

# **Juncaceae (Rush Family) Traits & Key**

## **for species in Newfoundland and Labrador**

© Susan J. Meades, *Flora of Newfoundland and Labrador* (Feb. 2026)

Juncaceae Traits .....	1
Juncaceae Key .....	3
References .....	15
Comparison Charts .....	Separate PDF

### **Juncaceae Family Traits**

- Culms (flowering stems) and leaves glabrous (without hairs), leaves terete (round in x.s.), slightly compressed, channelled (broadly U-shaped in x.s.), or flat (*Juncus*, *Oreojuncus*), or leaves flat, their margins slightly hairy with slender white hairs, the top of leaf sheaths also bear slender white hairs, usually more numerous than on the leaf margins (*Luzula*).
- Leaves mostly basal; cauline leaves usually few (1-7), alternate, sessile. Some species have leaves with only basal sheaths and no leaf blades (cataphylls), as in *Juncus effusus*. In leaves with blades, the junction of the leaf sheath and the blade often bears a pair of ±hyaline auricles (ear-like appendages), with entire, rounded to acute margins (*Juncus*), or auricles dissected into several narrow segments (*Oreojuncus*), or auricles lacking (*Luzula*). Terete, compressed, or channeled leaves may be hollow or filled with parenchyma, and may be septate (with lateral partitions at regular intervals), partially septate, or not septate. The septations can usually be felt as small bumps when running your fingers along the length of the leaf.
- Flowers are bisexual, with a perianth of 6 tepals (sepals and petals that look alike) 3 or 6 stamens, and a superior ovary with 3 carpels, a single style, and a 3-branched, spiraled stigma that may be white to red. Stamens are free from the perianth and the relative length of the anthers to the filaments is often an important key feature.
- The outer tepals (sepals) and inner tepals (petals) may be ±equal or unequal in size. Tepals may be white, green, light to dark brown, reddish-brown, or nearly black, often with hyaline margins, apices may be acute, acuminate (most commonly), or blunt; tepals usually persist at the base of the mature capsules.
- Flowers occur in several basic types of inflorescences: 1) one to several sessile flowers in a terminal inflorescence; 2) several to many flowers in terminal or pseudolateral (appearing lateral), open or compact, simple or branched inflorescences; 3) or flowers few (1-2) borne along nodes of the inflorescence

branches on usually submerged plants. Although various names have been applied to inflorescence types in the Juncaceae, most are variously-branched versions of a **cyme** (Figure 1), a determinate inflorescence in which the first flower to bloom is at the top of the stem (open half-circles in the diagram), with no further growth produced from the top of this stem. Additional flowers are produced on opposite pairs of lateral branches that develop below the first flower, producing lateral growth rather than vertical. The basic **simple cyme**, with a pair of opposite flowers below the terminal, is also called a **dichasium**. In a **compound cyme**, a 2<sup>nd</sup> series of flowers is produced below the first flowers; in a **decompound cyme**, a 3<sup>rd</sup> series of flowers is produced. In **anthelate cymes**, successive inflorescence branches are arranged vertically (as in *Luzula*) rather than laterally. In a **monopodial cyme** (monochasium), lateral branches develop on only one side of the inflorescence, as in *Juncus bufonius* (toad rush).

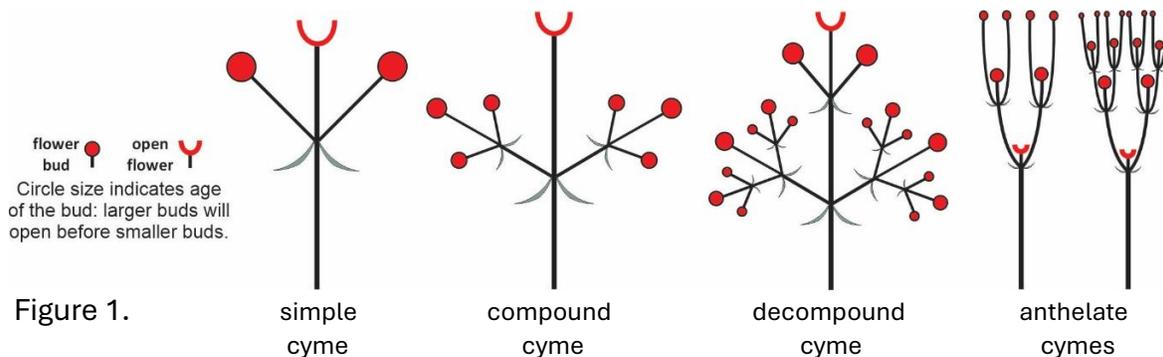


Figure 1.

**Note:** The above terms are not used in all references, but are used in the *Flora of North America* treatment of the Juncaceae (2000) and in Kirschner's articles (2002).

- Small flower clusters are usually called heads, but dense clusters of several flowers in compact inflorescences are often called glomerules. To simplify the terminology in this key, the term 'heads' will be used for all clusters of flowers.
- Individual flowers are often subtended by 2 small bracts, called bracteoles (often called prophylls), but plants of § *Ozophyllum* (e.g., *Juncus articulatus*), lack bracteoles.
- The fruit is a 3-valved loculicidal capsule, with 1-3 locules (chambers), similar in length to the tepals. Seeds are 10 to many (*Juncus*, *Oreojuncus*) or 3 (*Luzula*), ellipsoid to ovoid, <1-2 mm long, with or without slender tails (*Juncus*), wrinkled appendages (*Oreojuncus*), or a caruncle (*Luzula*) at the ends. *Luzula* seeds are dispersed by ants (a type of seed dispersal called myrmecochory) that are attracted by the nutrient-rich, white caruncles (0.1-0.5 mm long) on *Luzula* seeds. After seeds are transported to their nest and the caruncles consumed, seeds are discarded by the ants outside their nests. Seeds of *Juncus* or *Oreojuncus* are not dispersed by ants.

