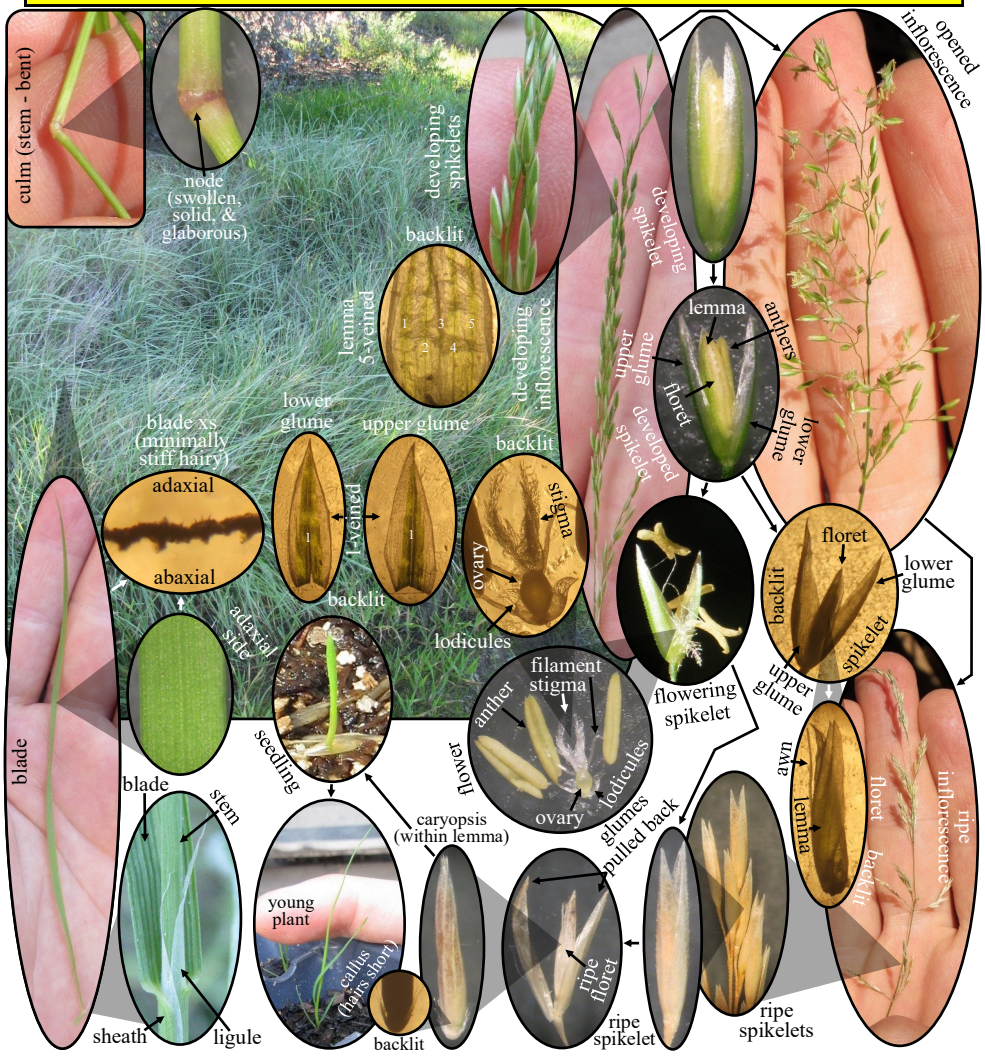
Leafy Bent Grass (*Agrostis pallens*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: June - August

Agrostis pallens is a perennial herbaceous plant that can spread via rhizomes. It is found in only one location on the peninsula. The blade of the leaf is flat to sometimes inrolled. The sheath of the of leaf is open and usually smooth. The ligule is membranous. The culms (stems) are usually erect and can be generally bent at the nodes. The nodes are swollen, solid, and glabrous. The inflorescence is a panicle that is open to contracted with numerous spikelets. Spikelets are 1-flowered. The glumes are equal to subequal and 1-veined (sometimes 3-veined). The lemma of the spikelet is 5-veined and can be awned (awned from the near middle) or not. The awn is short (0.5-2.5 mm) and is generally straight. The palea of the spikelet is obsolete or very much reduced. The fruit is a caryopsis contained within the lemma.



