Cyperaceae
sedge family

Grasslike in form, the sedges comprise a large group of genera, including 4500 species worldwide. Usually they are plants of wetlands or poorly drained soils. The leaves are often arranged in three ranks along the culms, which may or may not be triangular in cross-section. The flowers are singly borne in the axils of scales, which are usually (not always) clustered together in spikes or spikelets. Flowers are three-merous, with a single pistil. There are sometimes bristles at the base of the flowers. Fruit is an achene, naked or enclosed. Mature achenes are usually required to ascertain identity.

They may be separated from the grasses on the basis of the leaf sheaths. They are closed to the top.

These keys and those of the genera and species largely follow those of The Flora of North America: Volume 23, Cyperaceae

Keys to genera

A. Flowers unisexual; staminate and pistillate flowers for the most part, on separate spikes; pistillate flowers enclosed in sac, open only at the top. *Carex*

aa. Flowers bisexual; flowers not enclosed in sac-like structure. B

B. Flowers with perianth of 1 or more hairs, bristles or scales usually persistent on the achene. C

C. Perianth of bristles or hairs much > floral scales in fruit, more than 2X as long as the achene, including persistent style base. D

D. Perianth hairs strongly crisped, tangled in fruit (woolly). *Scirpus*

dd. Perianth hairs straight and not twisted. (silky). E

E. Perianth hairs 10+ in each flower, barbed; spikelets >1cm; leaf blades to 25cm. *Eriophorum*

ee. Perianth hairs usually 6 in each flower, not barbed; spikelets <1cm; leaf blades <1cm. *Trichophorum*

cc. Perianth scarcely exceeding the floral scales or not, no more than 2X as long as the achene, including the persistent style base, if present. F

F. Spikelets compressed laterally; scales 2-ranked at least in lower half and keeled. G

G. Achenes biconvex; styles bifid. H

H. Persistent style base on achene enlarged. *Rhynchospora*

hh. Persistent style base linear. *Dulichium*

gg. Achenes trigonous; styles three-parted. *Eleocharis*

ff. Spikelets generally rounded in cross-section; scales not keeled and spirally arranged. I

I. Culms without bladed leaves; leaves absent or reduced to sheaths. J

J. Style base enlarged, persistent in fruit and clearly differentiated; *Eleocharis*

culms with 1 spikelet.
jj. Style base not or barely enlarged, deciduous in fruit; culms with >1 spike in branching inflorescence. *Schoenoplectus*
ii. Culms with bladed leaves; at least distal leaves with blades >5mm. K
K. Style base enlarged persistent as a tubercle on top of the achene. L
L. Culms simple, with 1 spikelet; 1 proximal floral scale empty. *Eleocharis*
ll. Culms distally branched, with >1 spikelet; spikelets with 2+ scales empty. *Rhynchospora*
kk. Style base barely or not enlarged, deciduous or remaining merely as a beak on the achene. M
M. Spikelets 2+ in a distichlous spike. *Blysmopsis*
mm. Spikelets 1–500, paniculate, capitate or solitary. N
N. Leaf blades and bracts with prominent midrib or blades folded; inflorescence obviously terminal. O
O. Floral scales glabrous, never notched and awned; achenes minutely papillose. *Scirpus*
oo. Scales puberulent, notched and awned; achenes smooth. *Bolboschoenus*
nn. Bracts and leaf blades various; midrib not keeled; involucral bract erect, then inflorescence appears lateral. P
P.Bracts >2, proximal 10+mm, exceeding spikelets; spikelets at least 2 *Schoenoplectus*
pp.Bracts <2, <10mm, shorter than or scarcely exceeding spikelet; spikelet solitary. *Trichophorum*
bb. Flowers without perianth hairs, scales, etc. Q
Q. Spiklets with floral scales in 2 rows, keeled; often compressed. *Cyperus*

Q. Spikelets with scales unkeeled, spirally arranged, not compressed . R
R. Style base enlarged, persistent as tubercle. S
S. Culms with 1 spikelet; leaf blades absent. *Eleocharis*
ss. Culms with inflorescence of >2 spikelets; >1 leaf blade exceeding 4mm. T
T. Styles trifid; achenes trigonous; top of leaf sheath ciliate. *Bulbostylis*
tt. Styles bifid; achenes biconvex; top of leaf sheath glabrous. *Rhynchospora*

rr. Style base not or scarcely enlarged. U
U. Leaves with 2 lateral tufts of hairs at the top of the leaf sheath. *Bulbostylis*
uu. Leaves glabrous or with only short hairs at junction of blade and sheath. V
V. Inflorescence apparently lateral; proximal bract erect, appearing as an extension of culm. *Schoenoplectus*
vv. Inflorescence definitely terminal; bracts ascending or spreading but not appearing as an extension of the culm. *Cladium*

Blysmopsis Oteng-Yeboah

A monotypic genus, it is a perennial limited to the boreal regions of the Northern Hemisphere. Clump-forming, the culms are terete, or distally trigonous, the angles rounded. Leaves are ligulate and basal, their blades are flat. The terminal inflorescence is a spike, subtended by several leafy involucral bracts. There are from 2–25 spikelets per spike, each with 2–5 floral scales. Flowers are bisexual, the perianth reduced to 3–5 bristles. They are barbed and shorter than the achene. The styles are 2-fid, with persistent bases.

Blysmopsis rufa (Hudson) Oteng-Yeboah
(=*Scirpus rufus* (Huds.) Schrad.; *Blysmus rufus* (Huds.) Link)
Red bulrush; scirpe roux

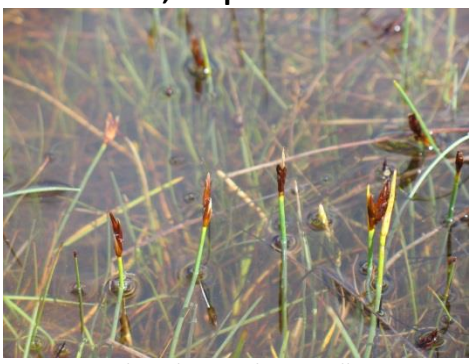


Photo by David Mazerolle

Photo by David Mazerolle

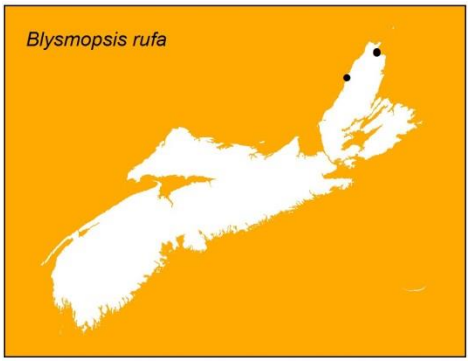
The culms may reach 45cm arising from slender horizontal rhizomes. There are 1–3 leaves without a conspicuous midvein, obtusely tipped. The inflorescence comprises 5–8 spikelets in a loose spike, 1–2cm. The floral scales are deciduous and reddish brown, three in number. Achenes are yellowish brown.

Fruiting late summer.

Saline habitats in coastal marshes or peatlands.

Known only from Dingwall, Victoria Co.; Cheticamp, Inverness Co. and Sand Beach, Yarmouth Co.

Ranges from NF to AK, south to NS, ON and AB.



Bolboschoenus (Asch.) Palla

Perennial herbs arising from rhizomes, they may or may not be cespitose. The culms are sharply trigonous. Leaves are both basal and cauline and without ligules. The blades are flat or V-shaped and sharply keeled. The terminal inflorescences are umbellate, corymbose or capitate with up to 80 spikelets. There are 1–5 involucral bracts, overtopping the spiklets, leafy. Spikelets comprise 25 or more scales, with the tips notched and awned. Flowers are bisexual; the perianth reduced to 3–6 bristles. Stamens three; styles 2–3-fid, their bases are persistent.

Key to species

A. Floral scales membranous and hyaline; anthers yellow; achenes biconvex; leaf sheaths membranous at the mouth, veins diverging from the base leaving a wide deltate veinless area. *Bolboschoenus maritimus*

aa. Floral scales papery and nearly opaque; anthers brownish orange; achenes mostly trigonous; leaf sheaths papery at the mouths, the veins reaching nearly to the summit. *B. robustus*

Bolboschoenus maritimus (L.) Palla
(=*Scirpus maritimus* L.; *Schoenoplectus m*. (L.) Lye)
Saltmarsh bulrush; scirpe maritime

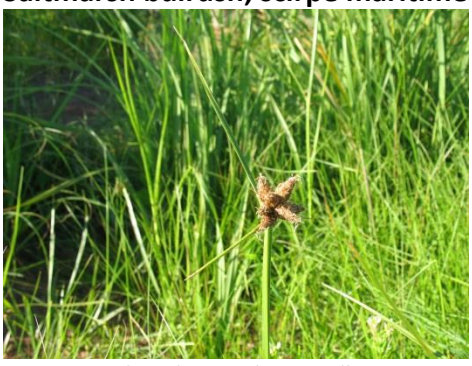


Photo by David Mazerolle

Separated from the next species on a few characters: The leaf sheaths reach more or less to mid-culm. The widely diverging veins leave a wide triangular veinless area at the top, that often disintegrates. The widest leaf blade is 2–12mm wide. All the spikelets are sessile in the inflorescence. It is simply branched and no more than half of the spikelets are solitary, or in clusters of 2–10 on 1–4 rays. Floral scales may be bright orange-brown to stramineous. Bristles are not persistent on shed achenes.

Photo by David Mazerolle

Of the two subspecies, ssp. *paludosus* (A. Nelson) T. Koyama, with the styles bifid and the scales and achenes dark to medium brown, is found in NS.

Flowering and fruiting from mid-July to October.

Found on waste ground about ports and coastal towns; saltmarshes, brackish meadows and estuaries, etc.

Coastal areas throughout, including Sable Island.

Ranges from NS to AK, south to CA, TX and VA.

***Bolboschoenus robustus* (Pursh) J. Sojak**
(= *Scirpus robustus* Pursh; *Schoenplectus r.* (Pursh) MT Strong)
Sturdy bulrush; scirpe robuste

Another tall perennial, the culms reach 150cm tall. The leaf sheaths reach beyond the middle of the culm. They are papery at the mouth, with the veins generally reaching the summit. No more than half the spikelets are solitary, the remainder are in pairs on 1–7 rays, each not exceeding 7cm. There are 2–4 involucral bracts exceeding the spikelets. Scales are medium brown to dark orange brown and nearly opaque. Bristles are not persistent or with only 1–2 adhering, dark reddish brown, shorter than the achenes.

Flowering and fruiting July to October.

An estuarine species.

Collected on the northern side from Annapolis and Cumberland counties to Cape Breton. Distribution remains unknown here and our collections may include hybrids of this and *B. maritimus*.

Ranges from NS; ME to FL and TX; CA.

Bulbostylis Kunth.

Mostly tropical, this genus comprises 80 species. Our single species has linear basal leaves, each ciliate on the sheath. The inflorescence is terminal arising from the axils of the involucral leaves. The flowers are perfect; stamens 1–3, with a single style. The style is cleft into three, swollen below and persistent as a tubercle on the achene.

***Bulbostylis capillaris* (L.) Nees.**
Dense-tufted Hair Sedge; bulbostyle capilaire

Photo by Alain Belliveau

Small in stature, rarely more than 10cm in height, it is often overlooked. Most of the filiform leaves are basal. The inflorescence is an umbel of small spikelets. Achenes are triangular and bear the minute tubercles.

Flowers and fruits produced from August through October.

Sandy open soil as roadsides and railways.

Scattered from Shelburne and Halifax Counties to Annapolis and Kings counties. Locally abundant.

Ranges from NS to ON, south to TX and FL, west to OR and CA.

Photo by Alain Belliveau

Carex L.
sedges

Grasslike species totalling 1500 worldwide, they are most diverse in the arctic and north temperate zones. All are herbaceous, bearing three ranks of leaves along the culm. The sedges produce their flowers in spikes. The staminate spikes are floral units consisting of three stamens in the axil of a scale. A

pistillate flower has a single ovary and two or three styles within the perigynium, which may or may not be beaked. Each perigynium may be subtended by a scale, often used along with the perigynium to identify species. The culm may terminate in a leafy bract directly beneath the inflorescence. Staminate and pistillate flowers may be within the same spike or on separate spikes. The fruit is a trigonous or lens-shaped achene.

The genus is divided into numerous sections, an aid to grouping species. Where a single species is found in Nova Scotia within a section, it is placed in parentheses within the key. All keys follow those published in FNA Ed. Committee, 2002.

Key to Sections

1. Spikes solitary on the culm.	2
2. Perigynia 6–7mm long; 1–10 per spikelet. (*C. pauciflora*)	LEUCOGLOCHIN
2. Perigynia mostly 2–4mm long; many per spikelet.	3
3. Perigynia pubescent, in a short dense spike. (*C. scirpoidea*)	SCIRPINAE
3. Perigynia glabrous.	4
4. Perigynia loosely arranged terminally, erect. *(C. leptalea)*	LEPTOCEPHALAE
4.Perigynia, at least the lower, reflexed in compact, terminal spikes.	5
5. Staminate flowers if present, at the apex; perigynia strongly reflexed. *(C. dioica*).	PHAESTOGLOCHIN
5. Staminate flowers numerous, conspicuous at the base of the spike. (*C. exilis).*	STELLULATAE
1. Spikes >1 per culm.	6
6. Stigmas 2; achenes lenticular.	7
7. Spikes often >10, numerous and crowded.	8
8. Perigynium 4–6mm long, long-beaked; culm sharply angled. (*C. stipata*).	VULPINAE
8.Perigynium 2–4mm long, beak short; culms not sharply angled.	9
9. Leafy bract below basal spikes to 5cm long; scales awned. (*C. vulpinoidea*).	MULTIFLORAE
9. Leafy bracts shorter than the spikes; scales merely acute.	HELEOGLOCHIN
7. Spikes <10, often widely separated.	10
10. Staminate spikes present.	11
11. Spikes sessile.	CHORDORRHIZAE
11. Spikes stalked.	12
12. Plants prostrate and lax; perigynia globose and fleshy, turning orange. (*C. aurea*).	BICOLORES
12. Plants erect and stout; perigynia not fleshy.	PHACOCYSTIS
10. Separate staminate spikes absent.	13
13. Spikes few flowered, (1)2(3); perigynia brown or purple at maturity, shiny; pistillate scales whitish.	DISPERMAE
13. Spikes with more than 2 flowers, or with achenes	14

round, not lenticular; perigynia and scales not coloured as above.

14. Spikes ovate; perigynia compressed, numerous, and winged along the sides. — OVALES

14. Spikes not ovate; perigynia not winged, but may be thinner along the margins. — 15

15. Spikes with staminate flowers (scales) terminal. — 16

16. Perigynia strongly flattened; often >4 per spike. — PHAESTOGLOCHIN

16. Perigynia almost round, 1–3 in scattered delicate spikes. — GLAREOSAE, in part

15. Spikes with staminate flowers basal in the spike. — 17

17. Perigynia appressed, 4–5mm long; serrated beak almost as long as body; lower ones not reflexed. — DEWEYANAE

17. Perigynia <4.5mm long, lower ones strongly reflexed. — 18

18. Perigynia spreading to reflexed, spongy at the base; achene filling only upper half to 2/3. — STELLULATAE

18. Perigynia erect or ascending, plump; the achene filling it. — GLAREOSAE, in part

6. Stigmas 3; achenes triangular. — 19

19. Perigynia with some degree of pubescence. — 20

20. Perigynia beaks absent or vestigial. — 21

21. Spikes with 1–8 perigynia; lowest involucral leaf forming long sheath. (*C. pedunculata*). — CLANDESTINAE

21. Spikes with many perigynia; lowest involucral leaf not long-sheathed. — POROCYSTIS

20. Perigynia with prominent beaks. — 22

22. Leaves glabrous. — 23

23.Perigynia often many-nerved, densely pubescent. — PALUDOSAE

23. Perigynia with 2 main nerves, sparsely pubescent. — ACROCYSTIS

22. Leaves rugose or pubescent. — 24

24. Perigynia strongly nerved. (*C. scabrata*) — ANOMALAE

24. Perigynia without nerves. (*C. hirtifolia*). — HIRTIFOLIAE

19. Perigynia glabrous. — 25

25. Beak of the perigynia short or absent; etoothed. — 26

26. Terminal spike half-pistillate. — RACEMOSAE

26. Terminal spike wholly or mostly staminate. — 27

27. Spikes pendulous. — 28

28. Pistillate spikes ovate or short. — LIMOSAE

28. Pistillate spikes long, linear. — 29

29. Terminal spike partly pistillate. — HYMENOCHLAENAE

29. Terminal spike wholly staminate. 30
30. Leaf blades less than 5mm wide. CAREYANAE
30. Leaf blades more than 5mm wide. LAXIFLORAE
27. Spikes erect. 31
31. Perigynia with many parallel ridges. GRISEAE
31. Perigynia with few ridges or none. 32
32. Perigynia few, to 4mm long. PANICEAE
32. Perigynia numerous, <2.5mm long. 33
33. Pistillate spikes with <6 flowers; plants very small. (*C. eburnea*). ALBAE
33. Pistillate spikes with numerous flowers. 34
34. Perigynia distinctly ridged. POROCYSTIS
34. Perigynia without ridges. THURINGIACA
25. Beak of the perigynia conspicuous and toothed. 35
35. Beaks weakly toothed. 36
36. Plants low, cespitose. CHLOROSTACHYAE
36. Plants tall and slender. 37
37. Spikes linear, on long stalks, drooping. SYLVATICAE
37. Spikes short, or spherical, sessile and erect. CERATOCYSTIS
35. Beaks with stiff teeth to 1mm long. 38
38. Pistillate spikes ovoid to cylindrical, >25 perigynia. 39
39. Pistillate spike scales with long acuminate tips or barbed awns. PSEUDO-CYPERAE
39. Pistilalte spike scales merely acute, or if with awns, not barbed. 40
40. Pistillate spikes ovoid. LUPULINAE
40. Pistillate spikes cylindrical. 41
41. Neck of perigynium short, with stout teeth. (*C. lacustris*). PALUDOSAE
41. Neck of the perigynia long, sharply toothed. VESICARIAE
38. Pistillate spikes spherical, with <15 perigynia. 42
42. Leaves <3mm wide. (*C. oligosperma*). VESICARIAE, in part
42. Leaves >15mm wide. ROSTRALES

Section ACROCYSTIS

Rhizomatous or stoloniferous, these sedges are densely cespitose. The culms are conspicuously shorter than the leaves and red or brown at the base. The sheaths are fibrous, membranous and ciliate at the front. Blades measure from 2–4.5mm wide and glabrous. The racemes contain 2–6 spikes. The proximal bracts are scalelike or filiform. The lateral spikes are pistillate and pedunculate and the terminal spike is staminate. Pistillate scales are white hyaline or reddish-brown, marked with 1–3 veins and awnless. The perigynia are abruptly beaked and usually pubescent. The three-angled achenes fill the bodies of the

perigynia. Styles are usually deciduous. Section contains some of our earliest flowering *Carex* species and most species occupy upland habitats unlike most other sections.

Key to species

A. Some pistillate spikes produced on short stems at the base of the plant, amidst the leaves. B

B. Bracts of the distal pistillate spikes leaflike, equalling or exceeding the flowers; remnants of old leaves not fibrous, or barely so; pistillate scales shorter than the perigynia. *Carex deflexa*

bb. Bracts of the distal pistillate spikes scalelike, shorter than the flowers; old leaves in fibrous tufts; pistillate scales equal to or longer than the perigynia. C

C. Perigynia <3.2mm long, beak 0.4–1mm. *C. umbellata*

cc. Perigynia >3.1mm long, beak >0.9mm. *C. tonsa*

aa. Basal pistillate spikes absent. D

D. Perigynia bodies globose to obovoid, length and width nearly equal. E

E. Plants densely cespitose; rhizomes short and not spreading outward; widest leaves >3mm wide. *C. communis*

ee. Plants loosely cespitose, or with solitary stems; rhizomes long and spreading; widest leaves <3mm wide. F

F. Beaks of perigynia <.9mm; culms smooth, or slightly roughened at the top. *C. pensylvanica*

ff. Beaks of the perigynia >0.9mm; culms strongly scabrous near the top. *C. lucorum*

dd. Perigynia ellipsoid, longer than wide. G

G. Leaves at least 3mm wide; pistillate and staminate spikes usually widely separated. *C. communis*

gg. Leaves <3.3mm wide, but if wider than 2.9mm then spikes closely associated and near the staminate spike. H

H. Lower 2 pistillate spikes wide-spaced, by at least 7mm, not overlapping; lower cauline bracts equal to or exceeding the height of the inflorescence. *C. novae-angliae*

hh. Lower 2 pistillate spikes overlapping or adjacent to each other, separated by less than 7mm; lower cauline bract, shorter than the inflorescence. I

I. Pistillate scales shorter than the perigynia which are conspicuous. J

J. Perigynia <3.1mm; culms slender; leaves equal to or longer than the culms. *C. deflexa*

jj. Perigynia >3.2mm long; culms robust; leaves shorter than the culms. *C. peckii*

ii. Pistillate scales about equal in length to the perigynia, obscuring them. *C. albicans*

Carex albicans Willd.
White-tinged Sedge; carex à écailles marginées

Photo by Sean Blaney
var. emmonsii

Photo by Sean Blaney
Var. emmonsii

A cespitose species it arises on culms 10–45cm tall; their bases are reddish brown to reddish purple and smooth to scabrous distally. The leaves are pale or bright green and no more than 2.5mm wide. Plants are bisexual; spikes are unisexual. The involucral leaf is shorter than the inflorescence. Cauline spikes are nearly overlapping, not exceeding 7mm apart. The pistillate scales are reddish brown with whitish margins. Perigynia are pale green and without veins or ridges, but ciliate or serrulate. Stigmas number three.

Var. *emmonsii* (Dewey) Rettig has the staminate spikes <8.4mm, their scales with the midrib extending beyond the tip. It is known from Yarmouth and Shelburne counties to Antigonish. (as *C. emmonsii*). Var. *albicans* has shorter staminate spikes and scales without the midvein extension.

Early-maturing, fruiting by June.

Elsewhere known from acidic, dry soils of sandstone or granite. Var *emmonsii* is characteristic of rich deciduous forests.

Scattered mainland collections.

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

Carex communis LH Bailey
carex commune

Photo by David Mazerolle

A densely cespitose species, its larger size should separate it from others in the section. Culms may reach 60cm tall, and are roughened just below the inflorescence. The leaves may be 5mm wide, scabrous or papillose on either surface. Cauline spikes are clearly distant from each other, the pistillate spikes have 3–10 green perigynia. Their beaks are ciliate or serrulate. Ours is the typical variety, with tiny apical teeth on the perigynial beaks and the scales less than 1.6mm wide.

Photo by Roger Lloyd

Flowering and fruiting from May until July.

Found in dryish soils of forests, roadsides and even clearings. Cliff crevices in northern regions.

Common throughout NS.

Found throughout the continent.

***Carex deflexa* Hornem.**
carex déprimé

Photo by Martin Thomas

This species with its pale green leaves no wider than 2.6mm, arises on arching culms to 31cm tall. The spikes are exceeded by the proximal leafy bracts. Pistillate spikes number 1–4,with one or two amongst the leaves at the base of the plant. The cauline spikes are overlapping or nearly so. Pistillate scales are light to dark reddish brown, with whitish margins, shorter than the yellowish to grayish-green perigynia. Their beaks may be bent.

Flowers and fruits from May to July.

Frequents dry sandy mixed or evergreen forests and rock crevices.

Scattered from Yarmouth to northern Cape Breton. Perhaps overlooked.

Ranges across the continent and variously south to SC and ID; Greenland.

Photo by Martin Thomas

***Carex lucorum* Willd.**
Forest sedge

Photo by Roger Lloyd

Arising on culms to 55cm, this species has fibrous remnants of old leaves persistent at the base. The single staminate spike is up to 2.2cm long. Below it are 2–3 pistillate spikes. The proximal leafy bract subtending the inflorescence is shorter than it. The beaks of the perigynia are half the length of the body and straight. Perigynia are yellowish to olive and nerveless.