## Key to Juncaceae species in Newfoundland and Labrador

- 1a. Leaves stiff and wiry, narrow (to 1 mm wide), ±flat to channelled (broadly U-shaped in x.s.); leaf margins finely serrulate; junction of the sheath and leaf blade bearing auricles to 4 mm long, deeply divided (lacerate) into several narrow segments; the culm bears a single, terminal inflorescence of 1-4 (usually 2-3) flowers, subtended by a narrow involucre bract and 1-2 cauline leaves much longer than the inflorescence; plants cespitose, often forming dense tufts; plants of alpine or exposed coastal barrens on acid substrates; native in insular Nfld. and Labrador. .... **Oreojuncus trifidus** (highland rush)
- 1b. Leaves not wiry, blades terete to slightly compressed (thus lacking margins) or flat; leaf auricles with entire margins or auricles absent; inflorescence of several to many flowers, in open or compact clusters, involucre bracts shorter or longer than the inflorescence; plants cespitose or not, of various habitats. .... **2**
  - 2a. Leaves flat, leaf margins and top of each sheath bearing long slender white hairs; the hairs more numerous and denser at the top of the sheaths; auricles lacking; capsule with 3 seeds. **Luzula** (woodrush). .... **3**
  - 2b. Leaves flat, terete, or channeled (U-shaped in x.s.); leaf surfaces glabrous; junction of the leaf sheath and blade bearing auricles with entire margins, or auricles lacking; capsules with 10-many seeds. **Juncus** (rush). .... **14**
- 3a. Inflorescence open, with single or few flowers on slender, ascending to nodding branches. .... **4**
- 3b. Inflorescence compact, with one to several dense flower clusters (heads), each head of 1-18 flowers on a peduncle or sessile on the culm. .... **8**
  - 4a. Inflorescence umbel-like, with 5-22 slender branches, 1-4 cm long, all originating from a common point at the top of the culm, each ending in single flower (rarely 2). ....  
..... **Luzula acuminata** (field woodrush)
  - 4b. Inflorescence anthelate, with a short central flower overtopped by lower, longer, ascending branches, originating from below the central flower, divided one or more times near the tip into pedicels that support one to few flowers. .... **5**
- 5a. Ultimate branch divisions (pedicels) ending in small clusters of 2-8 flowers; tepals white to pinkish; capsules 1.5-1.8 mm long. .... **Luzula luzuloides** (forest woodrush)
- 5b. Ultimate branch divisions (pedicels) ending in a single flower; tepals stramineous (straw-coloured), pale to dark brown; capsules 1.1-2.2 mm long. .... **6**
  - 6a. Involucre bract to 1 cm long; tepals dark purplish brown; branches of the inflorescence 2-4, arching to nodding; capsules 1.2-1.6 mm long; native to northernmost Labrador. .... **Luzula wahlenbergii** (Wahlenberg's woodrush)
  - 6b. Involucre bract 1.5-4 cm long; tepals stramineous to dark brown; branches of the inflorescence spreading to reflexed; capsules 1.9-2.2 mm long; native to Labrador and/or insular Newfoundland. .... **7**

- 7a. Plants 4-10 dm tall; flowers few; inflorescence with long primary and secondary branches; tepals stramineous to pale brown, stiff, to 2.0 mm long; capsules usually dark brown, longer than the tepals; native to Labrador and insular Nfld. .... ***Luzula parviflora* subsp. *melanocarpa*** (black-fruit woodrush)
- 7b. Plants 2-6 dm tall; flowers many; inflorescence with long primary and short secondary branches; tepals medium brown to dark brown, not stiff, 2.0-2.5 mm long; capsules dark brown, barely longer than the tepals; native to Labrador; not known from insular Nfld. .... ***Luzula parviflora* subsp. *parviflora*** (small-flower woodrush)
- 8a. Flowering stems nodding, with 5-10 dense spikes, each with 3-6 sessile flowers (total 5-60 flowers per plant); each flower subtended by a small whitish bract with ciliate margins; individual spikes often separated by 1-7 cm, or spikes compact, forming a single nodding, head-like inflorescence; plants of exposed, arctic-alpine barrens and slopes on acidic bedrock; native to Labrador and sw/w/nw/e insular Nfld. .... ***Luzula spicata*** (spiked woodrush)
- 8b. Flowering stems erect, with 1 spike or 2-12 dense clusters of spikes on separate peduncles, each cluster with 1-18 sessile flowers (total 20-60 flowers per plant); plants of Labrador and/or insular Nfld. .... **9**
- 9a. Plants <1-3 dm tall; involucral bracts 0.4-2 cm long; plants of exposed barren, tundra, rocky, or sandy habitats in Labrador; not known from insular Nfld. .... **10**
- 9b. Plants 1-4 dm tall; involucral bracts 2-6.5 cm long; plants of various habitats in Labrador and/or insular Nfld. .... **12**
- 10a. Plants 1-3 dm tall; inflorescence usually with 1 sessile head, to 1.8 cm long; involucral bracts 1.5-2.0 cm long, longer than the inflorescence; native but uncommon in Labrador. .... ***Luzula groenlandica*** (Greenland woodrush)
- 10b. Plants 0.3-3 dm tall; inflorescence, head-like, with 2-7 heads; involucral bracts 4-9 mm long, shorter than the inflorescence. .... **11**
- 11a. Basal sheaths reddish-orange; basal leaves 1.5-2.5 mm wide; cauline leaves 2-3, reddish; blades 2-4 cm long × 1-1.5 mm wide; inflorescence a large cluster (0.7-1 cm long) of 2-7 sessile heads, each with 10+ sessile flowers; often with 1-2 lateral peduncles, each with 1-5 sessile flower; native throughout most of Labrador. .... ***Luzula confusa*** (northern woodrush)
- 11b. Basal sheaths stramineous to brown; basal leaves 1.5-4 mm wide, cauline leaves 1-2, green; blades 1-2 cm long × 1-2 mm wide; inflorescence a large cluster (0.5-3 cm long) of 2-7 sessile heads, each with several sessile flowers; native to northernmost Labrador. .... ***Luzula nivalis*** (arctic woodrush)
- 12a. Plants 1-2.5 dm tall; spreading by creeping rhizomes; inflorescence with 2-6 flower heads, appearing more rounded than cylindrical, the central head sessile, lateral heads on spreading peduncles; stamens with anthers 1.3-1.8 mm long,

