, unlike other grasses in similar habitats. Panicles are small, 3–5cm tall, with 2–3 short branches per node. The keeled lemma is ciliate on the marginal ribs, but the callus is smooth.

Alpine, on talus and in crevices.

Limited to Cumberland Co. and Blomidon peninsula as well as northern Cape Breton.

Found from NF to AK, south CA, NM and PA; Greenland. Circumboreal.

STATUS: YELLOW-listed in NS.

***Poa nemoralis* L.**

Woodland Bluegrass; pâturin des bois

A tall cespitose species, bearing short divergent leaves, with a wide obtuse ligule 0.5mm long. There are numerous branches at each node in the panicle. Lemmas are three-ribbed, with the marginal ones lightly pubescent at the base.

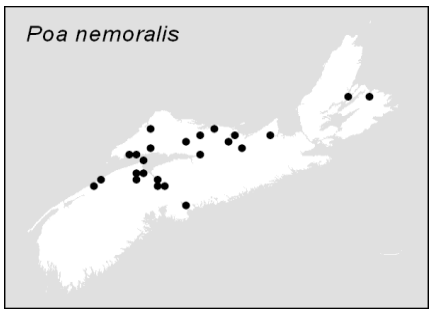
Flowers and fruits throughout the summer.

Found in fields, on roadsides and about towns.

From Kings and Halifax counties, east to Cape Breton Co.

Ranges from NF to AK, south to CA, TX and SC. Only partly native to Canada and introduced to Nova Scotia.

Photo by Roger Lloyd



***Poa palustris* L.**
Fowl Bluegrass; pâturin des marais

Photo by Roger Lloyd

A tall species, it is best identified in the field by the smooth leaf sheaths bearing long ligules. Panicles are large, producing many branches at each node. There are numerous spikelets, each about 5mm long and bronze or reddish distally. Callus of the lemmas is ciliate on the marginal ribs and keel.

Flowers and fruits throughout the summer.

Grows in moist soils in meadows, streambanks; tolerates open sites.

Common.

Ranges from NF to AK, south to CA, NM and NC; Eurasia.

***Poa pratensis* L.**

Kentucky Bluegrass

Photo by David Mazerolle

A variable species with ssp. *pratensis* and ssp. *irrigata* (Lindm.) H. Lindb. confirmed for Nova Scotia.

Culms > 20 cm; plants usually not glaucous; panicle with 3-5 branches per node.	ssp. *pratensis*
Culms < 25 cm; plants usually glaucous; panicle with 1-2 branches per node.	ssp. *irrigata*

It is strongly stoloniferous, a character it shares here only with *P. palustris*. Panicles have several branches at each

Photo by Roger Lloyd

node. Lemmas are marked with five ribs, pubescent on the keel and the marginal ribs. Its short ligule will separate it from *P. palustris*.

A vigorous species, it has been introduced as a turf grass.

Flowers and fruits, when not mowed, from June to August.

Found in fields, meadows and gardens, even roadsides. Cultivated.

Common throughout.

Ranges from NF to AK, south to the Gulf of Mexico.

***Poa saltuensis* Fern. & Wieg.**

Photo by Roger Lloyd

Another slender species, its culms may reach 80cm tall. Typical plants have pairs of branches at each node. Spikelets are borne distally on the slender arcuate branches. Lemmas are devoid of pubescence on the keel and ribs.

Flowers and fruits from late May through August.

Grows in fertile soils of deciduous forests and alluvium.

Mostly northern, from Digby and Cumberland counties to northern Cape Breton.

Ranges from NF to ON, south to TN and NC.

***Poa trivialis* L.**

Rough Bluegrass; pâturin rude

Photo by Roger Lloyd

A tall dominant in meadows, it may reach 1m in height. Leaf sheaths and distal parts of the culms are scabrous, a key identifying character. Ligules are long and pointed. There are several branches per node within the panicle, each carrying numerous spikelets with 2–5 florets. Lemmas are narrow and acuminate, glabrous on the marginal ribs and sparsely hairy on the keels. Often a lax plant, some strains are more erect making them suitable for cultivation as forage.

Flowers and fruits from June to August.

Grows in moist soils as in meadows, marshes and even gardens.

Yarmouth Co. to northern Cape Breton.

After its introduction from Europe, it is now found from NF to ON; SK, AK to BC, variously south to CA, TX and GA.

Puccinellia Parl.

