

Conspectus Tables
for
Field Guide to the Sedges of the Pacific Northwest
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(*Carex* Working Group): 2008, Oregon State University Press

These tables compare the traits of two or more *Carex* species that might be confused. To find tables that include the species of interest to you, use the “Find” command (control F). Remember that one species may appear in two or more tables.

If you would like to see a comparison not presented here, or if you have suggestions for improvement, contact Barbara Wilson, bwilson@peak.org.

Table 1. *Carex pachystachya* and *C. preslii*. (*Carex* section *Ovales*, Key J)

Trait	<i>C. pachystachya</i>	<i>C. preslii</i>
Habitat	mesic to moist meadows, forest edges	dry or seasonally dry open woods, meadows, roadsides
Inflorescence shape	compact (usually)	slightly more elongated
Lowest inflorescence internode	0.7 – 4.5 (-9) mm	3 – 7 mm
Perigynium sheen	with metallic sheen	dull
Perigynium color	golden brown or coppery to dark brown	green or gold to golden brown when old
Beak shape	entire and unwinged for the distal 0.4 – 0.7 mm	some flat and ciliate-serrulate almost to the tip, others entire and unwinged for up to 0.6 mm
Beak tip color	brown or narrowly white	brown

Table 2. *Carex pachystachya* and *C. microptera*. (*Carex* section *Ovales*, Key J)

Trait	<i>C. microptera</i>	<i>C. pachystachya</i>
Habitat	mesic to dry	mesic to wet, but not saturated
Spike texture	fine	coarse
Inflorescence color	more two-toned	more uniform
Perigynia number per inflorescence	more	fewer
Perigynia positions in inflorescence	crowded	spreading
Perigynium shape	flat except where distended by the achene	planoconvex
Perigynium thickness	0.3 – 0.5 mm	0.5 – 0.7 mm
Perigynium color	usually green and pale, to straw-colored, to brown when mature; or blackish	usually golden brown to coppery to dark brown, sometimes green along beak

Table 3. *Carex pachystachya* and *C. macloviana*. There is disagreement about whether *C. macloviana* occurs south of British Columbia. It should be looked for, especially in northern Washington. (*Carex* section *Ovales*, Key J)

Trait	<i>C. macloviana</i>	<i>C. pachystachya</i>
Culm	distinctly 3-edged	with rounded, inconspicuous edges
Pistillate scales' white margins	0.03 – 0.25 mm wide, usually conspicuous	0 – 0.1 mm wide, usually inconspicuous
Perigynium length	3.6 – 4.5 mm	2.8 – 4.7 mm
Perigynium wings	dark, conspicuously contrasting with the perigynium body	similar in color to body (at most dark-edged)
Perigynium thickness	0.4 – 0.5 mm	0.5 – 0.7 mm
Beak tip	white-hyaline	white hyaline or brown
Pithy tissue in U-shape around achene at base	usually present	usually absent

Table 4. *Ovales* with green, winged fruits and short inflorescence bracts. These plants have pale inflorescences because they nearly lack dark brown or blackish pigment. (*Carex* section *Ovales*, Key J)

Trait	<i>C. feta</i>	<i>C. fracta</i>	<i>C. scoparia</i>	<i>C. subfusca</i>
Distribution	W. of Cascades, incl. SW Oregon	Cascades & SW Oregon	Willamette Valley & W Washington	Cascade Mts., & E OR, E WA
Leaf sheath front [upper end?]	more or less extended upward (1.5 – 6 mm)	extended upward in hyaline flap (3 – 9 mm)	not extended upwards	not extended upwards
Leaf sheath front color	green except hyaline triangle to 0.6 cm at top	hyaline (rarely green except upper 1 cm)	narrowly hyaline (can appear green when dried)	hyaline
Inflorescence habit	erect	erect	erect or arching	erect
Spikes	more or less separated	crowded above, separated below	somewhat crowded	crowded
Perigynium length	3.2 – 4.2 mm	2.9 – 4.0 mm (- 4.8)	4.2 – 6.8 mm	2.4 – 4.0 mm (- 4.3)
Perigynium width	1.7 – 2.1 mm	1 – 1.7 mm	1.2 – 2.0 mm	0.9 – 1.9 mm
Perigynium wing width	0.3 – 0.5 (-0.6) mm	0.1 – 0.2 (-0.3) mm	0.2 – 0.6 mm	0.15 – 0.3 (-0.45) mm
Perigynium wing shape	tapered	tapered	wider above, narrow in lower half; asymmetrical	narrow throughout

Table 5. *Carex leporina* (= *C. ovalis*) and *C. praticola*, which are *Carex* section *Ovales* with erect to nodding inflorescences and moderately long perigynia. Note that stolons develop with age and are often absent until late summer. (*Carex* section *Ovales*, Key J)

Trait	<i>C. leporina</i> (= <i>C. ovalis</i>)	<i>C. praticola</i>
Range in PNW	west of Cascades	widely distributed, more common east
Stolons	yes	no
Leaf sheath front	white-hyaline	white-hyaline, the summit often tinged with brown
Pistillate scale color	often brown with green (or brown) midstripe, sometimes white at tip or base	white to brown with white, green, or brown midstripe
Pistillate scale margin	brown	white hyaline margin 0.1 – 0.3 mm wide
Pistillate scale length	3.4 – 5 mm	(3.4-) 4.2 – 5.8 mm
Pistillate scale length/perigynium	equal or shorter than mature perigynium	equal or longer than mature perigynium
Perigynium ventral veins	(0-) 2 – 5, conspicuous (usually)	0 (-4, rarely 7), usually faint or short if present
Perigynium length	3.4 – 4.7 (-5.2) mm	(3.7-) 4.5 – 6 mm
Perigynium width	1.3 – 2.1 mm	1.2 – 2 mm
Perigynium thickness	0.4 – 0.5 mm	0.5 – 0.8 mm
Beak tip color at end	brown	white-hyaline
Beak tip shape, length	usually cylindrical, unwinged, for 0.3 – 0.5 mm	usually cylindrical, unwinged, for 0.4 – 1 mm
Beak tip to achene top	(1.2-) 1.5 – 2 mm	(1.6-) 1.9 – 3 mm
Achene length	1.1 – 1.8 mm	1.4 – 2.1 (-2.7) mm

Table 6. *Carex* section *Ovales* that normally have inflorescence bracts longer than the inflorescence and sometimes leaf-like. Caution: Any sedge may produce elongated inflorescence bracts on late-season shoots. Such plants are not covered here. Only *C. athrostachya* and *C. unilateralis* are common and widespread. (*Carex* section *Ovales*, Key J)