- much longer (3-5 times longer) than the filaments; each head with 3-9 flowers; plants introduced in w/ne/e Nfld. . . . . ***Luzula campestris*** (field woodrush)
- 12b. Plants 1.3-4 dm tall; cespitose, rhizomes short, not creeping; inflorescence with 2-16 ± cylindric flower head, the central 1-2 heads short, lateral heads on ± erect peduncles; stamens with anthers 0.6-1.4 mm long, up to 2 times as long as the filaments; each head with 6-18 flowers; plants native. . . . . **13**
- 13a. Culms 1.3-3 dm tall; basal leaves several, 2-3.5 mm wide; cauline leaves 2-3, measuring 2-4.5 cm long × up to 2.8 mm wide; flower head 2-6, most on peduncles to 2.5 cm long; each head with 6-10 sessile flowers; tepals reddish-brown to dark brown or blackish, inner tepals obtuse or mucronate, slightly shorter than the outer tepals; bracteoles (small bracts subtending each flower) 1.2-1.6 mm long, with ciliate margins; capsules dark reddish brown to nearly black, somewhat pointed at the apex, and equal to or longer than the tepals when mature; native throughout insular Nfld and Labrador, usually at higher elevations. . . . .  
. . . . . ***Luzula multiflora*** subsp. ***frigida*** (frigid woodrush)
- 13b. Culms 1.5 to ±4 dm tall; basal leaves fewer and wider, 2-7 mm wide; cauline leaves 2-3, measuring 3.7-12 cm long × up to 5 mm wide; flower heads 3-16, the central head sessile, the remaining on peduncles to 1.5-5.2 cm long; each head with 8-18 sessile flowers; tepals stramineous (straw-coloured), light greenish, to dark brown, similar in size and shape, apices acuminate; bracteoles 1.5-2.5 mm long, with entire margins; capsules pale brown to medium brown, obtuse at the apex, usually shorter than the tepals when mature; plants of insular Nfld. only, usually at lower elevations. . . . .  
. . . . . ***Luzula multiflora*** subsp. ***multiflora*** (common or many-flowered woodrush)
- 14a. Plants terrestrial or emergent; cespitose or rhizomatous; culms simple or branched, erect to spreading; leaves flat, terete, or channeled (U-shaped in x.s.); septate, partially septate, or not septate; flowers 1-many in terminal or pseudolateral (appearing lateral) inflorescences; bracteoles present or absent; seeds with or without tails. . . . . **15**
- 14b. Plants often submerged or floating, some forming carpets or loose to dense mats at or below the water surface; usually in pools, ponds, or lakes, or plants stranded on muddy shores; rhizomes present or absent; culms narrow and weak, <1-2 mm wide, with or without a bulbous swelling at culm bases; leaves terete, narrow and limp, partially or completely septate; flowers terminal or axillary along inflorescence branches; flowers often replaced by bulbils or tufts of short slender leaves; bracteoles absent; seeds not tailed. (*Juncus* § *Ozophyllum*, in part) . . . . . **40**
- 15a. Plants 1-20 dm tall; inflorescences pseudolateral: the lowest bract erect and extending above the inflorescence, resembling an extension of the culm; cataphylls 3-5; leaves with blades absent; flowers in dense or loose branched cymes. . . . . **16**
- 15b. Plants <1-6 dm tall; inflorescences terminal, simple or branched; cataphylls 0-4; basal leaves 1-5; cauline leaves 0-5; leaf blades flat, channelled, or terete, leaves

- septate, not septate, or partially septate; inflorescence with 1-several heads of 1-many flowers. .... **22**
- 16a. Plants 1-8 dm tall, rhizomatous, with single erect culms arising from each node of a long horizontally-creeping rhizome, usually producing a straight line of erect culms; stamens 6; plants of Labrador and insular Nfld. (*Juncus* § *Juncotypus*). **17**
- 16b. Plants 4-20 dm tall, densely caespitose, forming dense clumps; rhizomes with very short internodes; stamens 3; plants of insular Nfld.; not known from Labrador. .... **19**
- 17a. Plants 3.5-8 dm tall; flowers 6-many; tepals dark brown to blackish with a relatively wide green or pale midrib and narrow hyaline margins, lanceolate, about 3.5-5.5 mm long; anthers 1.2-2.2 mm long, at least 4 times longer than the short filaments (0.2-0.5 mm long); plants of stream and lake margins, marshes, meadows, fens, marl ponds, and coastal shores; native throughout insular Nfld. and coastal Labrador. ....  
..... ***Juncus balticus* subsp. *littoralis*** (shoreline Baltic rush)
- 17b. Plants 1-6 dm tall; flowers 2-10; tepals stramineous (straw-coloured), yellow-green, pale brown, or dark reddish-brown to nearly black; anther up to 2 times longer than the filaments; native to insular Nfld. and/or Labrador. .... **18**
- 18a. Plants 1-6 dm tall, culms are bright green; the lowest bract is 0.5-3 dm long, equal in length or longer than the culm; flowers 3-10; tepals stramineous, yellow-green to pale brown, 2.5-4.2 mm long, equal in length to slightly longer than the green to pale brown capsules at maturity; anthers nearly as long or equal in length to the filaments; plants of sandy shores of ponds and streams, or meadows, usually over acidic substrates; native to Labrador and insular Nfld. ....  
..... ***Juncus filiformis*** (thread rush)
- 18b. Plants 1-3 dm tall (rarely taller), culms are dark bluish-green; the lowest bract is short, extending 1-5 cm above the inflorescence; flowers usually 2-5; tepals dark reddish-brown to nearly black with a paler centre, 4-5 mm long; anthers about 2 times as long as the filaments; plants of coastal shores as well as inland freshwater marshes and shores, especially in areas with calcareous substrates; native to Labrador; not known from insular Nfld. ....  
..... ***Juncus arcticus* subsp. *arcticus*** (arctic rush)
- 19a. Plants 4-10 dm (usually 6-8 dm) tall; culms with 10-20 noticeable vertical ridges; the inflorescence dense, branches of the inflorescence usually not visible between the culm and the tightly packed flowers; lowest bract 1-2 dm long, somewhat enlarged at the base opposite the flowers; culms 1.5-3(-4) mm wide just below the inflorescence; plants of peatlands and peaty shores; plants of w/c/ne/eNfld. ....  
..... ***Juncus conglomeratus*** (compact rush)
- 19b. Plants 3.5-14 dm tall; culms smooth or with noticeable vertical ridges; inflorescences open, their branches clearly visible; lowest bract 0.5-2.5 dm long, not enlarged at the base opposite the flowers; culms 1-3(-5) mm wide just below the inflorescence. ... **20**