Flowers early May to June.

Habitat is dry sandy and acidic soils as found beneath pines, open forest and recent clearings.

Western counties from Queens, Lunenburg and Kings and in northern Cape Breton.

Ranges from NS to ON, south to TN and GA.

***Carex novae-angliae* Schwein.**
carex de Nouvelle-Angloterre

Photo by Sean Blaney

Photo by Roger Lloyd

A loosely cespitose species, the slender culms are shorter than the narrow leaves, which may be only 1mm wide. Pistillate spikes 1–4, with reddish brown acuminate or acute scales. Lowermost leafy involucral bract is shorter than the inflorescence. The perigynia are light green and without veins; their beaks are straight.

Flowers and fruits from mid-May through early June.

Found in pastures, clearings and mixed deciduous forests.

Scattered throughout.

Ranges from NF to ON, south to WVA.

Carex peckii Howe
carex de Peck

Photo by Roger Lloyd

A loosely cespitose sedge with slender ascending rhizomes, its glabrous culms reach to 47cm in height. Leaves are only up to 4mm wide. They are not persistent as fibres at the base of the culms, and are shorter than the inflorescence. Bracts are generally shorter than the inflorescence. There are 2–3 pistillate spikes, none at the base amongst the leaves. The lower two spikes are nearly overlapping, with 3–10 perigynia. Pistillate scales are reddish to pale brown, with wide white margins, two-thirds the length of the perigynia. Staminate scales are elliptic. The perigynia are light green with straight beaks, longer than wide. Re-examination of some material identified as *C. nigromarginata* places them here.

Flowers and fruits throughout its range from May through mid-July.

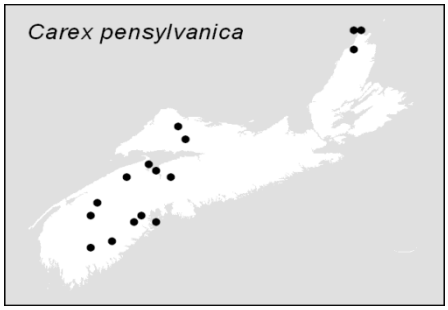
Dry or mesic slopes, mixed deciduous forests, rocky outcrops, old quarry.

So far known from White Rock, Kings Co., Rhodes Co., Lunenburg Co. and Halifax and the Pennants area, Halifax Co. (DAL herbarium only)

Elsewhere from NS to AK, south to CO and IN.

Considered to be ORANGE for Nova Scotia.

Carex pensylvanica Lam. check this one
carex de Pennsylvanie



Loosely cespitose, the culms reach 10–45cm tall, bearing leaves barely 3.6mm wide. Pistillate spikes 1–3 and cauline, rarely with one basal spike. Perigynia have beaks, shorter than one-quarter the length of the body. They are pale green, obovoid and veinless. The leafy bract nearest the inflorescence is shorter than it. A most distinctive character is the presence of stout woody rhizomes, reddish brown in colour, spreading horizontally.

Flowers and fruits produced early, to mid-May.

Grows in dry, rocky soils as in dry open woodlands.

Scattered from Annapolis and Lunenburg counties to northern Cape Breton.

Ranges from NS to BC, south to SC, KS and CA.

Carex tonsa (Fern.) EP Bickn.

Photo by Sean Blaney

Photo by Roger Lloyd

This sedge is another cespitose species, producing upright reddish brown rhizomes. The culms are only up to 16cm tall, often obscured by long bright green leaves and darker at the base. The inflorescence produces both staminate and pistillate scales. Peduncles of the basal pistillate spikes are erect. The involucral bract is scale-like and shorter than the inflorescence. The staminate spike is terminal. Pubescent perigynia usually number 3–10 on each spike. Ovate pistillate scales are brown with pale margins, which obscure the perigynia. Beak is straight and pale green, although it sometimes exhibits a reddish tinge near the apex. It is also pubescent. Stigmas number three. Our variety is var. *rugrosperma* (Mackenzie) Crins, collected as *C. rugrosperma* Mackenzie.

Flowering and fruiting by mid-June.

Grows in dry, acidic and often rocky or sandy soils on open land such as headlands, meadows and roadsides.

Scattered to common in Annapolis and Queens counties to Colchester; also found in northern Victoria Co.

Ranges from NF to BC and variously south in the east to GA.

***Carex umbellata* Schkuhr**
carex en ombmelle

Photo by Sean Blaney

Photo by Roger Lloyd

A densely cespitose species, it produces upright reddish brown rhizomes. The culms are 3–7.5cm tall, shorter than the leaves, whose pale green blades are less than 3mm wide. The involucral bract is scalelike and shorter or equal to the height of the inflorescence. Pistillate spikes number 2–5, and may have up to three buried amongst the leaves, at the base of the plant. The cauline spikes overlap with the staminate spikes. Pistillate scales are reddish brown with pale margins, at least as long as the perigynia and pointed. Perigynia are pale brown or green, nearly round and veinless. Their beaks are straight, weakly ciliate and strongly compressed.

Fruits produced until mid-July.

Grows in sterile sandy soils as in fallow fields and roadsides.

Collections from Queens Co. to Cumberland and Victoria counties.

Elsewhere, ranges from NF to BC, south in the east to LA and GA; Greenland.

Section ALBAE

Plants are long-rhizomatous and cespitose. The culms are brown at the base. The leaves have filiform blades, V-shaped in cross-section; their sheaths are not fibrous. The raceme bears 3–5 spikes, the terminal one staminate. Involucral leaf is bladeless but sheathing. Perigynia are filled by the achenes, weakly ridged and glabrous. The styles are deciduous.

***Carex eburnea* F. Boott**
carex ivoirin

Photo by Sean Blaney

A small sedge rarely taller than 20cm, it bears many hairlike leaves. The staminate spikes are inconspicuous; pistillate spikes 3–7mm long and few-flowered.

Grows in cliffs and talus, especially in calcareous soils, under conifers.

May be locally abundant where found, scattered from Cumberland and Hants counties to Cape Breton.

Ranges across the continent, south to WY , TX and GA.

STATUS: YELLOW-listed in NS.

Section ANOMALAE

Another monotypic section for Nova Scotia, these plants are also cespitose and bear stout rhizomes. The culms are reddish or purplish brown at the base and sharply angled (scabrous). The leaves have two prominent lateral veins, more marked than the midrib and often scabrous. The raceme has from 4–8 spikes subtended by leaflike bracts which are usually pubescent. The lower pistillate scales, at least, are awned. The terminal spike is usually staminate. The beaked perigynia are erect and sometimes spreading. The stigmas number three; the style is deciduous.

***Carex scabrata* Schweinitz**
carex scabre

Photo by Sean Blaney

Photo by Roger Lloyd

Ranging from 40–80cm tall, this cespitose species forms loose clumps of very rough culms and leaves. Lower leaves may reach 1cm wide. Pistillate spikes are several, 2–3cm long. The lowermost are borne on slender stalks. Scabrous ovate perigynia are marked by strong veins, etoothed, but with the beak nearly as long as the body.

Flowers and fruit from May to September.

Grows in alluvial soils along streams, in thickets and mucky shaded areas.

More frequently collected from north and central counties but scattered from Digby County to Cape Breton.

Ranges from NS to ON, south to MO, AL and GA.

Section BICOLORES

Loosely cespitose, these sedges have the culms brown at the base. The leaves are smooth when young, V-shaped in cross-section, their sheaths not fibrous at the base. Racemes comprise 2–6 spikes, their rachis papillose. The lateral spikes and sometimes the proximal ones are pistillate. Pistillate scales are obtuse to acuminate. Perigynia are ascending to spreading, weakly marked and sometimes inflated. They are beaked or beakless but generally glabrous.

Key to species

Lateral spike lax; mature perigynia orange; terminal spike usually staminate. *Carex aurea*

Lateral spike dense; mature perigynia whitish;, terminal spike gynecandrous. *C. garberi*

Carex aurea Nutt.
Golden Sedge; carex doré

Photo by Sean Blaney

Photo by Sean Blaney

A slender species, usually under 40cm in height, growing in loose mats. The leaves are very narrow and the lowest involucral bract exceeds the height of the inflorescence. Perigynia are almost round and at maturity they are a bright orange or golden, a unique character amongst our sedges. They are borne in 2–3 ranks, forming loose spikes about 1cm long. The terminal spike is staminate.

Matures from June to July.

Grows in alkaline soils on slopes, in fields or streamsides.

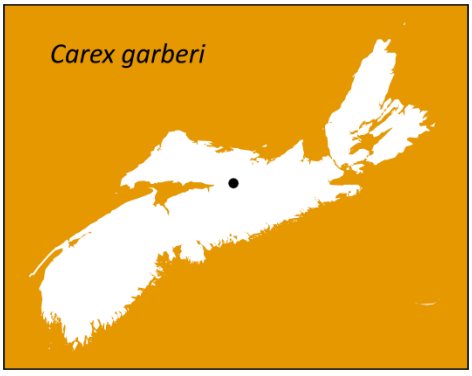
Found from Annapolis and Cumberland counties to northern Cape Breton.

Ranges from NF to AK, south to PA, TX and CA

***Carex garberi* Fernald**
carex de Garber

Photo by Sean Blaney

Photo by Roger Lloyd



Another short sedge, bearing leaves no more than 2.5mm wide. The racemes are exceeded by the proximal involucral bract. Spikes have up to 30 perigynia, with the proximal ones distant from each other. The terminal spike is gynecandrous with at least one-third of staminate flowers. Pistillate scales are ascending, brown but lighter on the margins and midvein. The perigynia are ascending, white, densely papillose.

Fruiting during the summer.

Found in moist soils on shores in meadows, fens especially in alkaline areas.

Recently discovered in Riversdale area of Colchester Co.

Ranges from NL and NS across the country and south to CA, WY, IL and PA.

STATUS: ORANGE-listed for Nova Scotia.

Section CAREYANAE

The plants are densely or loosely cespitose arising from short rhizomes. Culms may be brown or purple at base. Leaves are often wider than 10 mm and the cauline leaves are sometimes bladeless. Inflorescences are racemose, with 3–6 spikes. The bracts may be leaflike or bladeless. Lateral spikes are pistillate, frequently basal, and sometimes with 1–2 staminate flowers proximally. Spikes are pedunculate,. The terminal spike is staminate . Perigynia are ascending, distinctly marked by at least 8-veins. They are sessile and glabrous; beak less than or more than 5 mm, not forked. There are three stigmas. Achenes are trigonous, smaller than bodies of perigynia; the style is deciduous.

Carex digitalis Willd.

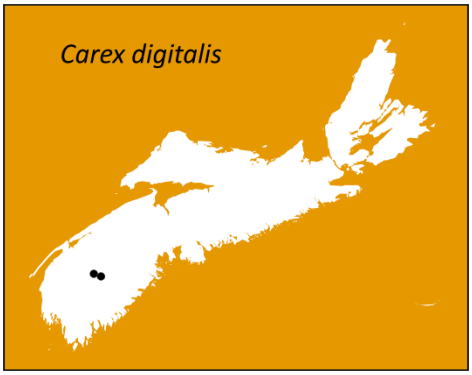
Photo by Ross Hall

These plants are densely cespitose. The erect or ascending culms may reach 52 cm. The basal sheaths of the leaves are white or light brown. The blades are up to 5 mm wide, shorter than or overtopping culm, There are usually four spikes per culm, the peduncles of pistillate spikes up to 10.2 cm long. Those of the staminate spike are shorter, 0.4–8.7 cm long. The pistillate spikes are proximal, usually basal and erect, ascending, or drooping. There is a single staminate linear or clavate spike. Pistillate scales are keeled; midribs are green. The margins are hyaline, apex acute, proximal scales of lateral spikes subtending perigyinia. The achenes are obovoid, plane or slightly concave at maturity, tightly fitting the perigynia. Styles are slender, ascending through the entire orifices.

Fruits in early summer.

Generally found in forested habitats: deciduous or mixed deciduous over a variety of soils.

In Nova Scotia so far known only from Kejimkujik National Park.



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

STATUS: ORANGE-listed for NS.

Section CERATOCYSTIS

A group of very common sedges, easily recognized as a section. All are densely cespitose bearing clusters of dimorphic culms. Some are less than 20cm in height producing smaller perigynia. The taller ones may be up to 40cm tall. The distal spikes are sessile and ovoid. The perigynia are tightly packed, spreading or reflexed, all terminating in long beaks.

Key to species

A. Pistillate scales greenish yellow.	*C. cryptolepis*
aa. Pistillate scales brownish.	B
B. Staminate spike sessile or on short peduncles <5mm long; cauline leaves nearly as long as the culms; beak of the perigynium>1.3mm long, scabrous.	*C. flava*
bb.Staminate spike on peduncles >4.5mm; cauline leaves less than half the length of the culms; beak of the perigynium weakly scabrous, <1.3mm long.	*C. viridula*

Carex cryptolepis Mackenzie
carex à écailles cachées

Photo by David Mazerolle

Leaves are narrower on this species, otherwise it resembles *C. flava*. The pistillate scales are the same colour and size as the perigynia, yellowish-green (hence “crypto” “lepis” is hidden scales).. Perigynia beaks are glabrous on the margins.

Generally associated with calcareous soils in meadows, fens and streamsides.

Northern in Nova Scotia, from Brier Island to Victoria Co. Not known from the Atlantic side.

Ranges from NF to SK, south to IL and NJ.

***Carex flava* L.**
Yellow Sedge; carex jaune

Photo by David Mazerolle

It is a common species and typical of the section. Forming dense clumps, the culms reach 50cm tall. Pistillate spikes 1–3, sessile and ovoid, usually less than 1cm long. Inflorescence is burr-like in appearance because of the reflexed perigynia. Staminate spike is solitary, sessile or short-pedunculate, 2cm long. Variable in form, the previous varieties are now included here.

Flowers and fruits throughout the summer.

Found in wetlands and poorly-drained soils.

Common throughout and frequently found.

Ranges from NF to NU, south to IN and VA; YT and AK south to WY and ID.

***Carex viridula* Michx.**

Photo by Sean Blaney

A small species, it is very common in its habitat. Cespitose, its leaves are about 2mm wide. The erect pistillate spikes are less than 2cm long, of loosely packed perigynia, each may be up to 4mm long. Yellow in colour, they narrow to angled beaks less than half the length of the body. Several subspecies and two varieties are recognized, all present in NS.

Photo by Roger Lloyd

Ssp. *viridula* has the pistillate spikelets closely associated, arising on culms longer than 5cm. The staminate spike is longer than 7mm.

Ssp. *brachyrrhyncha* (Celak.) B. Schmid has succulent leaves and culms less than 5 cm long. Its staminate spike is less than 6.5cm long. Its distribution is strictly coastal on Brier Island and Eastern Shore islands. It has two varieties, var. *elatior* (Schldtl.) Crins of alkaline, lime-rich soils and var. *saxilittoralis* (Robertson) Crins of rock crevices on exposed sea points.

The first variety has the culms to 85cm and the staminate spike's peduncle to 25mm. The latter is much smaller with the culms only to 5cm and the peduncle to 4mm. It is ORANGE-listed in NS. Ssp. *oedocarpa* (Andersson) B. Schmid has the proximal pistillate spike remote or basal. The leaves are dark or olive green.

Fruits and flowers from June to September.

Found in sphagnous swales, stony shores, coastal pastures or brackish pond edges.

Scattered throughout NS.

Ranges from NF to AK, south to NJ, IL, NM and CA; Greenland; Eurasia.

Forms hybrids with C. flava.

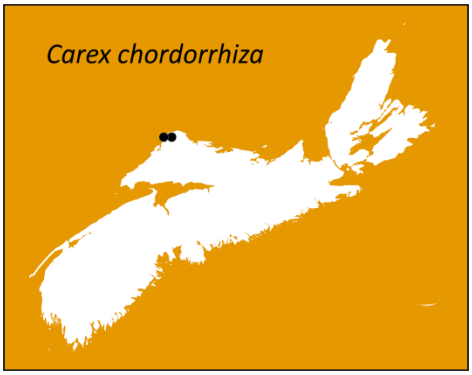
Section CHORDORRHIZAE

This section is monotypic and only recently discovered in Nova Scotia. Typically they are not clumping plants. Arising on short rhizomes, plants produce long stolons. Basal leaves are wider than 1mm, M-shaped in outline. The basal leaf sheaths are not fibrous. Spikes count 2–7. The strongly veined perigynia are ascending and may be unequally biconvex. They are glabrous and abruptly beaked, the beak mearly 1/5th of the body or less. The achenes are biconvex and scarcely smaller than the perigynia. Stigmas number 2 and the style is deciduous.

Carex chordorrhiza Ehrh. ex L. f.

Photo by Sean Blaney

Photo by Sean Blaney



The smooth culms range in height from 5–35 cm, and may be scabrous distally. The vegetative stems ascend when young, becoming prostrate stolons at maturity reaching 120 cm. Spikes may be ascending or spreading.. Pistillate scales are brownish with green center and paler margins, ovate to broadly ovate. Staminate scales ovate, apex obtuse to acuminate. Perigynia are dark brown, with 12–28 veins and, glossy. The smooth achenes are silvery brown.

Fruits in early summer.

Grows in wetlands: bogs, fens and marshes.

It has been recently found in the Amherst area of Cumberland Co.

Ranges from NF to AK, south to OR, IL and PA; Greenland. Reported to be uncommon and local and often overlooked.

STATUS: Currently listed as ORANGE for NS.

Section CHLOROSTACHYAE

Cespitose species arising from short rhizomes, their culms are brown at the base. The leaves are very narrow, no more than 4mm wide, V-shaped in cross-section or channelled. The lateral spikes are pistillate, the terminal spikes functionally staminate (in ours). The lateral spikes are pendent, or spreading and borne on long peduncles. The perigynia are ascending, not speckled nor veined, except for two strong marginal veins, smooth and tapering to a beak. There are three stigmas.

***Carex capillaris* L.**
carex capillaire

Photo by Sean Blaney

Photo by Roger Lloyd

A tussock-forming species, only to 30cm in height, it has mostly basal leaves. Culms are filiform with staminate flowers in the terminal spike. Perigynia, 2.5–3mm long, with beaks to 1mm. Pistillate scales are blunt-tipped, but for a tiny point on the midrib. They are shorter than the perigynia.

Flowering and fruiting in mid-summer.

Grows in cool, seepy rock faces, crevices.

Known only from Cape d'Or, Cumberland County and in northern Cape Breton.

A circumboreal species, ranging south in North America to NV, NM and NY.

STATUS: YELLOW-listed.

Section CLANDESTINAE

The section is typified by having its culms red-purple at the base. The widest leaves are 2–4mm wide, with the distal leaves often bladeless. The leaf sheaths are also purple-tinged. The inflorescence is a raceme of 2–6 spikes. The lateral spikes are usually pistillate or androgynous and may be basal. The

terminal spike is staminate or androgynous. The proximal pistillate scales are brown or black. The perigynia are veinless or strongly ridged on the margins. The apex is strongly contracted to a beak and pubescent. Stigmas number 3–4.

Carex pedunculata Willd.
carex pédonculé

Photo by Sean Blaney

Photo by Sean Blaney

The culms may reach 28cm in height. Leaves are long, stiff and mostly basal. Cespitose, the plants are distinctive in having the lower pistillate spikes on slender branches, buried amongst the leaves. Pubescent perigynia are obovate, the hairs short, tapering to a short beak.

Flowering and fruiting from April through early July.

An early colonizer in calcareous areas.

Limited to the northern side, local from Digby Neck to northern Cape Breton.

Ranges from NF to BC; south to SD, AL and GA.

Section DEWEYANAE

These species are cespitose, forming loose or dense clumps. The culms are brown at the base. Spikes 3–9, the lateral pistillate or gynaecandrous, their scales white to castaneous. Margins of the scales are hyaline, the midvein is green, ending in an acute apex. The perigynia are erect or ascending, sometimes spreading and beaked. There are two stigmas. The deciduous style is enlarged at the base.

Key to species

Lowest bract under the inflorescence not conspicuous, shorter than the lowest spike; perigynia with strong ridges on inner and outer surfaces. *Carex bromoides*

Lowest bract conspicuous, longer than the lowest spike; perigynia weakly nerved on the outer surface only. *C. deweyana*

Carex bromoides Willd.

Photo by Sean Blaney

Photo by Sean Blaney

Culms are scabrous above, bearing no involucral bracts below the spikes. The perigynia are lanceolate, 4.5–6mm long, and with strong ridges on both surfaces.

Flowering and fruiting from May through July.

Grows in wet areas in forests and swamps.

Locally abundant from Annapolis County to Cape Breton.

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

Carex deweyana Schwein.
carex de Dewey

Photo by Sean Blaney

This sedge has weak, lax culms, The spikes produce plump perigynia, without hyaline margins. They are loosely arranged in the spikes, about 4.5mm long with long beaks. There are no nerves or ridges on the inner face. Achenes fill only the upper portion of the perigynia.

Flowers and fruit produced from May until August.

Habitat is generally alkaline or calcareous in open woods, on banks in fertile forests.

Spread from Annapolis and Queens counties to northern Cape Breton.

Found across Canada and south to NV, NM and NJ.

Section DISPERMAE

Represented by a single distinctive species, it is found in North America and Eurasia. Plants form loose clumps, the culms are brownish at the base and very slender, rising above the leaves. The spikes are androgynous, 1-6 and bear only bristlelike bracts. The widely spaced spikes are few-flowered.

Carex disperma Dewey

Photo by David Mazerolle

A slender cespitose plant, culms are weakly erect. Leaves are narrow from culms to 60cm tall. Usually the flowers arise in clusters of fewer than three, with up to five spikes per culm. The pistillate scales are oval, transluscent white with green centres, and long-pointed. They are shorter than the perigynia.

Flowers and fruit produced until August.

Shady moist woods, wooded swamps. Common on coniferous sites that have been cleared.

Ranges from Annapolis and Lunenburg counties to Cape Breton.

Elsewhere from NF to AK, south to NJ and CA; Eurasia.

Section GLAREOSAE

Sedges of this section are cespitose and rhizomatous or stoloniferous, arising on culms with fibrous strands of persistent dead leaves. Their inflorescences are racemes of widely spaced spikes, subtended by scalelike or bristlelike involucral bracts. Perigynia are erect or ascending and veined on both surfaces. Beaked or beakless, they are usually smooth. The apex may be entire or bifurcate. Stigmas number two. Primarily, they are plants of woodlands, fens and bogs in Nova Scotia with the exception of *C. mackenziei*).

Key to species

A. Spikes widely distant; proximal bract long and bristlelike, exceeding the sparsely flowered inflorescence; flowers 1–5 per spike. — *Carex trisperma*

aa. Spikes closely associated, at least at the top; proximal bracts scalelike or bristlelike but shorter than the inflorescence; spikes with several flowers. — B

B. Plants loosely cespitose; scales white-hyaline; perigynia — *C. tenuiflora*

without
beaks or nearly so.
bb. Plants loosely or desnsely cespitose; scales green or brown; perigynia beaked. C

C. Terminal spike clavate, at least half of the length staminate; scales equal to or longer than the perigynia. *C. mackenziei*

cc. Terminal spike scarcely clavate; staminate for <1/2 its length; scales shorter than the perigynia. D

D. Leaves green-yellowish green; perigynia loosely spreading, beaked; beak abaxial suture visible. *C. brunnescens*

dd.Leaves gray-green; perigynia appressed-ascending; short-beaked; suture barely visible. *C. canescens*

Carex brunnescens (Pers.) Poiret
carex brunâtre

Photo by Sean Blaney

Photo by Sean Blaney

Densely cespitose this slender species may reach 90cm in height. The culms are erect or ascending and exceed the height of the leaves, which are less than 1mm wide. The inflorescence is to 7cm long, with 5–10 spikes, each with fewer than 10 plump perigynia. Staminate flowers are nearly obscure, found beneath the perigynia on the terminal spike. Our plants may be divided as follows:

ssp. *brunnescens* has the culms nodding or erect and the leaves >1.5mm wide while ssp. *sphaerostachya* (Tuckerm.) Kalela has the culms ascending or arching and the leaves <1.5mm wide.