Numbering about 30 species, this genus is primarily of wetland grasses in the cooler regions of North America. Nova Scotia has four species of saltmarshes or alkaline soils. Bearing short leaves, they are usually involute, and with very short ligules. The panicles are drooping or reflexed. Each spikelet bears numerous flowers. Lemmas are convex and faintly ribbed. Glumes are unequal in size, the first has a single rib while the second has three ribs.

Key to species

A. Lemmas 3–4mm long; anthers >1.5mm long.	*Puccinellia maritima*
aa. Lemmas <2.6mm long; Anthers <1.0mm long.	B
B. Spikelets borne from proximal end of panicle branches to the tip.	*P. fasciculata*
bb. Spikelets borne only on the distal half of the branches.	C
C. Lemma obtuse, often ciliate; panicle branches scabrous below the pedicels.	*P. distans*
cc. Lemmas acute; panicle branches glabrous below the pedicels.	*P. pumila*

***Puccinellia distans* (Jacq.) Parl.**

Weeping Alkaligrass; puccinellie à fleurs distantes

Photo by Sean Blaney

Short in stature, it rarely exceeds 30cm in height. Lemmas are about 2mm tall, convex and truncate, often ciliate at the apex. The anthers are very short. Magnification is required to see the scabrous nature of the panicle branches, just below the spikelet attachment.

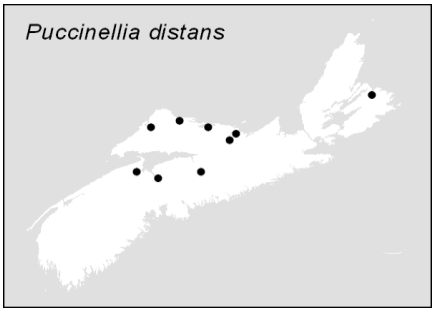
Flowers and fruits until October.

Waste soils and roadsides, brackish muds. Spread is enhanced by use of road salt.

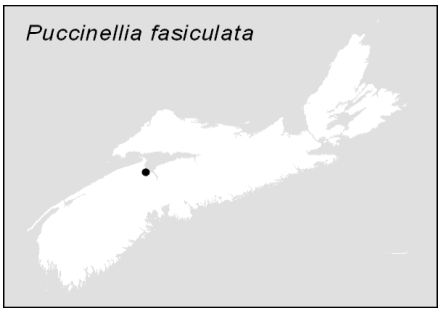
About towns in the province after its initial introduction in ballast.

Ranges from NF to AK, south to CA, NM and VA. Introduced from Europe.

Photo by Roger Lloyd



***Puccinellia fasciculata* (Torr.) Bickn.**
puccinellie fasciculée



A stout plant to 50cm, bearing leaves 2–4mm wide. Panicles are crowded but narrow and ovoid, with at least the lower branches bearing spikelets their full length. Spikelets are 3–4mm long, lemmas barely 2mm long.

Early-maturing, until July.

Associated with saltmarshes and dykelands.

Collected only from the Fundy coast, at Kentville and Grand Pré.

Ranges from NS; ON, south to VA; southwestern. Sometimes considered native to Canada.

Puccinellia maritima (Hudson) Parl
puccinelie maritime

Photo by Roger Lloyd

Another stout species, although this one is taller, from 50–80cm. Panicles may reach 15cm long, the branches reflexed or drooping. Leaves are relatively short and involute. Lemmas often purplish, 3–4mm long and truncated or obtuse at the apex.

Flowers and fruits during June and July.

Found on saline or brackish soils and one of the early colonisers on new saltmarshes and dyked land.

Common from Shelburne around the coast and up the Bay of Fundy. Less frequent on the Atlantic coast and so far absent from the Northumberland region.

NS to QC; WA; CA and Greenland.

Puccinellia pumila (Vasey) Hitchc.

Photo by David Mazerolle

A small species only 20–40cm, it resembles *P. distans* but is more robust. The panicle branches are smooth. Lemmas are 2–4mm long and acute, with only an occasional blunt-tipped one. Our material is included as ssp. l*angeana.*

Flowers and fruits all summer.

Saline soils.

Scattered to common coastal regions.

Species ranges from NF to NT; AK south to MB and NY. Greenland.

Schedonorus P. Beauv.