Unwinged = unwinged, brown, and usually entire

Flat = flat, more or less winged, and ciliate-serrulate nearly to the tip

Trait	<i>C. athrostachya</i>	<i>C. unilateralis</i>	<i>C. crawfordii</i>	<i>C. harfordii</i>	<i>C. synocephala</i>
Range	widespread, but mainly east of Cascades	west of Cascades	Cascades and cranberry bogs at coast	coastal California, coastal Oregon	eastern Washington (scablands)
Habitat	Diverse, often disturbed wetlands	marshes, seasonally wet areas, ditches	Seasonally wet lake margins, ditches	Coastal marshes, bogs, wet open areas	disturbed wet areas; pond margins in scablands
Orientation of head	erect on top the culm	+/- angled to side of culm	erect on top the culm	erect on top the culm	erect on top the culm
Inflorescence bract habit	spreading to ascending	erect to ascending	spreading to ascending	spreading to ascending	spreading to ascending
Inflorescence bract shape	leaf-like or bristle-like	leaf-like	bristle-like	bristle-like or leaf-like	leaf-like
Inflorescence bract width	usually less than 1.8 mm	usually more than 2 mm	less than 1 mm	less than 1 mm	
Perigynium shape	ovate to lanceolate plano-convex or flat, except where distended by the achene	ovate to lanceolate, usually flat, except where distended by the achene	narrowly lanceolate to narrowly ovate	ovate to broadly ovate, planoconvex or biconvex	narrowly lanceolate
Perigynium length	(2.8-) 3.5 – 4 (-4.8) mm	3.5 – 5 mm	3.4 – 4.1 (-4.7) mm	(2.6-) 3.3 – 4 (-4.6) mm	(4.6-) 5.5 – 7.3 mm
Perigynium width	(0.8-) 1 – 1.5 (-1.8) mm	1.3 – 1.75 mm	0.9 – 1.3 mm	(1.2-) 1.4 – 1.6 (-2) mm	0.7 - 1.2 mm
Perigynium thickness	0.35 – 0.45 mm	0.3 – 0.5 mm	0.15 – 0.35 mm	0.6 – 0.7 mm	0.3 – 0.4 mm

Wing width	(0.1-) 0.2 (-0.5) mm	0.2 – 0.3 mm	0.1 – 0.2 mm	0.1 – 0.3 (-0.4) mm	0.1 – 0.15 (-0.2) mm
Beak tip shape	unwinged for at least 0.4 – 0.9 mm	usually flat (or unwinged for 0.5 – 0.6 mm)	narrowly flat	unwinged for (0-) 0.3 – 0.7 mm	narrowly flat
Beak length	1.9 – 2.5 mm	(1.4-) 1.7 – 2.5 mm	(1.8) 2.1 – 3 mm	1.2 – 1.8 mm	3 – 5 mm
Achene length	(1-) 1.2 – 1.6 mm	(1.2-) 1.5 – 1.9 mm	1.1 – 1.5 mm	(1.3-) 1.5 – 1.9 mm	1 – 1.8 mm
Achene width	0.7 – 1 mm	0.75 – 1 (-1.2) mm	0.6 – 0.8 mm	(0.9-) 1 – 1.2 (-1.4) mm	0.6 – 0.8 mm
Achene thickness	0.3 – 0.4 mm	0.3 – 0.4 mm	0.14 – 0.35 mm	0.5 – 0.7 mm	0.3 – 0.4 mm
Achene base	sessile or shortly stipitate	stipitate	stipitate	stipitate	stipitate
Achene location	in lower part of perigynium body	in center of perigynium body	in center of body or lower	in middle of perigynium body	in center of perigynium body

Table 7. *Carex subfusca* and *Carex teneriformis*. These taxa are often synonymized. Variation within *C. subfusca* (including *C. teneriformis*) needs more study. (*Carex* section *Ovales*, Key J)

Trait	<i>Carex subfusca</i>	<i>Carex teneriformis</i>
Range	AZ, CA, OR, S WA	CA, perhaps also SW OR?
Fertile shoots; last years leaves	represented by dead, normally developed blades	represented by bladeless or very short-bladed sheaths
Leaf blade color	deep green	light green
Leaf blade width	1 – 2.5 mm	2 – 3.5 mm
Perigynia	appressed	loosely appressed to spreading
Perigynia, length	2.75 – 3.25 mm	3 – 3.5 mm

Table 8. Short (to 45 cm), montane *Ovales* with ascending, overlapping spikes on erect to slightly bent inflorescences; boat-shaped to leaf-shaped perigynia; and perigynium wings extending relatively high on the beak, to the base of the long (0.4 – 0.7 mm) unwinged tip. (*Carex* section *Ovales*, Key J)

Trait	<i>C. leporinella</i>	<i>C. phaeocephala</i>	<i>C. tahoensis</i>
Habitat	wetlands	dry alpine and subalpine slopes	dry subalpine slopes
Elevation	(1200-) 3000 – 9000	(3600-) 6800 – 9800	(3000-) 3900 – 9000
Perigynium shape	boat-shaped, with narrow, thick wings	leaf-shaped to boat-shaped	leaf-shaped to boat shaped
Perigynium length	3.5 – 4.2 mm	3.8 – 5.2 mm	(3.7-) 4.5 – 6 mm
Perigynium color	gold or dull brownish	gold or light or dark brown	dark brown with greenish edges
Perigynium texture	opaque	translucent	opaque
Perigynium thickness	0.4 – 0.5 (-0.6) mm	0.4 – 0.5 mm	0.5 – 0.7 (-0.9) mm
Peri ventral veins	0 – 6	0 (- 5)	3 – 8
Peri dorsal veins	(0-) 5 – 10	(0-) 4 – 9+	7 – 15
Peri veins, if present	strong	faint	strong

Table 9. *Carex constanceana* and similar species. Note that measurements for *C. constanceana* are taken from a very few plants collected on Mt. Adams, WA. Ranges for some measurements may expand as more specimens are studied. (*Carex* section *Ovales*, Key J)

Trait	<i>C. constanceana</i>	<i>C. petasata</i>	<i>C. praticola</i>
Range (known)	Mt. Adams, WA; Sierra Nevada, CA; Lake Co., OR	east of Cascades	east and west of Cascades
Culm length	30 – 85 cm	25 – 35 cm	(15-) 30 – 70 (-95) cm
Leaf length	10 – 30 (-40) cm	4 – 15 cm	10 – 30 cm
Inflorescence	+/- erect	erect	nodding (or erect)
Inflorescence (# spikes)			
Pistillate scale length	5.8 – 7.6 mm	4.8 – 5.5 mm	(3.4-) 4.2 – 5.8 mm
Pistillate scale	covers most of beak	reveals most of beak	covers most of beak
Pistillate scale, white margin on side	0.2 – 0.7 mm	0 – 0.2 (-0.4) mm	0.1 – 0.3 mm
Pistillate scale, tip	acute to acuminate	obtuse	obtuse to acuminate
Staminate scale, white margin on side	(0.2-) 0.3 – 0.7 mm	0 – 0.2 (-0.4) mm	xxxxxxx
Perigynium length	6 – 8 mm	5.8 – 7.5 mm	4.5 – 6 mm
Perigynium width	1.7 – 2.4 mm	2 – 2.4 mm	1.2 – 2 mm
Perigynium, dorsal veins	4 – 10	8 – 16	(0-) 4 - 11
Perigynium, ventral veins	4 – 10, at least 3 longer than achene	4 – 7, at least 3 longer than achene	0 – 4 (-7), usually shorter than achene
Perigynium, dorsal suture	conspicuous, with white margins	inconspicuous, lacking white margins	conspicuous with white margin, or inconspicuous

Table 10. Large, coarse, rhizomatous *Carex* with two stigmas per perigynium (section *Phacocystis*), in lowlands west of the Cascades. These plants can be confused with *Carex amplifolia*, which is readily distinguished by its perigynia with long beaks and three stigmas. (*Carex* section *Phacocystis*, Key G2)

