

Glossary _____

- Abaxial*—The side away from the axis (dorsal).
- Achene*—A small, dry, hard, one-celled, one-seeded, indehiscent fruit with the seed attached to the pericarp at one point.
- Acicular*—Needle-shaped.
- Acuminate*—Gradually tapered to a narrow tip.
- Acute*—Sharp-pointed, the tip forming an angle of less than 90 degrees.
- Adaxial*—The side toward the axis (ventral).
- Aggregated*—Crowded into a dense cluster, but not united.
- Androgynous*—Having staminate flowers above the pistillate flowers in the same spike.
- Aphyllopodic*—With the lowermost leaves greatly reduced, bladeless or nearly so; blades, when present, nongreen, short, firm, pointed.
- Apiculate*—Ending abruptly in a small point.
- Approximate*—Close together (opposite of remote).
- Aristate*—With a stiff bristle.
- Attenuate*—Slenderly tapering or prolonged; more gradual than acuminate.
- Auricle*—A small projecting lobe or appendage.
- Awn*—A bristle-shaped appendage.
- Beak*—A firm, prolonged, slender tip (the distal portion of the perigynium in *Carex*).
- Biconvex*—Convex on both sides.
- Bidentate*—Having two teeth.
- Bidentulate*—Minutely bidentate.
- Blade*—The broad, usually flat part of a leaf.
- Bract*—A modified leaf subtending a spike or inflorescence.
- Canaliculate*—Longitudinally channeled or grooved.
- Capitate*—Headlike; collected into a head or dense cluster.
- Cartilaginous*—Tough and firm, but somewhat flexible like cartilage.
- Castaneous*—Chestnut colored; dark brown.
- Cauline*—Of or on the stem.
- Cespitose*—Growing in low, dense tufts; clumped or clustered.
- Chartaceous*—Papery in texture.
- Ciliate*—Marginally fringed with hairs.
- Circinate*—Coiled from the tip downward.
- Clavate*—Shaped like a club.
- Collar*—The area on the abaxial surface of the grass leaf at the junction of the blade and sheath.
- Compound*—Having two or more similar parts in one organ.
- Concave*—With the surface bowed inward (see Convex).
- Concavo-convex*—With one surface bowed inward and the other outward.
- Contiguous*—Near, next, adjacent to.
- Convex*—With the surface bowed outward (see Concave).
- Coriaceous*—Thick and leathery in texture.
- Corrugated*—Wrinkled crosswise or horizontally.
- Cross-fibrillose*—With soft tissues of a structure (for example, the leaf sheath) broken down, leaving a central longitudinal fiber and short, curving horizontal fibers connecting it with the edges.
- Crowded*—Close together.

- Culm*—Stem of a grass, sedge, or rush.
- Cuspidate*—Tipped with a cusp, a sharp and firm point.
- Cylindric*—Having the form of a cylinder.
- Deciduous*—Not persistent; falling off.
- Decumbent*—With a prostrate or curved base and an erect or ascending tip.
- Deflexed*—Bent or turned abruptly downward.
- Dioecious*—Bearing staminate and pistillate flowers on different plants.
- Distal*—Toward or at the tip or far end.
- Divaricate*—Widely divergent or spreading from the axis.
- Dorsal*—Pertaining to the back, or outer surface; the side away from the axis.
- Dorsal suture*—A seam visible near the tip of the dorsal (abaxial) side of the perigynium in some sedge species. It represents the line along which the lateral margins of the bract forming the perigynium are fused and is sometimes like a seam with a flap.
- Elliptic*—With the form of a flattened circle, widest in the center and with the ends equal.
- Emarginate*—With a broad, shallow notch at the apex.
- Entire*—With a smooth margin (for example, a perigynium beak without a notch or dentation).
- Erose*—With an irregular margin, as if gnawed or shallowly shredded (see *Lacerate*).
- Excurrent*—Running through and beyond, as a midrib projecting beyond a leaf apex.
- Exserted*—Projecting beyond the containing structure.
- Falcate*—sickle-shaped; curved like a hawk's beak.
- Fasciculate*—In close bundles or clusters.
- Fibrillose*—Bearing delicate fibers or hairs.
- Filamentous*—Threadlike, very slender.
- Flaccid*—Weak and lax.
- Flexuous*—Wavy, flexible, curved in a zigzag fashion.
- Foliaceous*—Leaflike, usually green.
- Fuscous*—Gray brown.
- Fusiform*—Spindle-shaped, thickest near the middle and tapering at both ends.
- Glabrous*—Smooth, without hairs or glands.
- Glaucous*—With a waxy bluish or whitish covering.
- Globose*—Spherical.
- Gynaecandrous*—Having pistillate flowers above staminate flowers in the same spike.
- Head*—A rounded or flat-topped cluster of sessile or subsessile flowers or fruits.
- Hirsute*—With rather coarse or stiff hairs.
- Hirtellous*—Minutely hirsute.
- Hispid*—Ruff with firm, stiff hairs.
- Hispidulous*—Minutely hispid; bristly-hairy.
- Hyaline*—Thin and translucent.
- Indistinguishable*—Not distinctive or separable.
- Indurated*—Hardened.

