

**Equisetaceae (Horsetail Family) Key**  
**Key to species in Newfoundland and Labrador**  
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- 1a. Main stem branched twice, with smaller secondary branches originating from each node of the primary branches; leaves united into a loose chestnut brown sheaths at each node, divided at the tip into 3 or 4 pointed teeth. ....***Equisetum sylvaticum*** (woodland horsetail)
- 1b. Main stem of photosynthetic shoots unbranched or branched once; leaf sheaths at each node ending in distinct teeth or with 2 teeth joined together. .... **2**
- 2a. Stems branched, with strobili borne at the tip of photosynthetic or non-photosynthetic stems. .... **3**
- 2b. Stems unbranched, with strobili borne at the tip of photosynthetic stems. .... **7**
- 3a. Shoots dimorphic, with separate sterile and fertile shoots. .... **4**
- 3b. Shoots monomorphic, with strobili borne at the tip of photosynthetic stems. .... **5**
- 4a. Fertile shoots pinkish-brown or flesh-coloured, emerging before sterile shoots, withering after spores are shed; leaf sheaths about as long as wide, with 15–20 dark brown to black teeth, often with 2 teeth joined together. ....  
 ..... ***Equisetum arvense*** (field horsetail)
- 4b. Fertile shoots uncommon, becoming green and branched after spores are shed; leaf sheaths longer than wide, the 8–18 distinct teeth with dark centres and white margins. ....***Equisetum pratense*** (meadow horsetail)
- 5a. Central canal small, about 1/6 the diameter of the stem; vallecular canals as large as or larger than the central canal. ....***Equisetum palustre*** (marsh horsetail)
- 5b. Central canal ½–9/10 of the stem diameter; vallecular canals absent or smaller than the central canal. .... **6**
- 6a. Branches few, mainly at mid-stem; central canal 4/5–9/10 of stem diameter; stems with 10–30 low ridges; sheaths with 15–20 narrow teeth. ....  
 .....***Equisetum fluviatile*** (water horsetail)
- 6b. Stems usually branched at all or most nodes; central canal ½–2/3 of stem diameter; stems with 6–18 ridges; sheaths with 7–14 narrow teeth, often joined in 2s or 3s. ....  
 .....***Equisetum ×litorale*** (shore horsetail)
- 7a. Plants to 1+ m tall; central canal at least ½ the stem diameter; stems with 14–50 ridges; strobili clearly visible above the subtending sheath. .... **8**

- 7b. Plants to 25 cm tall; central canal absent or to  $\frac{1}{3}$  the stem diameter; stems with 3–12 ridges; strobili barely exerted above the subtending sheath. .... 9
- 8a. Stems annual, 3–8 mm thick, smooth; sheaths green, ending in 15–20 persistent slender dark teeth; strobilus apex blunt.....***Equisetum fluviatile*** (water horsetail)
- 8b. Stems perennial, 5–12 mm thick, rough; sheaths green to grey in the centre with a black band above and below, teeth 14–50, soon separating (articulating) from the sheath, leaving a ring of small circular scars; strobilus apex apiculate. ....  
.....***Equisetum hyemale*** var. ***affine*** (tall scouring-rush)
- 9a. Stems single, erect; central canal to  $\frac{1}{3}$  the diameter of the stem; strobili 2–5 mm long. ..  
.....***Equisetum variegatum*** var. ***variegatum*** (variegated scouring-rush)
- 9b. Stems caespitose, irregularly curved and bent; central canal absent, stems solid; strobili 5–8 mm long.....***Equisetum scirpoides*** (dwarf scouring-rush)

## *Equisetum* (*Equisetaceae*) Comparison Charts

<b><i>Equisetum</i> Chart 1</b> (of 3): Plants dimorphic, sterile shoots branched			
<i>Equisetum</i> species:	<b><i>E. arvense</i></b>	<b><i>E. pratense</i></b>	<b><i>E. sylvaticum</i></b>
	field horsetail	meadow horsetail	woodland horsetail
<b>Sterile Shoots</b>	branched, annual, dimorphic, 2–60+ cm tall, 1–4 mm thick, <b>with 10–14 ridges</b>	branched, annual, dimorphic, 15–50 cm tall, 1–3 mm thick; <b>whitish-green, with 8–20 ridges</b>	branched, annual, dimorphic, 25–70 cm tall, 1.5–3 mm thick; <b>with 10–18 ridges</b>
<b>Fertile Shoots</b>	<b>pinkish-brown, fleshy, ephemeral</b> ; shorter than sterile stems, but with larger sheaths	uncommon, brownish, <b>initially unbranched, becoming branched and green after spores are shed</b>	brown, 4–45 cm long; <b>initially unbranched, becoming branched and green after spores are shed</b>
<b>Sheath</b>	<b>as long as wide</b> , 2–5+ mm long and wide	<b>longer than wide</b> , 3–5 mm long x 2–4 mm wide	<b>inflated, papery, chestnut brown</b> 1–2.3 cm long
<b>Teeth</b>	4–14, lance-attenuate, <b>dark, often joined in pairs</b>	8–18, narrow, deltoid, <b>dark centres with white margins</b>	8–18, papery, <b>fused into 3–4 large obtuse lobes</b>
<b>Central Canal</b>	$\frac{1}{3}$ – $\frac{2}{3}$ of stem diameter vallecular canals large	$\frac{1}{6}$ – $\frac{1}{3}$ of stem diameter vallecular canals small	$\frac{1}{2}$ – $\frac{2}{3}$ of stem diameter vallecular canals prominent
<b>Branches</b>	<b>spreading to ascending</b> , simple, solid; ridges 3–4	<b>horizontal to drooping</b> , simple, solid; ridges 3	<b>delicate, arching, branched</b> , solid; ridges 3–4
<b>Length of First Internode</b>	<b>1st internode</b> of each branch <b>longer than subtending sheath</b>	<b>1st internode</b> of each branch <b>equal to or longer than subtending sheath</b>	<b>1st internode</b> of each branch <b>longer than subtending sheath</b>
<b>Strobili</b>	1–3.5 cm long, rounded	to 2.5 cm long, blunt	to 3 cm long, blunt