Trait	<i>C. aperta</i>	<i>C. aquatilis</i> var. <i>dives</i>	<i>C. barbarae</i>	<i>C. lyngbyei</i>	<i>C. obnupta</i>
Range	Lower Columbia River; Cascades	widespread west of Cascades	Rogue and Umpqua Rivers	coastal	widespread west of Cascades
Habitat	Broad flat riversides; lake shores, wetlands	freshwater marshes, ditches, lakeshores	riparian meadows, open woods, riparian oak savannah	salt water marshes	fresh or bracksh marshes, ditches, low spots
Plant base color		chestnut brown, reddish brown	blackish, purplish, or brown	blackish, purplish, or brown ????????	blackish or purplish
Leaf sheath		hyaline	ladder-fibrillose	hyaline	ladder-fibrillose
Leaves	die each year	die each year	annual?	die each year	evergreen
Leaf margins		with sharp forward-pointing prickles, or sometimes smooth	with sharp forward-pointing prickles	smooth	with sharp forward-pointing prickles
Peduncles	erect	erect or, on lower spikes, spreading to arching	none, or straight, more or less erect	arching	none or straight, more or less erect
Pistillate spike habit	straight	arching or straight	straight (or arching)	short, straight	arching (or sometiems straight)
Pistillate scale midrib		wide	moderate	narrow	very narrow; scale looks blackish
Pistillate scale tip		acute, entire	awned, scabrous	acute, entire	acute, entire
Perigynium top	inflated	not inflated	not inflated	not inflated	note inflated
Perigynium	membranous	membranous	membranous to tough	hard	hard

texture					
Perigynium abaxial veins		none (or very faint)	2+, strong	none	none
Perigynium color	olive green, purplish, or orangish	green to brown, usually with reddish or purplish spots	green, maturing medium brown	maturing yellow brown	maturing dark brown
Beak margin, length		entire, to 0.3 – 0.4 mm	scabrous, 0.5 mm, bidentate	entire, 0.1 – 0.3 mm	entire, 0.1 – 0.3 mm

Get consistent about nerves, veins. Which to use?

Table 11. Glaucous, rhizomatous *Phacocystis* east of the Cascade Range. The perigynium features that distinguish these species do not develop until the plants are fully mature, often in late August. *Carex angustata* and *C. aquatilis* cannot be distinguished reliably without mature perigynia. *Carex nebrascensis* is somewhat more distinct morphologically and lives at lower elevations than the other two (though elevational ranges overlap), but misidentifications are common. In addition to the features listed, *C. angustata* is reported to be distinguished by its scabrous proximal leaf sheaths, but we find that feature either very difficult to see or unreliable. V-shaped or W-shaped leaves may occur in all three species. In all species, leaf tips may be white if they were frozen when young. (*Carex* section *Phacocystis*, Key G2) **Keep**

Trait	<i>C. angustata</i>	<i>C. aquatilis</i> var. <i>aquatilis</i>	<i>C. nebrascensis</i>
Elevation	higher	higher	lower
Substrate			
Leaf sheath color	purplish brown or reddish brown	reddish brown	drab brown
Leaf sheath front (typically)	often ladder-fibrillose, at least on lower leaves	not ladder fibrillose	not ladder fibrillose
Leaf width	4 – 7 mm	2.5 – 8 mm	3 – 12 mm
Lower pistillate spike width	narrower 3 – 5 mm	often narrower 3 – 7 mm	wider 5 – 8 mm
Pistillate scale	awnless	awnless	awnless or with awn to 0.5 mm
Pistillate scale and perigynium tips	glabrous	glabrous	glabrous, scabrous, or very short hairy
Perigynium length	2.2 – 3 mm	2 – 3.6 mm	2.6 – 4 mm
Perigynium texture	normal	normal	tougher
Perigynium veins on faces	1 – 3, faint	0 (or very, very, very faint)	5 – 9, strong
Perigynium “shoulders”	more sloping	more rounded; tapering more abruptly to the beak	more sloping
Perigynium beak length	0.2 – 0.5 mm	0 – 0.2 mm	0.3 – 0.6 mm
Perigynium beak dentition	not bidentate	not bidentate	minutely bidentate, often scabrous

Table 12. The varieties of *C. aquatilis*. (*Carex* section *Phacocystis*, Key G2)

Trait	<i>C. aquatilis</i> var. <i>aquatilis</i>	<i>C. aquatilis</i> var. <i>dives</i>
Range	east of (and in) Cascades	west of (and in) Cascades
Leaf sheath front, at mouth	usually white-hyaline	usually purplish brown
Leaf sheaths, proximal	lacking purplish brown spots	with purplish brown spots
Leaves of fertile shoots,	2.5 – 8 mm wide	5 – 18 mm wide
Leaves, location of stomata	both surfaces	only on upper surface
Lowest inflorescence bract	5 – 40 cm long	14 – 65 cm long
Spikes, orientation	erect	drooping
Spikes, lower	usually entirely pistillate	usually androgynous
Spikes, lower, on peduncles	1 – 4 (-10) cm long	4.5 – 11 cm long
Perigynia, color	tawny with brown spots on lower half to two-thirds	green or tawny throughout
Beak, color	tawny	usually purplish brown
Beak, length	up to 0.2 mm long	0.3 – 0.4 mm long

Table 13. *Carex nigra* and similar species northwest Washington lowlands. *Carex nigra* has been introduced to SW BC and is expanding its range. It should be looked for in NW WA. (*Carex* section *Phacocystis*, Key G2)

Trait	<i>C. aquatilis</i> var. <i>dives</i>	<i>C. lenticularis</i>	<i>C. nigra</i>
Habit	rhizomatous	cespitose	more or less rhizomatous
Culm height	35 – 150 cm	15 – 90 cm	10 – 110 cm
Leaf width	5 – 18 mm wide	2 – 4 mm	2 – 4.5 mm
Lowest inflorescence bract	longer than inflorescence	longer than inflorescence	subequal to inflorescence
Pistillate scale color	red-brown or purplish brown	red-brown or blackish	blackish
Perigynium length	1.9 – 3.5 mm	2 – 3.5 mm	2 – 3.7 mm
Perigynium width	1 – 1.2 mm	1 – 1.8 mm	1.1 – 2.1 mm
Perigynium color	green or tawny with purplish brown spots	green with red-brown spotting on distal half	light brown with red-brown or black spots on distal half, or all dark there
Perigynium veins	0	5 – 7 on each side	3 – 9 on each side
Perigynium stipe	~0 mm	0.2 – 0.7 mm	0.1 – 0.3 mm

Table 14. Varieties of *C. scopulorum*. (*Carex* section *Phacocystis*, Key G2)

Trait	<i>C. scopulum</i> var. <i>bracteosa</i>	<i>C. scopulorum</i> var. <i>prionophylla</i>
Elevational range	higher	somewhat lower
Culm height	11 – 65 cm	35 – 90 cm
Proximal leaf blades	with blades	bladeless (sheaths only)
Proximal leaf sheath length	to 5 cm long not in fna	to 15 cm long not in fna
Leaf sheath front texture	veinless	ladder-fibrillose, with persistent veins
Perigynium apex	obtuse or rounded	acute

Table 15. *Carex scabriuscula* and the varieties of *C. scirpoidea*. These are dioecious plants that may have a single dense, cylindrical spike, or may have one or two smaller spikes at the base of a main spike. (*Primocarex*, *Carex* section *Scirpinae*, Key A)