- Inflorescence*—A flower cluster.
- Inframarginal*—Beneath, within, or less than the margins.
- Internodes*—The portion of a stem or other structure between two other nodes.
- Involute*—With the edges rolled inward toward the upper (ventral) side.
- Lacerate*—With the margins irregular, appearing to have been torn. Margins more deeply shredded than described for erose.
- Lanceolate*—Narrow and tapering to the apex, broadest toward the base, four to six times as long as broad.
- Lenticular*—In the shape of a lens, biconvex.
- Ligule*—The membranous appendage arising from the adaxial surface of the grass leaf at the junction of the sheath and blade.
- Membranaceous*—Thin, soft, and pliable like a membrane.
- Membranous*—See membranaceous.
- Moniliform*—Resembling a string of beads.
- Monoecious*—With staminate and pistillate flowers borne on the same plant.
- Mucronate*—Tipped with a short, sharp, slender point.
- Nerve*—A simple or unbranched vein or slender rib of a leaf, bract, perigynium, or other organ.
- Node*—The point on the stem where leaves and branches originate; the joint of a stem; the point on an axis that bears other structures.
- Ob*—Latin prefix, meaning in a reverse direction.
- Oblanceolate*—Lanceolate but with the narrowest part toward the base.
- Obliquely cleft*—An opening with the sides unequal or slanting.
- Obovate*—Ovate, but attached at the narrow end (two dimensional).
- Obovoid*—A three-dimensional figure, obovate in outline.
- Obsolete*—Rudimentary, scarcely detectable.
- Obtuse*—Blunt to almost rounded at the end.
- Orbicular*—Circular or nearly so in outline.
- Orifice*—An opening.
- Ovary*—The expanded lower portion of the pistil that contains the ovule(s).
- Ovate*—Flat and having the outline of an egg; broadest toward the base, one and one-half times as long as broad (two dimensional).
- Ovoid*—A three-dimensional figure, ovate in outline.
- Ovule*—The structure that becomes a seed after fertilization.
- Papillose*—Bearing minute rounded or fingerlike projections.
- Pedicel*—The stalk of a single flower in an inflorescence.
- Peduncle*—The stalk of an inflorescence or solitary flower.
- Perigynium* (plural = perigynia)—An inflated saclike structure enclosing the ovary (achene) in the genus *Carex*.
- Phyllopodic*—With the lowermost leaf blades well developed.
- Pistil*—The female (seed bearing) structure of a flower, consisting usually of an ovary and one or more styles and stigmas.
- Pistillate flower*—A flower with one or more pistils, but no stamens.
- Plane*—With a flat surface.