- 20a. Plants 3.5-14 dm (usually 5-8) dm tall; cataphyll bases dark reddish-brown to purple or black, paler toward the apex, with ±tight margins overlapping to the top; culms firm, dark green, with 10-20 noticeable vertical ridges, culms 1-2+ mm wide below the loose to ±compact inflorescence; lowest bract 1-2 dm long; tepals pale brown, ±rigid, 2-3 (-3.5) mm long, tips of outer tepals reflexed; capsules medium brown, usually shorter than the tepals; plants of bogs, thickets, and sandy habitats, also serpentine barrens; native to w/c/eNfld. ....  
..... ***Juncus pylaei*** (Pylaie's soft rush)
- 20b. Plants 4-20 (usually 5-10) dm tall; cataphyll bases reddish brown to dark brown, their margins not overlapping to the top; culms soft, easily compressed, pale to deep green, smooth or with 40-70 fine vertical ridges; culms usually 2-3 mm wide below the ±open inflorescence; lowest bract 0.5-2.5 dm long; tepals yellowish-green to pale brown, tinged with reddish-brown, usually green in the centre, rigid or soft, 1.8-3 mm long, erect or appressed, at least at the tips, to the yellowish-green to light brown capsules; plants of marshes and moist to wet meadows. .... **21**
- 21a. Plants 2-20 (usually 8-10) dm tall; cataphylls usually reddish brown, ±loose, margins not overlapping above the upper half or third; culms 2-5 mm wide near the base, 2-3(-5) mm wide below the inflorescence; lowest bract (1-)1.5-2.5(-3.5) dm long; inflorescence with branches about 4-10 cm long; tepals stiff to ±rigid, 2.2-3+ mm long; capsules 2-2.5 mm long. Native to insular Nfld. ....  
..... ***Juncus effusus*** subsp. ***solutus*** (Eastern soft rush)
- 21b. Plants 4-15 (usually 5-10) dm tall; cataphylls usually dark brown at the base and paler above, tight, margins not overlapping above the upper third to tenth; culms 5-8 mm wide near the base, 1-5 mm wide below the inflorescence; lowest bract 0.5-2.5 dm long; inflorescence with branches to 3-5.5 cm long; tepals soft, 2-3 mm long; capsules 1.8-3 mm long. Introduced in insular Nfld. ....  
..... ***Juncus effusus*** subsp. ***effusus*** (European soft rush)
- 22a. Plants perennial, <1-6 dm tall; basal leaves 1-4, cauline leaves 0-5, blades partially septate; inflorescence terminal, of a single flower or single head with 1-several flowers, inflorescence subtended by two bracts, each to 4 cm long; bracteoles absent; capsules 4-5.5(-8) mm long. .... **23**
- 22b. Plants annual or perennial, <1-15 dm tall; basal leaves 0-4, cauline leaves 0-7; leaf blades septate or not septate; inflorescence a simple or branched cyme with 1-many flowers, subtended by an erect, narrow, leaf-like bract, shorter or longer than the inflorescence, or in submerged plants, the inflorescence of 1-2 (rarely 3) flowers at 1-2 nodes of the terminal branches; bracteoles present or absent; capsules 2.2-5.3 mm long. .... **27**

- 23a. Plants 1-4 dm tall; basal leaves 1-4, cauline leaves 0-5; inflorescence terminal, subtended by 2 ovate, dark brown bracts, to 4 cm long; flowers 1-several; capsules ellipsoid, 4-5.5(-8) mm long. (*Juncus* § *Stygiopsis*, *in part*) ..... 24
- 23b. Plants 1-6 dm tall; basal leaves 2-5, cauline leaves 0-3; inflorescence terminal, subtended by a narrow leaf-like bract; flowers 1-10; capsules ellipsoid, 3-9 mm long. (*Juncus* § *Graminifolii*)..... 25
- 24a. Plants 1-3 dm tall; leaves 2-4, basal leaves, 2-10 cm long × up to 1 mm wide, blades not septate; the inflorescence is subtended by 2 pale, reddish, or dark brown, membranaceous bracts: the lower bract, 4-13 mm long, ends in a long, acuminate, awn-like tip that often overtops the inflorescence, and a shorter bract with an acute apex; the inflorescence with 2-several flowers, arranged ±horizontally; tepals 3-5 mm long, lanceolate to oblong, pale yellow to reddish brown; stamens 6, the filaments 4 times longer than the anthers; capsules 3-5 mm long, light brown, oblong; native plants of peatlands and barrens. ....  
..... ***Juncus triglumis*** subsp. ***albescens*** (northern white rush)
- 24b. Plants <1-1.6 dm tall; leaves 1-4, basal leaves 2-8 cm long × 0.5-1.5 mm wide, blades partially septate; the inflorescence is subtended by 2 dark brown, scale-like bracts: a lower bract, 1-1.5(-4)cm long, equal to or longer than the inflorescence, and a shorter second bract; the inflorescence with 1-4 (usually 2) flowers on short pedicels (to 2 mm long); flowers arranged vertically at the top of the culm; tepals 2.5-3.3(-4) mm long, ovate and obtuse, reddish brown to dark brown or black; stamens 6, the filaments 4 times longer than the anthers; capsules 4-5.5(-8) mm long, greenish-brown, oblong, with a mucronate apex; plants of ±wet, arctic-alpine barrens and tundra; native to Labrador, not known from insular Nfld. .... ***Juncus biglumis*** (two-glume rush)
- 25a. Plants 2-6 dm tall; basal leaves 2-5, cauline leaves 2-3; leaf blades flat, 1-30 cm long × 1.5-3 mm wide, with entire margins; inflorescence terminal, with 1-4(-7) clusters of 3-12 flowers; the lowest bract pale brown, 1-2 cm long, much shorter than the inflorescence; tepals 4.5-6 mm long, reddish-brown with a green midrib and broad hyaline margins, longer than the capsule; flowers are each subtended by a lanceolate, white to hyaline, spreading to reflexed bract, nearly as long as the tepals; stamens 6, filaments slightly longer than the anthers; capsules 3-5 mm long, brown at maturity; seeds not tailed; plants of alluvial shorelines; native to sw/wNfld.; not known from Labrador. .... ***Juncus longistylis*** (long-style rush)
- 25b. Plants 1-3.5+ dm tall; basal leaves 2-5, cauline leaves 0-1; leaf blades channeled to terete, to 10 cm long; inflorescence terminal, with 1-3 clusters of 1-10 flowers; the lower bract usually longer than the inflorescence; tepals 3.5-5.5 mm long; stamens 6, filaments longer than the anthers; capsules 5.5-9 mm long, ellipsoid, longer than the tepals; seeds with tails to 1 mm long; native to Nfld. and Labrador. (*Juncus* § *Stygiopsis*, *in part*)..... 26