Flowering and fruiting to August.

Acidic soils in moist open forests and thickets.

Scattered in southern NS and common from Kings to northern Cape Breton.

Ranges from NF to AK, variously south to NV and GA. Greenland; Eurasia.

***Carex canescens* L.**
carex blanchâtre

Photo by Sean Blaney

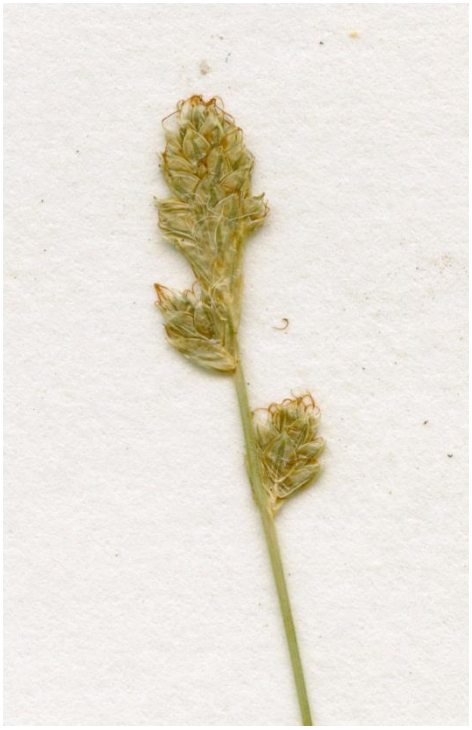


Photo by Roger Lloyd

The largest and most common species of this section in Nova Scotia, it grows to a height of 70cm. The inflorescence is comprised of spikes crowded with perigynia. The terminal spike has a few staminate flowers at its base.

Both North American subspecies are found here. Ssp. *canescens* has its culms ranging in height from 15–60cm, with all its spikes but for the lower, closely associated on the culm. Ssp. *disjuncta* (Fern.) Toivonen has culms from 30–90cm tall and all but the distal spikes, remote, at least 2–5cm apart. Most of our material seems to belong to the latter subspecies. Ssp. *canescens* has been collected only from Homeville, Cape Breton.

Fruiting from May until August.

Found in wooded swamps and bogs.

Common throughout the province.

Ranges across the continent, south to CA, NM and variously south in the east to SC; Greenland and Eurasia.

***Carex mackenziei* Krecz.**
carex de MacKenzie

Photo by David Mazerolle

Photo by Roger Lloyd

Very slender in growth, this sedge ranges from 10–40cm in height, bearing leaves 1–3mm wide. Both stolons and rhizomes are present, the latter short, the former very long. Distinctive is the presence of staminate scales at the base of the terminal spike. Pistillate scales are reddish brown, nearly obscuring the gray-green perigynia. Their centres are pale. There are often reddish dots covering the surface of the perigynia, which tend to age to a paler brown. The grayish green leaves do not exceed the height of the culm.

Fruiting from June through August.

around the heads of saltmarshes or bordering brackish ponds.

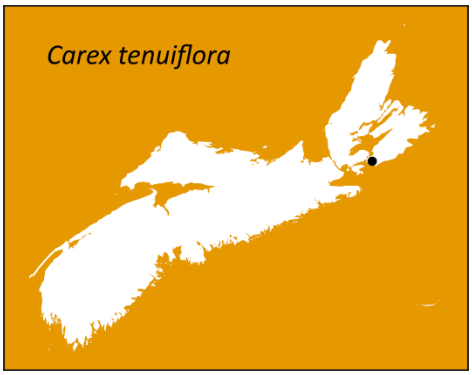
Uncommon at scattered localities around the coast.

Ranges from NF to AK, south to BC and ME; absent from YT. Greenland; Eurasia.

***Carex tenuiflora* Wahl.**
carex ténuiflore

Photo by David Mazerolle

Photo by Roger Lloyd



Arising from long slender rhizomes, this loosely cespitose species produces weakly erect culms 10–50cm tall. Spikes 2–4, are closely spaced, forming an ovoid inflorescence. Each spike produces 10–15 perigynia. The pistillate scales have green centres and about equal the perigynia in size.

Fruiting from May to August throughout its range.

Found in wet woods, bogs and fens where pH is higher

So far local on Nova Scotia and limited to Little Harbour, Richmond Co.

Circumboreal, south to NY, OH and WA; CO.

STATUS: ORANGE-listed for NS.

***Carex trisperma* Dewey**
carex trisperme

Photo by David Mazerolle

Photo by Roger Lloyd

A diffuse plant, this almost unmistakeable sedge is cespitose. Its filiform culms are 20–30cm tall. Leaves are mostly basal, 1–2mm wide and shorter than the culms. Inflorescence is 5–10cm long, with only 1–3 spikes, each producing 1–4 perigynia. The lowermost spike is subtended by an involucral bract, 1–2cm long. Pistillate scales are ovate, acutely pointed and pale with green centres, shorter than the perigynia. Two varieties are present. Var. *billingsii* OW Knight is sometimes separated on its even smaller habit. Both forms occur here, with this variety perhaps found in more open organic soils of some wetlands.

Carex disperma is often found amongst this one. The two species are similar.

Fruiting from June to August.

Bogs, swamps and swampy forest, usually in the shade.

Scattered throughout.

Ranges from NF to NT, south to MN, TN and NC.

Section Granulares is not included in the keys to sections. Two species were historically reported from Nova Scotia. Only the ***Carex granularis*** Muhl. Ex Willd. Record is supported by a collection, from Paradise, Annapolis Co**.** ***Carex crawei*** Dewey was proposed as present by a previous author (Scoggan, 1979). Both are calceophiles, with reddish-brown or yellowish perigynia, lossely enclosing the achenes. The lateral spikes may bear 25 or more perigynia.

Section GRISEAE

This section of sedges may be cespitose and is rhizomatous. The culms are brown or purplish at the bases. The basal sheaths of the leaves are not fibrous. Their fronts are membranous, the blades M-shaped in cross-section when young. Blades are less than 6mm wide. The racemes have 3–6 spikes with a long sheathing leafy bract below. Pistillate spikes are lateral and there may be 1–2 basal spikes. The terminal spike is staminate. The perigynia are yellowish, ageing to dark brown. They are ellipsoid and glabrous, beaked or beakless. The lower pistillate scales are awned. Stigmas number three.

Carex conoidea Willd.
carex conoide

Photo by David Mazerolle

Photo by Roger Lloyd

A cespitose species and our only species of the section in Nova Scotia. It is 20–30cm tall, producing several pedunculate spikes, 1–2cm long. The ellipsoid perigynia are 3–4mm long, strongly nerved.

Habitat preferences include sterile and peaty meadows, fields and headlands.

It is frequent from Yarmouth to Antigonish counties, but merely scattered about northern Cape Breton.

Ranges from NF to MB, south to MO and NC; AZ.

Section HELEOGLOCHIN

These sedges are densely cespitose, producing short rhizomes. The culms are brown to dark brown basally and less than 1mm wide at the top. The basal leaf sheaths are not fibrous and may be spotted red or copper on the fronts. Their blades are glabrous. The compound inflorescences are panicles of numerous spikes. The bracts are awl-shaped, scalelike or bristlelike, or absent. The lateral spikes are sessile and functionally pistillate, the terminal spikes are androgynous. The pistillate scales are acute or cuspidate. The perigynia are spreading and strongly veined on the abaxial surface, leathery in texture. Their margins are angled, glabrous, and abruptly beaked.

Key to species

Inflorescence little interrupted; mature perigynia nearly black. *Carex diandra*

Inflorescence flexuous and interrupted; mature perigynia brownish. *C. prairea*

Carex diandra Schrank
carex diandre

Photo by David Mazerolle

Slender and erect, the culms may reach 60–90cm in height. The inflorescence is 3–4cm long, comprising 3–10 compact spikes, scarcely separated. Perigynia darken in colour with age. The leaf sheaths are white, coppery towards the margins, where they are conspicuously spotted red.

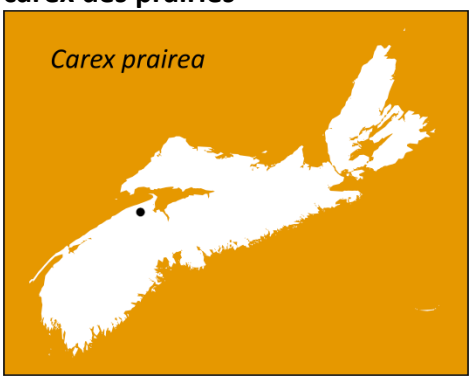
Fruiting from late May through August.

Freshwater marshes, bogs and cat-tail stands.

Northern in NS, where it is common, from Digby Neck to northern Cape Breton.

Ranges from NF to YT, south to CA, NM, MO and MD; Eurasia; New Zealand.

***Carex prairea* Dewey**
carex des prairies



The spikes are looser in this species than in *C. diandra*, their culms standing 50–100cm tall. The proximal spikes are widely separated. Leaf sheaths are strongly coppery towards their apices.

Fruiting from late May to July.

Grows in habitats such as cat-tail swamps.

A single record is extant from Centreville, Kings Co.

NS to BC, south to ID and VA

STATUS: ORANGE-listed in NS.

Section HIRTAE is not included in the key. The single species remaining in this section, ***Carex hirta* L.**, has a distribution in Nova Scotia limited to a single locality, Annapolis Royal. Its culms are strongly three-angled, with their bases brownish purple. The leaves and sheaths are pubescent, the sheaths with tufts of hairs at their openings.Scales are also hairy. This sedge grows on dry sandy soil as on railroad embankments and in nearby fields.

Section HIRTIFOLIAE

Plants form short rhizomes and loose clumps. The culms are reddish brown at the base. The pilose leaves are ridged on the adaxial surfaces by two prominent lateral veins. The basal sheaths are not fibrous. Racemes have 2–5 spikes, the nearly sessile lateral ones are pistillate. The terminal spikes are staminate. The ascending perigynia are nearly veinless, although their margins are strongly ridged. They are pilose and beaked, the beak bitoothed. Stigmas number three.

***Carex hirtifolia* Mackenzie**
carex à feuilles poilues

Photo by Sean Blaney

Photo by Roger Lloyd

This sedge is a lax pilose species, 30–60cm tall, its culm is distally scabrous. The leaf blades are to 8mm wide, also pilose. The trigonous perigynia are finely pilose, their scales prominently awned. The terminal spikes are 20mm long and only 3mm wide.

Fruits during May and June.

Habitat includes calcareous regions in thickets, deciduous forests and floodplains.

Scattered around the lowlands in the central counties as at Shubenacadie and Brookfield. Also along the Meander and Herbert rivers, Hants Co.

Ranges from NS to ON, south to KS, AR and VA

Section HYMENOCHLAENAE

Colonial or merely densely cespitose, the plants arise on short rhizomes, both vegetative and flowering. The culms are often maroon at the base, less frequently brown or pale green. The lowermost basal leaves are generally without blades, sometimes fibrous. Widest leaves are less than 13mm across. When young the leaves have two lateral veins more prominent than the midvein. The racemes include 3–7 spikes, subtended by an involucral bract. The lateral spikes are pedunculate and pistillate. Terminal spikes are erect and functionally staminate (gynaecandrous in *C. gracillima*). The proximal pistillate scales are green with broad hyaline margins, sometimes awned; the margins are sometimes ciliate. The perigynia have two marginal ridges, 2–10mm long, much longer than wide. They may be beaked or beakless, smooth or pubescent, the orifice entire or bitoothed.

Key to species

A. Perigynia >5mm long, narrowly lanceolate to ovoid; beaks may be elongate; leaves <5mm wide; achenes stalked. — *Carex debilis*

aa. Perigynia mostly 5mm or less, beakless or with a beak shorter than the body, leaves to 12mm wide; achenes not stalked. — B

B. Terminal spike gynaecandrous. — *C. gracillima*

bb. Terminal spike staminate. — C

C. Pistillate spikes linear; perigynia distinctly stipitate; leaf blades smooth. — *C. arctata*

cc. Pistillate spikes short-cylindric; perigynia acute at the base but not stipitate; leaf blades pilose. — *C. castanea*

Carex arctata Boott
carex comprimé

Photo by Martin Thomas

The basal leaves of this densely cespitose species are wide at the base, often exceeding 1cm. Their sheaths are dark maroon to purple. The 2–5 lateral spikes are linear like *C. debilis*, but the achenes are not stipitate. Peduncles are shorter than the spikes, to 3cm. Scales whitish with dark green centres. Green perigynia are often marked with red spots.

Grows in shady sites in thickets, on forested slopes.

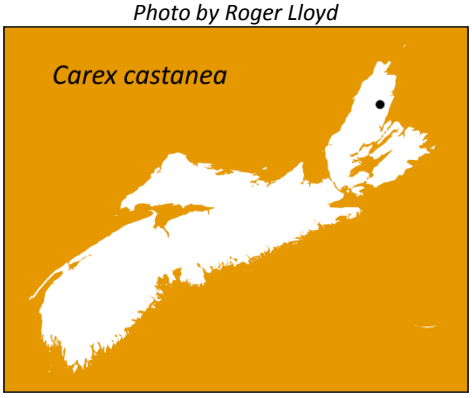
Common on the northern side from Digby to northern Cape Breton. Not collected along the Atlantic coast.

Found from NF to MB, south to NC and MN.

***Carex castanea* Wahl.**
carex châtain

Photo by David Mazerolle

Photo by Roger Lloyd



A loosely cespitose sedge, it arises on long slender culms to 90cm, much taller than the leaves and maroon at the base. The short tubular pistillate spikes are distinctive, arising on threadlike peduncles to 2cm long. The scales are chestnut coloured. Leaves are pilose. Perigynia are red-spotted and bear two ribs and several veins.

Usually in swamps and wet meadows, cliff crevices and ledges.

Collected from northern Cape Breton.

Ranges from NF to MB south to MN and NY.

STATUS: ORANGE-listed for NS.

***Carex debilis* Michx.**

Photo by David Mazerolle

A densely cespitose plant it is without the wide basal leaves of *C. arctata*. Culms may reach 1m in height and are dark maroon at the base. The lateral spikes, 2–5, are borne on slender peduncles to 5cm long. The achenes are stipitate, the stipe about 1mm long. Pistillate scales are white hyaline, with a broad green midrib. Ours belong to var. *rudgei* Bailey which has the lanceolate perigynia abruptly contracted to a beak and the scales with the margins reddish-streaked.

Flowers fruiting throughout the summer.

Open canopy, forests and meadows.

Scattered to common throughout.

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

***Carex gracillima* Schwein.**
carex filiforme

Photo by Alain Belliveau

Tall and slender, this cespitose sedge may reach 80cm tall. Like those species above, the culms are purplish at the base. The lateral spikes are linear and lax, 3–5cm long and borne on short filiform peduncles. The terminal spike has a few pistillate flowers distally (gynaecandrous). The ellipsoid perigynia are beakless.

Flowering and fruiting from May to July.

Mesic forests, wet meadows or roadsides.

Found throughout, but common eastward, becoming less frequent westward. Absent from the southwestern counties.

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

Photo by Ross Hall

Section LAXIFLORAE

These are densely cespitose woodland plants. Erect culms are brown or purple at the base. Tall species, they produce 3–6 erect pedunculate spikes, the terminal staminate. Perigynia are erect, and usually bear a short beak. They are yellow-brown to darker brown at maturity. The scales are acute or awned. Mature and ample inflorescences are required to confirm identity to species.

Key to species

A. Perigynia with 8–18 veins, 2–3 prominent.	*Carex leptonervia*
aa. Perigynia with >22 veins, all prominent.	B
B. Basal leaf sheaths purple or purplish tinged.	*C. ormostachya*
bb. Basal leaf sheaths brown, not purplish.	*C. laxiflora*

Carex laxiflora Lam.
carex laxiflore

Photo by Roger Lloyd

This species has short erect spikes, borne on densely tufted culms. The leaves are up to 2.6cm wide and sometimes appear corrugated The perigynia are strongly nerved, 5–20 per spikes and with straight beaks. Achenes are broadly ellipsoid.

Fruiting until early summer.

Frequents damp clearings and open rocky forests.

Collected from Annapolis to Hants County and Isle Haute.

Ranges from NS; QC to ON, south to FL and LA.

STATUS: ORANGE-listed for NS.

***Carex leptonervia* Fern.**
carex leptonervé

Photo by Roger Lloyd

Plants produce ascending culms, rarely decumbent and usually densely cespitose.. The leaves are flat with strong midveins and weaker lateral veins, serrulate. Over-wintering leaves may be glabrous.The second distal bract often exceeds the height of the terminal spike. Spikes are short and crowded, four per culm. The terminal one arises from the same node as the lateral one and is also exceeded by the bract. Perigynia 5–14 per spike, overlapping or proximate, appear to have only 2–3 nerves, their beaks curved.

Flowers and fruits until July.

Rich and fertile deciduous or mixed forests and thickets.

Common throughout although less frequent in southwestern regions.

Ranges from NF to SK south to MN, TN and NC.

***Carex ormostachya* Wieg.**
(=*C. laxiflora* var. *ormostachya* (Wieg.) Gleason)
carex en chapelet

Photo by Roger Lloyd

A cespitose species producing tufts of culms, more or less ascending or erect. The basal leaf sheaths are purple, with the blades also erect or ascending. The midvein is prominent above and the lateral veins are prominent below. The inflorescence has 4–5 lateral spikes to 6cm long and a shorter terminal spike. Pistillate scales are aristate or apiculate. Spikes produce 6–18 perigynia per spike, separate or overlapping and with 30 or more prominent veins.

Grows in sandy or gravelly soils in mixed deciduous forest.

Known only from one locality: Rockland, Kings Co.

Ranges from NS to ON, south to MN and PA; VA.

STATUS: ORANGE-listed in NS.

Section LEPTOCEPHALAE

A monotypic section, it contains a sedge of the widest range of any of our North American species. It is cespitose, the culms erect and brown at the base. The leaves are smooth. One spike per culm is produced with no bracts subtending it. The spike is androgynous. The pistillate scales are short-awned or acute. The ascending perigynia are weakly veined and have no beaks.

***Carex leptalea* Wahl.**
carex à tiges grêles

Photo by Sean Blaney

Photo by Roger Lloyd

Arising from mat-forming rhizomes, the hairlike culms are loosely erect, to 70cm. There are only 1–2 cauline leaves. The oblong spike has 2–7 staminate flowers and 2–9 pistillate flowers. Pistillate scales are only half as long as the beakless perigynia. Staminate scales are hooded. The perigynia are overlapping and marked by a pair of marginal ridges and many finer veins.

Fruiting into August.

Grows in wet meadows, wooded swamps or seepy slopes.

Common along the northern side of the province to northern Cape Breton Less frequent on the Atlantic shores.

NF to AK south to FL and CA; St. Pierre-et Miquelon. Absent from the arid southwest.

Section LEUCOGLOCHIN

Rhizomatous species, the plants may be cespitose. Culms are pale brown at the base. The basal sheaths are not fibrous and blades are smooth. The inflorescence is a terminal spike without involucral bracts. Pistillate scales are deciduous and shorter than the perigynia, which are narrowly beaked and glabrous. Stigmas number three; style is persistent. Generally these are plants of arctic, alpine or boreal conditions.

Carex pauciflora Lightf.
carex pauciflore

Photo by Sean Blaney

Photo by Roger Lloyd

Plants produce one or more culms, to 40cm tall. The leaves are short, 1–2mm wide. The inflorescence is a spike of 1–6 staminate flowers and 2–6 pistillate flowers. The reflexed perigynia are narrowly lanceolate, 8–10mm long.

Flowers and fruiting from June to September.

Found in sphagnous bogs, dry heaths and barrens, along the coast.

Common throughout but most collections are from the Atlantic side.

Ranges across the continent, south to WVA, IN and WA; Eurasia.

Section LIMOSAE

The sedges included here are low-growing plants, to 60cm tall, arising from long rhizomes. Their roots are covered by a dense yellow tomentum. Culms are a reddish brown or purplish at the base; the leaves are smooth and sometimes involute. The inflorescence comprises drooping pedicels bearing pistillate spikes 1–1.5cm long. The broadly ellipsoid perigynia are beakless or with very short ones. The scales are at least equal in length to the perigynia or obscuring them. Styles may be deciduous or persistent and sometimes exerted from the orifice.

Key to species

Perigynia with minute beak 0.5mm; leaf blades bluish or grayish green, margins involute; culms without persistent leaf bases. *Carex limosa*

Perigynia not beaked; leaf blades green, margins involute, dead leaf remains present. *C. rariflora*

Carex limosa L.
carex des bourbiers

Photo by Sean Blaney

Photo by Roger Lloyd

Culms range from 20–60cm tall and they bear whitish involute leaves. The old leaves are not persistent at the base. The pistillate spikes are lateral, drooping on slender pedicels. The staminate spike is terminal and nearly linear, barely wider than the culm, 3.5cm long. The perigynia are beaked and plump, almost obscured by the acute brownish scales. The involucral bract does not exceed the height of the inflorescence.

Flowers and fruits during July and August.

Found in floating mats on pond edges, in swamps or wet bogs.

More common in Cape Breton, but found as far south as Kings and Lunenburg counties.

Ranges from NL to AK, south to DE, NM and CA; Eurasia.

***Carex rariflora* (Wahlenb.) JE Smith**
carex rariflore

Photo by David Mazerolle

Photo by Roger Lloyd

A shorter species than *C. limosa*, it bears a solitary culm to 35cm. It has reddish or purplish leaf sheaths. The leaves are also whitish and involute, but scabrous distally. Dead leaves are persistent at the base of the plant. There are 1–2 lateral pistillate spikes, with purplish brown scales, sporting a greenish midvein and obscuring the perigynia. Nerves on the perigynia extend to the summits; there are no beaks.

Summer-fruiting.

Limited to fens and calcareous bogs and heaths.

Known from Scatarie Island and Baleine, Cape Breton Co.

Ranges from MF to AK, south only to Lake Ontario and ME.

STATUS: ORANGE-listed for NS.

Section LUPULINAE

Densely cespitose, these species reach 50–80cm tall on culms, purplish or reddish at the base. The leaf sheaths and larger leaves are septate. The racemes contain from 2–6 spikes, with the lateral spikes pistillate and the terminal spike staminate or androgynous. Generally the pistillate spikes are globose, cylindrical and pedunculate. Pistillate scales may be awned or merely acute, ranging from 1–2cm long. The beak is conspicuously bitoothed. The styles are persistent. Stigmas number three.

Key to species

Sheath of the distal leaf (not involucral) <1.5cm; beak of the perigynium <4.2mm long; achenes elliptic; spikes ovoid or nearly round.	*Carex intumescens*
Sheath of the distal leaf >1.7cm; beak of the perigynium >4.5mm; achenes nearly triangular; spikes nearly cylindric.	*C. lupulina*

***Carex intumescens* Rudge**
carex gonflé

Photo by David Mazerolle

A leafy species, the inflorescence is most noticeable, reaching 15cm in length on robust individuals. Its 1–4 pistillate spikes carry from 3–12 flowers in a spiky globose display. Perigynia are smooth with a shiny lustre and several ridges. The staminate flowers are terminal and nearly linear. The pistillate scales are 1–3 nerved, acute or awned.

Flowering and fruiting commences as early as May.

Wet mossy woods and intervales.

Scattered to common.

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

Photo by Roger Lloyd

***Carex lupulina* Willd.**
carex houblon

Photo by Sean Blaney

Photo by Roger Lloyd

Variable in size, although the inflorescence may reach 40cm tall. There are 1–2 staminate spikes. Pistillate spikes are tightly packed cylinders of up to 80 flowers. The perigynia are not obscured by the lanceolate awned scales, 1–7-nerved. Perigynia have long beaks and are clearly nerved.