Trait	<i>C. scabriuscula</i>	<i>C. scirpoidea</i> . v. <i>scirpoidea</i>	<i>C. scirpoidea</i> . v. <i>pseudoscirpoidea</i>	<i>C. scirpoidea</i> . v. <i>stenochlaena</i>
Elevation	high (near timberline)	intermediate (alpine and lower)	highest (mainly alpine)	lowest (montane, not alpine)
Moisture	seasonally wet	intermediate	driest (but moist in spring)	wet
Substrate	serpentine	limestone and other calcareous substrates	diverse substrates including limestone and mild serpentine	weakly acid substrates, not limestone
Habit	loosely cespitose	loosely cespitose	not cespitose	loosely cespitose
Dead last-year's leaves low on flowering culms?	present	absent	present	absent
Bladeless sheaths at base of flowering culm	lacking	present	lacking	present
Pistillate culm	erect	erect	erect	erect when young; drooping when mature
Culm height	(30-) 35 – 65 cm	(5-) 10 – 35 (-40) cm	5 – 31 cm	24 – 34 cm
Leaf blade length	15 – 35 cm	to 31 cm	to 21 cm	to 28 cm
Leaf blade width	3 – 4 cm	~2.5 mm	~3 mm	~2.5 mm
Pistillate scale shape	broadly lanceolate to ovate	ovate	ovate	lanceolate
Pistillate scale length	3 mm	2.5 mm	2.8 mm	3.5 mm

Pistillate scale apex	acute to awned (rarely obtuse), cillate at tip	obtuse or with small moist, cillate or not	obtuse or with small moist, cillate or not	obtuse or with small moist, cillate or not
Pistillate scale compared to perigynia	a little to much narrower	as wide as or a little narrower	as wide as or a little narrower	as wide as or a little narrower
Perigynium shape	Broadly elliptic to ovate or obovate	ovate	ovate	lanceolate
Perigynium length	(2.5-) 3 (-4) mm	(1.8) 2 – 2.5 (-3) mm	(1.5-) 2 – 2.8 (-3) mm	(2.8-) 3 – 4 (-5) mm
Perigynium width	(1-) 1.5 (-2.5) mm	1 – 1.2 (-1.5) mm	1.5 mm	0.9 – 1.4 (-1.6) mm
Perigynium proportions	less than or about 2.5 times as long as wide	about 1 to 2.5 times as long as wide	about 2.5 times as long as wide	usually more than 2.5 times as long as wide
Perigynium tightly enveloping achene	loosely enveloping achenes which is in lower half to two thirds of peri	for entire length and width	for entire length	for proximal three quarters of achene

Table 16. Pacific Northwest variants of *Carex leptalea* that can be treated as subspecies. Note that there is another variety in the eastern U.S., and that the whole species needs careful work. Many people don't recognize these subtaxa at this time.. (*Primocarex*, *Carex* section *Leptocephalae*, Key A)

Trait	<i>C. l. ssp. leptalea</i>	<i>C. l. ssp. pacifica</i>
Range	Widely distributed, including BC to CA	west of the Cascades, AK to NW WA
Culms	thinner	wider
Leaves	narrower	wider
Pistillate scales, color	yellowish green to brownish	brown-margined
Proximate pistillate scales, apex	variable	midvein excurrent as short awn
Perigynia, length	2.5 – 3.5 mm	(3-) 3.4 – 4.7 mm

Table 17. Alpine, *rhizomatous*, narrow-leaved *Primocarex* with a *single androgynous spike* and flat perigynia much larger than the achenes. *Carex* section *Inflatae*. Compare to the cespitose species with narrow leaves (Table 18). (*Primocarex*, *Carex* section *Inflatae*, Key A)

Trait	<i>C. breweri</i>	<i>C. engelmannii</i>	<i>C. subnigricans</i>
Habitat	dry (excessively drained)	dry	moist or mesic
Rhizome thickness	2 – 3 mm	1 mm	1 – 1.5 mm
Culm height	15 – 22 (-30) cm	7 – 15 cm	5 – 20 cm
Culm thickness at base	2.5 – 3 mm	2 – 2.5 mm	2 – 2.5 mm
Leaf width	0.6 – 1.2 mm	0.3 – 0.6 mm	0.4 – 10 mm
Leaf sheath front	uniform or often mottled dark brown	uniformly colorless or pale brown	uniformly colorless or pale brown
Inflorescence length	1.4 – 2.5 cm	0.7 – 1.5 cm	0.7 – 2 cm
Pistillate scale veins	3 – 5	1	1
Pistillate scale midvein area	white	yellowish brown	yellowish brown
Pistillate scale proportionate to perigynium	shorter and narrower than perigynium	about the same size as the perigynium	as wide as the perigynium, but shorter
Pistillate scale apex	acute to acuminate (may be awned)	acute but inrolled and appearing acuminate	acute to obtuse, not inrolled
Perigynium length	5 – 7 mm	3.5 – 5 mm	2.5 – 3.5 mm
Perigynium shape	broadly elliptic	elliptic	elliptic
Perigynium base	rounded	rounded (w/ small stipe)	cuneate
Perigynium veins	3 – 10, short	none	none
Anther length	2 – 3 mm	1.5 – 2 mm	1.5 – 2 mm

Table 18. Densely cespitose *Primocarex* with narrow leaves and *single androgynous spike*. Compare with *Carex* section *Inflatae* (Table 17, which are rhizomatous but can look very similar to these when the shoots arise in clusters from buried rhizomes. (*Primocarex*, Key A)

Trait	<i>C. capitata</i>	<i>C. circinata</i>	<i>C. filifolia</i>	<i>C. micropoda</i> (<i>C. pyrenaica</i>)	<i>C. nardina</i>
Range	Mountains, east side	NW Washington	east of Cascades	N Cascades, Olympics, Wallowas	NW WA, east side mountains in OR
Habitat	moist sites	cliffs	sagebrush areas, prairies, stony areas	seasonally moist sites at high elevation	dry alpine ridges
Elevation	moderate, high	low, moderate	low, moderate	high	high
Leaf width	0.5 – 1 mm	0.5 mm	0.3 – 0.7 mm	0.25 – 1.5 (-2) mm	0.5 mm
Perigynium texture	glabrous	glabrous	pubescent	glabrous	glabrous but serrulate on edges
Stigma number	2	3 (or 2)	3	3	2 or 3
Perigynium shape	ovate to suborbicular	linear-lanceolate	obovate or elliptic	lanceolate to broadly lanceolate	obovate or elliptic
Perigynium length	2 – 4 mm	4.5 – 6 mm	1.9 – 4.8 mm	3 – 4 (-5) mm	3 – 5 mm

Write another one: *Primocarex* from high elevations – see Bruce. *Carex gynocrates*, *C. capitata*, *C. nigricans*, *C. subnigricans*, maybe *C. scabriuscula*, or that could be left out.