Three species of Eurasian grasses of this genus have been introduced to North America; one reaches NS. Formerly included in *Festuca*, it is now accepted that their affinity lies with *Schedonorus*. Perennial

species, they may be cespitose or rhizomatous, producing culms to 2m tall, erect or decumbent. The sheaths of the leaves are open, smooth or scabrous. The ligules are smooth and membranous, the auricles clasping. Erect panicles produce smooth or scabrous branches. Spikelets are pedicellate, with 2–22 compressed florets. Glumes are equal and shorter than the lemmas, awnless and ribbed. Lemmas are veined, acute awned or not covering the paleas.

Key to species

Auricles glabrous; lemmas usually smooth, unawned or with a tip to 0.2mm.	*Schedonorus pratensis*
Auricles ciliate, with at least 1–2 hairs; lemmas scabrous or hispid, unawned or with awn to 4mm long.	*S. phoenix*

***Schedonorus phoenix* (Scop.) Holub.**
(=*Lolium arundinaceum* (Screb.) SJ Darbyshire)
fétuque élevée

Photo by David Mazerolle

A perennial grass that is sometimes rhizomatous, its culms may reach 120cm. The leaves are convolute when young. Panicles may reach from 10–35cm with usually a pair of branches at the base. Lemmas exceed the paleas in length.

Flowers throughout the late summer and fall.

Found on roadsides and in dryer soils.

Photo by Sean Blaney

No collections have yet been made, but the species is to be expected given travel into Nova Scotia from other parts of the continent.

Cultivated throughout North America as a soil stabilizer, forage or turf. Introduced from Eurasia.

***Schedonorus pratensis* (Huds.) P. Beauv.**
(=*Festuca pratensis* Hudson)
Meadow Fescue; fétuque des prés

Photo by Roger Lloyd

A tall glabrous grass to 120cm, its narrow leaves are 3–4mm wide. The nodding panicle produces plump spikelets, 8–10mm long, mostly awnless.

Flowers and fruits throughout the summer.

Found on roadsides, fields and meadows in rich soils. Planted as a forage crop.

Frequent here.

Ranges from NF to AK, south to CA, TX and FL. Naturalised from Europe.

Schizachne Hack.

A genus of only two perennial species, one is found in Nova Scotia. It is a tall cespitose grass, with long narrow leaves and closed leaf sheaths. The inflorescence is a loosely arranged raceme, terminal atop a simple culm. Lemmas are lanceolate bearing straight awns.

Schizachne purpurascens (Torr.) Swallen
False Melic; schizachné pourpré

Photo by Roger Lloyd

A slender grass, its leaves are flat. Inflorescence has lax branches, the pedicellate spikelets have 3–5 florets, their bodies about 10mm long. Lemmas are awned, the awns to 1cm between long-exerted terminal teeth. The callus bears a corona of stiff hairs. This character separates this species from *Bromus* to which it was once associated.

Flowers and fruits in summer.

Dripping cliff ledges, deciduous woodland floodplains and damp woods.

Occasional about the Bay of Fundy in Kings, Hants, Colchester and Cumberland counties and in northern Cape Breton.

Ranges from NF to AK, south to NM and WVA; FL; Eurasia.

Secale L.
rye

Rye includes five species, originating from Eurasia. A single introduction is occasionally seen in disturbed soils where seed is accidentally dispersed. It differs from wheat on the basis of the awl-shaped glumes having a single rib, while the glumes of wheat are three-nerved.

***Secale cereale* L.**
Cultivated Rye; seigle commun


Photo by Roger Lloyd

Standing up to 2m in height, the culms are topped by a short densely flowered spike, 8–15cm long. Each node bears a single sessile spikelet, with two florets, lending a flattened appearance. The lemmas are long-awned. Glumes are also awned and narrow.

Common cereal crop on light soils and sometimes persisting the following year.

Frequently found in the Annapolis Valley.

Ranges across the continent and south to the Gulf of Mexico.

Setaria P. Beauv.
Foxtail grasses

The genus is best developed in the tropical and subtropical regions of Asia, with a few in the Americas. Nova Scotia hosts three introduced annual species. The terminal spicate panicles have long bristles arising from below the spikelets, which give the inflorescence the appearance of a foxtail or bottlebrush. The spikelets are soon deciduous, separating from just above the bristles. The fertile lemma is firm and roughened. First glumes are half as long as the spikelet.