- Plano-convex*—Flat on one surface, rounded on the other. In a plano-convex perigynium, the dorsal side is convex or rounded and the ventral side is flat.
- Plicate*—Plaited; folded like a fan.
- Proximal*—Toward the base.
- Puberulent*—Minutely hairy.
- Pubescent*—Covered with hairs, hairy.
- Punctate*—Dotted with depressions or translucent glands.
- Puncticulate*—Minutely punctate, diminutive of punctate.
- Rachilla*—The axis of the spikelet in grasses and some sedges. The presence of a rachilla alongside the achene within the perigynium of some sedges demonstrates that each pistillate flower represents an inflorescence branch reduced to a single flower. It is commonly present in single-spiked sedges.
- Remote*—Removed to, or situated at a distance from (opposite of approximate).
- Retorse*—Bent or turned abruptly backward.
- Revolute*—Rolled back from the margins or apex toward the dorsal side.
- Rhizome*—A usually prostrate stem, rooting at the nodes.
- Rhombic*—Diamond shaped.
- Rib*—A primary or prominent vein of a leaf, bract, or other structure.
- Rugose*—Wrinkled.
- Rugulose*—Diminutive of rugose.
- Scabrous*—Rough to the touch due to the presence of short, stiff hairs or stout projections.
- Scale*—A small, thin, or flat structure.
- Scarious*—Thin, dry, and chaffy in texture, not green.
- Separate*—Distinct from each other.
- Septate*—Divided by transverse partitions.
- Septate-nodulose*—Divided by small transverse knobs or nodules.
- Serrate*—With short, sharp teeth pointing forward.
- Serrulate*—Minutely serrate.
- Sessile*—Without a stalk, attached directly at the base.
- Setaceous*—Bristle-shaped.
- Sheath*—The basal portion of the rush, sedge, or grass leaf that forms a tubular cover surrounding the stem.
- Spiciform*—Spikelike.
- Spike*—An unbranched, elongate inflorescence with sessile or subsessile flowers maturing from the base upwards.
- Squarrose*—Spreading rigidly at right angles or recurved.
- Staminate flower*—A flower with one or more stamens, but no pistils.
- Stigma*—The apical part of the pistil on which the pollen is deposited and where it germinates.
- Stipe*—A stalklike structure.
- Stipitate*—Having a stipe or stalk.
- Stramineous*—Straw-colored.
- Striate*—Marked with fine longitudinal lines or streaks; finely nerved.
- Strigose*—With short, stiff, appressed hairs.
- Striolate*—Minutely striate; diminutive of striate.
- Style*—The slender stalk that connects the stigma to the ovary.

- Sub-*—Latin prefix, meaning under, almost, or not quite.
- Subulate*—Awl-shaped; flat, narrow, and tapering gradually to a sharp apex.
- Suffused*—Tinged, diffused, overspread.
- Sulcate*—Longitudinally grooved or furrowed.
- Sward*—Turf.
- Terete*—Cylindrical; circular in cross section.
- Tomentum*—A covering of tangled or matted, woolly hairs.
- Torose*—Cylindrical with alternate swellings and contractions.
- Torulose*—Diminutive of torose. In sedges, generally used with reference to a perigynium with a swollen base that is more or less adnate to the achene.
- Trigonous*—With three angles.
- Triquetrous*—With three sharp or projecting angles.
- Truncate*—Cut squarely across at the apex or base.
- Tuberculate*—Bearing small swellings or projections (tubercles).
- Tufted*—Growing in tufts or clumps; cespitose.
- Tussock*—A clump or tuft of grass-like plants.
- Ventral*—Pertaining to the inner face of an organ, the side toward or facing the axis, adaxial.
- Ventromarginal*—Toward the ventral side of the margin.
- Villose*—Pubescent with long, soft, often bent or curved, but not matted hairs.
- Wing*—A thin, flat appendage or the border of an organ.

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Appendix: Species Comparisons

Table 1—Spikes gynaeandrous; heads ovoid to elongate; perigynia plano-convex to flattened; margins winged or thin-edged; beaks cylindrical, serrulate or smooth.