Table 19. *Carex* with single spikes and long, narrow perigynia. (*Primocarex*, Key A)

Trait	<i>C. anthoxanthea</i>	<i>C. circinata</i>	<i>C. pauciflora</i>
Habitat	cool seeps, bogs, fens	cliffs, talus	bogs
Habit	rhizomatous but making clumps	cespitose to very short rhizomatous	rhizomatous
Inflorescence sex	staminate, pistillate, or androgynous	androgynous	androgynous
Pistillate scale persistence	persistent	persistent	deciduous
Perigynium position	ascending	ascending	spreading to reflexed
Perigynium length	3 – 4 mm	4.5 – 6 mm	(5-) 5.9 – 7.8 mm

Table 20. Three alpine sedges that were once considered to be parts of *C. atrata*. They have with flattened perigynia much larger than the achenes, gynaeceandrous terminal spikes, and more or less erect, short-peduncled, pistillate, lateral spikes. In *C. heteroneura*, the culm may bend over as the inflorescences mature, so that the spikes hang down although the spikes ascend relative to the culm. (*Carex* section *Racemosae*, Key F)

Trait	<i>C. atosquama</i>	<i>C. heteroneura</i> var. <i>epapillosa</i>	<i>C. heteroneura</i> var. <i>heteroneuroa</i>
Terminal spike	fewer than 20% staminate flowers at base	fewer than 25% staminate flowers at base	33% to 67% staminate flowers at base
Inflorescence	small	small or large	large
Lateral spike, length	0.8 – 1.2 cm	1 – 2 cm	0.8 - 1.6 (-2) cm
Pistillate scale apex	apex obtuse (relatively blunt)	apex acute to acuminate	apex acute to acuminate
Pistillate scale color	dark with midveins same color as bodies	light to dark with midveins same color as bodies, or lighter	dark with midveins lighter in color than the bodies
Perigynium length	2.5 – 3.5 mm	3.5 – 4 mm	2.5 – 3.5 mm
Perigynium color	darkly golden with dark brown tip	brown with light-colored margins	light green or yellowish
Perigynium texture	more papillose	more smooth	more smooth
Perigynium shape	elliptic	elliptic to obovate	(elliptic to) obovate or round

Table 21. *Carex paysonis* and *C. spectabilis*, plants of subalpine to alpine habitats. (*Carex* section *Scitae*, Key F)

Trait	<i>C. paysonis</i>	<i>C. spectabilis</i>
Range	BC, ID, MT, SK, UT, WY	AK, BC, CA, ID, MT, OR, SK, WA, WY, YT
Habit	rhizomatous	more or less caespitose
Lower leaf sheaths with blades?	yes	no
Pistillate scale tips	acute to mucronate	acute to short-awned
Perigynium shape	broadly ovate or obovate to circular	narrowly ovate or broadly elliptic
Perigynium texture	smooth	papillose
Perigynium length	3.5 – 4.0 mm	3.5 – 5.0 mm

Table 22. *Carex comosa* and *C. hystericina*. (*Carex* section *Vesicariae*, Key E)

Trait	<i>C. comosa</i>	<i>C. hystericina</i>
Perigynium length	(4.8-) 6.2 – 8.7 mm	4.5 – 7.3 mm
Perigynium veins	most separated by less than 2 times their width	most separated by 3+ times their width
Beak teeth	1.3 – 2.1 (-2.8) mm	0.3 – 0.9 mm
Beak teeth	outcurved	straight

Table 23. *Carex utriculata* and *C. rostrata*. (*Carex* section *Vesicariae*, Key E)

Trait	<i>C. rostrata</i>	<i>C. utriculata</i>
Range	circumboreal, northern, barely reaching NE WA	widespread in North America
Foliage color	very glaucous	green
Widest leaves, width	1.5 – 4.5 (-7.5) mm	4 – 12 (-15) mm
Leaves	U-shaped, with involute margins	flat to broadly V-shaped
Leaf surfaces	densely papillose (at 10X)	smooth

Table 24. *Carex exsiccata* and *C. vesicaria*. (*Carex* section *Vesicariae*, Key E)

Trait	<i>C. exsiccata</i>	<i>C. vesicaria</i>
Range	mainly west of Cascades	widespread, in and east of Cascades
Longer perigynium, length	7.5 – 10.1 mm	4.8 – 7.5 (-8.2) mm
Perigynium, proportions	3.4 – 5 times as long as wide	2 – 3.5 times as long as wide
Perigynia	not or slightly inflated	inflated
Perigynium apex & beak	contracted to distinct beak	gradually tapering to indistinct beak

Table 25. *Carex atherodes* and *C. lacustris*, large, coarse, wetland sedges. Pistillate scales scabrous awned. Perigynia with 12 – 28 nerves. *Carex lacustris* occurs in northern Idaho and may reach northeast Washington, though it has not been found there (yet). (*Carex* section *Carex*, Key E)

Trait	<i>C. atherodes</i>	<i>C. lacustris</i>
Leaf sheath front	usually pubescent at least near top	glabrous
Leaf width	3 – 10 mm	(5.5-) 8.5 – 21 mm
Leaf dorsal (lower) surface	usually sparsely hairy	glabrous
Perigynium length	(6.5-) 7 – 12 mm	(4.5) 5.2 – 7.8 mm
Perigynium surface	usually sparsely hairy	glabrous
Perigynium beak length	2/1 – 4 mm	0.5 – 1.6 mm
Beak teeth	spreading	straight
Beak teeth length	0.2 – 0.7 (-0.9) mm	(1.2-) 1.5 – 3 mm

Table 26. East side, wetland sedges with hairy foliage: *Carex atherodes* and *C. sheldonii*. These species have more or less pubescent perigynia and leaf sheath fronts with hairs. Their ranges are similar, at edges of marshes, streams, and ditches in eastern Oregon, often in more or less alkaline areas. They may occur together, with *C. atherodes* deeper in the water than *C. sheldonii*. *Carex hirta*, introduced to Portland but apparently not persisting, resembles *C. sheldonii*, but has staminate scales with short-awned apex (vs. obtuse to acuminate for *C. sheldonii*) and with spreading white hairs (vs. glabrous for *C. sheldonii*, or with appressed hairs near the tip only). (*Carex* section *Carex*, Key E)

Trait	<i>C. atherodes</i>	<i>C. sheldonii</i>
Range	east of Cascades	east of Cascades in Oregon
Habitat, water depth	deeper	shallower
Habitat	emergent, often stranded in summer or in drought	wet meadows, streamsides, and ditches, the bases submerged only during high water
Culm height	40 – 125 cm	40 – 80 cm
Leaf width	3 – 10 mm	2.5 – 6 mm
Leaf, lower surface	densely finely papillose, often with spreading hairs too	not papillose; with spreading hairs
Leaf sheath front	pubescent, but often only at tip, sometimes glabrous	pubescent, usually uniformly so, sometimes only at tip
Apex, staminate scales	awned	awnless
Perigynium pubescence	sparse, longer	sparse to dense, short
Perigynium length	(6.5-) 7 – 12 mm	4.8 – 6.5 mm
Perigynium width	1.8 – 3.8 mm	1.4 – 2.4 mm
Beak teeth length	(1.2-) 1.5 – 3 mm	(0.4-) 0.6 – 1.4 mm
Beak teeth position	spreading to outcurved	spreading

Table 27. *Carex lasiocarpa* and *C. pellita*. Sometimes *C. lasiocarpa* and *C. pellita* inhabit the same bog or marsh. If they do, they form separate rings, with *C. lasiocarpa* in deeper or more permanent water. (*Carex* section *Paludosae*, Key C)

Trait	<i>C. lasiocarpa</i>	<i>C. pellita</i>
Range	OR: in & E of Cascades WA: NW, Cascades, E	widespread
Habitat	bogs, extensive marshes	marshes, ditches, streamsides, bogs
Leaves	more or less glaucous	green
Leaf shape in cross section	involute to narrowly triangular-channeled	flat or M-shaped except at base and tip
Leaf midvein	forming inconspicuous keel	forming sharply pointed keel
Leaf tip	prolonged, filiform	not prolonged
Leaf width	0.2 – 2 (-2.2) mm*	(2-) 2.2 – 4.5 (-6) mm wide
Perigynium length	3 – 4.3 mm	2.4 – 5.2 mm
Perigynium width	1.5 – 2.2 mm	1.7 – 2.8 mm

* FNA does not specify this measurement as leaf width and the measurement is slightly different; it reads "...forming inconspicuous keel, 0.7 – 2 (-2.2) mm, glabrous."