Key to species
Bristles numerous, 4–12, below each spikelet; spikelets 2.5–3mm long. *Setaria pumila*

Bristles fewer, 1–4 for each spikelet; spikelets about 2mm long. *S. italica*

***Setaria italica* (L.) Beauv., German Millet** has been found about gardens and not persisting. Reports are unsubstantiated by collections for NS. Ranges from NS to MB; AB to BC and south to CA and FL.

Setaria pumila (Poir.) R&S
(=*S. glauca* (L.) Beauv)
Yellow Foxtail; sétaire glauque

Photo by Roger Lloyd

An erect grass, from 20–70cm tall. The spicate panicle is 2–8cm long, bearing tufts of yellowish bristles, about twice as long as the spikelets. Ligules are in the form of short scales. The leaves have long twisted hairs on the upper surface.

Flowers and fruiting from June to September.

Fallow soil and gardens.

Widely scattered and common in the Annapolis Valley.

More common in the west but found throughout the continent, but for the arctic. Introduced from Eurasia.

Setaria viridis (L.)
Green Foxtail Grass; sétaire verte

Photo by David Mazerolle

Larger than the species above, its culms reach 1m, sometimes decumbent at the base. Panicles are thick and stiffly erect, 5–10cm long and 1.5cm thick. The rachis is puberulent. Spikelets are ellipsoid, 2mm long and surrounded by 1–4 bristles, 2–3cm long. Green leaves are glabrous, 4–15mm wide and up to 30cm long forming a compressed purplish sheath. Edges of the sheath are overlapping, the ligule is reduced to a fringe of hairs with no auricle. Fruits are smaller than in the previous species and

Photo by Roger Lloyd

the inflorescence is green.

Flowers and fruits through the summer to October.

Found on roadsides and in cultivated fields.

Common in the Annapolis Valley and scattered throughout.

Widespread introduction from Eurasia.

Spartina Schreber
cordgrasses

A North American genus primarily, with 16 species included. Three are found in Nova Scotia as native grasses. All perennial and rhizomatous, the plants produce thick leathery leaves with long flat or involute blades. Ligules are reduced to a fringe of hairs. The spikelets are densely packed on strongly ascending or erect branches of the racemiform inflorescence. Each spikelet contains one floret. A pair of keeled unequal glumes subtend them. Awnless lemmas are also keeled and marked with 1–3 ribs.

Key to species

A. Low-growing grass, usually lax, to 60cm; the narrow leaves revolute.	*Spartina patens*
aaTaller grass, to 2m; leaves are flat.	B
B. Leaf margins, apices and glumes scabrous.	*S. pectinata*
bb. Leaves and glumes smooth.	*S. alterniflora*

***Spartina alterniflora* Loisel.**

Cordgrass; spartine alterniflore

Photo by David Mazerolle

Photo by Roger Lloyd

An erect grass, its culms reach 0.5–1m tall. The inflorescence has the branches tightly appressed. Spikelets are loosely arranged, 10–12mm long. The glumes are awnless.

Flowers and fruiting from August to September.

Halophytic, intertidal flats and saltmarshes, beaches. Often dominant.

Ranges from NF to QC, south to TX; west coast from WA to CA.

***Spartina patens* (Ait.) Muhl.**
Saltwater Hay; spartine étalée

Photo by Sean Blaney

Photo by Roger Lloyd

A low growing grass, forming dense matted patches, it only reaches 60cm tall. The leaves are long, narrow and revolute. Inflorescence is 6–7cm long and is sparingly branched, each 3–5cm long. The spikelets are imbricate. Some of the glumes are awned, 1–3mm long. Its small neat appearance readily separates it from the other species.

Flowers and fruits from August to September.

Found in saltmarshes and often forming horizontal zones between *S. alterniflora* and *Juncus arcticus*.

Found throughout the coastal areas.

Ranges from NF to ON, south to MI and along the coast to TX; west coast.

HYBRIDS: Forms a hybrid with the next species named *S*. x *caespitosa* (AA Eaton) Fern. It is intermediate in size and leaf width between the two parent species. In NS it has been found at Annapolis Royal and Lower Onslow. It only grows from NS south to VA.

***Spartina pectinata* Link**
Prairie Cordgrass


Photo by David Mazerolle

This is the largest of our species, its culms reaching 1–2m. The imbricate spikelets along the secund branches are distinctive. The second glume is awned and 3–10mm long, unlike our other *Spartina* with similar inflorescences.