- 26a. Plants 1-3.5(-4) dm tall, rhizomatous; culms green; basal leaves 3-5, partially cauline, blade channeled (broadly U-shaped in x.s.), to 10 cm long × 2-3(-4) mm wide, not septate; inflorescence terminal, with 1-3 clusters of 2-10 flowers; the lower bract 6-7 cm long; tepals 4.5-5.5 mm long, reddish-brown to dark brown; filaments 2.5-4 times longer than the anthers; capsules 6-7.5 mm long, reddish-brown to nearly black, ellipsoid; seeds with tails to 1 mm long; plants of alpine meadows, peatlands, and streambanks. ....  
..... ***Juncus castaneus* subsp. *castaneus*** (chestnut rush)
- 26b. Plants 1-1.7(-2.7) dm tall, ± cespitose; culms green to mostly reddish-purple; basal leaves 2-4, cauline leaf 1, 1.5-3.5 cm long; blade ±terete and partially septate; inflorescence terminal, with 1 (occasionally 2-3) clusters of 1-4 (usually 2-3) flowers; lower bract 1-2 cm long, usually longer than the inflorescence; tepals 3.5-5 mm long, the 3-veined midrib green at the base to reddish above, with broad, hyaline margins; filaments 3 or more times longer than the anthers; capsules (5.5-)6.5-9 mm long, green, ellipsoid with a short pointed beak to 0.5 mm long; seeds with tails 1-1.4 mm long; plants of wet peatlands and bog pools.  
..... ***Juncus stygius* subsp. *americanus*** American moor rush
- 27a. Plants annual or perennial, <1-10 dm tall; basal leaves 0-4, cauline leaves 0-4(-5); leaves not septate, flowers 1-many, borne singly on inflorescence branches; lowest bract shorter or longer than the inflorescence; bracteoles usually 2, stamens 6. .... **28**
- 27b. Plants perennial, <1-15 dm tall; basal leaves 0-3, cauline leaves usually 0-3 (3-7 in *Juncus articulatus*), leaves septate; flowers in 2-many heads, each with 3-many flowers; lowest bract usually shorter than the inflorescence (equal or longer in *Juncus canadensis*); bracteoles absent; stamens 3 or 6. (*Juncus* § *Ozophyllum*) ..... **33**
- 28a. Plants annual, cespitose, to 4 dm tall, culms 1 to many, upright to weak and decumbent; leaves flat or somewhat fleshy and nearly terete; auricles lacking, the green to reddish leaf sheath gradually tapering to the leaf blade; lower bracts usually shorter than the inflorescence, each branch bearing 1 terminal flower (rarely 2-3); tepals 3-5.5 mm long, ±broadly to narrowly lanceolate, green along the centre with hyaline margins; capsules about 3-4 mm long. (*Juncus* § *Tenageia*) ..... **29**
- 28b. Plants perennial, rhizomatous or cespitose, 1-10 dm tall; leaves flat to ±terete; auricles present; lower bracts longer or shorter than the inflorescence, branches with flowers few to many; tepals 2.5-5 mm long, lanceolate to ovate, green, pale reddish-brown, to dark brown, capsules 2.2-4.7 mm long. (*Juncus* § *Steirochloa*) ..... **30**
- 29a. Plants <1-4 dm tall; leaf blades flat or somewhat channeled (broadly U-shaped in x.s.), 1-12 cm long × up to 1.5 mm wide; lower bracts usually shorter than the open inflorescence, which occupies at least the upper half of the plant; flowers usually 1 (occasionally few) at each branch end; tepals narrowly lanceolate, outer tepals 4-5.5 mm long, inner tepals to 5 mm long; plants of shallow and ephemeral fresh water