Table 28. *Carex* Section *Limosae*. Strongly rhizomatous bog plants with terminal spike staminate (or gynecandrous), lateral spikes pistillate (or gynecandrous or androgynous with few staminate flowers) and dangling on slender peduncles, and young roots with felty yellow hairs. *Carex macrochaeta* differs in having whitish felty root hairs and (in the PNW) growing in loose clumps on wet cliffs. (* = perigynium tapers to beak, so it may appear much longer.) (*Carex* section *Limosae*, Key F)

Trait	<i>C. limosa</i>	<i>C. magellanica ssp. irrigua</i>	<i>C. pluriflora</i>
Status in WA and OR	widespread	rare and local (N WA)	rare and local (N coastal OR, Olympic Peninsula)
Habit	rhizomatous	rhizomatous	rhizomatous
Leaf color	green or glaucous	glaucous	glaucous, densely white-papillate on lower surface
Leaf blade margins	grooved or channeled, margins involute	flat, margins revolute	flat, margins slightly revolute
Leaf width	1 – 2.5 mm	1 – 4 mm	1.5 – 4 mm
Lowest inflorescence bract length	2 – 6 cm	3 – 15 cm	0.5 – 2 cm
Lowest inflorescence bract shape	leaf-like, shorter than inflorescence	leaf-like, as long as or longer than the inflorescence	bristle-like, much shorter than inflorescence
Lateral spike length	6 – 20 mm	6 – 22 mm	12 – 20 mm
Lateral spikes	pistillate or androgynous	pistillate or gynecandrous	pistillate
Terminal spike width	1.5 – 2.5 (-3) mm	1 – 4 mm	2.2 – 3 mm
Pistillate scale color	light to dark brown	pale or dark red brown with pale midrib	black or nearly so
Pistillate scale length	3 – 5.5 mm	2.8 – 7 mm	3.5 – 4.5
Pistillate scale length	as long as or slightly longer than perigynia	longer than perigynia	slightly shorter (or longer?) than perigynia
Pistillate scale width	2 – 3.4 mm wide	1.1 – 2 mm	2.1 – 3.8 mm
Pistillate scale width	wider than perigynia	narrower than perigynia	slightly wider than perigynia, tending to wrap around it
Pistillate scale nerves	usually 3	1	1 (or faintly 3)
Pistillate scale apex	obtuse to subacute, sometimes mucronate	acute to acuminate, often awned	acute, mucronate, or short-awned
Pistillate scale awns	~ 0	0 or to 3 mm	0 or < 1.5 mm
Perigynium color	pale, greenish to straw-colored	greenish to straw-colored	pale or blackish
Perigynium	densely papillose	densely papillose	densely papillose
Perigynium shape	elliptic to ovate	broadly elliptic to ovate	obovate and thick
Perigynium length	2.5 – 4 mm	2.5 – 3.6 mm	3.2 – 4.2 mm
Beak length	0.1 – 0.5 mm	0 – 0.2 mm	0

Table 29. *Carex canescens* and relatives, section *Glareosae*. *Carex lachenalii* occurs on Vancouver Island and is to be looked for in NW WA. *Carex arctiformis* is known only from AK and BC. * = not in OR and WA (yet?). (*Carex* section *Glareosae*, Key I)

Trait	<i>Carex brunnescens</i>	<i>Carex canescens</i>	<i>Carex praeceptorum</i>	<i>C. arctiformis</i> *	<i>C. lachenalii</i> *
Elevation	moderate to high (2000 to 7000 ft and above, not alpine)	low (coastal) to high	high (~ 5900 ft. or above)	low	low
Culm height	15 – 90 cm, erect or arching	(10-) 20 – 60 (-90) cm, erect	10 – 20 (-30) cm, erect	(15-) 20 – 50 cm, erect	10 – 40 cm, erect
Inflorescence color	pale or brown	gray-green, light straw-colored, or brown	brownish	grayish or usually brown	reddish brown
Inflorescence arrangement	very spread out, most spikes not overlapping	spread out, with at least lower spikes barely or not overlapping (can be crowded on late-season shoots)	crowded, with spikes overlapping	crowded, with spikes overlapping	spikes overlapping but not crowded
Pistillate scale color	white-hyaline (or brownish) with green or brown midrib	hyaline (white, green, or tinged brown) except firmer midrib	brown with pale midrib and hyaline margins	greenish white, usually tinged reddish brown	reddish brown with white-hyaline margins
Pistillate scales	subequal to perigynia but not concealing them	subequal to perigynia but not concealing them	subequal to perigynia	as long as or longer than the perigynia, often concealing them	shorter or subequal to the perigynia, not concealing them
Perigynium color	brown (green when young, often dark brown when old)	gray-green, whitish, or light straw color, to brown in some populations	pale brown to brown, the veins usually darker than the rest of the surface	gray green or when mature usually brown	greenish brown or yellowish brown
Perigynium length	2 – 2.5 mm	1.8 – 3 mm	(1.9-) 2.0 – 2.3 (-2.4) mm	2.5 – 3 mm	2 – 3.5 mm
Beak length	0.2 – 0.4 mm	0.3 – 0.5 mm	to 0.5 mm		0.5 – 1 mm
Dorsal suture	inconspicuous, about as long as the beak	inconspicuous, often shorter than beak	darker than surrounding tissue, about as long as beak	inconspicuous, often shorter than the beak	evident, shorter than beak

Table 30. *Carex laeviculmis* and *C. brunnescens*. These species are densely cespitose and have narrow leaves and arching inflorescences. (*Carex* section *Glareosae* and *Deweyanae*, Key 1)

Trait	<i>C. brunnescens</i>	<i>C. laeviculmis</i>
Range		
Pistillate scale color	white (or brownish) with green 3-veined center	margins red-brown or sometimes straw-colored
Pistillate scale: perigynium	subequal to perigynia	shorter than perigynium
Perigynium orientation	ascending	ascending or the tips spreading (i.e., perigynia themselves bend back)
Perigynium color	green to brown, usually dark brown when ripe	green to brown, often reddish brown apically
Perigynium length	2 – 2.5 mm	2.3 – 3.7 mm
Perigynium widest	near middle	near or somewhat below middle
Beak length	0.2 – 0.4 mm	0.4 – 1.1 (-1.3) mm
Beak/perigynium length ratio	10 – 20%	15 – 33 (-38)%

Table 31. *Carex laevis* and the *Stellulatae*. (*Carex* sections *Deweyanae* and *Stellulatae*, Key I).