Flowers and fruits in June.

Found in muck soils, in forests, swamps, swales and intervales.

Scattered and local from Shelburne to Cumberland Co.

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

Section MULTIFLORAE

Plants with slender culms 1mm wide or less, arise from loose clumps. They are usually brown at the base. Basal sheaths are fibrous, their fronts membranous and often red-spotted. The blades are smooth. The inflorescence is paniculate, a condensed cluster of 8–20 androgynous spikes and usually more than 15. The pistillate scales are yellow or brown and with three midribs in the centre. The apex is acute or awned. The pergynia are ascending, spreading at maturity, their margins acutely angled. Beaks are bitoothed and smooth.

***Carex vulpinoidea* Michx.**
carex vulpinoide

Photo by Sean Blaney

Photo by Sean Blaney

A densely cespitose sedge, its culms may reach 1m in height. Leaves often exceed the culm in height. Inflorescence is 7–10cm long, with at least 12 tightly compressed spikes, barely separable distally. Pistillate scales are long-acuminate, a key character.

Flowers and fruits from June to August.

Saturated soils, seasonally flooded land.

Scattered to common in the western counties. Two Cape Breton collections.

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

Section OVALES

Difficult to separate, these sedges require magnification to view the mature perigynia needed to make an identification. It is preferable to select perigynia from the middle of the spikes for observation of traits and measurements.(Voss & Reznicek; Arsenault, et al…..). Usually densely cespitose, culms arise from short rhizomes. They are brown at the base. The inflorescence is a raceme of 2–20 spikes, subtended by a scalelike or bristlike bract, less than 5cm long and sometimes taller than the inflorescence. The lateral spikes are sessile, pistillate or gynaecandrous and the terminal spikes, gynecandrous. The pistillate scales are acuminate, obtuse or awned. Perigynia are erect or spreading, smooth, sometimes veined; their beaks are bifurcate . Stigmas number two; styles are deciduous.

We acknowledge the difficulty and ambiguity in the following keys, given the easily accessible tools available to the field botanist.

Key to species
(from FNA, Ed. Comm., 2002)

A. Pistillate scales equal in length to perigynia or exceeding them, obscuring the beak; apex not awned. B

B. Pistillate scales as wide as the bodies of the perigynia, covering them; lowest bract subtending the inflorescence wide and flat at origin and almost as long as the inflorescence. *Carex adusta*

aa. Pistillate scales narrower than the bodies; lowest bract insignificant and not as above. C

C.Beak of the perigynium cylindrical and unwinged, the distal 0.4mm length entire. *C. ovalis*

cc. Beak of the perigynium flat, ciliate or serrulate its length. D

D. Main leaves stiff, glaucous, auriculate, maritime habitats. *C. silicea,* in part

dd. Main leaves softer, green, not auriculate, not limited to maritime habitats. E

E. Perigynia ascending or spreading, nerved on the adaxial surface, finely papillose; spikes 7–15, the distal ones closely associated. *C. argyrantha*

ee.Perigynia erect-ascending, may be veinless on adaxial surface or with uneven veins, smooth; spikes <7, distal ones often separated. *C. siccata*

aa. Pistillate scales shorter than the perigynia, apex narrower than the beaks and sometimes awned. F

F. Pistillate scales in the lower half of the spikes acuminate, subulate or awned. G

G. Perigynia >2.5 times longer than wide, bodies lanceolate, <2mm wide. H

H. Perigynia <1.3mm wide; achenes 0.6–0.8mm wide; inflorescence dense, lower internodes 2–3mm. *C. crawfordii, in part*

hh. Perigynia >1.2mm wide; achene 0.7–1.1mm wide; inflorescence may be dense or open; lowermost internode 2–17mm. *C. scoparia,* in part

gg. Perigynia <2.2 times longer than wide, bodies not lanceolate, >1.8mm wide. I

I. Achenes < 1.4mm long and < 0.8mm wide; inflorescence compact, headlike erect or stiffly bent. *C. scoparia,* in part

ii. Achenes >1.5mm long and >0.8mm wide; inflorescence elongated, arched or nodding, lowermost internode >5mm. *C. hormathodes*

ff. Pistillate scales in the lower half of the spike acute, obtuse or acuminate or inconpicuous. J

J. Perigynia 2mm wide, or less. K

K. Perigynia thin, not winged to the base; leaf sheaths expanded L

towards the apex, winged, the wing continuous with the midvein and edges of blade.

L. Inflorescence straight, spikes overlapping; perigynia more than 40; leaf sheaths firm at summit. *C. tribuloides*

ll. Inflorescence flexuous; lower spikes distant; perigynia <40; leaf sheaths firm or fragile. *C. projecta*

kk. Perigynia thicker, winged to base; leaf sheaths not expanded. M

M. Perigynia >2.5 times as long as wide, lanceolate. N

N. Inflorescence dense, erect; lowest internode 3mm. *C. crawfordii, in part*

nn.Inflorescence dense to open, lax or arching; lowest internode >2mm. O

O.Pistillate scales acuminate; perigynia ascending; inflorescence arching. *C. scoparia, in part*

oo. Pistillate scales acute; perigynia spreading; inflorescence nodding. *C. tenera*

mm. Perigynia <2.5 times longer than wide; body various but not lanceolate. P

P. Perigynium body obovate. *C. longii, in part*

pp. Perigynium body ovate or elliptic. Q

Q. Perigynia veinless; inflorescence <30mm. *C. bebbii*

qq. Perigynia with 3 veins; inflorescence 12–60mm. *C. tincta*

jj. Perigynia >2mm wide. R

R. Inflorescence arching or nodding, 2.3–8.4cm; spikes clavate and distant; coastal. *C. silicea*

rr. Inflorescence erect, 1–4.5cm; base of the spike rounded to acute. S

S. Perigynia veinless on adaxial surface, widest leaves 3–6mm; sheaths truncate at summit. *C. cumulata*

ss. Perigynia veined on adaxial surface; leaves 2–4mm at widest; sheaths concave at summit. *C. longii, in part*

***Carex adusta* Boott**
carex brûlé

Photo by Sean Blaney

Tall and coarse, the culms may reach 80cm. The compact inflorescence is erect, less than 4cm long and subtended by a long bract. Perigynia are widely elliptic, 1.5mm wide and 4mm long. The scales are equal to them in length, but are slightly narrower.

Flowering and fruiting from June to September.

Found in dry, open forest or recent clearings on acidic, gravelly soils. Most frequent after fire

Scattered and not common, from Kejimkujik National Park to Cumberland Co.; northern Cape Breton. Recently collected from Williams Lake area of Halifax Co.

Ranges from NF to BC, variously south to ID and PA.

STATUS: YELLOW-listed in NS.

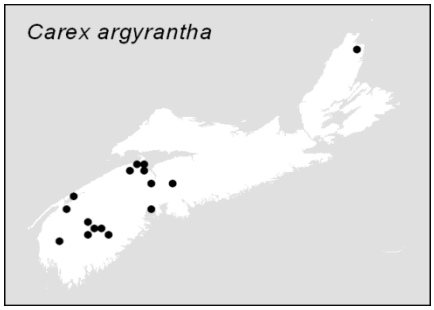
***Carex argyrantha* Tuckerm.**
carex argenté

Photos by Sean Blaney

Arising on culms 30–80 cm in height, this sedge produces coarse but compact inflorescences. The distal spikes at least are proximate. Involucral bracts are absent. Ovoid perigynia are silvery green, less than 4mm long and 2.25mm wide. They are strongly veined on both surfaces.

Flowers and fruiting from June to August.

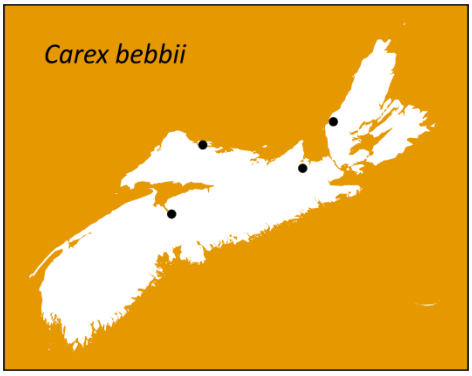
Sandy soils in thickets and clearing; dryish forests.



Distribution is patchy. Occasional from Annapolis and Cumberland counties to northern Cape Breton.

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

***Carex bebbii* (Olney) Fern.**
carex de Bebb



Densely cespitose, its culms reach a height of only 60cm. Its inflorescence is crowded and only to 2.5cm long. The small spikes are nearly round, producing widely lanceolate perigynia to 3.5mm long. Pistillate scales are shorter and narrower than the perigynia.

Flowers from June through August.

Alkaline soils in northern areas, usually in poorly drained sites.

Local and rare: Hants Co., Antigonish Co. and Inverness Co.

Ranges from, NF to AK, south to NJ and NV.

STATUS: ORANGE-listed for NS. Change colour

***Carex crawfordii* Fern.**
carex de Crawford

Photo by Roger Lloyd

Closely resembles *C. scoparia* but for the shorter inflorescence. It measures only 2.5–3cm long, comprising 7–9(14) obovoid spikes. Perigynia are lanceolate but usually only 3–3.5 (4.7) mm long.

Flowering and fruiting from June through September.

Peaty soils in swales and barrens. Damp sands and gravelly edges of lakes and ponds.

Found from Annapolis and Queens counties to Cape Breton.

Ranges from NF to AK, south to NJ and MO and OR.

***Carex cumulata* (Bailey) Fern.**
carex dense

Photo by Alain Belliveau

Stiffly erect, the culms terminate in an inflorescence measuring 2–4cm tall. Spikes are neat and ovoid, tightly clustered, each rounded at the base. The wide perigynia are 3mm long and nerveless on the inner surface.

Flowers and fruiting from June through September.

Grows in damp, acidic sands or gravels on open barrens, lakeshores and rock ledges.

Known from Yarmouth to Halifax and Cumberland counties.

Ranges from NF to MB, south to NJ and IL.

Photo by Alain Belliveau

Photo by David Mazerolle

Carex hormathodes Fern.
carex moniliforme

Photo by Roger Lloyd

A slender species from 30–60cm tall, it produces an inflorescence from 4–7cm long. The lower spikes are usually distant. Staminate flowers are borne at the base of the upper spikes. The acuminate and awned apices of the pistillate scales are distinctive features.

Flowering and fruiting from late May through August.

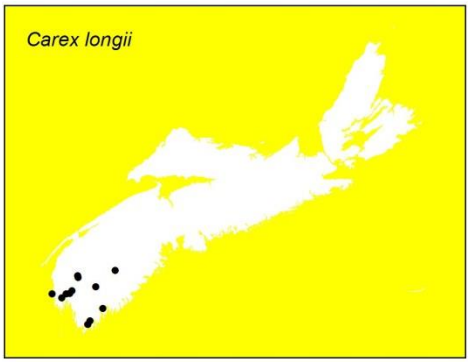
Usually on poorly drained soils near the coast; saltmarshes.

Common.

Ranges from NF to QC, along the coast to NC.

***Carex longii* Mackenzie**
carex de Long

Photo by David Mazerolle



A densely cespitose plant, it is distinctive in having its lowermost leaves reduced to scales. The stiffly erect culms exceed the height of the leaves. The spikes are closely associated and the proximal bract below are bristle-tipped and scalelike. The perigynia may have many veins on both surfaces.

Flowering and fruiting mostly in summer.

Found in swamps, bogs and other peaty sites near the coast.

Limited to Yarmouth and Shelburne counties.

NS; ON south to TX and FL. WA and OR.

STATUS: YELLOW-listed in NS.

***Carex ovalis* Good.**
carex des lièvres

Cespitose, this sedge arises on slender nodding culms 20–60cm long. The perigynia are widely lanceolate and acuminate. The long beak is round in cross-section at the apex and 4–5mm long. Pistillate scales are brown, about equalling the perigynia in size.

Flowers June to August.

Grows in wet seepy soils, on hillsides or roadsides.

Known only from southwestern counties.

Introduced from Europe and naturalized in Canada. On both coasts from NF and QC south; BC to CA.

***Carex projecta* Mack.**
carex à bec étalé

Photo by Sean Blaney

Tall and leafy, this sedge has a flexuous culm, with the lower spikes distant. Spikes are smaller than most, their lanceolate perigynia spreading.

Flowers and fruits from June to August.

Shaded meadows, thickets and swamps.

Common throughout.

Ranges from NF to SK south to GA; WA.

***Carex scoparia* Schkuhr**
carex à balais

Photo by Sean Blaney

Photo by Roger Lloyd

A variable species, these coarse plants reach only 30–50cm. The inflorescence is 3–5cm long. Spikes are crowded with narrowly lanceolate perigynia, to 6mm long. Under magnification, each perigynium can be seen to have a transparent winged margin.

Flowers and fruit from May to August.

Found in poorly-drained soils in fields and ditches,

Very common throughout and easily the most frequently identified of this section.

Ranges across the continent and south to CA, NM and GA.

***Carex siccata* Dewey**
(=*Carex foenea* Willd.)
carex sic

Taller than most Ovales sedges, the culms of this cespitose plant may reach 80cm. The inflorescence is 3–5cm long, with 3–6 coarse and clavate spikes. Staminate flowers are borne basally. The ovoid perigynia measure about 3.3–5mm, and are faintly ribbed on the inner surface. Pistillate scales equal the perigynia in length and nearly equal them in width, basically obscuring them.

Flowers from May to August.

Preferred habitat is dry and sandy soils as on barrens.

Scattered from Yarmouth to northern Cape Breton.

Ranges across the continent, south to WA, AZ and variously so to NC in the east.

***Carex silicea* Olney**
carex silicicole

Photo by Sean Blaney

A slender plant, its culms are generally less than 60cm tall. The inflorescence is flexuous, 5–7cm long. The prominately clavate spikes may be distant or barely touching. The staminate scales are borne basally. Pistillate scales are glabrous and papery and nearly obscuring the perigynia. The leaves are stiff and involute. The entire plant appears silvery.

Flowers and fruits from June to August.

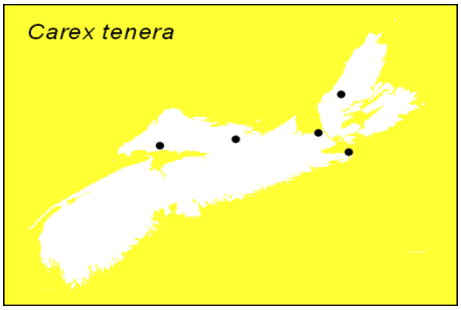
Grows in sands, of barrier beaches and rocky shores on the coast.

From Yarmouth to northern Cape Breton, where it is associated with the shingle beaches.

Ranges from NF to QC, variously south to VA.

Photo by Roger Lloyd

Carex tenera **Dewey**
carex tender



A very slender plant, the culms are flexuous with distant spikes. Perigynia are small, less than 4mm long. They are strongly veined on both surfaces.

Flowers and fruits from May through August.

Wide range of habitats: meadows, forests, moist or dry clearings, woodland vernal pools.

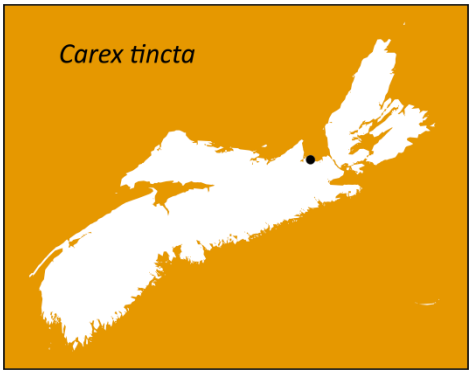
Uncommon and not often collected: mostly from Cumberland to Guysborough counties.

Ranges from NS to BC, south to WA, NM and GA.

STATUS: YELLOW-listed in NS.

***Carex tincta* Fern.**
carex coloré

Photo by Roger Lloyd



Variable in height, the culms may be from 30–90cm tall. The tight leaf sheath may be roughened across and the blades are 2–4mm wide. Spikes are ovoid, 4–8 in each inflorescence. The perigynia are loosely ascending, subtended by brown pistillate scales nearly as long as the beaks of the perigynia.

Grows in rich, fertile soils.

So far known only from Bayfield, Antigonish Co.

Ranges from NS to ON, south to WI and CT.

ORANGE-listed for NS. Change map to reflect this

***Carex tribuloides* Wahlenb.**

Photo by Sean Blaney

Photo by Roger Lloyd

A tall leafy species, resembling *C. projecta.* This species has the spikes closely spaced and crowded with erect lanceolate perigynia. The leaves are wider than those of *C. projecta* and it is less frequently seen.

Flowers and fruits from June to September.

Found in wet forest soils and swales.

Collected from Kings and Queens counties to Cape Breton.

Ranges from NS to MB, south to TX and FL; BC.

Section PALUDOSAE

These sedges are colonial, and arise from long rhizomes. The culms are reddish or purplish at the base. The basal leaf sheaths are fibrous and often spotted red. Blades and sheaths may be septate, the blades no more than 21mm wide. The inflorescence is racemose, bearing 2–10 crowded spikes. Involucral bracts are leaflike. Lower pedunculate spikes are pistillate with up to 200 perigynia. The distal few lateral spikes and the terminal one are staminate. Pistillate scales are veined, with the margins entire. Their apices are acute to acuminate or short awned. The ascending perigynia are brownish and maybe veined. Beaked, they may be smooth or scabrous. Stigmas number three.

Key to species

A. Body of the perigynium glabrous.	*Carex lacustris*
aa. Body of the perigynium pubescent.	B
B. Perigynia 4.5–6.5mm, puberulent.	*C. houghtoniana*
bb. Perigynia <4.5mm, densely pubescent.	C
C. Leaf blades flat or folded into an M, >2.2mm wide, tip not prolonged; midvein forming a prominent and sharply pointed keel.	*C. pellita*
bb. Leaf blades involute to triangular-channelled, <2.2mm wide, may have long filiform tip; leaves and bracts with low midvein, not prominently keeled.	*C. lasiocarpa*

Carex houghtoniana Torr.
carex de Houghton

Photo by Sean Blaney

Lateral, triangular culms are up to 80cm tall and scabrous on the angles. The leaves, sheaths and involucral bracts are glabrous in this species. Distal spikes are erect and staminate. Proximal spikes areascending and pistillate. Beaks of the perigynia are less than half their length and bitoothed. The perigynia are sparsely puberulent.

Grows in sandy soils, along roadsides.

Scattered localities from Queens to Colchester County.

Photo by Roger Lloyd

Ranges from NS to AB, south to NY and MN.

***Carex lacustris* Willd.**
carex lacustre

Photo by Sean Blaney

A stout coarse plant reaches to 1m, the leaves are about 1cm wide.The 2–4 cylindrical lateral spikes are pistillate; they are distant. The strongly nerved perigynia are about 5mm long, toothed at the orifice. The involucral bracts exceed the height of the terminal staminate spike.

Flowers and fruits from late May to August.

Strongly colonial, it forms pure stands about the estuarine marshes and brackish swales.

Collected from Queens to Victoria counties.

Ranges from NS to AB, south to KS and TN; ID.

Photo by Roger Lloyd

***Carex lasiocarpa* Ehrh.**

Another tall species, but with fine, narrow leaves. The culms reach upwards of a metre, bearing involute leaves which taper to an acuminate tip. The inflorescence is 6–20cm long. The terminal erect spikes are staminate; the lateral ascending spikes are pistillate. The perigynia are relatively small, less than 4.5mm long. They are densely pubescent. Ours is var. *americana* Fernald.

Flowers and fruits from May through August.

Peaty soils in fens, bogs, swamps, marshes; frequently at the water's edge.

Common throughout.

Ranges across Canada and south to NC, CO and CA.

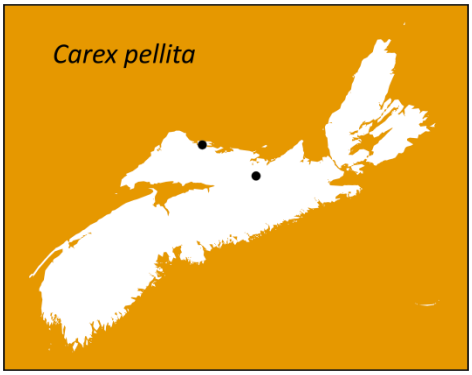
Photo by Roger Lloyd

Photo by Roger Lloyd

Carex pellita Willd.
carex laineux

Photo by Sean Blaney

A colonial species, arising on long creeping rhizomes, the lateral culms are three-angled and reach 100cm.
Their angles may be glabrous or scabrous. The basal leaf sheaths are reddish purple, often fibrillose, with ligules. The flat leaves are keeled at the tip from an extension of the midvein as are the leafy bracts. Like the previous species, the terminal erect spikes are staminate; the lateral ascending spikes are pistillate. The pistillate scales are ovate to lanceolate, acute to acuminately awned. Perigynia are densely pubescent obscuring the veins. Firm beaks are



bitoothed.

Flowers and fruiting from May to August.

Wet soils in fields, meadows and marshes, especially in calcareous regions under successional conditions.

Known only from East River of Pictou, Pictou Co.

Ranges from NF to YT, south to CA, TX and TN.

STATUS: ORANGE-listed for NS.

Section PANICEAE

These species may be loosely cespitose or colonial and rhizomatous. The culms are brown or purple at the base. The basal sheaths may be fibrous. The leaf blades have the lateral veins on the adaxial surface more prominent than the midvein and usually less than 5mm wide. The inflorescence is a raceme of 2–4 spikes, subtended by a leafy bract. The pistillate scales are obtuse to short-awned. Perigynia are spreading or ascending, maturing to dark brown and marked with two marginal ribs. Stigmas count three; style is deciduous.

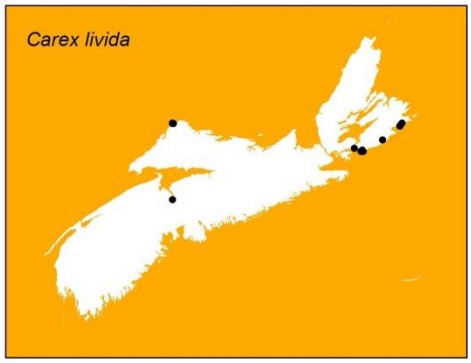
Key to species

Perigynia strongly ascending, beakless or tapering to a wedge-shaped apex; leaves glaucous and channelled. *C. livida*

Perigynia ascending to spreading, concavely tapering to a deflexed curved beak; leaves flat or folded, herbaceous, not glaucous. *C. panicea*

***Carex livida* (Wahlenb.) Willd.**
carex livide

Photo by David Mazerolle



A glaucous plant, its culms may be scabrous just below the inflorescence. The densely flowered pistillate spikes are ovoid. Perigynia are green and unbeaked, but taper to a cuneate apex.

Flowers and fruits produced in early summer.

Habitat preferred is calcareous, bogs and meadows.

Rare and local in NS, collected only in eastern Cape Breton; more recently found on Brier Island (2014), Cumberland and in Kings Co.

Ranges from NL to AK, south to CA, CO and NJ; southward; Europe.

***Carex panicea* L.**
Carnation sedge; carex faux-millet

Photo by Roger Lloyd

This species may not be glaucous, although it is distinctively bluish-green. It bears stiff leaves, that are plicate at the base or flat. The culms are 14–75cm tall, with an inflorescence 3–21cm long. Pistillate spikes are ovoid and densely packed. The perigynia are subtended by reddish-purple scales, their midribs green and margins transluscent. The tiny beaks of the perigynia are sharply deflexed.

Grassy seeps and peaty shores.

Local. Abundant in Yarmouth Co. and scattered eastward to Antigonish and Cape Breton counties.

Ranges from NF to NJ; Eurasia; Greenland; St. Pierre et Miquelon where it was first introduced to North America.