Species	Inflorescence shape and color at maturity	Perigynium shape	Perigynium dimensions		Perigynium nerves		Beak dimensions		Habitat			
			Length	Width	Thickness	Dorsal	Ventral	Length		Tip to achene ^a	Achene length	
<i>Carex abrupta</i>	Orbicular, brownish	Broadly lanceolate, flat or plano-convex, broadly rounded at the base, contracted at the beak	3–5.4	1–2.1	0.4–0.5	---	Number --- (5)7–10	3–7	---	mm --- (0)0.5–0.8 (1.6)2–2.3	1.2–1.8	Montane, moist mountain meadows and dry slopes
<i>C. athrostachya</i>	Ovoid, green to stramineous or brown	Narrowly ovate, flat to plano-convex, tapering at the base, gradually tapering at the beak	2.8–4.8	0.9–1.8		7–9	5–7	0.5–0.8	1.5–2	0.8–1.2	Lowlands to moderate elevations, moist to wet sites, ephemeral pools, reservoir draw-down areas	
<i>C. crawfordii</i>	Oblong, pale green to stramineous or tan	Lanceolate-subulate, flat, slightly tapering at the base, gradually tapering at the beak	3–4	0.4–1.2		8–10	0–7 (obscure)	0–0.2	1.7–2.2	0.8–1.1	Lowlands to moderate elevations, moist to wet open or wooded areas	
<i>C. ebenea</i>	Ovoid, brownish gold to greenish black	Narrowly lanceolate or oblanceolate, flat or plano-convex, usually tapering at the base, gradually tapering at the beak	3.5–7.1	1.1–1.7	0.4–0.5	7–9	0–5	0.9–1.5	1.5–2.2	1.3–2	Subalpine to alpine, at least seasonally moist to wet mountain meadows	
<i>C. haydeniana</i>	Triangular-ovoid, blackish green to blackish gold	Broadly ovate, flat, broadly rounded at the base, abruptly tapering at the slender beak	4.5–6.5	1.5–2.6	0.3–0.5	(0)4–9	0–3(8)	0.3–0.7	2.6–3.5	1.3–1.7	Subalpine to alpine, moist to mesic open areas	

(con.)

Table 1—con.

Species	Inflorescence shape and color at maturity	Perigynium shape	Perigynium dimensions		Perigynium nerves		Beak dimensions		Habitat		
			Length	Width	Thickness	Dorsal	Ventral	Length		Tip to achene ^a	
			----- mm	----- mm	-----	--- Number ---	----- mm	-----			
<i>C. mariposana</i>	Oblong, green to reddish brown	Ovate, plano-convex, slightly tapering at the base, gradually tapering to a long beak	3.4–5	1.1–2.2	0.5–0.6	6–11	(0)4–5	0.5–0.6	1.5–2.2	1.5–2	Montane to subalpine, mesic to moist mountain meadows and slopes
<i>C. microptera</i>	Suborbicular, greenish black to brown	Lanceolate-ovate, flat, round-tapering at the base, gradually tapering at the beak	2.9–5	1.1–2.4	0.3–0.5	(0)3–8 (10)	0–8	0.2–0.6 (0.9)	1.6–2.7 (3.5)	1–1.6	Montane to subalpine, moderately wet to moderately dry meadows and slopes
<i>C. pachystachya</i>	Suborbicular or oblong, golden brown to brown	Broadly ovate, plano-convex, broadly rounded at the base, abruptly tapering at the short beak	2.8–5	1.1–2.3	0.5–0.7	(0)2–9	0 to obscure	0.4–0.7	1.5–2 (2.9)	1.2–1.9	Coastal to alpine, wet to moist or moderately dry sites on open slopes or in wooded areas
<i>C. subfusca</i>	Oblong or ovoid, brown to stramineous	Broadly or narrowly ovate, plano-convex, slightly tapering at the rounded base, abruptly contracted at the beak	1.4–4.3	0.9–1.9	0.4–0.5	(0)2–11	0–6	0–0.7	(1.1)1.3–2	1–1.6	Mid-elevations, seasonally moist or wet mountain meadows

^aSee figure 10.