Trait	<i>C. laevis</i>	<i>C. echinata</i>	<i>C. interior</i>	<i>C. canescens</i>
Perigynium position	appressed-ascending to spreading-ascending, beak sometimes recurved	wide-spreading to lower ones reflexed (star-like)	wide-spreading to lower ones reflexed (starlike)	appressed; spikelets have cone-like appearance
Perigynium length	2.5 – 4 mm	2.4 – 4.8 mm	1.9 – 3.3 mm	1.7 – 2.8 mm
Beak	0.5 – 1.3 mm, narrow-conic, sometimes recurved (gives spreading look)	0.8 – 2 mm, +/- equal to perigynium body, straight	0.5 – 1 mm, ¼ - 1.3 as long as perigynium	0.2 – 0.5, papery, not distinct from perigynium body
Beak serration	finely serrate, ma look entire at 10X	sparsely serrate	densely serrate	+/- entire
Perigynium texture	--	--	--	papillate
Perigynium number	5 – 10 (-15)	5 – 15	5 – 15	15 – 30
Bracts	--	pistillate scales of terminal spike appressed	pistillate scales of terminal spike appressed	

Table 32. *Carex echinata* var. *echinata* and *C. interior*. A constant source of confusion, partly because *C. interior* in SW Oregon sometimes has perigynia that are less stubby than they “should” be. (*Carex* section *Stellulatae*, Key I)

Trait	<i>C. echinata</i> var. <i>echinata</i>	<i>C. interior</i>
Perigynium length	(2.6) 2.9 – 3.6 (-4) mm	1.95 – 3 (-3.3) mm
Perigynium length/ width ratio	(1.7) 1.8 – 3.2 (-3.6)	1.4 – 2 (-2.2)
Beak length	(0.85) 0.95 – 2 mm	0.4 – 0.95 mm
Beak length / body length ratio	(0.4-) 0.45 – 0.86	0.18 – 0.44

Table 33. Upland *Carex* with pubescent perigynia in Josephine and Curry Counties, Oregon. (*Carex* section *Acrocystis* and *Clandestinae*, Key C)

Trait	<i>C. concinnoides</i>	<i>C. brainerdii</i>	<i>C. brevicaulis</i>	<i>C. rossii</i>	<i>C. serpenticola</i>	<i>C. scabriuscula</i>
Flowering time	April to May	May to June	May to summer	May to June	April to May	June to July
Dioecious?	no	no	no	no	sometimes	yes
Basal spikes?	no	yes	yes	yes	no	no
Height	short	short	short	short	short	longer
Leaf color	green	glaucous	green	green	green	green
Leaf undersurface texture	not or sparsely papillose	densely papillose	not or sparsely papillose	not or sparsely papillose	not or sparsely papillose	
Restricted to serpentine?	no	no	no	no	yes	yes
Restricted to coast?	no	no	yes	no	no	no
Perigynium shape	globose	globose	globose	globose	globose	flattened
Perigynium color	green or tan	green or tan	green or tan	green or tan	green or tan	blackish
Pistillate spike length	6 – 13 mm	4 – 8 mm	6 – 8 mm	5 – 9 (-11) mm	6 – 11 mm	
Beak length	.5 mm	0.8 – 1.9 mm	0.6 – 1.6 mm	0.9 – 1.7 mm	0.5 – 1 mm	0.5 mm
Inflorescence bract	reduced, not over 1 cm long	leaf-like, = or slightly > inflorescence	leaf-like or scale-like, = < inflorescence, rarely >	leaf-like, longer than inflorescence	leaf-like, shorter than inflorescence	leaf-like, shorter than inflorescence
Stigma number	4	3	3	3	3	3
Perigynium veins	veinless	conspicuously 12-15 veined, at least to mid body	2 main veins, also finely 12-15 veined near base	2 main veins, otherwise veinless	veinless or 5-veined near base	2 main veins
Pistillate scale color	reddish brown	reddish brown, with or without narrow white margins	reddish brown with narrow white margins	pale to dark reddish brown, with narrow white margins	dark purple to black, with narrow white margin	red brown to purple rarely with white margin

Table 34. Four similar species of *Carex* section *Deweyanae*. Relatively soft, lax sedges of riparian woodland. (*Carex* section *Deweyanae*, Key I)

Trait	<i>C. bolanderi</i>	<i>C. infirminervia</i>	<i>C. leptopoda</i>	<i>C. deweyana s. str.</i>
Ligule, distal leaf length [??]	(2-) 3.5 – 7.1 mm	(2.1-) 2.6 – 6.8 mm	(2.5-) 3.4 – 6.8 (-7.4) mm	0.9 – 2.2 mm
Ligule, distal leaf proportions	2 – 3.9 times as long as wide	xxxxxxxxxx	1.5 – 3 times as long as wide	as long as wide
Leaf width	narrower	narrower	widest	
Culm edge (middle of culm) texture	glabrous, scabrous, or minutely serrulate	papillose (but it wears off)	papillose or glabrous	smooth or papillose
Inflorescence color	gold to brownish, usually	white to gold, mostly	whitish to green, usually	whitish to green
Spike sides	jagged	variable	smoother	somewhat jagged
Spike shape	longer than wide (usually)	longer than wide (usually)	longer than wide (usually)	about as long as wide
Perigynia number in spike	(14-) 18 – 31 (-40)	12 – 22	11 – 23	(5-) 7 – 13 (-16)
Perigynium length	3.4 – 5.2 mm	3.7 – 5.3 mm	3.3 – 3.9 (-4.4) mm	4 – 4.9 (-5.2) mm
Perigynium dorsal nerves	3 – 7, stronger	0 – 4, weak	0 – 3, weak	0 – 5
Perigynium dorsal texture	not delicate	very delicate	very delicate	delicate
Beak length	long (38 – 50% of perigynium length)	long (38 – 50% of perigynium length)	short (28-38% of perigynium length)	short (32 – 40% of perigynium length)
Beak teeth length	long (0.3 – 1 mm)	short (0 – 0.2 (-0.4)) mm	short (0 – 0.3 mm),	short (0 – 0.2 mm)
Beak teeth orientation	often spreading	not spreading	not spreading	not spreading
Pistillate scale size	long (covering achene)	long (covering achene)	short (not covering achene)	xxxxxxxxxx

Table 35. *Carex* section *Divisae*. These plants have 2 stigmas/perigynium, are strongly rhizomatous, and tend to be dioecious or have inconsistent arrangements of male and female flowers in the inflorescence. All species are more or less alkali-tolerant, especially *C. douglasii*. (*Carex* section *Divisae*, Key B, H)

Trait	<i>C. douglasii</i>	<i>C. duriuscula</i>	<i>C. pansa</i>	<i>C. praegracilis</i>	<i>C. simulata</i>
Range	east of Cascades	east of Cascades	coast	east of Cascades & SW OR	east of Cascades & SW OR
Habitat	alkaline flats, roadsides, sagebrush steppe	dry grassland?	coastal sand dunes	grassland, alkaline meadows, moist serpentine meadows	streamsides, wet meadows, boggy places; substrate usually moist all year
Rhizome width	slender; 0.8 – 1.9 mm	slender; 0.6 – 1.8 mm	thicker; 1.8 – 2.6 mm	thicker; 1.8 – 3 mm	thicker; 1.5 – 2.8 mm
Rhizome color	brown	brown	dark, blackish	dark, blackish	brown or dark brown
Origin of shoots	singly or in cluster. terminate rhizomes	singly or in cluster, terminate rhizomes	singly, reg. intervals along rhizome	singly, at regular intervals along rhizome	singly, at regular intervals along rhizome
Inflorescence shape	dense, head-like	dense, head-like	dense, head-like	more elongate	dense, head-like, or longer
Inflorescence length	1.2 – 3.4 (-4.5) cm	(0.7) 1 – 1.4 (2) cm	1.2 – 2.5 cm	0.9 – 4 cm	1 – 3 cm
Inflorescence width, pistillate infl.	=/< 2X as long as wide	=/< 2X as long as wide	< 2X as long as wide	> 2X as long as wide	
Inflorescence width	7 – 27 mm	5 – 7 mm	10 – 20 mm	10 – 15 mm thick --	to - 15 mm
Filament position	exserted		included	exserted	exserted
Anther length	(2.5-) 2.8 – 3.9 mm	1.4 – 3.0 mm	1.7 – 3.1 mm	(1.8-) 2.2 – 3.9 mm	1.8 – 3.1 mm
Anther apiculus (30X)	bristly	smooth to warty, short and broad	bristly hairy	bristly hairy	smooth to warty
Longest anther awns	0.2 – 1 mm not in fina	< 0.1 mm	0.2 – 0.4 mm	0.1 – 0.2 mm, slender	0.1 – 0.2 mm, stout
Pistillate scale length	(4.3-) 4.7 – 7.5 mm	2.4 – 4.1 mm			
Perigynium length	(3-) 3.5 – 4.2 (-4.8) mm	2.4 – 3.9 mm	3.1 – 4.2 mm	(2.2-) 2.6 – 3.7 mm	1.8 – 2.8 mm
Beak length	longer; (0.9-) 1.2 – 1.9 mm	longer; 0.3 – 0.9 mm	longer; 0.7 – 1.5 mm	longer; 0.7 – 1.2 mm	short; 0.25 – 0.5 mm
Perigynium color	brown	dark reddish brown	dark brown to blackish	brown to blackish	dark reddish brown to blackish
Perigynium surface			shiny	dull	shiny
Style position	exserted	included	included or not	usually included	exserted
Stigmas	long, tangled, persistent	not long, not especially persistent	not long, not especially persistent	not long, not especially persistent	not long, not especially persistent