***Equisetum* Chart 2 (of 3): plants monomorphic, shoots usually branched**

<i>Equisetum</i> species:	<i>E. palustre</i>	<i>E. fluviatile</i>	<i>E. ×litorale</i> ( <i>E. arvense</i> x <i>E. fluviatile</i> )
	marsh horsetail	water horsetail	shore horsetail
<b>Aerial Stems</b>	monomorphic, branched or unbranched, 20–80 cm tall; with 5–10 ridges	monomorphic, sporadically branched or unbranched, 35–80+ cm; with 10–30 ridges	monomorphic, branched or occasionally unbranched, 20–70 cm; with 6–18 ridges
<b>Sheath</b>	elongate, <b>wider above</b> ; 4–9 mm long × 2–5 mm wide	± <b>as long as wide, tightly appressed</b> ; ± 4–10 mm long and wide	± elongate, <b>loose</b> ; 3.5–8 mm × 2.5–6 mm
<b>Teeth</b>	5–10, narrow, 2–5 mm wide; dark, with white scarious margins	<b>15–20, very narrow</b> , 2–3 mm wide; black	<b>7–14, narrow</b> , 1–3 mm wide; dark, narrowly white-margined; <b>often in 2s or 3s</b>
<b>Central Canal</b>	<b>small</b> , ± 1/6 of stem diameter, vallecular canals = to or larger than the central canal	<b>large</b> , 1/5–9/10 of stem diameter; vallecular canals absent; <b>stems collapse when squeezed</b>	1/2–2/3 of stem diameter; vallecular canals smaller than central canal
<b>Branches</b>	hollow; ridges 4–6	hollow, ridges 4–6	<b>often solid; ridges 3–5</b>
<b>Length of First Internode</b>	<b>1st internode</b> of branches shorter than subtending sheath	<b>1st internode</b> of branches shorter than subtending sheath	lower nodes with 1st branch internode = to subtending sheath, <b>upper nodes with 1st branch internode longer than subtending sheath</b>
<b>Strobili</b>	1–2.5 cm long, obtuse	0.7–3 cm long, obtuse	0.7–2.0 cm long, obtuse

***Equisetum* Chart 3** (of 3): plants monomorphic, aerial shoots unbranched

<i>Equisetum</i> species:	<i>E. fluviatile</i>	<i>E. hyemale</i> subsp. <i>affine</i>	<i>E. variegatum</i> subsp. <i>variegatum</i>	<i>E. scirpoides</i>
	water horsetail	tall scouring-rush	variegated scouring-rush	dwarf scouring-rush
<b>Aerial Stems</b>	annual, <b>occas. branched at mid-stem</b> , 35–80+ cm tall; with 10–30 ridges	<b>perennial</b> , 30–100+ cm tall; with 14–50 ridges; branching at apex if damaged	<b>perennial</b> , 10–25 cm long; with 3–12 ridges	<b>perennial, cespitose, irregularly curved and bent</b> , 3–20+ cm long; with 6–8 ridges
<b>Sheaths</b>	± as long as wide, <b>tightly appressed</b> ; ± 4–10 mm long and wide	± as long as wide, <b>tight</b> , ± 4.5–18 mm long and wide; <b>with dark bands at top and bottom</b>	<b>loose</b> , 1–6 mm long, <b>black and ± wider above, green below</b>	<b>loose</b> , 1–2.5 mm long × 0.75–1.5 mm wide; <b>black above, green below</b>
<b>Teeth</b>	<b>15–20, very narrow</b> , persistent, 2–3 mm wide, black	14–50, lanceolate, <b>articulating</b> (soon shedding)	<b>3–12</b> , lanceolate to <b>deltoid</b> , persistent, dark centres with wide white margins	<b>3, deltoid</b> , persistent, dark with white scarious margins
<b>Central Canal</b>	<b>large</b> , $\frac{1}{5}$ – $\frac{9}{10}$ of stem diameter; vallecular canals absent; <b>stems collapse if squeezed</b>	$\frac{1}{3}$ – $\frac{3}{4}$ of stem diameter; vallecular canals small	$\frac{1}{3}$ of stem diameter; vallecular canals large	<b>solid</b> , with 3–4 small vallecular canals
<b>Strobili</b>	0.7–3 cm long, apex obtuse, cone peduncled	to 2 cm long, apex <b>apiculate</b> , cone short-peduncled	5–8 mm long, apex <b>strongly apiculate</b> ; cone <b>barely exerted</b>	2–5 mm long, apex <b>apiculate</b> , cone <b>barely exerted</b>