Leafy Bent Grass (*Agrostis pallens*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: June - August

out of dormancy on hillside

dormant on hillside

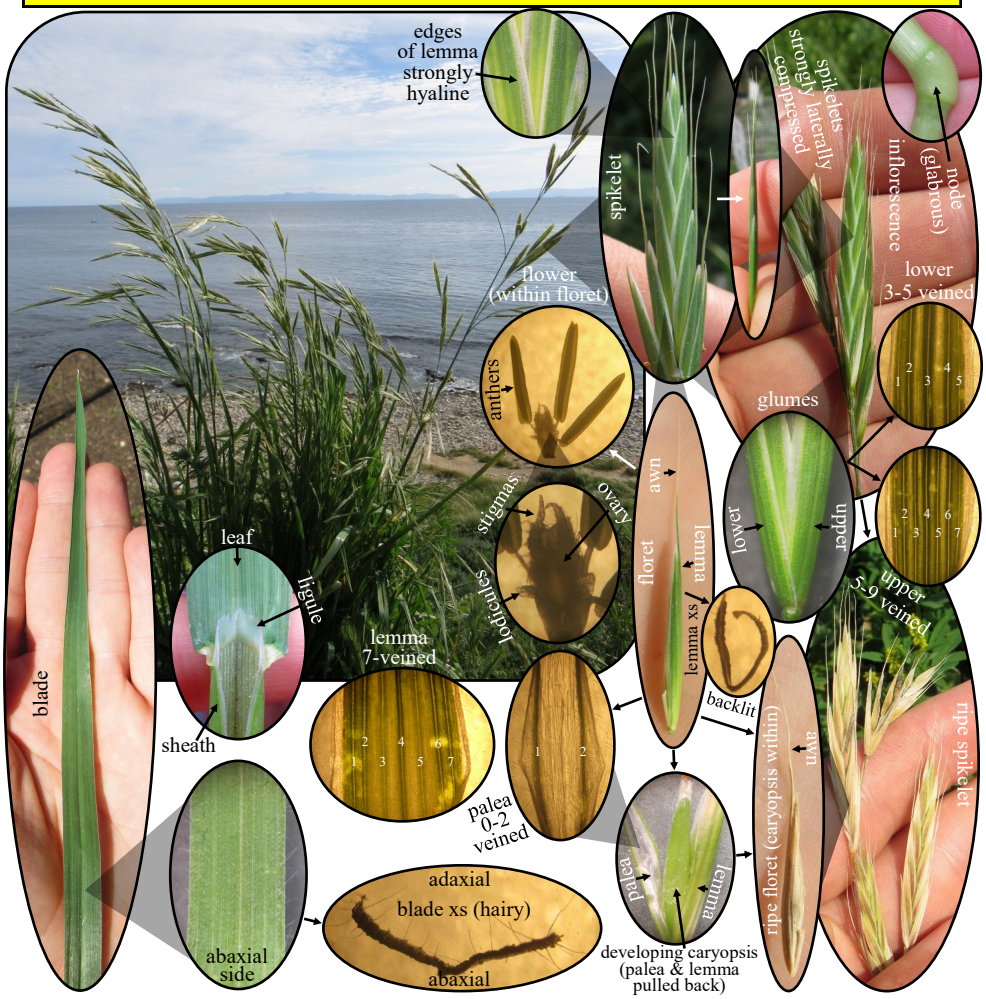
Arizona Brome (*Bromus arizonicus*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: March - June

Bromus arizonicus is an annual herbaceous plant. It is found along the coastal bluffs of the peninsula. The blade is generally hairy and flat. The ligule is membranous. The sheath of the leaf is closed to near the top, generally hairy, and auricles are absent. The culms (stems) are usually erect and have nodes that are swollen, solid, and glabrous. The inflorescence is a panicle that is open to somewhat contracted with numerous spikelets. The lower branches of the inflorescence spread at maturity. The spikelets are strongly laterally compressed and 4-8 flowered. The glumes are somewhat equal. The lower glume is 3-5 veined. The upper glume is 5-9 veined. The lemma is 7 -veined, laterally compressed, strongly keeled distally, and generally hairy (distally or throughout). The edges of the lemma are also strongly hyaline. The awn of the lemma is 6-13 mm and is straight to sometimes slightly bent. The palea is less than the lemma, transparent, and 0-2 veined. The fruit is a caryopsis contained with floret.