Table 2—Spikes gynaeandrous, broadly oblong, sessile to short-pedunculate, forming capitate to oblong heads; perigynia orbicular to oblong, usually flattened; nerves marginal, stigmas 3; styles deciduous.

Species	Pistillate scales	Perigynium shape	Perigynium dimensions	Perigynium color and texture	Distribution
<i>Carex albonigra</i>	Often concealing the perigynium; apex usually obtuse; margins white-hyaline	Elliptic to ovate, slightly flattened, tapered toward the base and apex	2.5–3.5 mm long, 1.3–2 mm wide	Reddish black, minutely papillate-roughened	Frequent, high elevations
<i>C. atrosquama</i>	Shorter than the perigynia; tip obtuse to acute	Narrowly elliptic-obovoid, somewhat plano-convex, tapered at the base and apex	4–4.5 mm long, 1.5–1.8 mm wide	Olive green to yellowish brown, granular-roughened, punctulate	Infrequent and local, high elevations
<i>C. helleri</i>	Longer and usually narrower than the perigynium; tip attenuate to acute or short-awned	Ovate or orbicular, flattened, rounded to slightly tapered at the base, rounded at the apex	2.5–3.8 mm long, 1.5–2.8 mm wide	Darker center and paler margins, membranous	California, Nevada (Cascade, Sweetwater, Sierra Nevada, and White Mountains), high elevations
<i>C. heteroneura</i>	Tip acute to acuminate; margins not obviously hyaline	Broadly ovate, strongly flattened, rounded at the base and apex	3–4 mm long, 1.5–3 mm wide	Stramineous or suffused with purple, membranous	Common, moderate to high elevations

Table 3—Spikes unisexual, usually cylindrical; terminal spike staminate and linear; perigynia biconvex; stigmas 2.

Species	Plant habit	Bracts	Perigynium	Beak
<i>Carex aquatilis</i>	Not clumping, phyllopodic	Lowest bract usually longer than the inflorescence	2–3.6 mm long, 1.2–2.2 mm wide; nerveless (except the margins), membranous, commonly speckled with reddish brown	0.1–0.3 mm long, entire
<i>C. lenticularis</i>	Clumping, phyllopodic	Lowest bract longer than the inflorescence	1.8–3.5 mm long, 1–1.8 mm wide; nerved, membranous, stipitate, light green, early and readily deciduous	Slender, 0.1–0.3 mm long, entire, dark-tipped
<i>C. nebrascensis</i>	Not clumping, phyllopodic	Lowest bract usually longer than the inflorescence	2.7–4.1 mm long, 1.5–2.5 mm wide; nerved, usually leathery, stramineous to brown or reddish brown	Abruptly contracted, 0.2–1 mm long, bidentate, subciliate between the teeth
<i>C. prionophylla</i>	Clumping, aphyllopodic	Lowest bract shorter than the inflorescence	2.3–3.4 mm long, 1.2–1.7 mm wide; nerveless, membranous, coppery tan	0.2–0.3 mm long, entire, reddish black tipped
<i>C. scopulorum</i> ^a	Not clumping, phyllopodic, sod-forming	Lowest bract generally shorter than the inflorescence	1.8–3.5 mm long, 1.5–2.3 mm wide, nerveless, membranous, greenish to coppery tan	0.1–0.4 mm long, slightly bent, entire

^a*C. scopulorum*: spikes generally shorter than those of the other species, approximate and squarrose in outline; perigynium usually orbicular; and achenes occasionally trigonous rather than lenticular.

Table 4—Spike solitary; inflorescence black to reddish brown.