Section PHACOCYSTIS

These are rhizomatous sedges on culms coloured brown or reddish at the bases. Leaf sheaths are sometimes red-spotted on the fronts. The racemes generally have 2–8 spikes, the terminal 1–3 are staminate and at least twice as long as wide. The perigynia are erect or ascending, papillose and beaked. The scales are long awned. Stgmas number two.

Key to species

A. Spikes erect; scales with 1 vein; achenes small, not constricted. B
B. Beaks of the perigynia twisted at maturity; along streams. *Carex torta*
bb. Beaks of the perigynia straight at maturity; of peatlands C
C. Basal leaves bladeless, remnant of sheath forming a fibrillose ladder around the lower stem. *C. stricta*
cc. Basal leaves on the culm with blades; no fibrillose ladder around the lower stem. D
D.Culms >50cm tall; perigynia smooth on the upper side. *C. aquatilis*
dd. Culms <60cm tall; perigynia with light ridges on the upper side. E

E.Pistillate spikes crowded in broomlike form; midvein of the scales as wide as the margins. *C. lenticularis*

ee. Pistillate spikes separate; midvein of scales very narrow. *C. nigra*

aa. Spikes pendent (except in *C. recta*); pistillate scales with 3 veins, long-awned; achenes large, sometimes constricted. F

F. Typical of tidal flats, individuals or in small stands. G

G. Spikes pendulous, elliptic; scales long-awned. *C. paleacea*

gg. Spikes erect, long and slender; scales short-awned. *C. recta*

ff. Associated with freshwater habitats; cespitose, >1m in height. H

H. Basal leaf sheaths glabrous on underside. *C. crinita*

hh. Basal leaf sheaths pubescent on underside. *C. gynandra*

Carex aquatilis Wahl.
carex aquatique

Photo by David Mazerolle

Resembling *C. nigra*, it is much taller and more robust, often reaching 1.5m. The perigynia also lack the nerves on the upper side. The lower leaves have blades and form glabrous sheaths. The involucral leaf exceeds the height of the inflorescence. The perigynia are subtended by reddish to purple brown scales.

Flowers in spring producing fruit by mid-summer.

Frequents swamps and bogs in the Cape Breton Highlands; floodplains, meadows and lacustrine habitats in the south.

Common throughout.

Ranges across Canada and south to NC, NM and CA; Eurasia.

Carex crinita Lam.
carex crépu

A large cespitose species, individuals range from 40–150cm in height. Leaves reach 6mm in width. The spikes are pendulous; 1–2 terminal spikes are staminate. Perigynia are dull but glabrous, compressed and subtended by scales with long awns. At least one margin of the achene is constricted.

Flowers and fruit from May through September.

Freshwater wetlands, particularly edges of swamps.

Photo by Ross Hall

Photo by Sean Blaney

Photo by Roger Lloyd

Found throughout and abundant.

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

Carex gynandra Schweinitz
carex gynandre

Photo by David Mazerolle

Another cespitose species, up to 140cm in height, it bears slightly wider leaves than the previous species, to 10.5mm wide. There are 1–3 staminate spikes and 2–5 pistillate spikes, all lax or drooping. Pistillate scales are awned. The ovate perigynia are scarcely inflated, with up to five ridges on one side. The achenes do not fill the perigynia.

Flowers and fruiting in spring.

Wet soils in swamps and streamsides.

Photo by Sean Blaney
Staminate flowers

Common throughout.

Ranges from NF to NU. And variously south to AL and GA.

Carex lenticularis **Michx.**

Photo by Sean Blaney

Densely cespitose, this sedge is only 20–40cm tall and closely resembles *C. nigra*. The pistillate spikes are clustered together with the lower ones, so that the inflorescence resembles a broom. The central vein of the scale has a wide paler band adjacent to it, ending in an obtuse apex. The perigynia bear 5–7 nerves.

Flowers and fruits in summer.

Limited to gravelly or sandy lakeshores.

Photo by Roger Lloyd

While found throughout NS, it is most common from Yarmouth to Halifax.

Ranges from St. Pierre et Miquelon west to AK, south to MA and MN in the east and CA and NM in the west.

Carex nigra (L.) Reichard
Black Sedge
carex noire

Photo by Sean Blaney

One of our most common species, and certainly the most familiar in the section. It ranges from 10cm to 1m in height. The perigynial scales are marked by a very thin midvein and acute apex, purplish brown in colour. The perigynia have but a few nerves on both the outer and inner sides.

Flowers and fruits May to September.

Frequents poorly drained and open soils as in meadows, fields and streamsides. Often forms pure stands.

Common throughout the province.

Ranges from NF to QC, south to WI and NY; BC; Greenland.

Photo by Roger Lloyd

***Carex paleacea* Schreber.**
carex paléacé

Photo by Sean Blaney

Ranging from 20–80cm in height, it bears short elliptical spikes, drooping from long stalks. The pistillate scales are long awned. Staminate spikes number 1–3, with 2–7 pistillate spikes below. The involucral leaves are brown or reddish-brown. Pistillate scales are yellowish-brown. The awns are rough.

Coastal habitats, often growing in pure colonies. Usually at the head of saltmarshes. May be found with other halophytes. Swales and cliff crevices near the coast.

Photo by Roger Lloyd

Common in its habitat around the coast.

Ranges from NL to NT and south to ON and NH; Greenland.

Carex recta Boott
carex dressé

Photos by David Mazerolle

A coarse sedge, the culms reach to 75cm. The erect spikes are sessile and dark brown, usually staminate at the top. The compressed perigynia are most often shorter than the scales, which are acute or short-awned. Distinctive is the indent on one side of the achene.

Fruiting in July and August.

Frequents brackish meadows, salt marshes and coastal swales.

Probably common around the entire coast, although there is only a single collection from the inner Bay of Fundy (Sunset Beach, west end of Long Island, Kings Co.). None from the Northumberland Strait.

Ranges from NF to NT, south to ON, and MA.

***Carex stricta* Lam.**
carex raide

Photo by David Mazerolle

Photo by Roger Lloyd

The basal leaves of this sedge have only sheaths, no blades. Often the sheaths are broken into fibrous strands. The involucral leaf is shorter than the inflorescence or equal in height to it. Reddish brown scales subtend the perigynia, but are shorter.

Flowering from May onward, quickly forming fruit, often as early as May.

Forms tussocks in fens and marshes, usually not in bogs.

Common throughout, but especially in the northern regions.

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

***Carex torta* Boott**
carex tordu

Photo by David Mazerolle

Photo by Roger Lloyd

A slender species to 70cm, with long narrow lax spikes. The lowest leaves on the culm have blades, unlike those of *C. stricta*. Staminate spikes 1–2 with 3–4 pistillate spikes. Perigynia are green and glabrous, bearing a beak, that twists by maturity. Dark scales are shorter than the perigynia.

Flowers early, fruiting mid to late July.

Found along streams, especially in rocky substrates.

Common from Annapolis County to northern Cape Breton.

Ranges from NS to ON, variously south to OK and GA.

Section PHAESTOGLOCHIN

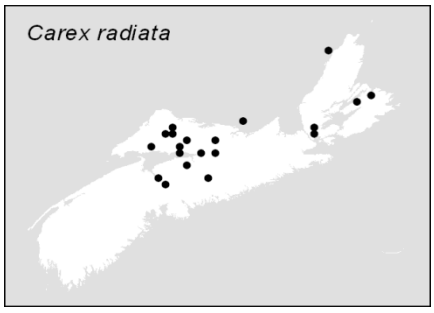
Clump-forming sedges, they have short rhizomes. Culms are brown below, rarely reddish. The basal leaf sheath is fibrous with the fronts membranous and sometimes rugose. Leaf blades are glabrous. Usually the inflorescence is racemose, or with two branches, producing 3–15 spikes. Involucral bracts are leafy or filiform. Lateral spikes are sessile and pistillate and the terminal spike is androgynous. Pistillate scales are hyaline and greenish with a single midvein. Perigynia are ascending or spreading, oblanceolate or obovate and smooth. The perigynia are usually beaked, and glabrous, bitoothed. Stigmas number two. Style is deciduous.

Key to species

A.Inflorescence lax; lower internodes more than twice as long as the lower spikes. B
B.Stigmas straight, twisted or loosely coiled. *Carex radiata*
bb. Stigmas tightly coiled. *C. rosea*
aa. Inflorescence dense; lower internodes <2 times as long as lower spikes. *C. spicata*

Carex radiata (Wahlenb.) Dewey
carex rayonnant

Photo by David Mazerolle



This very slender species is densely cespitose, its tenuous culms 20–80cm tall. Each of the 4–8 spikes has only 3–8 flowers. The long straight to slightly twisted stigmas are the best features for identification.

Fruits mature from late May to mid-August.

Moist soils in open woods, deciduous or mixed deciduous.

Collected from Hants, Cumberland and Colchester counties to northern Cape Breton.

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

Carex rosea Schkuhr ex Willd.
carex en rosacea

Photo by Sean Blaney

Densely cespitose it is larger than the previous plant, reaching 90cm in height. The culms tend to be more erect or ascending. There are 4–8 sessile spikelets, each with 7–14 spreading perigynia. The stigmas are noticeably coiled. The staminate flowers are in the terminal spike, but are difficult to see.

Flowers from May to early July.

Grows in dry soils beneath deciduous forests and thickets.

Common from Annapolis Co. to northern Cape Breton.

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

Carex spicata Hudson
carex à épi

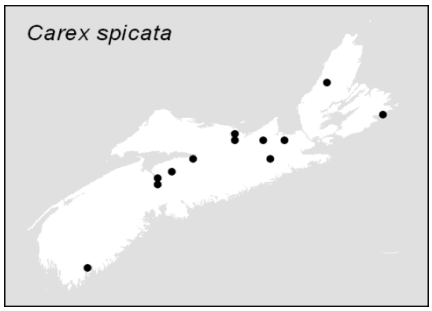
Photo by Sean Blaney

A slender species, its culms reach from 10–85cm tall. The narrow leaves, 2–4mm wide are shorter than the culm. Spikes number three or more, closely arranged or even overlapping. Perigynia are green at maturity, 4–5mm long. Scales are equal in length to them, but reddish or purplish. Terminal spikes are androgynous, a few staminate flowers atop the 5–10 spreading perigynia.

Fruiting from May to July.

Alkaline soils in large polsters: fields, pastures, even

Photo by Roger Lloyd



roadsides. Common in Hants Co. Scattered eastward; Shelburne Co.

Ranges from NS; ON, south to VA and IL; locally introduced from Europe.

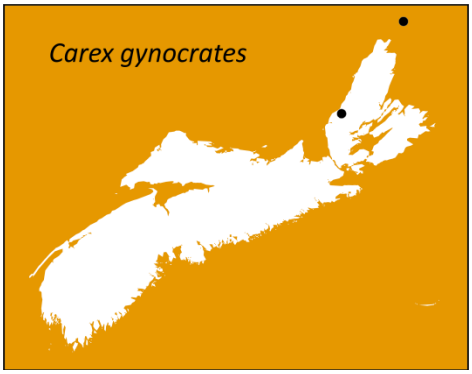
Section PHYSOGLOCHIN

Loosely cespitose, these plants have yellowish-brown rhizomes. The culms are brown at the base. The basal leaf sheaths are membranous on the fronts and not fibrous. The smooth leaf blades are filiform or V- shaped in cross section, and less than 1mm wide. The inflorescence is a solitary spike, which may be unisexual or androgynous. It is cylindrical or ovoid. Bracts are absent. The perigynia are appressed, becoming spreading or reflexed at maturity, veined on the lower surface. The apex is contracted to a beak which is weakly serrulate and bitoothed. Stigmas two; style deciduous.

***Carex gynocrates* Wormsk.**
carex à côtes

Photo by Sean Blaney

Photo by Sean Blaney



Small in stature, its culms rarely exceed 30cm, arising from filiform rhizomes, in small clusters of 1–3. The leaves are filiform, to 30cm long. The inflorescence is unisexual or androgynous, the staminate spike 8–16mm; pistillate spike with 4–15 flowers and oblong. The pistillate scales are from light to dark brown with a pale or greenish midvein. The perigynia soon become reflexed or spreading, yellow to olive-green, maturing to chestnut brown. They are sometimes striated and beaked.

Fruiting from June to August.

Wooded swamps and saturated peat elsewhere.

Known from two localities, Saint Paul Island and near Lake Ainslie.

Ranges from NF to AK, south to NV and NJ. Greenland.

STATUS: ORANGE-listed in NS.

Section POROCYSTIS

Another group of cespitose sedges, arising from short rhizomes, these have the culms reddish brown at the base. Leaves are usually pubescent and less than 8mm wide. Racemes comprise 2–6 spikes, each with 40–50 perigynia; the lateral spikes arise on slender peduncules and are pistillate. The terminal spike is staminate or gynaecandrous. Pistillate scales are usually acute or awned and smooth, or ciliate along the edges. Perigynia are veined, at least on one surface, but usually smooth and beakless. The opening is entire, not toothed. There are three stigmas and the style is deciduous.

Key to species

A. Terminal spike entirely staminate; perigynia glabrous. *Carex pallescens*

aa. Terminal spike about two-thirds staminate; perigynia densely pilose. *C. swanii*

***Carex pallescens* L.**
carex pâle

Photo by Roger Lloyd

A compact species, the culms may reach 80cm in height. The leaves are sparsely pilose below. Lateral spikes are cylindrical, each 1.5cm long, erect on slender peduncles. Each green perigynium is subtended by an ovate scale, nearly obscuring it. Terminal spikes are nearly 3cm long and are wholly staminate.

Flowering and fruiting from May through August.

Grows in grasslands and moist thickets.

A very common species.

Ranges from St. Pierre et Miquelon and NF, to ON, south to TN and VA; BC to WA and MT; Eurasia.

***Carex swanii* (Fern.) Mackenzie**
carex de Swan

Photo by Sean Blaney

Culms are sparsely pilose, arising to 75cm tall; they bear pilose leaves. Terminal spike is about half pistillate, with the staminate portion below. It measures no more than 2cm. Perigynia are densely pilose and are beakless. Inflated, they are scarcely longer than the scales and only weakly nerved.

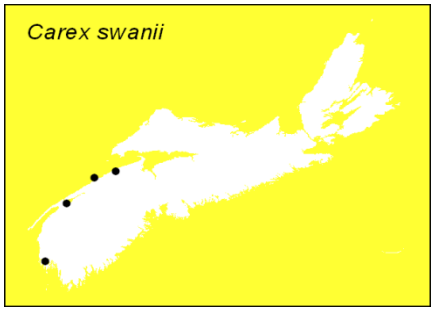
Matures early in summer.

Barrens, pastures and clearings where soils are acidic.

Local; Yarmouth Co. east only to Kings Co.

Ranges from NS to ON, south to MS and GA; BC.

Photo by Roger Lloyd



Section PSEUDO-CYPERAE

Colonial or cespitose, these plants arise on culms variously coloured red, purplish or reddish brown at the bases. The leaf sheaths and blades are sparsely septate and generally wider than 5mm. Terminal spikes in the racemes are staminate; lateral spikes are cylindric and pedunculate, wholly pistillate. The pistillate scales are green to dark brown and sometimes awned. Perigynia are usually inflated and veined, glabrous and shiny. The styles are persistent; stigmas number three.

Key to species

A. Pistillate scales awned, their margins ciliate. B

B. Perigynia elliptic to round, with 5–12 veins, separate to end of the beak; achenes scabrous. *Carex lurida*

bb. Perigynia lanceolate-ovoid to elliptic, with >12 veins, confluent at or below mid-beak; achenes smooth. C

C.Perigynia spreading to ascending, herbaceous and inflated; veins many, spearated by at least three times their width. *C. hystericina*

cc. Perigynia reflexed and leathery, not inflated when mature, strongly ridged, the veins separated by less than twice their width. D

D. Spikes >12mm wide; teeth on the beak strongly curved, to 2.1mm long. *C. comosa*

dd. Spikes <12mm wide; teeth straight or slightly curving, longest teeth <1.2mm long. *C. pseudocyperus*

aa. Pistillate scales without awns, their margins glabrous. E

E. Leaves threadlike to involute, wiry; culms round or rounded trigonous. *C. oligosperma*

ee. Leaves not as above, >1.5mm wide; culms round to trigonous. F

F. Perigynia obscurely veined, often dark, beak <1mm long. *C. saxatilis*

ff. Perigynia distinctly veined, to the beak, green or stramineous, beak >1mm long, toothed. G

G. Widest perigynia >4.5mm wide; achenes deeply indented, asymmetric. *C. tuckermanii*

gg. Widest perigynia <4.5mm wide; achenes symmetric, not indented. H

H. Widest leaves <4.3mm; perigynium beak <4.2mm, finely scabrous near the tip and on teeth. *C. bullata*

hh. Widest leaves 1.5–15mm wide; perigynium beak 1–4.5mm, smooth. I

I. Lowermost involucral bract >3 times longer than the inflorescence; staminate spike 1, scarcely distant from the summit; perigynia reflexed. *C. retrorsa*

ii.Lowermost involucral bract shorter than, or no more than twice as long as the inflorescence; staminate spikes 2 or more, well separated from summit; perigynia ascending or spreading. J

J. Leaves strongly papillose on upper surface, whitish green; widest leaf <4.5mm; culms glabrous distally; ligule as long as wide. *C. rostrata*

jj. Leaves smooth on upper surface, pale to dark green; widest leaf >3mm wide; culms scabrous distally; ligule shorter or longer than wide. K

K. Plants colonial, rhizomes long and creeping; widest leaves 4.5–12mm wide. *C. utriculata*

kk.Plants cespitose, rhizomes short; widest leaves <6.5mm wide. *C. vesicaria*

Carex bullata **Schkuhr**
carex ballonné

Photo by Sean Blaney

A slender sedge, its culms may reach 80cm tall. Pistillate spikes 1–2, are widely separated. There are 1–3 staminate spikes on a long peduncle. Involucral bract is leafy but barely exceeding the inflorescence in height. The wide separation between spikes and shorter bract will distinguish it from *C. retrorsa*. Beaks of the perigynia are scabrous, requiring a hand lens to see.

Fruiting from June to October.

Peaty marshes and fens, usually in riparian habitat.

Abundant from Yarmouth and Shelburne counties, scattered east to Lunenburg and Annapolis counties.

Ranges from NS; ME to GA and AR.

Photo by Ross Hall

***Carex comosa* Boott**
carex à toupet

Photo by Sean Blaney

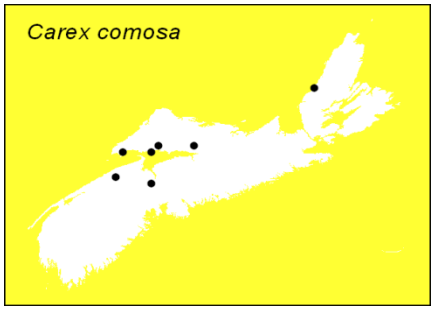
It resembles *C. pseudocyperus*, but with the exaggerated bottlebrush appearance. This is due to the recurved teeth on the perigynia beaks. The scales also have long acuminate tips.

Matures from June through August.

Marshes and swamp edges.

Scattered in the Annapolis Valley to Cumberland,

Roger Lloyd



Colchester and Inverness counties.

From NF to ON, south to TX and FL; west coast from BC to CA, inland to MT.

Carex hystericina **Muhl.**
carex porc-épic

Photo by Sean Blaney

This species resembles the more common *C. lurida*, but for the presence of many nerves on the perigynia, extending to the orifice. The spikes of this species tend to be shorter. Culms are noticeably scabrous below the inflorescence. Ligules are very short.

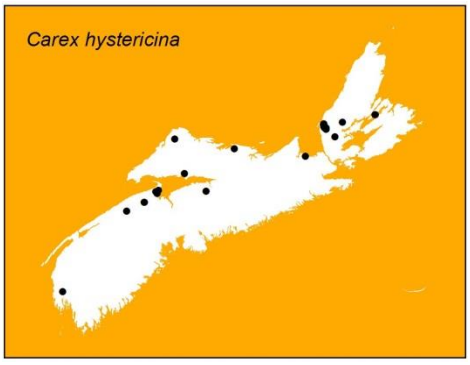
Frequents seeps, marshes and shoreline fens.

Scattered in Kings and Annapolis Co and in Victoria and Inverness Co.

Roger Lloyd

Ranges from NF to BC, south to GA and CA.

STATUS: ORANGE-listed for NS.



***Carex lurida* Wahlenb.**
carex luisant

A cespitose species, its culms reach 40–80cm. The leaves have a long deltate ligule extending upward along the culm. Pistillate spikes are about 3cm long and ovoid, the scales ending in a long scabrous awn. Perigynia marked by only a few strong nerves.

Fruiting from June through October.

Found in swamps, meadows, damp thickets and pool edges.

Photo by David Mazerolle

Roger Lloyd

Common throughout but more frequent from Annapolis eastward.

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

Carex oligosperma Michx.
carex oligosperme

Very slender, this plant also has involute leaves, scarcely 1–3mm wide. Pistillate spike is often solitary or 2–3 at most, each distant. Perigynia number 1–10 per spike. The bract is nearly as long as the summit of the staminate spike.

Fruits from June through August.

A poor fen secies.

Common along the coast from Yarmouth to northern Cape Breton.

Ranges from NS to YT, south to AB, IL and NC.

Photo by Roger Lloyd

Sean Blaney

Carex pseudocyperus L.
carex faux-souchet

Photo by David Mazerolle

Nearly 1m in stature, this species produces several drooping lateral spikes. Pistillate spikes are long and cylindric. There are many recurved perigynia, each with straight teeth.

Matures from June to August.

Paludal, meadows and swales.

Not abundant but scattered from Yarmouth to Cape Breton.

Ranges from NF to AB, south to ND, IN and NJ; Eurasia and

Photo by Roger Lloyd

Africa.

Carex retrorsa Schweinits
carex réfléchi

Photo by Sean Blaney

A coarsely tall species, reaching 1m in height and densely cespitose. There are 3–5 pistillate spikes clustered near the summit of the culm. The slender staminate spikes numbering 1–2, are terminal. Perigynia are widely divergent, 7–8mm long. The lowermost involucral bract is distinctive as it is several times longer than the raceme.

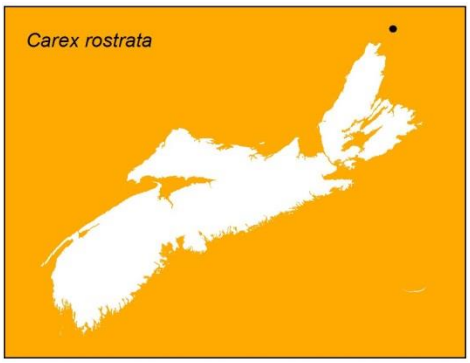
Fruiting from July to October.

Found in riparian zones and in wet meadows, where soils are fertile.

Uncommon to scattered from Annapolis and Cumberland counties to northern Cape Breton.

Ranges from NF to NT, south to NV and MD.

***Carex rostrata* Stokes**
carex rostré



Resembles the previous species, but this species has longer spikes. The pistillate spikes of this species are at least 6cm long and more distant. Perigynia are shorter and appressed, rather than spreading. Lowermost leafy bract is about the same height as the raceme.

Flowering and fruiting from July to September.

Found in bogs and swamps.

Known only from Saint Paul Island.

NL to AK, south to ID and IL.

STATUS: ORANGE-listed for Nova Scotia.

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***Carex saxatilis* L.**
carex saxatile

Photo by Roger Lloyd

A smaller species, barely reaching 50cm in height. Pistillate spikes, 1–2, are sessile on the culm. Beaks on the perigynia have barely no teeth. Leaves are 1–3mm wide.

A northern species, of damp peaty sands and gravelly soils.

Collected but once from Warren Lake, Victoria.

Ranges from NF to AK, south to UT and ME; Greenland.

STATUS: ORANGE-listed for NS.