Table 36. *Carex* section *Vulpinae*. Spikes androgynous. Perigynia tapering gradually to the beak, widest at or near the base (but in *C. jonesii* sometimes widest nearer the middle). Perigynium base swollen with pithy tissue. Plants more or less cespitose. (*Carex* section *Vulpinae*, Key H)

Trait	<i>C. illota</i>	<i>C. integra</i>	<i>C. jonesii</i>	<i>C. neurophora</i>	<i>C. nervina</i>
Leaves			clustered at base of plant	not clustered at base	not clustered at base
Proximal leaf sheath			with long blades	with short blades	with short blades
Leaf sheath front	not cross-wrinkled	not cross-wrinkled	not or weakly cross-wrinkled	usually cross-wrinkled	generally not cross-wrinkled
Leaf sheath fronts			splitting with age	not splitting	not splitting
Leaf sheath front color	hyaline	hyaline	short, hyaline	long, veined green	
Leaf sheath front mouth			concave	truncate	truncate, thickened
Culm habit	erect	erect	erect	erect	erect but then bending over
Inflorescence, shape	very condensed	upper spikes crowded, lower often not	very condensed	very condensed	very condensed
Inflorescence, color	dark brown	usually medium to light brown	dark brown	dark brown or green	dark brown or green
Perigynium base	not swollen	not swollen	swollen	swollen	swollen
Perigynium edge	unwinged	with very narrow wing 0.05 – 0.2 mm wide	unwinged	unwinged	unwinged
Perigynium length	2.6 – 3.2 mm	2.1 – 3.6 mm	3.5 mm	3.5 mm	to 4.5 mm
Perigynium dorsal surface veins	0 – 4	0 – 5	7 – 11	9 – 11	15
Perigynium ventral surface veins	0 – 7	0 – 4	5 – 7	5 – 7	7 – 12
Beak margin	serrulate	smooth or nearly so	smooth (or subserrulate)	serrulate	(smooth or) serrulate

Table 37. *Carex densa* and *C. vulpinoidea*. Leaf sheath fronts cross-rugulose and spotted with reddish brown or pale brown.

* *C. vulpinoidea* is planted in habitat restoration projects in the Portland area, and also shows up occasionally elsewhere in wild populations in the Willamette Valley and southwest Oregon. These western Oregon plants are probably introductions. (*Carex* section *Multiflorae*, Key H)

Trait	<i>C. densa</i>	<i>C. vulpinoidea</i>
Range	west of Cascade Range	mainly east of Cascade Range, but extending west in the Columbia Gorge and to Vancouver Island, occasional elsewhere*
Inflorescence shape	Dense, ovoid, shorter	Interrupted, more cylindrical, longer
Inflorescence length	3 – 5 cm	(3-) 7 – 10 cm
Inflorescence width	15 – 25 mm	15 mm
Lowest branches	not distinct	distinctly separate
Pistillate scale awns	awnless, or with short awn up to 0.5 - 2 mm long	with a definite awn mostly 1 – 5 mm long
Perigynium length	2.8 – 4 mm	2.0 – 3.2 mm
Perigynium shape	length usually < 2 > x width	length < or subequal to 2 x width
Perigynium front wall pith	filled with pithy tissue below	filled with pithy tissue in a U around the fruit
Perigynium front wall shape	rounded over fruit	flat over fruit
Perigynium thickness	0.7 – 1.1 mm	0.4 – 0.7 mm
Perigynium color	golden brown or yellowish brown	dull yellowish green to pale brown
Perigynium veins on ventral side	evidently nerved (rarely nerveless)	nerveless (or nearly so)
Perigynium beak margin	serrulate, usually	entire, often
Achene length	1.5 – 1.7 mm	1.2 – 1.4 mm

Table 38. Alpine sedges with a single dense, usually dark head with multiple spikes that are sessile or nearly so (on stalks < 0.5 mm long). See also Table 17 for species with a single dense, dark spike. (*Carex* sections *Ovales*, *Racemosae*, and *Unknown*, Keys H and J).

Trait	<i>C. haydeniana</i>	<i>C. pelocarpa</i> (= <i>C. nova</i>)	<i>C. vernacula</i> (= <i>C. foetida</i>)
Inflorescence	slightly lobed; spikes distinguishable	lobed; spikes distinguishable	unlobed, spikes not distinguishable
Spike sexes	gynecandrous	gynecandrous	androgynous
Stigma number	2	3	2
Achene shape	lenticular	trigonous	lenticular
Achene size	filling half or less of the body of the perigynium	filling proximal ½ or less of perigygnia	filling most of the body of the perigynium
Perigynium color	green to straw colored or brown with dark brown beak tip	glossy dark reddish brown, similar in color to dark pistillate scales	reddish brown to black distally; yellow tan proximally
Perigynium length	4 – 6.5 mm	3.5 – 4.5 mm	3.3 – 4.6 mm
Perigynium stipe	~ 0	~ 0	0.2 – 0.6 mm
Beak length	1.3 – 2 mm	0.5 – 0.8 mm	0.9 – 1.5 mm

Table 39. Varieties of *Carex luzulina*. Look up that Flora of Wyoming where this was described. It sounds like a version of var. *ablata* to me. (*Carex* section *Aulocystis*, Key F)

Trait	<i>C. l. var. ablata</i>	<i>C. l. var. luzulina</i>	<i>C. l. var. atropurpurea</i>
Leaves, width	3 – 9 mm	3 – 9 mm	2 – 4 mm
Inflorescence	spikes more separated, often only upper two overlapping	spikes more clustered	lax?
Pistillate scale, color	dark purplish	reddish-brown	dark purplish
Pistillate scale, pale midstripe	usually < 0.2 mm	usually > 0.2 mm	
Pistillate scale, pale midrib	not extending to tip	extending to tip	
Pistillate scale, tip	usually acute	usually obtuse	acute
Perigynia	ascending	more or less spreading	
Perigynia, color	purple except at margins, or at least with purple on beak	green or straw-colored with reddish or purple spots, mainly on the perigynium body	