Species	Plant habit	Spikes	Perigynium	Beak
<i>Carex breweri</i> var. <i>paddoensis</i>	Culms arising singly to loosely cespitose	Dark brown, stout, ellipsoid or ovoid; perigynia ascending	Broadly ovate or elliptic; body dark brown, usually paler at the base	Abruptly contracted, short, obliquely cleft
<i>C. nigricans</i>	Loosely cespitose	Generally black, bottlebrush shaped; perigynia widely spreading	Lanceolate to narrowly ovate, black, especially distally	Obliquely cleft, not hyaline-tipped
<i>C. pyrenaica</i>	Densely cespitose	Generally brown with a ragged outline; perigynia spreading- ascending	Lanceolate to elliptic-ovate, slightly blackish brown distally	Prominently hyaline-tipped
<i>C. subnigricans</i>	Loosely to densely cespitose, sod- forming	Generally reddish brown with a smooth outline; perigynia appressed-ascending	Lanceolate-ovate, slightly inflated, dark brown or blackish brown	Obliquely cleft and slightly hyaline- tipped

Table 5—Spikes gynaecandrous, oblong, small, sessile, forming an oblong or elongate head; perigynia ovoid to ovoid-oblong with raised margins, plano-convex; stigmas 2.

Species	Perigynium dimensions	Perigynium color and texture	Beak
<i>Carex brunnescens</i>	1.7–2.7 mm long, 1–1.5 mm wide	Green to pale brown at maturity, thin-walled distally (often ruptured), spongy-thickened below	Abruptly tapered, slender, 0.5– 0.7 mm long; flap of dorsal suture appears hyaline
<i>C. canescens</i>	1.8–3 mm long, 0.9–1.75 mm wide	Dull grayish brown or silvery at maturity, rough to papillate, but not thin-walled distally, spongy-thickened below	Ill-defined, gradually tapered, 0.2–0.5 mm long; dorsal suture obsolete on the beak, paler than the surrounding tissue
<i>C. praeceptorum</i>	1.5–2.5 mm long, 1–1.2 mm wide	Golden-tinged, slightly roughened (papillate), spongy thickened below	Abruptly contracted, 0.25–0.5 mm long; dorsal suture overlapping or folded, darker than the tissue

Table 6—Spikes usually sessile, small, few-flowered; terminal spike staminate; perigynia pubescent, ovoid-rounded, beakless or short-beaked; stigmas 3.

Species	Bract (lowest)	Pistillate spikes	Perigynium	Beak	Habitat
<i>Carex concinnoides</i>	Shorter than the inflorescence	Bicolored with reddish purple and green, generally oblong, sessile, closely 5–10 flowered, approximate	Copiously loose-hairy; base broadly sub-stipitate; marginal nerves not keeled; stigmas usually 3 or 4	Abruptly contracted, obliquely cleft, 0.1–0.5 mm long, reddish purple	Dry woods, low to moderate elevations
<i>C. geophila</i>	Shorter than to slightly surpassing the inflorescence	Tan to brown, sessile, 2–5 flowered, generally approximate	Puberulent; base narrowly stipitate; marginal nerves keeled; stigmas 3	Shallowly bidentate, 0.4–1.2 mm long	Pinyon-juniper woodlands, moderate elevations
<i>C. rossii</i>	Leaflike, generally much surpassing the inflorescence	Green to purplish brown, sessile to pedunculate, 2–5 flowered, approximate to widely separate	Finely puberulent; base narrowly stipitate; marginal nerves prominent, but not keeled; stigmas 3	Conic, obliquely cleft, deeply bidentate, 1.1–1.7 mm long	Conifer forests, sea level to near timberline

Table 7—Spikes solitary, usually brown to tan.