***Carex tuckermanii* Dewey**
carex de Tuckerman

Photo by David Mazerolle

Plants may reach 120cm in height. Inflorescence may be 35cm long and the proximal bract overtops the inflorescence, sometimes reaching 70cm long. Each perigynium is inflated, at least 5mm wide at the base. The achenes bear a deep indent on one side, a key character to separate this species.

Fruiting from July to August.

Associated with vernal pools near streams.

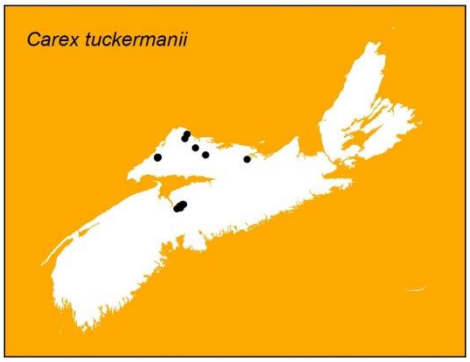
An uncommon sedge. So far it has been collected at Sweets Corner, Hants Co, and along the Wallace and Pugwash Rivers, both in Cumberland Co.

Ranges from NS to ON, south to IL and MD.

Photo by Sean Blaney

STATUS: ORANGE-listed in NS.

Photo by Roger Lloyd



***Carex utriculata* Boott**
(=C*. rostrata* Stokes, var. *utriculata (Boott)* LH Bailey)
carex utriculé


Photo by Sean Blaney

A colonial species, its culms arise from long rhizomes, to 100cm tall. They are smooth or barely scabrous distally. The basal sheaths of the leaves are brown or reddish and thickened. The ligules are nearly square. Blades are smooth and whitish green. The leafy bract is longer than the raceme. There are 2–5 erect or ascending pistillate spikes, with 2–5 terminal staminate spikes. Perigynia are green or straw-coloured. The beaks are smooth and bitoothed.

Fruiting from June through August.

Usually a marsh sedge in poor fens and riparian marshes.

Mostky southwestern in distribution.

Ranges from NF to AK, south to CA and variously to NC.

Photo by Roger Lloyd

***Carex vesicaria* L.**
carex vésiculeux

Photo by David Mazerolle

Slender culms reach 80cm in height. The 2–3 pistillate spikes are sessile and distant, each with about six rows of perigynia. These spikes are only about 8mm wide. The species is highly variable and some authors separate varieties or species from the named species. More study is required to determine relationships.

Fruiting from June to August.

Grows in meadows, marshes and intervales.

Photo by Sean Blaney

Photo by Roger Lloyd

Found throughout although more frequent northwestward.

Across Canada and south to NC and NM, CA; Eurasia.

Section RACEMOSAE

Cespitose species, they may be long-rhizomatous or stoloniferous. The roots are brown or black and lack the feltlike covering. The culms are red or purple at the base. Proximal leaves are often red or purple-spotted and smooth or papillose. The racemes comprise 1–10 spikes. Bracts are filiform or scalelike. The

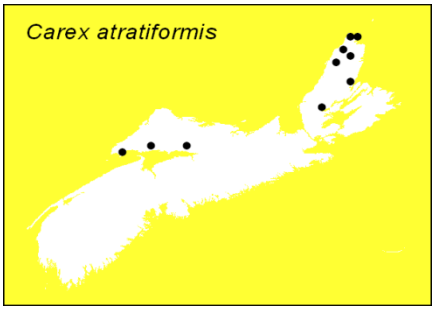
lateral spikes are generally pistillate and pedunculate. The terminal spike varies. Pistillate scales are brown or black and not ciliate, sharply pointed. The perigynia are erect or ascending, sessile and with two prominent marginal ridges. It is beaked and smooth or papillose. Styles are deciduous.

Key to species

Proximal lateral spike spreading or pendulous. *C. atratiformis*

Proximal lateral spike erect. *C. buxbaumii*

Carex atratiformis **Britton**
carex atratiforme



Photos by Sean Blaney

Small in stature, it rarely exceeds 40cm. The basal leaves are short and only 2–3mm wide. There is no separate staminate spike. Terminal spike is gynecandrous. Short pistillate spikes have a reddish or purplish cast. The achenes are trigonous; stigmas number three.

Fruits throughout the summer.

Moist cliffs, streamsides, and associated rock crevices.

Common in northern Cape Breton. Collected from McAlese Brook, Cumberland Co.

Ranges from NF to AK, south to BC and NY; Greenland.

***Carex buxbaumii* Wahlenb.**
carex de Buxbaum

Photos by sean Blaney

Photos by Sean Blaney

Very similar to previous species, but this one has tough sessile spikes, dark brown in colour. The perigynia are 2.5–3.5mm long, obovate and beakless.

Found in swamps and meadows in poor fens, brackish marshes and swales coastally.

Scattered throughout, but appears absent from the Northumberland region.

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

***Carex norvegica* Retz.** is now considered Extirpated from Nova Scotia.

Section ROSTRALES

A small section of cespitose and rhizomatous sedges, the culms are yellowish or brown at the bases, never reddish. The racemes comprise 2–6 spikes, subtended by a leafy bract. Lateral spikes are pistillate or with the distal lateral spike androgynous. Terminal spike if present, is staminate. The pistillate scales are acute or awned and bear 6–7veins in the centre. Perigynia are spreading or reflexed, lanceolate and smooth in our species. In cross-section, they are round or trigonous, slightly inflated and nerved. The beak is bitoothed. Stigmas number three; style persistent.

Key to species

Widest leaves <3.5mm wide; bract sheaths concave at the top. *Carex michauxiana*

Widest leaves >5mm; bract sheaths truncate or convex at the top. *C. folliculata*

***Carex folliculata* L.**
carex folliculé

Photos by David Mazerolle

Reaching nearly 1m in height, the culms bear wider leaves than the next species, often exceeding 1cm in width. The perigynia are acuminate to a long bitoothed beak. The scales abruptly extend into a long awn, extending from the midvein.

Fruiting from June through August.

Found in swamps, edges of swamps and thickets.

Common throughout.

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

Photos by Roger Lloyd

***Carex michauxiana* Boeckeler**
carex de Michaux

Photos by Sean Blaney

Photos by Roger Lloyd

Shorter in stature, its culms range from 30–60cm tall. Pistillate spikes 2–3, with 5–7 plump veined perigynia, 1cm long, tapering to a beak. They are finely veined and lustrous. Staminate spike is solitary and terminal, often hidden. The leafy bracts are much longer than the inflorescence.

Fruiting from June through August.

Swamp, blanket fens and sphagnous beaches of sand and cobble.

Not common in southwestern counties, becoming more frequent and abundant, eastward to Cape Breton.

Ranges from NS to SK, south to MN and PA.

Section SCIRPINAE

Like many, these plants are cespitose, the culms reddish-brown at the base. The old leaf sheaths are not persistent at the base. Usually, the inflorescence is a single spike. In our species, there is no involucral bract. Spikes are usually unisexual; species are dioecious. The pistillate scales are ciliate. Perigynia are

borne erect, with a pair of marginal ridges, tapering to a beak and pubescent. Stigmas usually number three; style is deciduous.

Carex scirpoidea Michx.

Photos by Roger Lloyd

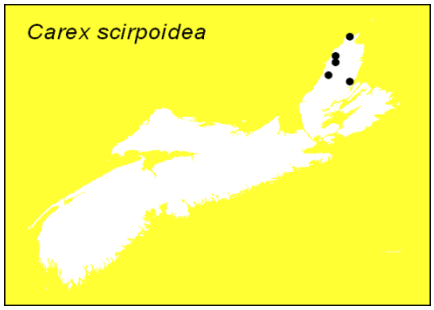
Standing up to 40cm tall, the culm bears a single spike, 1–3cm long. Perigynia are pubescent, ending in a short beak. Pistillate scales are dark with a light centre.

Fruiting from June to August.

Streamsides in rock crevices or riparian cliffs.

Locally abundant along some of the rivers of northern Cape Breton: Cheticamp, Margaree and Lockhart Brook and Corney Brook. Near two small ponds in Jim Campbell Barren.

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



Section STELLULATAE

The cespitose species included here have culms exceeding the leaves, with brown bases. Their smooth leaves are less than 5mm wide. Racemes contain 2–6 spikes. The sessile lateral spikes may be pistillate, gyecandrous or staminate; the same holds for the terminal one. The apices of the pistillate scales are variously shaped but not awned. The perigynia are spreading, even reflexing at maturity, lending a starlike appearance to the short spikes. The beaks are short and smooth, although the margins may be serrulate, bitoothed. Stigmas number two; style is deciduous.

Key to species

A. Spike solitary, terminal.	*Carex exilis*
aa. Spikes 2+.	B
B. Leaves 2.8–5mm wide.	*C. wiegandii*
bb. Leaves <2.7mm wide.	C
C. Pistillate scales shorter than the bodies of the perigynia; perigynial beak half the length of the body.	*C. interior*
cc. Scales equal in length to the body of the perigynia; beak more than half as long as the body.	D
D. Stems smooth; perigynium 1–2mm wide, oblong, without nerves on upper surface.	*C. echinata*
dd. Stems scabrous on the angles above; perigynium 1.5–3mm wide, strongly nerved on the upper face.	*C. atlantica*

Carex atlantica **Bailey**

Photos by David Mazerolle

A tall species, its culms often exceeding 1m. Inflorescences range from 15–55mm long, with 3–8 small spikes diverging from a sessile base. Perigynia are ovoid with short bitoothed beaks and strongly nerved bodies. They are not strongly reflexed as others of the section. Two subspecies are found here, ssp. *capillacea* (Bailey) Reznicek has the pergynia 1.9–3mm long and the leaves less than 1.6mm wide. Ssp. *atlantica* has wider leaves to 4mm and the perigynia 2.3–3.8mm long.

Fruits from May to early August.

Frequents bogs, swamps and other peatland and sand barrens.

Photo by Sean Blaney
Ssp. capillacea

Common from Yarmouth and Annapolis counties to Guysborough Co. and scattered to Cape Breton.

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

Carex echinata Murray
carex étoilé

Photos by David Mazerolle

Photo by Sean Blaney

Highly variable, some forms have been given specific status or subspecific rank. Eastern material is now acknowledged to belong to the highly variable ssp. *echinata*, in all its extremes. Generally it may be separated on the basis of possessing acutely pointed scales and attenuate beaks on the perigynia. The beaks are strongly bitoothed and serrulate on the margins.

Fruits early, from May through July.

Found in a variety of wetlands including bogs, swamps and shorelines to ditches.

A very common species throughout.

Ranges from NF to YT, south to NC, NM and CA; absent from the prairie and plains districts.

***Carex exilis* Dewey**
carex maigre

Photos by David Mazerolle

A recognizeable species, ranging from 30–80cm, with a single spike on a stiffly erect culm. The staminate flowers are conspicuous at the base of the spike, which is predominately pistillate. Unisexual plants are also common. Perigynia are dark brown, faintly ribbed and beak margins may be serrulate.

Fruiting from May through August.

Peatlands such as bogs and barrens.

Scattered throughout and more common adjacent to the coasts.

St. Pierre et Miquelon to ON, south to MN and MD; NC. Disjunct in the Gulf States.

***Carex interior* Bailey**
carex continental

Photos by David Mazerolle

A smaller compact species, its culms range from 10–95cm. Perigynia are ovoid, short beaked, scarcely serrulate. The surfaces of the perigynia are glabrous and nerveless on the inner face. Terminal spike is pistillate comprising 4–16 flowers.

Fruiting from May until early summer.

Wet soils and swampy woods; alkaline soils.

Collected from Yarmouth to Cape Breton, with few coastal

Photo by Roger Lloyd

localities reported.

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

Carex wiegandii Mackenzie
carex de Wiegand

Photos by David Mazerolle

A coarsely cespitose species, its culms may exceed 1m in height. The stems are softer and glabrous, unlike those of *C. atlantica.* The thin leaves are less than 5mm wide, but still the wider than most species of this section. Spikes are small, 4–6 of them, each with 5–20 flowers. The broad ovoid perigynia are subtended by scales obscuring only half of them. The terminal spike is staminate only at the base.

Fruits during the summer.

Treed bogs, bogs, conifer and alder thickets.

Cape Breton Island and Port LaTour, Shelburne Co.

Ranges from NS to ON, south to MI and PA.

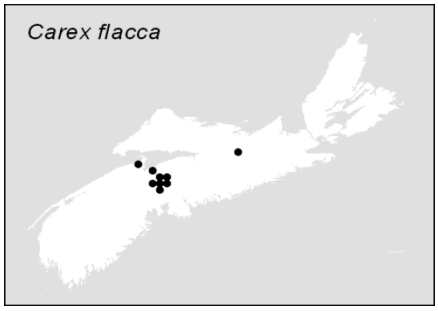
STATUS: YELLOW-listed in NS.

Section THURINGIACA

Loosely cespitose, the long rhizomatous plants produce culms with reddish brown bases. The racemes include 3–6 spikes, subtended by a leaflike bract. The lateral spikes are pistillate, cylindric in shape. They may have more than 30 flowers. The terminal 1–3 spikes are staminate. The pistillate scales are acuminate or acutely pointed. Perigynia are spreading or ascending, smooth but for two marginal ridges, less than 1cm long. It is not toothed at the orifice. There are three stigmas; the style is deciduous.

Carex flacca Schreber
carex glauque

Photos by David Mazerolle



A slender plant, its culms reach upwards 20–50cm. The leaves are mostly basal. The inflorescence is subtended by a leafy bract. The two or more pistillate spikes are narrowly cylindric. Terminal spikes are staminate, 1–3 and may have a few pistillate flowers at their bases. Perigynia are numerous and crowded, each short-beaked, soon becoming inflated and almost round.

Fruits produced during June and July.

Variable in appearance and mostly of calcareous regions.

Collections from Kings Co., Hants Co. in the Windsor area, Pictou and Antigonish counties.

Naturalized in North America: NS; QC and ON, south to MI and NY.

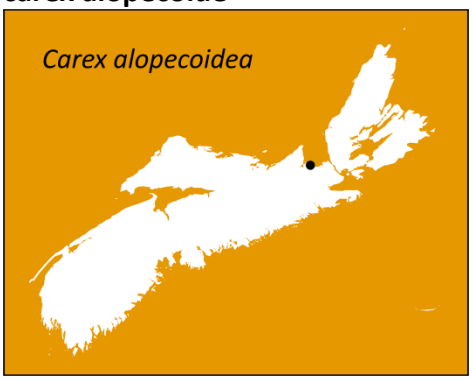
Section VULPINAE

Arising from short rhizomes, these sedges are also cespitose. The culms are dark brown to black at the bases. The leaf sheaths are often spotted yellow, red or brown at the base and may be fibrous. The inflorescence may be racemose or paniculate, sometimes tightly packed with 4–20 spikes and subtended by a filiform or scalelike bract. The lateral spikes are androgynous or pistillate and sessile; the terminal spike is androgynous. The scales are pointed or short-awned. Perigynia are spreading or ascending, veined or veinless, acutely angled on the margins and smooth. There are two stigmas and the style is deciduous.

Key to species

Perigynia without veins on the upper surface and not swollen at the base.	*Carex alopecoidea*
Perigynia veined on the upper surface and swollen at the base.	*C. stipata*

Carex alopecoidea **Tuckerm.**
carex alopécoïde



Culms clustered and reaching 80cm tall. The leaves extend beyond the inflorescence but only slightly. Old leaves are persistent as fibres. Inflorescence is 2–4cm long, packed with golden-brown perigynia. They are subtended by shorter coppery scales, ovate to deltate and with hyaline margins. Scabrous beaks are two-thirds the length of the body. Lower spikes may be distant.

Flowering in June and July.

Secondary successional coastal forest.

Collected from St. George's Bay area, Antigonish Co.

Ranges from NS; QC to SK, south to WY and TN.

STATUS: Considered to be ORANGE for NS.

Carex stipata **Muhl.**

Photos by Sean Blaney

Densely cespitose, the stiffly erect culms may reach 120cm in height. Leaves are 5–10mm wide. Leaf fibres are not persistent from previous year. The culms are acutely trigonous, a character that readily separates it from *C. vulpinoidea*. Brown perigynia are lanceolate and acuminate and tightly packed into the spike. Each perigynium is 4–5mm long, with 7–15 reddish veins, subtended by a hyaline scale.

Fruiting from May through August.

Broad tolerance for habitats but usually in wet acidic sites.

Common and abundant where found.

Ranges from NF to BC and AK, south to CA, LA and FL.

Photo by Roger Lloyd

Cladium P. Br.
twig-rushes

About 50 species of twig-rushes are found worldwide; a single species is native to Nova Scotia. Inflorescence is corymbose or capitate, and of clusters of brown ovoid spikelets. The uppermost flower of each is perfect and the middle flowers are staminate or soon abortive. Ovoid achenes are pointed on either end, but without tubercles. Culms are solitary or not, round or terete. Leaves are cauline.

Cladium mariscoides (Muhl.) Torr.
Twig-rush; marisque inerme

photo by Sean Blaney

Photo by Ross Hall

A coarse perennial species, it has the culms 40–80cm in height. The light reddish-brown spikelets are arranged in an open cyme, slightly taller than the proximal leafy bract. Leaves are nearly involute and smooth.

Fruiting from August through October.

An emergent species of swales, boggy lacustrine edges and marshes.

Abundant throughout and forming large stands at times.

Ranges from NF west to SK, south to MN, MS, FL and TX.

Cyperus L.
flatsedge

Worldwide, these temperate and tropical herbs number more than 600 species. Nova Scotia is at the northern edge of the genus' range. But Nova Scotia has three native and one introduced member of these "C4" sedges, that have drought-resistant mechanisms of photosynthesis. Perennial or sometimes annual, these herbs may be cespitose, rhizomatous or stoloniferous. The culms may be solitary or not, round or angled. Leaves are usually basal and without ligules. Spikelets are arranged in palmate spikes or nearly umbellate. Leafy involucral bracts are present, 1–20, spirally arranged terminally on the culm, spreading or erect. Flowers are bisexual and in the axils of floral scales. Sometimes their bases are

decurrent on the rachilla. Perianth is absent. Stamens number 1–3; linear styles are cleft 2–3; stigmas are 2–3.

Key to species

A. Plants annual; stigmas 2. B
- B. Inflorescence globose; achene oblong, scarcely compressed, truncated at the summit. *Cyperus lupulinus*
- bb. Inflorescence digitate; achene ovoid or ellipsoid, flattened, with rounded apex. *C. diandrus*

aa. Plants perennial; stigmas 3. C
- C. Spikelets long and round in cross-section, pinnately arranged along the rachilla. *C. esculentus*
- cc. Spikelets flattened, several to many digitately attached to the rachis. *C. dentatus*

***Cyperus dentatus* Torr.**
Toothed flatsedge; souchet denté

photo by Sean Blaney

Photo by Alain Belliveau

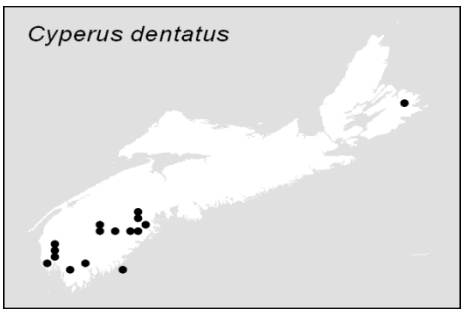
A compact and cespitose species, it is only 20–30cm tall. The trigonous culm bears an inflorescence of 4–9 rays, each of 2–6 compressed spikelets. The floral scales are reddish brown marked by 1–3 ribs. There are three stamens. Sessile achenes are reddish brown.

Fruits in summer.

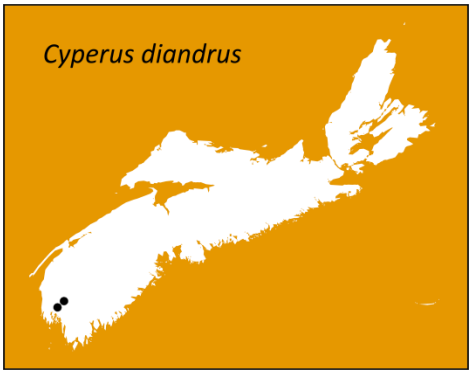
Typical lacustrine species of sand and peat shorelines.

Scattered from Yarmouth to Lunenburg Co.; Cape Breton Co.

Ranges from NS to ON, variously south to AL and GA.



***Cyperus diandrus* Torr.**
souchet diandre



An annual species from fibrous roots, it is also cespitose. Short in stature, the trigonous culms range from 4–25cm tall. Leaves are flat and less than 3mm wide. Digitate flower heads have 3–6 rays subtended by 1–4 bracts. The compressed spikelets number 6–12, the scales tightly imbricate. They are stramineous to brown, with clear margins. Achenes are brown and honeycombed.

Matures in summer.

Grows along undisturbed shorelines of sand and peaty soils.

NS: Known only from Yarmouth Co. and only since 2000 collected from Ellenwood, Third and Bennetts Lakes.

Ranges from NS to ON, south to NE, TN and VA.

ORANGE-listed.

***Cyperus esculentus* L.**
Yellow Nutgrass

Photo by Sean Blaney

A stoloniferous species, it often produces tubers. The trigonous culms reach 50cm in height. Inflorescence is composed of rounded or ellipsoid spikes on 4–10 divaricate rays, ascending at a 75 degree angle from a persistent rachilla. Spikelets 5–10, linear and flattened, are subtended by light brown deciduous scales. Achenes are brown. Our material is referenced to var. *leptostachyus* Boekeler with ovate-lanceolate floral scales and strongly angled spikes.

Fruiting from August to October.

A noxious weed of sandy locations.

Collected from Kings Co to Truro. Perhaps not persisting.

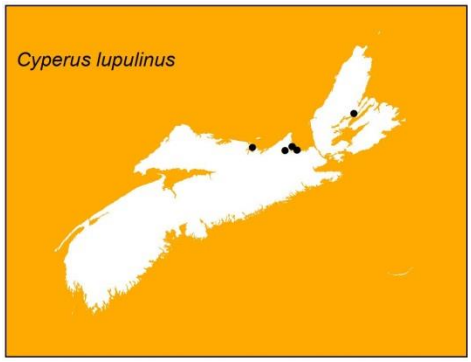
An introduced weed ranging throughout the continent but for the Great Plains, Prairies and far north. From western Europe. Troublesome in other regions.

***Cyperus lupulinus* (Spreng.) Marks**
(=*C. filiculmis* Vahl)
Slender Flatsedge; souchet petit-houblon

Photo by Sean Blaney

A small annual species, it differs from our other *Cyperus* species, by having globular heads of spikelets. The rays number from 0–6, 1–7cm long, subtended by 3–6 flat horizontal bracts. Spikelets number 6–20, with reddish brown or straw-coloured ovate floral scales, lacking ribs. The oblong achenes are brown. Our material belongs to ssp. *macilentus* (Fernald.) Marks.

Fruiting also from August to October.



Known only on the Northumberland shore from Antigonish Co.

Elsewhere from NS to ON, south to CO, TX and FL; WA and OR to ID.

STATUS: ORANGE-listed.

Dulichium Pers.
three-way sedge

A monotypic genus, it is endemic to North America. Perennial and rhizomatous, the terete culms stand to 1m in height, simple and jointed. Plants when viewed from above appear to have a triangular outline from the three ranks of the cauline leaves. Lower leaves are bladeless. Spikelets are cinnamon-coloured at maturity and borne on rachises arising from the upper leaf axils. There are 3–10 per spike. The flowers are bisexual, perianth is reduced to 3–9 bristles, exceeding the achene in length. Stamens number three; style is cleft in two with a persistent base.

Dulichium arundinaceum (L.) Britton
Three-way sedge

Photo by David Mazerolle

Reaching from 30–100cm tall, the culms, to 14 in number are jointed and terete. Inflorescence is lateral, the spikes arising from the upper leaf axils.

Fruits mature from July through October.

Found on muddy lakeshores and swamps, where it may be a dominant emergent sedge forming pure colonies.

Photo by Sean Blaney

Found throughout; especially common along the Atlantic and the upper Fundy marshes.