Flowers and fruits from August through September.

Upper saltmarshes, marshes, lakeshores in southwestern NS; roadsides in Annapolis Valley.

Frequent coastally and common along Cobequid Bay. Scattered inland collections as along the rocky lakeshores in southwestern Nova Scotia.

Elsewhere from NF to NT south to OR, TX and NC.


Photo by Roger Lloyd

Sphenopholis Scribn.

A genus of short-lived perennials or annuals, there are only seven species included, North American and Caribbean in distribution. Leaves are flat and soft. Panicles bear spikelets containing 2–3 florets. Proximal glume is long lanceolate while the second glume is broader and obtuse, usually shorter than the lemma of the adjacent floret. Lemmas are unmarked or faintly ribbed with five ribs. Our single species has the spikelets awnless.

Sphenopholis intermedia Rydb.
Slender Wedgegrass

Photo by David Mazerolle

Photo by Roger Lloyd

Culms are weak or lax and only 20–40cm tall. Leaves are barely 1–2mm wide. Spikelets are numerous, green and 2–3mm long, arranged in a panicle 4–8cm tall. The distal glume just about obscures the first lemma, while the lower one is hardly wider than the midrib. Lemmas are merely acute, not awned.

The vars. *pilosa* and *major* are now included in the typical form and not recognized as distinct.

Flowers and fruiting from June through August.

Grows in rocky cliff faces and steep slopes on basalt, limestone or other basic rock.

Found along the Cape Blomidon peninsula and in Hants, Cumberland and Colchester counties. More frequent in central and northern Cape Breton.

Ranges from NS; ON to AK, south to FL and CA.

Sporobolus R. Br.
dropseed

This genus includes 100 worldwide species, with only a single species introduced to Nova Scotia. Ours is an annual, intolerant of competition and cespitose in habit. Short leaves are only to 2mm wide forming long sheaths. Ligules are in the form of long spreading hairs. Panicle is enclosed at the base by the uppermost sheath, 1–5cm long. Glumes are unequal in size and marked by a single rib as are the lemmas, which are longer, and awnless.

Sporobolus vaginiflorus (Torr.) Wood
Povertygrass; Sheathed Dropseed

Photo by David Mazerolle

An annual grass, it produces short and very stiff leaves. There are long hairs on the base of the leaf blade extending to the ligule which is also pilose. The small narrow inflorescence is mostly enclosed by the terminal leaf sheath. Spikelets are crowded, 4–5mm long and each bearing a single floret. Paleas are conspicuously longer than the lemmas.

Flowers and fruits from late August to September.

Found along roadsides and in other open sandy sites.

Ranging in the province from Digby Neck northeastward to Halifax, Hants, Pictou and Guysborough counties. A single Cape Breton locality to date.

Elsewhere it is found from NS to ON, south to FL and TX. Various western localities. Introduced from the midwest to NS.

Photo by Roger Lloyd

Thinopyrum A. Löve

A recent segregate from *Elymus* and other Triticeae grasses, it includes 10 species, mostly Mediterranean in origin. All are perennials and may be cespitose or rhizomatous. The culms range from 10–250cm tall, usually held erect. The open sheaths may be glabrous or ciliate, with very short auricles or none. The leaves are flat or convolute and the ligules are membranous. The terminal inflorescence is a distichous spike, not disarticulating at maturity. Most nodes bear a single spikelet. Spikelets are diamond shaped and often arching outward at maturity. Glumes are rectangular or lanceolate and distally stronger ribbed than basally, with 4–9 ribs. They may be smooth or pubescent. Lemmas are five-ribbed, smooth or pubescent and awned, or not.

Thinopyrum pycnanthum (Godr.) Barkworth
(=*Elymus pungens* (Pers.) Gould)
Tick Quackgrass; agropyre littoral

Photo by Sean Blaney

A long-rhizomatous species, this quackgrass has culms from 10–120cm tall. The culms are glabrous, the lower sheaths and ligules are ciliate. Leaf blades may be up to 35cm long and 2–6mm wide, flat or inrolled and glaucous. The spikes are 4–20cm tall, made up of spikelets 1–2cm long, each with 3–10 florets. The glabrous glumes are 4.5–8mm long, weakly keeled and with 4–7 ribs, acutely pointed. Lemmas may be slightly longer and awned, or not.

Photo by Roger Lloyd

Fruiting during July and August.