Species	Spike	Perigynium	Beak	Elevation
<i>Carex elynoides</i>	Linear with a smooth outline, tan to reddish brown; perigynia erect-ascending or appressed	Obpyramidal, glabrous, thin-membranous	Slender, 0.4–1 mm long, conspicuously hyaline-tipped	Alpine
<i>C. exserta</i>	Narrowly conic or oblong; truncate at the base at maturity, tan to reddish brown; perigynia spreading-ascending	Obovoid, minutely hairy	Beakless, minutely bidentate	Mid to high
<i>C. filifolia</i>	Narrowly conic with a ragged outline, tan to golden brown; perigynia erect-ascending	Obovoid to obpyramidal, minutely hairy	Abruptly contracted, short, 0.1–0.8 mm long, obscurely hyaline-tipped	Mid
<i>C. nardina</i>	Oblong to ovoid, stramineous to reddish or golden brown; perigynia erect-appressed	Biconvex or plano-convex, upper margins serrulate, lower margins glabrous	0.8 mm long, serrulate, bidentulate, obscurely hyaline-tipped	High

Table 8—Bract sheathing: spikes usually sessile, small, few-flowered; terminal spike staminate; perigynia pubescent, ovoid-roundish with flat margins, beakless or short-beaked.

Species	Involucral bract			Spikes			
	Blade	Sheath-shape	Mouth	Lowest	Upper		
<i>Carex fissuricola</i>	Longer than the inflorescence	Linear or tapering to the wide mouth	Generally Y- or V-shaped, with a purple margin	Often long-exserted, more or less nodding	Often clustered		
<i>C. luzulaifolia</i>	Almost none or very short	Conspicuously tapering to the wide mouth	Shallowly U-shaped, with a wide purple margin	Very long exserted, nodding	Distant		
<i>C. luzulina</i> var. <i>ablata</i>	Shorter than the inflorescence	Linear	Shallowly U-shaped or truncate	Short-exserted, ascending	Sometimes clustered		
<i>C. luzulina</i> var. <i>luzulina</i>	Shorter than the inflorescence	Linear	Shallowly U-shaped or truncate	Short-exserted, ascending	Generally densely clustered		
Pistillate scales							
Size and color		Pubescence	Color	Length	Width	Perigynium	
				----- mm	-----	Margins	Pubescence
<i>Carex fissuricola</i>	Brown to purple	Ciliate on the margin and midrib	Brown to purple	3.2–5.5	0.9–2	Less than one-half the achene width	Sparsely pubescent when young
<i>C. luzulaifolia</i>	Dark purple with white margins	Glabrous (sometimes with a ciliate awn)	Dark purple	4–5.3	1.7–2.5	Generally less than three-fourths the achene width	Glabrous
<i>C. luzulina</i> var. <i>ablata</i>	Greater than 0.2 mm wide, purple with a pale midrib	Generally ciliate near the tip	Generally mostly purple	3–4.5	0.9–1.5	Generally none or greater than one-half the achene width	Ciliate near and on the beak
<i>C. luzulina</i> var. <i>luzulina</i>	Less than 0.2 mm wide, red brown with a pale midrib	Ciliate near the tip	Generally green to reddish brown, occasionally purple	3–4.5	0.9–1.6	Generally none or greater than one-half the achene width	Ciliate near and on the beak, occasionally hirsute on the body

Table 9—Spikes short, sessile, indistinguishable; perigynia plano-convex, lanceolate-ovate with a dorsal suture; margins raised or sharp-edged.