Across the continent.

Eleocharis R. Br.

A genus of cespitose annuals or perennials, usually they are rhizomatous or stoloniferous. Culms are terete and angled or strongly compressed. Some species may be hollow and septate, with spongy tissue within. Leaves are basal, two per culm and bladeless. The inflorescence is terminal, a solitary spike without leafy bracts. The spikelets have from 4–500 brown scales, spirally arranged. Some of the proximal scales are empty. Flowers are bisexual. Perianth is reduced to 3–6 bristles, of various lengths and armature. Stamens number 1–3; the style is bi- or tri-fid, the base persistent on the achene as a tubercle.

Mature spikelets and achenes are required plus a 10–20X lens to confirm identity of most species.

Key to species

A. Culms hollow, septate; spikelet scales with >15 longitudinal nerves; achenes sculpted under 15X; spikelets cylindric to narrowly elliptic; 9–76mm long, as wide as the culms. *Eleocharis robbinsii*

aa. Culms rarely hollow with complete septa; spikelet scales with midrib only; achenes glabrous or sculpted under 10X; spikelets mostly ovoid, rarely as narrow as culms. B

- B. Achenes with distinctly longitudinal ridges, separated by numerous horizontal cross ribs, trigonous to circular; proximal scale of spikelet subtending flower; distal leaf sheath membranous, hyaline and often disintegrating; culms spongy, to 1.5mm wide. *E. acicularis*
- bb. Achenes without longitudinal or horizontal ridges, biconvex to trigonous or circular; proximal spikelet scale empty or subtending a flower; distal leaf C

sheaths papery, persistent or not; culms to 5mm wide.

C. Tubercle similar in texture and form with the achene apex and merging with it; achenes apically narrowed to a beak, glabrous or reticulate under 10X; rhizomes present; spikelet scales 4–12 per. — *E. quinqueflora*

cc. Tubercle differing in colour, texture and form from the achene; achenes never ridged, rarely narrowing to a beak; rhizomes present or absent; scales 5–150 per. — D

D. Styles bifid; biconvex or rarely trigonous, smooth or finely rugulose at 10X; plants never stoloniferous. — E

E. Distal leaf sheaths disintegrating, thinly membranous, prominently inflated and wrinkled; culms <0.6mm wide. — *E. olivacea*

ee. Distal leaf sheaths evident, firmly membranous to papery, not inflated nor wrinkled; culms <5mm wide. — F

F. Plants annual, without creeping rhizomes; achenes green, stramineous, brown or black; distal leaf sheath apex acuminate. — G

G. Spikelets ovoid; tubercles 0.3–0.5mm wide. — *E. ovata*

gg. Spikelets broadly ovoid to ellipsoid; tubercles > or =0.5mm wide. — *E. obtusa*

ff. Plants perennial, with creeping rhizomes; achenes yellow to dark brown; distal leaf sheath apex truncate to nearly acute. — H

H. Proximal spikelet scale clasping at least 2/3 of culm; all spikelets with empty subproximal scale. — *E. palustris*

hh. Proximal spikelet scale clasping >3/4 of culm; subproximal scale subtending a flower or empty. — *E. uniglumis*

dd. Styles trifid or bifid; achenes trigonous (biconvex in *E. obtusa*); smooth or variously sculpted at 10X; plants stoloniferous. — I

I. Plants tufted annuals,; achenes biconves, smooth; tubercles strongly compressed dorsiventrally, much thinner than the achene. — *E. obtusa*

ii. Plants tufted perennials or annuals, rhizomatous or stoloniferous; achenes trigonous or nearly terete, smooth or sculpted; tubercles not strongly compressed. — J

J. Some or all culms with distal leaf sheath apex toothed, sheaths persistent. — K

K. Spikelets with some or all scales except the proximal emarginate to bifid. — L

L. Culms 4–5 angled or terete; achenes falling with the scales or before, yellow, brown or green; floral scales slightly notched or entire. — *E. tenuis*

ll. Culms >5-angled, or occasionally terete, commonly compressed; achenes persistent after scales fall, yellow, orange or medium brown; floral scales incised, with few entire. — *E. elliptica*

kk. Spikelets with all scales entire. — *E. fallax*

jj. Culms without tooth on the distal leaf sheath; — M

sheaths disintegrating or persistent.

M. Distal leaf sheath apices persistent, membranous to papery obtuse or truncate; perennials with creeping rhizomes or ascending caudex-like rhizomes. — N

N. Plants densely cespitose; creeping rhizomes absent. — O

O. Tubercles merging with achene in colour, form and texture or absent; achene smooth to rugulose under 10X, with a distinct beak, paler than the rest of the achene. — *E. rostellata*

oo. Tubercles clearly distinct from the achene; achenes smooth to rugulose but unbeaked. — *E. tuberculosa*

nn. Plants mat-forming or densely cespitose but with creeping rhizomes. — P

P. Boreal species; scales of the spikelets <1.3mm. — *E. nitida*

pp. Non-boreal species; scales >1.5mm. — Q

Q. Culms 0.5–1.5mm wide; achenes 1.1–1.5 X 0.95–1.25mm; rare. — *E. fallax*, in part

qq. Culms <0.8mm wide; achenes generally smaller; widespread. — R

R. Culms angled 4–5 or terete, or sometimes compressed; achenes falling with or before scales, yellow, brown or green. — *E. tenuis*

rr. Culms with >5 angles or terete and sometimes compressed; achenes persistent, yellow, orange or straw coloured. — *E. elliptica*

mm. Distal leaf sheath apices lanceolate, disintegrating; with short creeping rhizomes; tubers present. — *E. parvula*

***Eleocharis acicularis* (L.) Eoemer & Schultes**
éléocharide aciculaire

Photo by Roger Lloyd

Mat-forming this slender species arises on filiform culms less than 15cm tall. The spikelets are only 2mm long. Achenes are nearly globose in cross-section and marked with longitudinal ridges and fine transverse lines. The culms often form reddish or green mats along muddy shores and beaches.

Fruiting from July through October.

Found in muddy roadside ditches, meadows and lacustrine habitats.

Common throughout.

A circumboreal species found throughout the continent.

***Eleocharis elliptica* Kunth**
(=*E. tenuis* var *borealis* (Svenson) Gleason)
éléocharide elliptique

Photo by Roger Lloyd

A perennial mat-forming species, this has the culms with 6–8 angles, sometimes reaching 90cm in height. Distal leaf sheaths are persistent and intact. Ovoid spikelets produce bright yellow and persistent achenes, subtended by very dark brown and intact floral scales. Bristles absent or 1–3.

Fruiting late summer.

Found in ditches, on lake margins and meadows or bogs.

Infrequently found along eastern Atlantic counties to Cape Breton.

Ranges from NS to YT, south to WA, WY, MO and NJ. Absent from Great Plains.

***Eleocharis fallax* Weatherby**
éléocharide trompeuse

A mat-forming species, its terete culms have 12 blunt angles and once dry, stand 30–75cm. The distal leaf sheaths persist without shattering; they are dark red near the base. Ovoid or spheric spikelets are acute to obtuse, the lowermost scale entire and surrounding the culm. The next scale subtends a flower. Scales are deciduous, spreading in fruit. Bristles of the perianth 1–5 and unequal in size. Dark yellow to brown achenes are not persistent.

Tubercles as high as wide and not compressed.

Fruits in late summer.

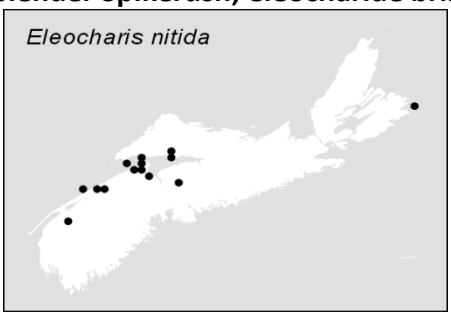
Grows on coastal sites near fresh or brackish waters.

Only known from Cape Breton.

Found only in NS, QC; MA, NY and NJ south along the coastal plain to AL, LA and TX.

ORANGE-listed in NS.

***Eleocharis nitida* Fern.**
Slender Spikerush; éléocharide brillante



The culms of this spike-rush are usually less than 10cm tall. Achenes mature earlier than others and are a bright glaucous yellow. Smooth or merely rugulose, the ridges are minute and only visible under magnification.

Fruits mature as early as mid-June.

Moist soils, often associated with basalt.

Found along the North Mountain of Kings and Annapolis counties; Cape d'Or and Economy Mountain, Cumberland Co.; Scatarie Island, Cape Breton.

Ranges from NF to ON, NS; SK to BC north to AK; south in

the east to NH and MN.

***Eleocharis obtusa* (Willd.) Schultes**
éléocharide obtuse

Photos by David Mazzerolle

Photo by Roger Lloyd

Generally from 3–50cm tall, the spikelets are broadly ovoid to lanceoloid, 5–13 mm tall. The floral scales are straw-coloured, elliptic and with unkeeled midribs. The bristles greatly exceed the deltoid tubercle.

Fruiting until fall.

In marshes, along mucky streamsides and wet disturbed soils.

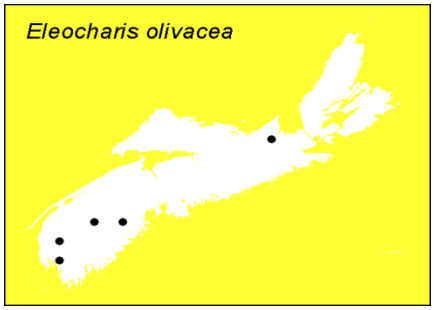
Common throughout.

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

***Eleocharis olivacea* Torr.**
(=*E. flavescens* (Poiret) Urban, var. *olivacea* (Torr.) Gleason)
Capitate Spike-rush; éléocharide olivâtre

Photo by David Mazerolle

Photo by Roger Lloyd



Arising from creeping rhizomes, the culms range from 3–28cm tall, but are less than 0.6mm wide. The distal leaf sheaths soon disintegrate, their apices are truncated and often inflated distally. The ovoid spikelets have the lowermost scale without a flower. Perianth bristles are pale and usually number seven. The bristles are twice as long as the achene which is green to golden-brown at maturity. The apex may constrict to the tubercle. Fruiting culms are often bent over, with the spikelets touching the ground.

Fruits from mid-summer to October.

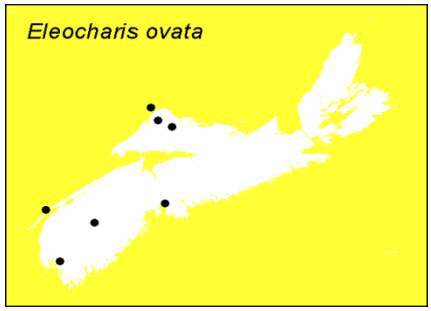
Mucky peat as on bog margins, and sandy lakeshores.

Local and mostly southwestern: Yarmouth to Digby and Lunenburg counties, with Cumberland and Antigonish Co. collections.

Coastal Plain from NS to ON, south to TX and FL; WY.

Eleocharis ovata (Roth) R&S
éléocharide ovale

Photo by Roger Lloyd



A variable but conspicuous spikerush, it is densely cespitose. Culms are reddish basally and only to 35cm tall. Spikelets are ovoid; their floral scales orange-brown, the midribs keeled. Tubercles are widely deltoid, the bristles exceeding them.

Fruiting from May through October.

Grows on muddy streamsides, streambeds and lakeshores, often in subsiding water.

Less common than the previous species, which it resembles somewhat.

In the east from NF to ON, south to MO and MD; western ranges extends from AB to BC and OR.

Eleocharis palustris (L.) Roem. & Schult.
éléocharide des marais

Photo by David Mazerolle

A perennial spike-rush forming mats. The culms exceed 50cm and arise from stout rhizomes. The plant's size and shape of the spikelets and their tubercles is highly variable. There are 2–3 sterile scales at the base of the spikelet. The lowermost does not completely encircle the stem. Achenes are not persistent. They are subtended by stramineous or green floral scales, often spreading at maturity. Four bristles

Photo by Roger Lloyd

may sometimes be absent, often shorter than the achene.

Fruits from June until September.

Found on lakeshores, in meadows, and even bogs. In lakes may form pure colonies emerging in shallows.

Scattered throughout NS.

Found from NF to AK, south to Mexico and absent only from GA and FL; Greenland.

Eleocharis parvula (Roem. & Schult.) Link
éléocharide naine

Photo by Sean Blaney

Easy to identify based on its small, mat-forming habit and habitat. Culms are less than 10cm tall and the spikelets barely 2mm long. There are few flowers in the spikelets. The achenes are beaked, the slender beak nearly conical and of similar texture as the body.

Fruiting from July through October.

Grows on brackish habitats, forming turfs around coastal ponds.

Photo by Roger Lloyd

Scattered around the coast but for northern Cape Breton.

Circumpolar in range; disjunct in Cuba and Brazil.

***Eleocharis quinqueflora* (Hartm.) Schwartz.**
(=*E. pauciflora* (Lightf.) Link.)
éléocharide à cinq fleurs

Photo by Sean Blaney

Slender in stature, scarcely 30cm tall. Its culms arise singly or from creeping rhizomes and are not twisted nor constricted below the spikelet. Spikelets 4–8mm long, producing few flowers; the lowermost scale is usually fertile. The achene tubercle, is a slender beak, only slightly extending past the perianth bristles.

Fruiting until September.

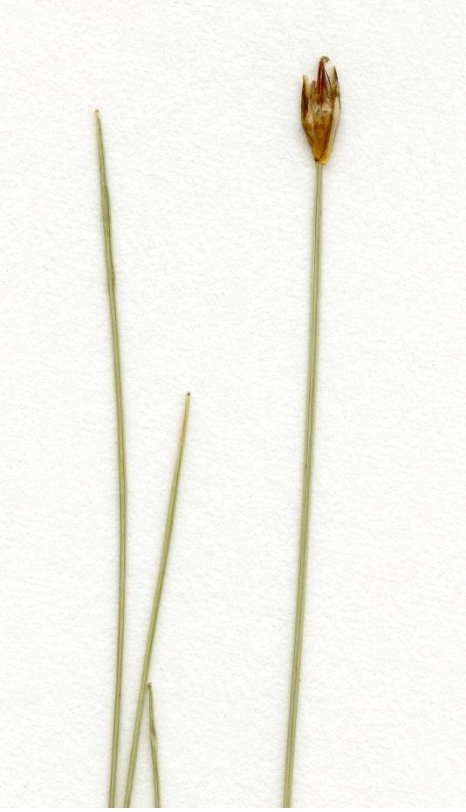


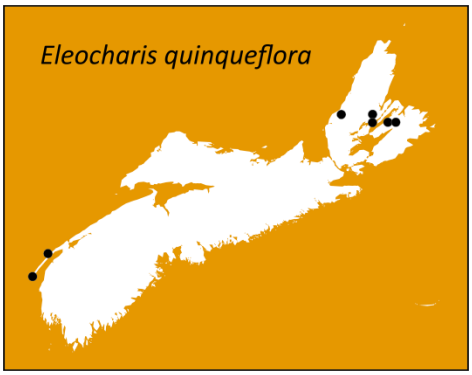
Photo by Roger Lloyd

Grows on alkaline substrates, in bogs and coastal cliffs.

Collected from Digby Neck and central Cape Breton.

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

STATUS: ORANGE-listed in NS.



***Eleocharis robbinsii* Oakes**
éléocharide de Robbins

Photo by Sean Blaney

Photo by Roger Lloyd

Spikelet-bearing culms reach 70cm tall, and are sharply three-angled. The submerged culms may be flaccid and filiform, the spikelets scarcely wider than the culm. Bristles 6–7 stramineous to reddish brown, retrorsely spinulose. Tubercle on the achene pyrimidal atop a short neck on the sculpted achene. Markings visible under 10–15X.

Fruiting later from August to October.

An emergent species from peaty shallows of lakes.

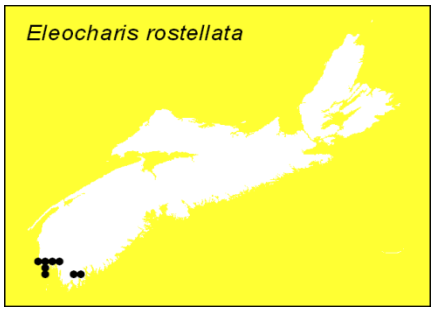
Common in southwestern NS, east to Halifax and scattered to Cape Breton.

Ranges from NS to ON, variously south to FL and MS.

***Eleocharis rostellata* Torr.**
éléocharide à petit bec

Photo by Sean Blaney

Photo by Roger Lloyd



The culms reach 1m in height and differ from other species in being compressed and arching rather than terete or round and stiffly erect. The achenes are trigonous and there are three stigmas.

Fruiting from July to October.

Limited to saltmarshes and swales.

Of restricted distribution in Nova Scotia: several Yarmouth Co. localities and coastally to Digby Co.

Ranges from NS; ON; BC; variously south to south to CA, FL and TX; absent from the middle Mississippi floodplain; West Indies.

Eleocharis tenuis (Willd.) Schultes

Photo by Sean Blaney

Slender culms (to 70cm) arise from purplish-red rhizomes. Spikelets are longer than those of other spike-rushes. Mature achenes are olive green, their surfaces reticulated. The tubercles are wider than tall. Var. *pseudoptera* (Weatherby) Svenson has the culms sharply 4–5 angled and nearly winged. The achenes are yellow. Grows on more calcareous substrates than the typical variety. Var. *tenuis* has the culms round and the achenes straw-coloured, lemon yellow to olive green.

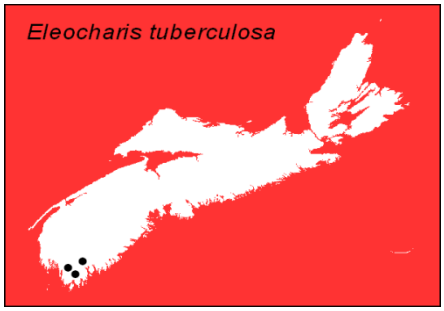
General wet habitats such as lakeshores, ditches, meadows or bogs.

An infrequent species, collected throughout.

Ranges from NS to QC, south of the Great Lakes to SD, TX and GA.

Eleocharis tuberculosa (Michx.) Roemer & schultes
Tubercled Spike-rush; éléocharide tuberculée

Photo by Sean Blaney



A cespitose species, producing stiffly erect culms, it bears large ovoid spikelets. Achenes are reticulated and topped by very large tubercles.

Fruits from June to September.

Found on sandy or peaty lake margins

Found only in southwestern NS on a small number of lakes including Harper's Lake, Gold Lake, Western, Mill, Barrington and Great Pubnico Lakes. Also along the Tusket River. Recently discovered at Little Ten Mile Lake in Queens Co.

Ranges only along the coastal plain: NS; ME to FL and TX.

RED-listed in NS.

***Eleocharis uniglumis* (Link) Schultes**
(=*E. halophila* (Fernald & Brackett) Fernald; éléocharide uniglume

Photo by Sean Blaney

Photo by Roger Lloyd

Resembles *E. palustris* but for the proximal scale, which completely encircles the culm. It is a perennial mat-forming species with terete culms, appearing ridged when dry. The subproximal scale contains a flower, while the proximal doesn't. The floral scales are brown to red-brown, the centres paler to green. There are four perianth bristles, unequal in size. The achenes are not persistent. The tubercles are much higher than wide and pale, sometimes marked with depressions.

Fruiting in summer.

Coastal or brackish habitats.

Found wherever suitable habitat occurs.

Ranges from NF to AK, south to OR, WY and RI.

Eriophorum L.
cottongrasses

Plants of wetlands, they are typified by the long conspicuous bristles of the perianth, persisting after maturity. Perennial and rhizomatous, they may also be cespitose. Culms erect, terete or trigonous. Leaves are both basal and cauline, filiform or flat, or reduced to sheaths. The terminal inflorescence is a panicle or of a solitary spikelet with 1-several leafy or scalelike involucral bracts. Floral scales subtend

each flower with the lowermost one sometimes empty. The flowers are bisexual and the perianth is reduced to shining filiform bristles, much exceeding the achenes. Stamens 1–3; deciduous styles cleft 1–3. There are 25 species worldwide, mostly of temperate, alpine and arctic regions of the northern hemisphere.

Key to species

A. Spikelet solitary; leafy involucral bract absent.	B
B. Plant densely cespitose; bristles shining white.	*Eriophorum vaginatum*
bb. Plant arising on creeping rhizome; bristles chestnut.	*E. russeolum*
aa. Spikelets >1; leafy bracts 1 or more.	C
C. Plant slender, to 80cm; involucral bract 1.	D
D. Sheath of involucral leaf and floral scales dark; upper leaf blades round at the apex, 1–4cm long.	*E. gracile*
dd. Sheath of involucral bract and floral scales pinkish; upper leaf blades acute, 3–18cm long.	*E. tenellum*
cc. Plant stout, to 1m; involucral bracts >1.	E
E. Spikelets tightly clustered; floral scales marked by several thick brown nerves; bristles tawny coloured.	*E. virginicum*
ee. Spikelets loosely clustered; scales tawny or greenish black, with a single midvein; bristles white.	F
F. Floral scales with flat and papery apices, midrib not extending to tip.	*E. angustifolium*
ff. Floral scales acutely tipped, midrib extending to the tip.	*E. viridicarinatum*

Eriophorum angustifolium **Honckeny**

Photo by Sean Blaney

This species resembles *E. viridicarinatum* but for the floral scales. They are flattened distally, with widely obtuse ends, lacking a distinct midrib. Plant's appearance is somewhat ragged by the end of June. Ssp. *triste* (Fries) EOG Hulten is reported from the Fundy shores around to Bon Portage Island, Shelburne Co. It differs from ssp. *angustifolium* by the presence of completely scabrous peduncles and culms of 30cm or less. Ssp. *angustifolium* has culms from 20–100cm and the peduncles are scabrous only on the angles.

Photo by Roger Lloyd

Flowers and fruits in early June.

Found in bogs, swamps, wet meadows.

Very common to common throughout.

Ranges from the arctic regions south to NY, IL, NM and OR.

***Eriophorum gracile* Koch**
linaigrette grêle

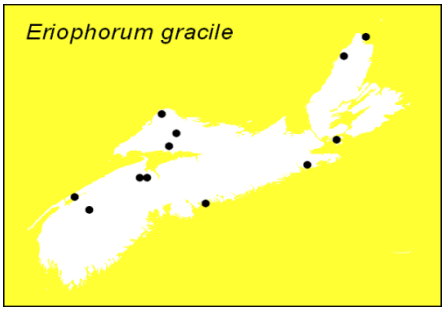
Photo by David Mazerolle

A slender species, the inflorescence comprises several spikelets subtended by a single leafy involucral bract. It is grey or black at the base. Floral scales are dark in colour.

Flowers and fruits during early summer.

Grows in wet peat and inundated shores.

Scattered eastward from Annapolis and Halifax counties.



Ranges across the continent, south to DE, CO and OR Eurasia.

STATUS: YELLOW-listed in NS.

***Eriophorum russeolum* Fr. Ex Hartm.**
(*E. chamissonis* CA Meyer, erroneous)
Rusty Cottongrass; linaigrette rousse

Photo by David Mazerolle

Arising from creeping rhizomes, the culms are solitary. The basal leaf sheaths are persistent, purplish or brown. Spikelets are solitary, the flowers with reddish brown bristles. The proximal floral scale is purplish and usually empty. White forms have been reported from Cumberland Co.

Flowers and fruits in June and July.

Photo by Sean Blaney

Frequents coastal swamps, bogs.

Scattered from Hants and Cumberland counties northward.

Ranges from NL to AK, south to ON, MN and BC.

Eriophorum tenellum Nutt.
linaigrette ténue

Photo by David Mazerolle

Photo by Roger Lloyd

Colonial plants arise from long creeping rhizomes. Culms reach up to 90cm, are scarious beneath the inflorescence. Resembles *E. russeolum* but for the reddish colour in the involucral leaf. The floral scales are green or black. The distal cauline leaf is much longer, scabrous and acutely pointed.