Found on brackish or coastal shores.

Scattered localities from Yarmouth to St. Paul Island and through Inverness and Victoria counties.

Elsewhere it grows from NS; AB, New England States and other widely scattered states. Introduced from the coasts of southern Europe.

Historically, ***T. junceiforme*** was planted experimentally at Conrad's Beach and Chezzetcook for erosion control. It is unknown if these populations are extant. Also *T. intermedium* was once reported from Lower Truro, Colchester Co., but no collections are extant. *T. ponticum* was collected from Wolfville, but once.

Torreyochloa Church

Rhizomatous perennials, the culms are 18cm–1.5m tall, sometimes decumbent and rooting at the lower nodes. Sheaths are open to the base, with membranous ligules. There are no auricles. The terminal panicles have scabrous branches, densely so distally. The pedicellate spikelets have 2–8 florets are laterally compressed. The spikelets are deciduous, disarticulating above the glumes and beneath the florets. Glumes are unequal and shorter than the lowest lemma and awnless, though marked with three ribs. Lemmas are usually marked with 5–9 ribs and are also unawned.

***Torreyochloa pallida* (Torr.) Church**

Photo by David Mazerolle

Photo by David Mazerolle

Photo by Roger Lloyd

This species is divided into two varieties, which in our material may be difficult to separate. The typical variety has the leaves, 2–4mm wide and 4–7 florets per spikelet. Similar to *Glyceria*, but for the open leaf sheaths to the base. Var. *fernaldii* (Hitchc.) Dore has narrower leaves, less than 3mm wide and fewer florets, 3–5 per spikelet. It is our more common species in eastern Canada, but easily missed amongst taller more robust grasses in its habitat. It ranges from NF to BC south to VA and TN.

Flowers and fruits from June through August.

Frequents wet soils in bogs and meadows, marshes and savannahs.

The typical variety was historically found along the Tusket R. It may now be extirpated. Var. *fernaldii* is found throughout the province.

The typical variety is found from NS; QC to MB south to GA.

Trisetum Pers.

Temperate and boreal in the eastern and western hemispheres, there are about 75 species in total. Plants are cespitose or rhizomatous, annuals or perennials with compressed panicles borne on slender culms. Leaf blades are flat and the sheaths are split to the base where they may be fused. Rachillas are pilose and exerted beyond the uppermost floret. Florets number 2–5 per spikelet. Generally the thin glumes exceed the length of the floret. Awnless, they are marked by 1–3 ribs, unequal in size. Lemmas are toothed, with five ribs and bent or straight awns.

Key to species

A. Lemmas awnless or with inconspicuous awns not exceeding the lemmas. *Trisetum melicoides*

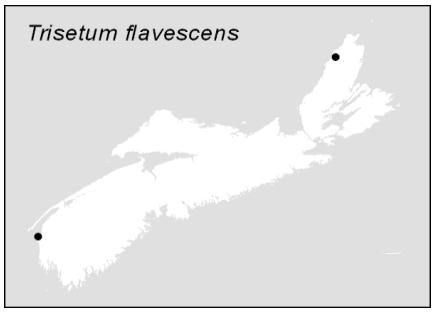
aa. Lemmas definitely awned, awns 3–14mm long, exceeding the apex. B

B. Plants with rhizomes; culms solitary, exceeding 40cm; leaves 2–5mm wide. *T. flavescens*

aa. Plants cespitose; culms multiple, <30cm tall; leaves 2mm wide. *T. spicatum*

Trisetum flavescens (L.) Beauv.

Yellow Oatgrass; trisète jaunâtre



Loosely cespitose, its culms reach 40–90cm tall. Leaves may be 2–5mm wide. The contracted panicles are silvery in appearance, 5–8cm long. Spikelets are about 4.5mm long, their twisted awns 2–4mm long and borne between the two teeth on the lemmas. Both lemmas and rachillas are glabrous.

Flowers and fruits earlier, in June and July.

Persisting in old fields after cultivation as a forage.

Collections are widespread, Digby Co and Inverness, with reports from localities between.

NS; QC and ON; AB and BC and southward. Naturalized from Europe.