Species	Habit	Leaves and leaf sheaths	Perigynium	Beak
<i>Carex illota</i>	Slightly aphyllopodic, clumped, 1–3(4) dm tall	Clustered near the base; ventral sheath yellowish brown at the shallowly concave mouth	Narrowly ovate to lanceolate, 2.5–3.2 mm long, 0.9–1.3 mm wide, greenish fuscous to brown	Tapering to a smooth, slender, entire beak
<i>C. jonesii</i>	Slightly aphyllopodic, arising singly from rhizomes or forming small clumps 1.5–6 dm tall	Closely clustered near the base; ventral leaf sheaths plane, truncate to concave at the mouth	Ovate-lanceolate to lance-triangular, 2.5–4.8 mm long, 0.9–1.4 mm wide	Ill-defined, generally smooth and terete
<i>C. nervina</i>	Slightly phyllopodic, caespitose, often forming tussocks 4–8 dm tall	Not clustered at the base; leaf sheaths ribbed ventrally, U-shaped at the mouth with a thickened rim	Broadly lance-triangular to ovate; the base distended by spongy tissue, 2.8–4.5 mm long, 1–1.8 mm wide	Well-defined, abruptly contracted, slightly serrulate
<i>C. neurophora</i>	Strongly aphyllopodic, caespitose, often forming tussocks 2–8 dm tall	Not clustered near the base; leaf sheaths conspicuously cross-rugose ventrally, occasionally somewhat cartilaginous at the convex mouth	Lanceolate to lance-triangular, 2.9–4 mm long, 0.8–1.5 mm wide	Ill-defined, generally more sharp-edged and slightly more serrulate than in <i>C. jonesii</i>

Table 10—Spikes gynaeandrous; heads ovoid to elongate; perigynia plano-convex to concavo-convex to flattened; margins winged; achene winged.

Species	Habit	Perigynium	Beak	Achene
<i>Carex petasata</i>	Not densely cespitose, to 9 dm tall	5.8–8 mm long, 1.5–2.25 mm wide, widest below the middle, slightly tapered to the truncate base, membranous, finely nerved, brownish green to stramineous	Upper part smooth and terete, obliquely cleft, 3.2–4.6 mm long from beak tip to achene	Oblong, glossy, 2.2–3 mm long, located at the base of the perigynium cavity
<i>C. phaeocephala</i>	Densely cespitose, to 3 dm tall	3.5–6 mm long, usually widest at the middle, tapering to the blunt base, subcoriaceous, coarsely nerved, tan to brownish black with green margins	Upper part smooth and terete, obliquely cleft, 1.8–2.6 mm long from beak tip to achene	Oblong, not glossy, 1.5–2.3 mm long, often located toward the middle of the perigynium cavity
<i>C. xerantica</i>	Not densely cespitose, to 7 dm tall	3.7–7 mm long, widest below the middle, abruptly tapered to a narrow base, lightly nerved to nearly nerveless	Flattened, strongly margined and serrulate up to the tip, bidentate, 2.2–3.6 mm long from beak tip to achene	Quadrate-lenticular, not glossy, 1.7–2.6 mm long, located toward the base of the perigynium cavity

Table 11—Perigynia smooth, inflated, bidentate; achene trigonous, flexuous, and continuous with the bony style.

Species	Habit	Spike	Perigynium	Beak
<i>Carex retrorsa</i>	Densely cespitose	Approximate; perigynia spreading to deflexed, not crowded	Lance-ovoid, membranaceous	Slender-conic, 2–3.5 mm long
<i>C. utriculata</i> (<i>C. rostrata</i>)	Singly to loosely clumped, forms swards	Remote; perigynia spreading and crowded	Broadly ellipsoid, membranaceous, but firm	More or less abruptly contracted, 1–2 mm long
<i>C. vesicaria</i>	Not cespitose, forms swards	Remote; perigynia ascending, not crowded	Lanceolate to lance-ovoid, membranaceous, punctulate	Gradually tapering, slender, conic, 1.8–2.5 mm long

Hurd, Emerenciana G.; Shaw, Nancy L.; Mastrogiuseppe, Joy; Smithman, Lynda C.; Goodrich, Sherel. 1998. Field guide to Intermountain sedges. Gen. Tech. Rep. RMRS-GTR-10. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 282 p.

Descriptions of morphological characteristics, habitat, and geographic distributions are provided for 114 sedges (*Carex* spp.) of the Intermountain area. A dichotomous key, color photographs, line drawings, and discussions highlighting differences among similar species aid identification. An illustrated morphology, glossary, and index of common names simplify use. The guide is not inclusive; comprehensive local floras should be checked to confirm identifications.

Keywords: *Carex*, *Cyperaceae*, grasslike species, plant taxonomy, riparian, wetlands

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