- ponds, muddy shores or pools, and wet ditches; native throughout Nfld., north to central and western Labrador. .... ***Juncus bufonius*** (toad rush)
- 29b. Plants <1-2 dm tall, lower culms and sheaths often red; leaf blades slightly channeled (U-shaped in x.s.) to nearly terete, 2-10 cm long × nearly 1 mm wide; lower bracts 1-3.5 cm long; the inflorescence many branched, including the upper fourth to most of the plant; branches with up to 10 flowers, usually borne singly or in clusters of 2-3 at the branch ends; tepals lanceolate, outer tepals 3-5 mm long, inner tepals 2.8-3.3 mm long; plants often halophytic, growing in coastal salt-water and brackish habitats, also in shallow and ephemeral fresh water ponds, muddy pools or shores, and wet ditches; native throughout Nfld., north to coastal central Labrador. ....  
..... ***Juncus ranarius*** (frog rush)
- 30a. Plants 2-7 dm tall; basal leaves usually 2-3, blades ±terete, 10-30 cm long × 1-3 mm wide; sheaths of leaves and bracts reddish; inflorescence ±dense, 1-5 cm long, with 5-15 flowers on short branches, clustered near the top of the culm; the subtending bract 1-10 cm long, shorter or longer than the inflorescence; tepals tan to pale reddish-brown with hyaline margins; outer tepals 3.3-4.4 mm long, inner tepals slightly shorter; capsule ellipsoid, green to tan, about 3.5-4.7 mm long, longer than the tepals; seeds with tails up to 0.5 mm long; plants north to central Labrador. .... ***Juncus vaseyi*** (Vasey's rush)
- 30b. Plants 1-10 dm tall; leaf blades ± flat; sheaths of leaves and bracts green; inflorescences ±dense to open, 1-10 cm long, with few to many flowers borne singly on branch ends; lowest bract 2-15 cm long; tepals 2.5-3.8 mm long, outer and inner tepals about equal in length; capsules ovoid or ellipsoid, tan to dark brown, 2.2-4.7 mm long, about equal to the tepals; seeds barely tailed (<0.1 mm long) or without tails; plants of Labrador and/or Nfld. .... **31**
- 31a. Plants 2-9 dm tall; rhizomatous, with creeping rhizomes; basal leaves usually 1-4, cauline leaves 0-2; blades usually 5-25 cm long × <1-2+ mm wide; lower bracts 2-10 cm long; inflorescence 2-10 (-15) cm long, usually with 2-4+ erect to ascending branches; flowers many (10-120); tepals 2.5-3.8 mm long, obtuse, reddish-brown to dark brown with a green to pale brown centre, appressed to the capsule; stamens with anthers 1.2-1.7 mm long, 2-4 times longer than the filaments; capsules ovoid, 2.2-3.5 mm long, dark brown, about equal to the tepals; a halophytic species of saltmarshes and wet habitats with high salinity; native to coastal Nfld., north to the Portland Creek area, not known from Labrador. .... ***Juncus gerardi*** (black-grass)
- 31b. Plants 1.5-10 dm tall, rhizomatous or cespitose; basal leaves usually 2-3; cauline leaves 1-2, blades up to 1 mm wide; lower bracts 2-15 cm long, usually longer than the inflorescence, with 1-5 erect, ascending, to ±spreading branches; flowers few to many (5-80); tepals 3.3-5 mm long, lanceolate, acuminate, with a green midrib and narrow hyaline margins, spreading; tepals longer or slightly shorter than the capsule; stamens with anthers longer or shorter than the filaments; capsules ellipsoid, 2.9-4.7 mm long, tan or light brown; plants of drier habitats on coarse- or fine-textured soils or near freshwater habitats; native to Nfld. and Labrador. .... **32**

- 32a. Plants rhizomatous, 2-10 dm tall; leaves 5-30 cm long; auricles 0.2-0.4 mm long, leathery, yellow to yellow-brown, apex rounded; lower bracts 3-15 cm long; tepals 4-5 mm long, longer than the 2.9-3.5 mm long capsule; anthers 0.6-1 mm long, slightly shorter than the 0.8-1.2 mm long filaments; plants of sw/wNfld., north to central Labrador. .... ***Juncus dudleyi*** (Dudley's rush)
- 32b. Plants cespitose with short rhizomes, 1.5-5 dm tall; leaves 3-12(-20) cm long; auricles 2-5 mm long, thin, hyaline to pale brown, ±triangular and tapering to an acute apex; lower bracts 2-10 cm long; tepals 3.3-4.4 mm long, slightly shorter than the 3.8-4.7 mm long capsule; anthers short, 0.1-0.2 mm long, the filaments 0.5-0.9 mm long, 4-5 times longer than the anthers; plants of Nfld., disjunct in central Labrador. .... ***Juncus tenuis*** (path rush)
- 33a. Plants cespitose, <1-10 dm tall; basal leaves 0-3, cauline leaves 0-7; leaves partially or fully septate; lowest bract usually shorter than the inflorescence (often longer in *Juncus canadensis*), the inflorescence a simple to branched cyme, with erect or spreading branches; seeds tailed or not. .... **34**
- 33b. Plants rhizomatous, <1-15 dm tall; basal leaves 0-2, cauline leaves 2-4(-5); leaves septate; lower bracts usually shorter than the few to many-branched inflorescence; branches erect or spreading; seeds not tailed. .... **38**
- 34a. Plants erect, <1-3 dm tall, or spreading close to the ground in wet sites, or plants submerged to floating, culms then to 10 dm long with limp leaves; in emergent and terrestrial plants, culm bases often bulbous; basal leaves 1, cauline leaves 0-1; leaf blades 2-10 cm long × up to 1.4 mm wide, terete and partially septate; lowest bract shorter than the ±erect to spreading inflorescence; flower heads usually 1-8, small, each with 2-15 flowers, some replaced by tufts of short, filiform leaves or bulbils; stamens usually 3; tepals 2-3.6 mm long, green to reddish brown, shorter than the obtuse, 2.5-4 mm long, brown to reddish-brown capsule; plants of sandy or peaty shores; introduced in the southern half of Nfld.; not known from Labrador . .... ***Juncus bulbosus*** (bulbous rush)
- 34b. Plants erect, <1-10+ dm tall, often emergent, but typically not submergent; sometimes rooted in shallow water, or culms decumbent to prostrate, rooting at the nodes in shallow water or wet sand; culm bases not enlarged or bulbous; basal leaves 0-3, cauline leaves 1-7; leaf blades terete and septate; lowest bract shorter or longer than the inflorescence, with erect or spreading branches; flower heads 3-35+, each with 2-50 flowers; short leafy tufts or bulbils not replacing flowers; stamens 3 or 6; tepals 1.8-4 mm long, shorter or longer than the 2.5-4 mm long capsule. .... **35**
- 35a. Plants erect, 1.4-5.5 dm tall; inflorescence narrow, with erect branches; lower bracts 1.8-7 mm long, shorter than the inflorescence; flowering heads 3-7, each with 2-8 flowers; tepals 2.3-3.1 mm long, lanceolate, green in the centre to reddish-brown with hyaline margins, much shorter than the ellipsoid, reddish-brown to dark brown,