Southern Chinook Brome (*Bromus psuedolaevipes*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: April - June

Bromus psuedolaevipes is a perennial herbaceous plant. It is found in two spots on the peninsula. The blade of the leaf can be hairy throughout or hairs confined to just the margins of the blade. The sheath of the leaf is closed to near the top, generally hairy, and with auricles present. The ligule of the leaf is membranous and fringed at the tip. The culms (stems) are usually erect to spreading and have nodes that are swollen, solid, and hairy. The inflorescence is a panicle with the branches ascending to spreading or reflexed. The inflorescence is also usually nodding. The spikelets of the inflorescence are not strongly flattened, usually hairy, and are 4-10 flowered. The glumes are hairy and the margins are often tinged with a reddish-brown color. The lower glumes are 3-veined with the uppers glumes 5-veined (sometimes being 3-veined). The lemma is rounded on the back, hairy throughout, has a reddish-brown color to the margins, short lobes at the tip, and with a straight awn that is 3-5 mm. The palea is less than the lemma and is transparent. The fruit is a caryopsis contained within the lemma and palea. This plant is an endemic to California.

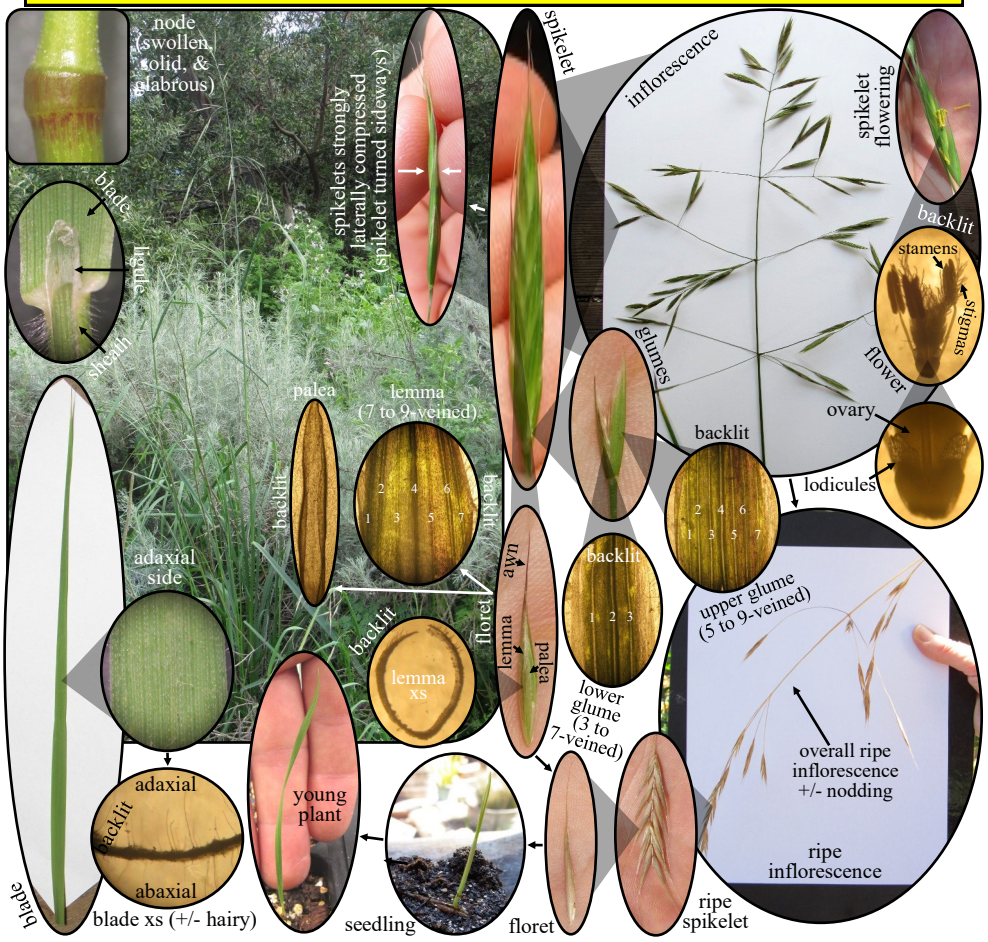
California Brome (*Bromus sitchensis* var. *carinatus*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: April - August

Bromus sitchensis var. *carinatus* is a perennial herbaceous plant. It is found throughout the peninsula. The culms (stems) are tall and erect. The blade of the leaf is long, flat to sometimes inrolled, and usually hairy adaxially and abaxially. The sheath of the leaf is closed to near the top, usually hairy, and with auricles usually not present. The throat of the sheath is hairy. The ligule of the leaf is membranous. The inflorescence is a panicle that is open to erect. There are 1-4 branches per node on the inflorescence and the branches can be spreading, ascending, or reflexed. There can be 1-4 spikelets per branch of the inflorescence. The spikelets are strongly laterally compressed and there are 4-11 florets per spikelet. The spikelets are not crowded or overlapping. The glumes are usually hairy with the lower glume 3-7 veined and the upper glume 5-9 veined. The lemmas are laterally compressed, strongly keeled distally, hairy, and 7-9 veined (veins are usually not raised or riblike). The awn of the lemma can be 4-17 mm long and sometimes slightly bent. The palea is less than the lemma and is transparent. The fruit is a caryopsis contained within the lemma and palea.