Flowers and fruiting in late summer.

Found in swamps, bogs and swales.

Found throughout NS.

Ranges from NF to NU, south to NJ and IL.

Eriophorum vaginatum L.
Hare's Tail

Photo by Sean Blaney

A densely cespitose species, it forms tussocks of culms, 10–60cm tall. Basal leaf sheaths are brown. Cauline leaves are bladeless, and number 1–3. Spikelets are solitary and capitate, the glistening white bristles straight. There are no involucral bracts. Our plants are ssp. *spissum* (L.) Fern.

Our earliest to fruit, as early as late May.

Bogs.

Photo by Roger Lloyd

Scattered throughout the province.

Ranges from NF to AB, south to MT, IN and PA.

***Eriophorum virginicum* L.**
Tawny Cottongrass; linaigrette de Virginie

Photos by Sean Blaney

Conspicuous in fruit, it may reach 120cm in height. Typically the bristles are tawny, fading to white at maturity. Spikelets are densely capitate, the floral scales have several well-marked ribs. Leaf blades are generally flat rather than channelled.

Flowers and fruits from late summer through the fall.

Bogs, swamps and marshes.

Photo by Roger Lloyd

Very common throughout NS.

Ranges from NF to ON, south to GA; BC.

***Eriophorum viridicarinatum* (Engelm) Fern.**
linaigrette verte

Photo by Sean Blaney

A tidy compact plant, with several spikelets comprising the inflorescence. Culms number one or more, to 90cm tall. Leafy bracts 2–4, sometimes brown towards the bases. Bristles of the perianth are pure white to pale brown. Floral scales have thickened apices, with distinct midribs to the tips.

Flowering and fruiting in June and July.

Photo by Roger Lloyd

Generalist in wetlands.

Ranges eastward from Digby Neck. Common from the Cobequids northward.

Across the continent and south to CO and NJ.

Rhynchospora Vahl.
Beak-rushes

These plants may be annual or perennial, sometimes cespitose and often have scaly rhizomes. The culms are erect or procumbent, wiry or not and trigonous. Both basal and cauline leaves are present, generally in three ranks. The inflorescence is terminal, of various forms and subtended by 1–5 involucral bracts. Floral scales subtend each flower, with at least one of the lower scales empty. Flowers are bisexual or at most only the distal one is staminate. Style base is persistent as a tubercle. Perianth is in the form of 2–12 barbed or plumose bristles. There are more than 250 species worldwide; only five reach Nova Scotia.

Key to species

A. Stem to 1.5m tall; perianth bristles at least twice the height of the fruit. *Rhynchospora macrostachya*

aa. Stem <1m tall, perianth bristles usually equal to or shorter than the height of the fruit. B

B. Bristles of the perianth >8; spikelets white, becoming tawny at maturity. *R. alba*

bb. Bristles 6; spikelets brown. C

C. Bristles upwardly barbed; achenes evenly pale. *R. fusca*

cc. Bristles retrorsely barbed or smooth; achenes dark brown, at least at the centre. D

D. Spikelets 3.5–5.0 mm long, numerous in a *R. capitellata*

capitate inflorescence.
dd. Spikelets 5–7 mm long; inflorescence loose, spikelets number 2–10. *R. capillacea*

Rhynchospora alba (L.) Vahl
rhynchospore blanc

Photos by Sean Blaney

Culms weakly erect or procumbent, 30–40cm tall. Inflorescence has a few white spikelets, turning tawny at maturity. Leaves are very slender. Bristles on the achenes number 8–12.

Flowering and fruiting July to September.

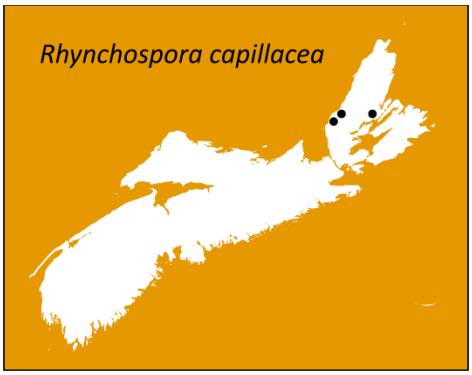
Peaty substrates in bogs, swamps and wet meadows.

Common throughout.

Ranges across the continent and south to CA and GA. Absent in the continental centre.

Rhynchospora capillacea Torr.
rhynchospore capillaire

Photo by Sean Blaney



A perennial species, its wiry culms reach only to 40cm. The rhizomes are stoloniferous. Culm exceeds the height of the leaves, which are involute rather than flat. Flower clusters 1–2, with the spikelets pale reddish brown, each flower subtended by six bristles.

Grows on alkaline bogs.

Limited to the southern end of Lake Ainslie and Baddeck Bay areas of Cape Breton.

Ranges from NF to BC, variously south to TX and AL in calcareous regions.

STATUS: ORANGE-listed in NS.

Rhynchospora capitellata (Michx.) Vahl
rhynchospore à petites têtes

Photos by David Mazerolle

A slender plant that rarely branches, it stands only 30–50cm. Dark brown spikelets are borne in several glomerules. Each is subtended by a leafy involucral bract.

Flowers and fruits from July through to October.

Grows on lakeshores, seasonally flooded savannahs and peatlands.

Southwestern NS to Antigonish and Guysborough counties, where it may be abundant; Dewar's Lake, Cumberland Co.

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

***Rhynchospora fusca* (L.) Aiton.f.**
rhynchospore brun

Photo by Ross Hall

Photo by David Mazerolle

Perennial and cespitose, this beak-rush arises from slender stoloniferous rhizomes, the culms 10–50cm. They are leafy and filiform. Inflorescence is comprised of light brown spikelets, 1–2 of them lateral, their branches ascending. Involucral bracts overtop the flower clusters. The 5–6 floral bristles are antrorsely barbed and may slightly exceed the achene. Fruits are lightly marked longitudinally and horizontally.

Flowers and fruits from June through October.

Lake margins, and other open sandy peat shores.

Common in Digby to Shelburne counties, scattered to Cape Breton. Collected throughout.

Ranges from NF to ON; SK, south to IL and MD.

***Rhynchospora macrostachya* Torrey ex A. Gray**
rhynchospore à gros épillets

Photo by David Mazerolle

This coarse beak-rush may reach 80–150 (170) cm in height. Culms are held stiffly erect and are leafy, trigonous. The flat blades are ascending and overtopped by the inflorescence. The inflorescence comprises clusters of tightly packed corymbs. The brown spikelets are lanceoloid and subtended by lanceolate fertile scales, with an excurrent midrib. The perianth bristles are fully twice the length of the fruit, antrorsely barbed.

The narrow inflorescence outline and long bristles serve to separate this species.

Favours sunny wetlands and acidic shores.

Two Canadian localities, both on marshy lakeshores of Queens Co.: Carrigan Lake (Blaney, 2011) and Molega Lake (Hill, 2012).

Ranges from NS; ME west to MI, south of the Great Lakes, variously south to TX and FL.

STATUS: ORANGE-listed for NS.

Schoenoplectus (Reichenb.) Palla

Annuals or perennials they may be cespitose or rhizomatous, or neither. The culms are strongly trigonous or cylindric, smooth and spongy. The leaves are basal, plants rarely have a single cauline leaf. The inflorescence is capitate or paniculate, with 1–100 spikelets. There are 1–5 leafy bracts. The floral scales are deciduous. Flowers are bisexual, perianth is of 6–8 bristles. Stamens number three; styles are deciduous, 2–3-fid. There are 77 species worldwide.

Key to species

A. Inflorescence capitate or with a single spikelet. B
B. Culms nearly cylindric; leaves 3–20, flaccid and submerged; spikelet erect. *Schoenoplectus subterminalis*
bb. Culms trigonous; leaves 4–7; blades erect and about the height of the inflorescence. *S. torreyi*
aa. Inflorescence of multiple spikelets. C
C. Culms cylindric or angled only distally; inflorescence branched. D
D. Awns of spikelet scales straight to bent; scales orange or stramineous and spotted at 10X; *S. tabernaemontani*

spikelets solitary.

dd. Awns strongly twisted; scales mostly pale or partly pale and spotted, sides scabrous; often with clustered spikelets. *S. acutus*

cc. Culms trigonous throughout; inflorescence may be branched. E

E. Culm sides deeply concave; lowermost bract 1–6cm, other bracts bladeless; notch at apex of spikelet scales very shallow. *S. americanus*

ee. Culm sides shallowly concave to nearly smooth; lowermost bract 3–20cm, other bracts with narrow blades exceeding spikelets; apical notch of scales to 1mm deep. *S. pungens*

Schoenoplectus acutus (Muhl.) Löve and Löve
(=*Scirpus a.* Muhl.)

Photo by David Mazerolle

Growing to 4m in height, the culm is smooth and round. Leaves are basal and reaching only one-third the length of the culm. Spikelets are clustered 2–8, some are even solitary. Floral scales are dark red or orange-brown. Similar to *S. tabernaemontani,* it grows in more alkaline habitats. The open inflorescences branch 2–3 times on shorter peduncles than the other widespread species. The achenes are not exposed.

Fruits during August and September.

Wet alkaline soils.

Collected throughout.

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

Schoenoplectus americanus (Pers.) Volk
(=*Scirpus a*. Pers.)
scirpe d'Amérique

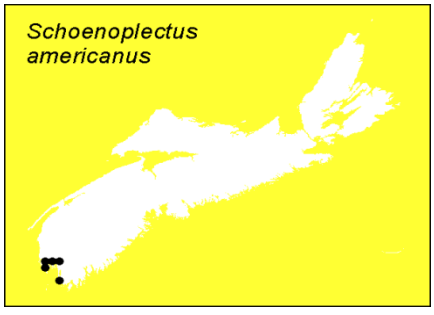
An erect species ranging in height from 0.3–2.5m tall. Culms are sharply trigonous and from 3–10mm thick. Most leaves are basal, less than half the length of the culm. Spikelets 2–20 overtopped by a stiff involucre 1–6cm long. Inflorescence is tightly clustered and appearing lateral.

Fruits from July to September.

Photo by Sean Blaney

Photo by David Mazerolle

Photo by Roger Lloyd



Restricted to the upper edges of saltmarshes.

Yarmouth and Shelburne counties.

NS; CMA to MI, south along the Atlantic to FL and TX; AK to CA and NM.

STATUS: YELLOW-listed in NS.

Schoenoplectus pungens (Vahl) Palla
(=*Scirpus p*. Vahl)
scirpe piquant

Arising from firm rhizomes, the trigonous culms are convex to concave proximally and deeply concave or flat distally. The leaves are basal, with 2–6 blades, 2–5 times as long as the sheaths. Inflorescence is capitate with 1–5 spikelets subtended by an erect bract, 3–20cm. Floral scales are bright to dark orange, often spotted and with a paler midrib. Perianth is bristlelike brown and 4–8-merous.

Fruits July to September.

Found on fresh to brackish shores, marshes and often emergent.

Common in NS.

Ranges from NF to AK, south to CA and FL.

Schoenoplectus subterminalis (Torrey) J. Soják
(=*Scirpus s*. Torrey)
scirpe subterminale

Photo by Sean Blaney

Photo by Ross Hall

Aquatic or emergent, the culms are very weak, procumbent and from 20-150cm long. Leaves are narrow and also weak. Spikelet is small and solitary, subtended by a stiff leafy bract. Floral scales are pale brown with a green centre.

Fruiting from late July to October.

Emergent or aquatic in sandy peaty lake edges.

Found from Yarmouth Co. to northern Cape Breton.

Ranges from NF to ON, south to SC and MO; western.

Schoenoplectus tabernaemontani (CC Gmelin) Palla (=*Scirpus validus* Vahl)
scirpe des étangs

Photo by Sean Blaney

Photo by Sean Blaney

A tall perennial, reaching several metres, the culms are thick and soft, round in cross-section. Terminal spikelets on a branching inflorescence are subtended by a very short involucral leaf, that is erect and thickly crescent-shaped in cross-section. There may be up to 200 spikelets in clusters of 2–4, or they are all solitary. Achenes are exposed at maturity. Leaves are few and basal.

Fruiting from June to September.

Emergent in shallow waters of ponds and lakes, fresh and brackish. Forming pure colonies.

Throughout coastal NS, with fewer inland localities.

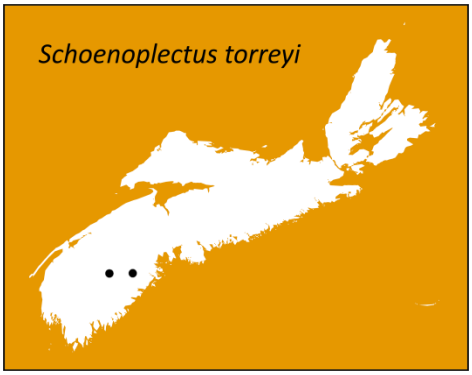
Ranges throughout the continent and further, except for NU.

Schoenoplectus torreyi (Olney) Palla
scirpe de Torrey

This mat-forming species has sharply three-angled culms, reaching 1.5m in height. They may be 5mm in thickness, with noticeably concave sides near the top. Leaves number 4–7, with the proximal bract resembling them. Spikelets number 1–4 with the scales orange-brown to stramineous, sometimes green centred. Calyx is bristlelike, the six parts, only slightly exceeding the flowers. Styles are trifid. Achenes tend to be compressed-trigonous and brown, ovoid or obovoid.

Photo by Sean Blaney

Photo by David Mazerolle



Flowers and fruits during the summer.

Emergent in freshwater especially where water levels fluctuate.

NS: Recently found in southwestern areas at Long Lake, southeast of Molega Lake and Russell Lake, east of Kejimkujik National Park, both stations in Queens Co.

Ranges from NS to MB, south to MO and VA.

ORANGE-listed for NS.

Scirpus L.

Perennial plants, they may be cespitose or rhizomatous, or neither. Culms are more or less angled and sometimes solitary. Leaves are both basal and cauline or all cauline, the blades flat or V-shaped in cross-section. The terminal inflorescences are corymbose-paniculate or even umbellate. Occasionally they may be axillary in the upper three leaves. Leafy bracts usually number three. Each spikelet has from 10–50 smooth floral scales, each with a flower. Perianth comprises 3–6 bristles, of various sizes and forms. The base of the style is persistent.

Key to species

A. Floral bristles always present with >3, smooth and often twisted, exceeding the achenes; lateral heads of small cymes pedicellate, all in open cymes. B

B. Plants with thick rhizomes ca 1cm dia., often forming an open arc or circular phalanx, unbranched; bracts of the inflorescence glutinous at the base; achenes reddish brown. *Scirpus longii*

bb. Plants tightly cespitose forming dense tussocks from short rhizomes; bracts not glutinous; achenes white to very pale brown. C

C. Spikelets pedicellate, mostly solitary; scales blackish at least at the apex; achenes maturing by early July. *S. atrocinctus*

cc. Spikelets solitary on pedicels, or sessile in glomerules; scales pale brown, reddish to black; maturing from July to D

Sept.

D. Spikelets in open cymes, central spikelet of each cyme sessile, rest usually pedicellate; scales pale brown, no black pigment. *S. pedicellatus*

dd. Spikelets in cymes of 2–15; central one sessile, rest sessile or pedicellate; scales reddish brown to black; achenes maturing in Aug.-Sept. *S. cyperinus*

aa. Floral bristles absent, or with 3 or fewer, with teeth or barbs, straight or contorted; exceeding or shorter than achenes all cymules sessile, all in dense glomerules. E

E.Floral bristles absent. *S. georgianus*

ee. Floral bristles present, 1–3. F

F. . Up to 90cm tall, perianth bristles persistent on the achene. *S. microcarpus*

ff. Up to 1.5m tall, bristles readily detaching from the achene. *S. expansus*

***Scirpus atrocinctus* Fern.**
(previously included with *S. cyperinus*)
scirpe à ceinture noire

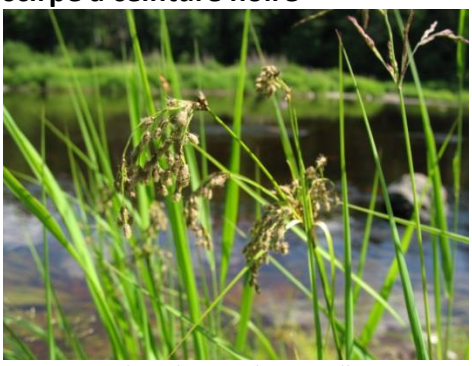


Photo by David Mazerolle

Plants form dense tussocks, the short rhizomes branching. Fertile culms are upright. There are 4–7 leaves per culm. Inflorescence is terminal, the rays ascending or spreading. The leafy bracts have blackish bases, but they are not glutinous. Spikes are arranged in cymes, most are pedicellate but for the central spikelet. Floral scales blackish, the perianth bristles project beyond them. Mature inflorescences appear nearly woolly.

Fruiting from June to July.

Photo by Roger Lloyd

Found in moist soils as in meadows, marshes and ditches.

Collected from Digby and Queens counties to Cape Breton.

Ranges from NF to NT and BC, southward.

***Scirpus cyperinus* (L.) Kunth**
scirpe souchet

Photos by Ross Hall

Spikelets are small, the bristles exceeding the scales lending a woolly appearance to this species later in the season as well. The involucral leaf bases are reddish brown, separating it from the previous species. The culms may be leafier, with 5–10 per culm.

Matures later in August and September.

Wet soils in meadows and swamps.

Common throughout.

Ranges from NF to MB, south to TX and FL; variously west.

Scirpus expansus Fern.
scirpe étalé

Arising from a reddish rhizome, this spreading bulrush has leafy erect culms. The proximal leaves and sheaths have many septae, the blades may be to 68cm long. Resembling *S. microcarpus*, it appears to have a larger divaricate or ascending inflorescence of sessile spikelets. Involucral bract bases are green or reddish, but not glutinous. Floral scales black with green midveins,. The achenes are trigonous. The sharply toothed bristles are brittle, easily separating.

Fruiting in August and September.

Lacustrine and ditches.

Fundy shore, limited to shoreline of Lily Lake and roadside ditches in Sandy Cove, Digby Co. It was once thought to be abundant locally in Queens, Shelburne and Yarmouth counties.

Ranges elsewhere from NS to ON, south to LA and GA.

Although some consider it extirpated, we feel it will be found again.

Scirpus georgianus R. M. Harper
(=*S. atrovirens* Willd.)

Photo by Roger Lloyd

Coarse, it stands about 60cm in height. The inflorescence comprises numerous small spikelets, bearing very short bristles on the perianth. Generally cespitose.

Fruiting until late summer.

Wet soil as in swamps and in roadside ditches.

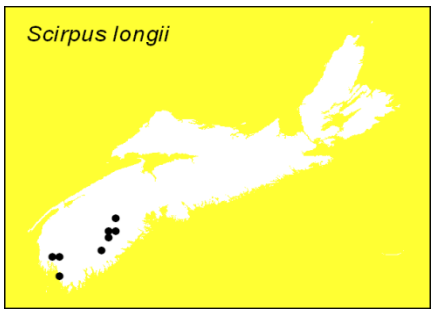
Common from Yarmouth to Guysborough counties and in eastern Cape Breton. Occasionally seen through the Annapolis Valley.

Ranges from NF to AB, south to GA and AR.

Many of our *Scirpus atrovirens* collections should be examined for possible inclusion in *Scirpus hattorianus.*

***Scirpus longii* Fern.**
Long's Bulrush
scirpe de Long

Photos by David Mazerolle



A tall plant, the culms bear a terminal ascending or spreading inflorescence of small spikelets arranged in an open cyme. The lateral ones are long-pedicellate. Involucral leaves are black at the base and glutinous. Often seen vegetative, the large thick creeping rhizomes form large circular colonies. Bristles of the perianth are persistent and long exceed the reddish achenes, lending a woolly appearance to the fruiting heads of mature plants.

Fruiting June and early July.

Peat and muck on shores, fens and stillwater meadows.

With few stations, although it may be locally abundant in Queens, Shelburne and Yarmouth counties.

Ranges from NS to NJ.

***Scirpus microcarpus* J. Presl & C. Presl.**
scirpe à noeuds rouges

Photos by Ruth Newell

A stout and leafy species, this mat-forming bulrush spreads from reddish rhizomes. Leafy culms only reach 50cm in height, bearing from 4–11 leaves. The lower leaf sheaths have a prominent red tinge. Inflorescence has the rays divaricate or ascending, the proximal branches glabrous, those distal scabrous. Spiklets are sessile and in dense clusters. Floral scales are green or black, Persistent bristles number four per flower and are straight or curved, densely toothed.

Fruiting from July to early August.

Grows on swamps, meadows, ditches and streamsides.

Locally abundant from Digby Co. to northern Cape Breton. Rare along the Atlantic.

Ranges from NF to AK, south to CA, NM and KY; Asia.

Scirpus pedicellatus Fern.
scirpe pédicellé

Photo by David Mazerolle

Photo by Sean Blaney

A rhizomatous species, it forms dense tussocks, the culms each with eight leaves. The ascending rays of the terminal inflorescence are scabrous throughout. Involucral bracts are green to black at the base but not glutinous. Spikelets are arranged in open cymes, the floral scales usually pale brown. The six perianth bristles are persistent, much longer than the achenes and extending past the sales. Styles are 3-fid. Inflorescence has a woolly appearance.

Fruiting in July.

Grows on lowlands such as marshes, swales, and swamps.

Recently collected from River Inhabitants, Inverness Co. Our older material collected as *S. cyperinus* should be re-examined.

Ranges from NF to ON, south to MO, KY and NJ.

Trichophorum Pers.

These herbs are perennial, the trigonous or terete culms arising from rhizomes, or not. Leaves are mostly basal, the sheaths bladeless or with blades only 5mm long. Ligules are present. The terminal inflorescence comprises a single spikelet, subtended by a single involucre, a scalelike bract. There are 3–9 scales in the spikelet, spirally arranged and each subtending a flower. Flowers are bisexual, with 0–6 straight bristles, which may exceed the achene by as much as 20 times its length.

Key to species

Culms smooth, terete. *Trichophorum cespitosum*

Culms trigonous, with scabrous angles. *T. alpinum*

Trichophorum alpinum **(L.) Pers.**
(=*Scirpus hudsonianus* **(Michx.) Fern.)**
trichophore des Alpes

Photos by David Mazerolle

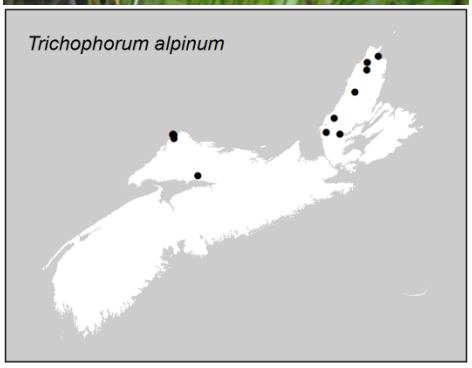
A slender species arising from short rootstocks. The bristles of the perianth are long and silky.

Fruiting from June to August.

Wet cliffs, in bogs and poorly drained swamps.

Occasionally abundant and seemingly replacing the next species on the northern side of the province. From Digby Neck to northern Cape Breton.

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



***Trichophorum cespitosum* (L.) Hartman**
(=*Scirpus c*. L.)
Deergrass
trichophore cespiteux

Photos by Sean Blaney

Plants develop lawns of tussocks formed of bladeless sheathed stems hidden in the mossy substrate. Slender culms range from 10–40cm tall, channelled but smooth. Solitary spikelets comprise 3–9 flowers, the involucral bracts about as long.

Fruiting from June to August.

Dryish, peaty soils in barrens and dry bogs.

Abundant along the Atlantic side, from Digby to Cape Breton. Scattered to uncommon inland and along the Fundy shores.

Ranges from NL to AK, variously south to GA and UT; northern Eurasia.