- 3.2-4.8 mm long capsule; stamens usually 3 (or 6); seed with tails to 0.3 mm long; plants of moist acidic habitats; native throughout Nfld. and N to nLabrador. .... ***Juncus tweedyi*** (short-tail rush)
- 35b. Plants 1-10+ dm tall; inflorescence branches ascending to spreading; lower bract 1-13 cm long, shorter to longer than the inflorescence; flowering heads 3-35+, obconical to hemispherical, each with 2-50 flowers; tepals 1.8-4 mm long, slightly shorter than the 2.4-4 mm long capsule; stamens 3 or 6, anthers equal in length to shorter than the filaments. .... **36**
- 36a. Plants 3-10(-12) dm tall; leaves 7-22 cm long × up to 3.5 mm wide, auricles 0.5-1.7 mm long, rounded; lowest bract 1-13 cm long, as long as, or often much longer than the inflorescence; flowering heads 3-15, hemispherical, usually with 5-50 flowers per head; tepals 2.7-4 mm long, acuminate, green to reddish-brown with narrow hyaline margins, slightly shorter than the 3.3-4.5 mm long mm long green to reddish-brown capsule; stamens usually 3, anthers 0.3-0.5 mm long, filament 2-3 times longer than the anthers; seeds with tails 0.3-0.6 mm long; plants of various wet, freshwater or brackish habitats; native throughout much of Nfld. (except the Great Northern Peninsula); not known from Labrador. .... ***Juncus canadensis*** (Canada rush)
- 36b. Plants 1-6(-9) dm tall; leaves 3.5-15 mm long, auricles 0.5-1 mm long, rounded; lowest bract 1-8 cm long, shorter than the inflorescence; flowering heads 3-35, ±hemispherical, with 2-14+ flowers per head; tepals 1.8-3.5 mm long, slightly shorter than the 2.5-4 mm long capsule; stamens 3 or 6, anthers equal to or shorter than the filaments; plants of various wet habitats; not known from Labrador. .... **37**
- 37a. Culms erect or decumbent, often rooting at the lower nodes in wet sand or shallow water; basal leaves 0-2, cauline leaves 3-7, blades 3.5-12 cm long × 0.5-1.1 mm wide; flowering heads 10-35+, each with 3-14(-20) flowers; stamens 6; anthers 0.5-0.9 mm long, about equal in length to the filaments; tepals 2.2-3.5 mm long, lanceolate, reddish brown bordering a green centre, with narrow hyaline margins, apices narrowly acute; tepals shorter than the 2.5-4 mm long ellipsoid capsules, reddish brown to deep brown or black, tapering abruptly to a short beak; seeds not tailed; plants of wet sites, often calcareous; native throughout much of Nfld., extending N to the Port au Choix Peninsula. .... ***Juncus articulatus*** (jointed rush)
- 37b. Culms erect; basal leaves 1, cauline leaves 1-3; blades 4.5-15 cm long × 1-2 mm wide; flowering head 3-35, each with 2-10 flowers; stamens 3, anthers 0.4-0.6 mm long, the filaments 3 times longer than the anthers; tepals 1.8-3.2 mm long, lanceolate, green with narrow hyaline margins, apices acuminate; tepals shorter than the 3-3.8 mm long pale yellowish-brown capsule, tapering gradually to a short beak; seeds with tails to 0.3 mm long; plants of wet habitats, usually along riverbanks and shoreline thickets; native to w/c/e Nfld. .... ***Juncus subcaudatus*** (woodland rush)

- 38a. Plants emergent, usually tall, 3-15 dm tall; basal leaves 0, cauline leaves 2, the upper leaf usually reduced to an inflated sheath with no blade; the lower leaf, 5-10 dm long, with a rigid blade often longer than the many-branched inflorescence, bearing 20-100 hemispherical heads, each with 5-13+ flowers; tepals 2.3-3.2 mm long, narrowly lanceolate, reddish brown with narrow hyaline margins, apices acuminate; stamens 6, capsules 2.3-3.3 mm, yellowish to pale brown, about as long as the tepals; seeds tailless; plants usually growing in shallow water along the shores of freshwater pond, native throughout much of Nfld., not known from Labrador. .... ***Juncus militaris*** (bayonet rush)
- 38b. Plants emergent or terrestrial, <1-6 dm tall; basal leaves 0-2, cauline leaves 2-4(-5); the inflorescence few-branched, flower heads 3-20, each with 2-30 flowers; tepals 2.2-4.1 mm long, lanceolate or oblong, greenish to reddish-brown, apices acuminate or obtuse; stamens 3 or 6, capsules 2.3-5 mm long, obtuse or tapering to a short beak. .... **39**
- 39a. Plants <1-6 dm tall; basal leaves 0-2, cauline leaves 2-3(-5); lower bract shorter than the narrow, erect, few-branched inflorescence; flower heads 10-20, hemispherical, each with 2-10 sessile flowers, some heads w/ central flowers on pedicels 2-6 mm long; tepals 2.2-2.8 mm long, reddish-brown (outer tepals yellow at the centre), lanceolate to oblong, shorter than the capsule; outer tepals with broadly acute apices, inner tepals with obtuse to rounded apices; stamens 6; the ellipsoid capsule 2.3-3.5 mm long, obtuse and mucronate at the apex; plants of wet meadows fens, wet pools in barrens, often on limestone substrates; native throughout Nfld.; north to cLab. .... ***Juncus alpinoarticulatus*** subsp. ***americanus*** (northern green rush)
- 39b. Plants <1-5.5 (-7) dm tall; basal leaves 1, cauline leaves 2-4; lower bract to 13 cm long, usually equal to or longer than the inflorescence, branches ascending to spreading; flower heads 3-15, spherical, each with 6-30 sessile flowers; tepals 2.4-4.1 mm long, green to reddish-brown, lanceolate, with acuminate apices; stamens 3 or 6; the ellipsoid capsule 3.2-5 mm long, tapering gradually to a 0.5 mm long beak; plants of fens, freshwater marshes, saltmarshes, estuaries, and shores; native to sw/wNfld., not known from Labrador. .... ***Juncus nodosus*** (knotted rush)
- 40a. Plants without rhizomes, culm bases with a bulb-like swelling; submerged plants up to 3 dm long, with weak culms and limp leaves; plants in shallow water or pools often forming broad rosettes, culms rooting at the nodes, culms and leaves often red; plants on dry land up to 10 dm tall, green; basal leaves 1, cauline leaves 0-1, blades ±terete, partially septate, 2-10 cm long × up to 1.4 mm wide; inflorescence open, with 1-8 heads, each with 2-6+ flowers, some often replaced by bulbils; tepals green to pale reddish-brown, 2-3.6 mm long, with acute to obtuse apices; stamens usually 3, rarely 6; capsules ±2.5-4 mm long, slightly longer than the tepals, medium brown to reddish brown, obtuse at