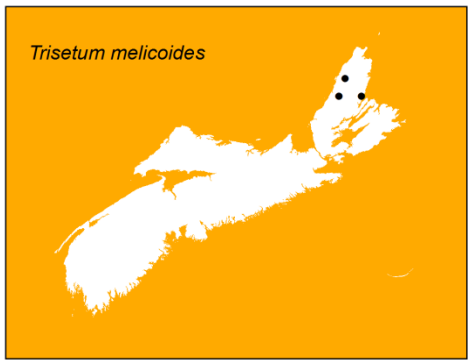
***Trisetum melicoides* (Michx.) Scribn.**
(=*Graphephorum melicoides* (Micx.) Desv., erroneous)
trisète fausse-mélique

Photo by Sean Blaney

A slender glabrous species, from 20–100cm tall. The long leaves are 2–10mm wide. The loose panicle is lax, silvery green in colour, fading to a whitish brown at maturity. The scabrous rachilla is densely pilose. Glumes are unequal in size.

Flowers and fruits until August.

Alkaline soils on gravelly banks and shores.



Known only from Indian Brook, Victoria Co.

Ranges from NF to ON, south to WI and NY.

STATUS: ORANGE-listed in NS.

Photo by David Mazerolle

Trisetum spicatum (L.) K. Ritchter
trisète à épi

Photo by David Mazerolle

Photo by Roger Lloyd

A short grass, rarely exceeding 30cm tall. Its leaves are mostly basal and about 2mm wide. The inflorescence is crowded in compressed into a spicate panicle, 3–5cm long. Sometimes it is partly interrupted at the base. Each spikelet contains several florets, 6–7mm tall. The upper floret is awned, the twisted awn 2–4mm long and borne just below the two teeth of the lemma. The glumes may be pilose on the keel and ciliate or hirsute.

Flowers and fruits from June through August.

Grows in rocky soils on outcrops, cliffs, streamsides. Found on Cape Blomidon Cape d'Or and scattered from Halifax and Hants counties to northern Cape Breton.

Elsewhere found from NL to AK, south to CA, NM, and variously in the east to NC; Greenland.

Triticum L.
wheat

One of the most important cereal crops of the western temperate zones, it includes about 30 species, originally native to southern Europe and western Asia. There are many cultivars, bred for specific crop

needs. One species is sometimes found adjacent to cultivated fields and nearby roads and rails. It is distinguished from rye on the basis of the glume characters. *Triticum* glumes have three ribs and no awns, or very short ones.

Triticum aestivum L.
Wheat; blé commun

Photo by Roger Lloyd

An annual species, its upright culms are 40–60cm tall, bearing spikes 6–8cm long. Each node bears a single spikelet, subtended by spatulate glumes. Leaf sheaths are auriculate.

Found in farmyards, roadsides, wasteland and around grain elevators.

Scattered around the arable parts of the province but not persistent.

Introduced from Asia Minor and widespread throughout North America.

Zizania L.
wild rice

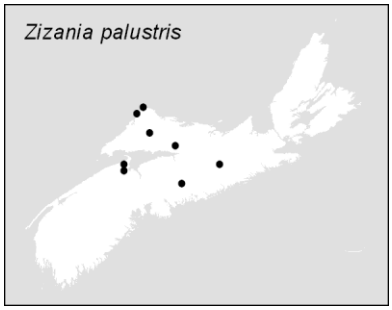
A genus of tall emergent plants, only one is found in Nova Scotia, as an introduction. Typically the leaves are broad, and possess a very large ligule. Panicles are large and spikelets are unisexual. The lower panicle branches bear the pendulous staminate spikelets, while the ascending or erect upper branches produce pistillate spikelets. Lemmas of both are awned

***Zizania palustris* L.**

Northern Wild Rice; zizanie des marais

Photo by Sean Blaney

Photo by Roger Lloyd



A tall annual species, it stretches over 1m in height. Leaves are up to 1.2cm wide, It is a distinctive grass and resembles no other species. The long awns of the pistillate florets form a brushlike cluster distally on the panicle. The horizontal staminate branches are well below.

Var. *interior* (Fassett) Dore is larger than the typical variety, with the leaves 1–4cm wide. Its pistillate branches have 11–30 spikelets each. This variety was historically planted in the Canard River opposite Port Williams. Possibly introduced elsewhere in waterfowl impoundments.

Flowers and fruits throughout the summer.

Found in shallow, freshwater marshes.

Known from Long Lake near Amherst, the Amherst marshes, Port Hood and elsewhere. Most likely introduced to Nova Scotia for waterfowl.

Ranges from NS to SK, south to CO, AL and NC; western locations.