- the apex; introduced at scattered locations across the southern half of Nfld.; not known from Labrador. .... ***Juncus bulbosus*** (bulbous rush)
- 40b. Plants rhizomatous, with slender rhizomes 1-3 mm in diameter, often spreading by stolons; culm bases without bulb-like swellings; submerged plants often forming dense mats, leaves to 11 cm long, septate; inflorescence open, with erect to spreading branches; flowers often replaced by small bulbils or tufts of few, slender leaves; tepals 1.6-4.4 mm long, obtuse; stamens 6; capsules 1.5-5 mm long, ellipsoid to ovoid, gradually tapering to a short beak. .... **41**
- 41a. Plants usually emergent, occasionally submerged along wet shores or in pools; rhizomes 1-3 mm wide, often whitish; culms 1-2 mm wide; emergent or terrestrial plants 1-7 dm tall; basal leaves 0-2, cauline leaves 1-4; blades 1.5-11 cm long × ±1 mm wide; auricles 0.3-1 mm long, rounded; inflorescence to 25 cm long; flowers sessile, 1-2 (rarely 3) at each node and usually on the same side of the inflorescence branches; tepals green to reddish, 1.6-2.8 mm long; stamens with anthers about 2-3 times longer than the filaments; capsules ellipsoid, brown to reddish-brown, 1.5-3.5 mm long; plants of fens, pools, and wet shores of ponds and streams; native throughout most of Nfld. (except the Great Northern Peninsula), extending north to sLab. .... ***Juncus pelocarpus*** (brown-fruit rush)
- 41b. Submerged plants forming dense, spreading mats to 5 dm wide, rhizomes 1 mm wide; culms 0.5-1 mm wide; emergent plants to 1 dm tall; basal leaves 1-5, cauline leaves 1-4; blades 1-3 cm long × 0.1-0.3 mm wide; auricles short, 0.1-0.8 mm long, ±acute; inflorescence 1-4 cm long; with 1-3 flowers on short pedicels at 1 or 2 nodes of each branch; small tufts of narrow leaves often replacing flowers, also present below the inflorescence; tepals green to reddish-brown, the outer tepals 1.8-2.8 mm long, shorter than the 2.2-4.4 mm long inner tepals; stamens with anthers ±equal in length to the filaments; capsules ovoid, reddish-brown, 2.4-5 mm long; plants of pool and pond margins; native to w/cNfld., north to central Labrador. .... ***Juncus subtilis*** (creeping rush)

Measurements used in this key are from a combination of data found in Brooks and Clemants (2002), Fernald (1950), Hämet-Ahti (1971, 1980), Kirschner (2002), and Závěská Drábková and Kirschner (2013).

## References

- Brooks, R.E., and S.E. Clemants. 2000. Juncaceae, in: *Flora of North America*. Vol. 22. pp: 211-267.
- Fernald, M.L., 1950. Juncaceae: pp. 397-420, in: *Gray's Manual of Botany*. Corrected printing, 1970. D. Van Nostrand Co., New York, USA.
- Hämet-Ahti, L. 1971. A synopsis of the species of *Luzula*, subgenus *Anthelaea* Griseb. (Juncaceae) indigenous to North America. *Ann. Bot. Fennici* 8: 368-381.
- Hämet-Ahti, L. 1980. The *Juncus effusus* aggregate in eastern North America. *Ann. Bot. Fennici* 17: 183-191.
- Kirschner J. (compiler). 2002a. *Species Plantarum. Flora of the World*. Part 6. Juncaceae 1: *Rostkovia* to *Luzula*. pp: 1–237. Australian Biological Resources Study, Canberra, Australia.
- Kirschner J. (compiler). 2002b. *Species Plantarum. Flora of the World*. Part 7. Juncaceae 2: *Juncus* subg. *Juncus*. pp: 1–336. Australian Biological Resources Study, Canberra, Australia.
- Kirschner J. (compiler). 2002c. *Species Plantarum. Flora of the World*. Part 8. Juncaceae 2: *Juncus* subg. *Agathryon*. pp: 1–192. Australian Biological Resources Study, Canberra, Australia.
- Kirschner, J., L.J. Novara, V.S. Novikov, S. Snogerup, & Z. Kaplan. 1999. Supraspecific division of the genus *Juncus* (Juncaceae). *Folia Geobot.* 34(3): 377–390.
- Knapp, W.M., K. Gandhi, R.F.C. Naczi, & A. Floden. 2022. *Juncus tweedyi* (Juncaceae sect. *Ozophyllum*), the correct name for *Juncus brevicaudatus*. *Phytotaxa* 566(2): 242-244.
- Proćków, J. and L. Záveská Drábková. 2023. A revision of the Juncaceae with delimitation of six new genera: nomenclatural changes in *Juncus*. *Phytotaxa*. Vol 622(1): 017-041.
- Záveská Drábková, L., and J. Kirschner. 2013. *Oreojuncus*, a new genus in the Juncaceae. *Preslia* 85: 483-503.