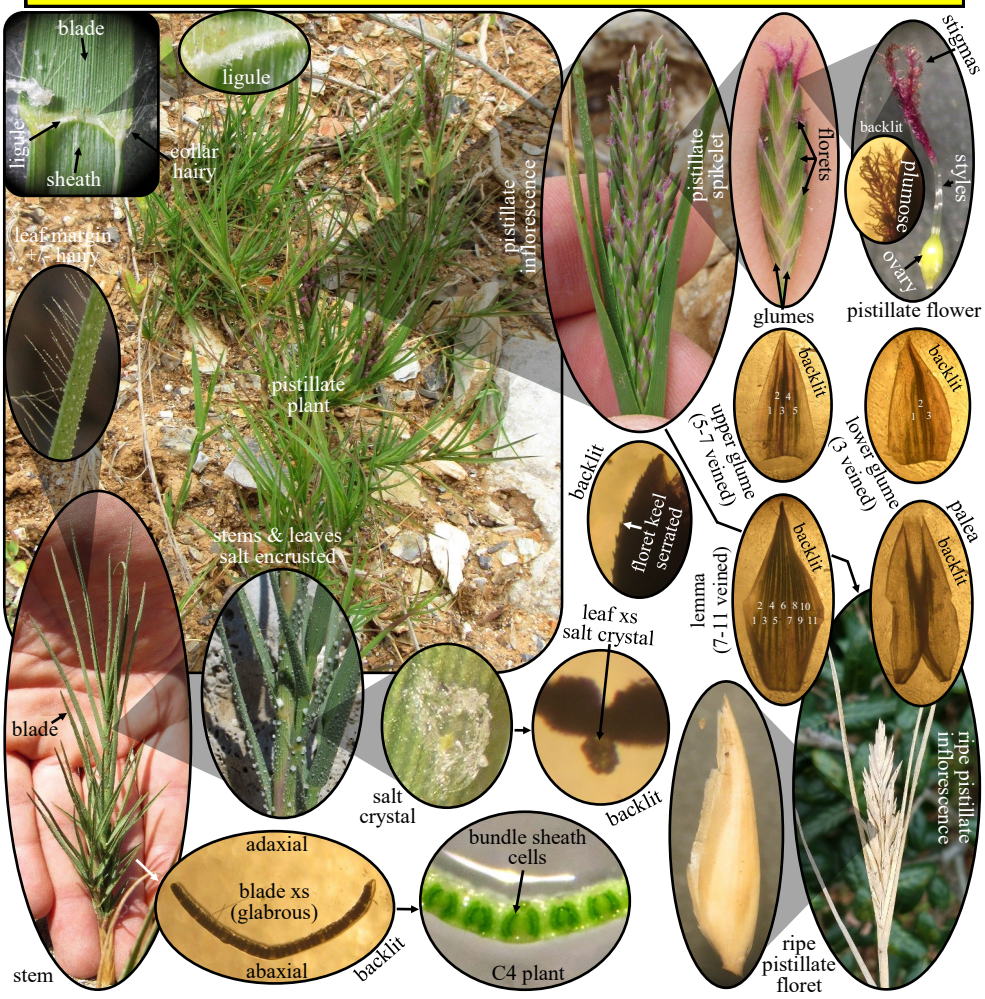
Saltgrass (*Distichlis spicata*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: April - September

Distichlis spicata is a perennial grasslike herbaceous plant that spreads via rhizomes. The rhizomes are stout scaly and stramineous in color. It is found in a few spots along the coastal bluffs of the peninsula. The plant is dioecious. The culms (stems) are usually erect but can sometimes be decumbent or prostrate and are glabrous. The leaves are distichous, usually flat, and stiff. The margins of the leaves can be hairy. The sheath of the leaf overlaps the culm very strongly. The ligule of the leaf is very short, membranous and serrated at the tip. The pistillate inflorescence is a panicle, usually congested, and made up of 2-20 spikelets. Each spikelet of the pistillate inflorescence can have 5-20 florets. The keel of the pistillate floret is serrated and is bowed out. The staminate inflorescence looks very similar to the pistillate inflorescence. The lemma of the staminate inflorescence is thinner in texture and the palea is not bowed out. Stamens are also present in the staminate flowers. The fruit is a caryopsis.



Saltgrass (*Distichlis spicata*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: April - September

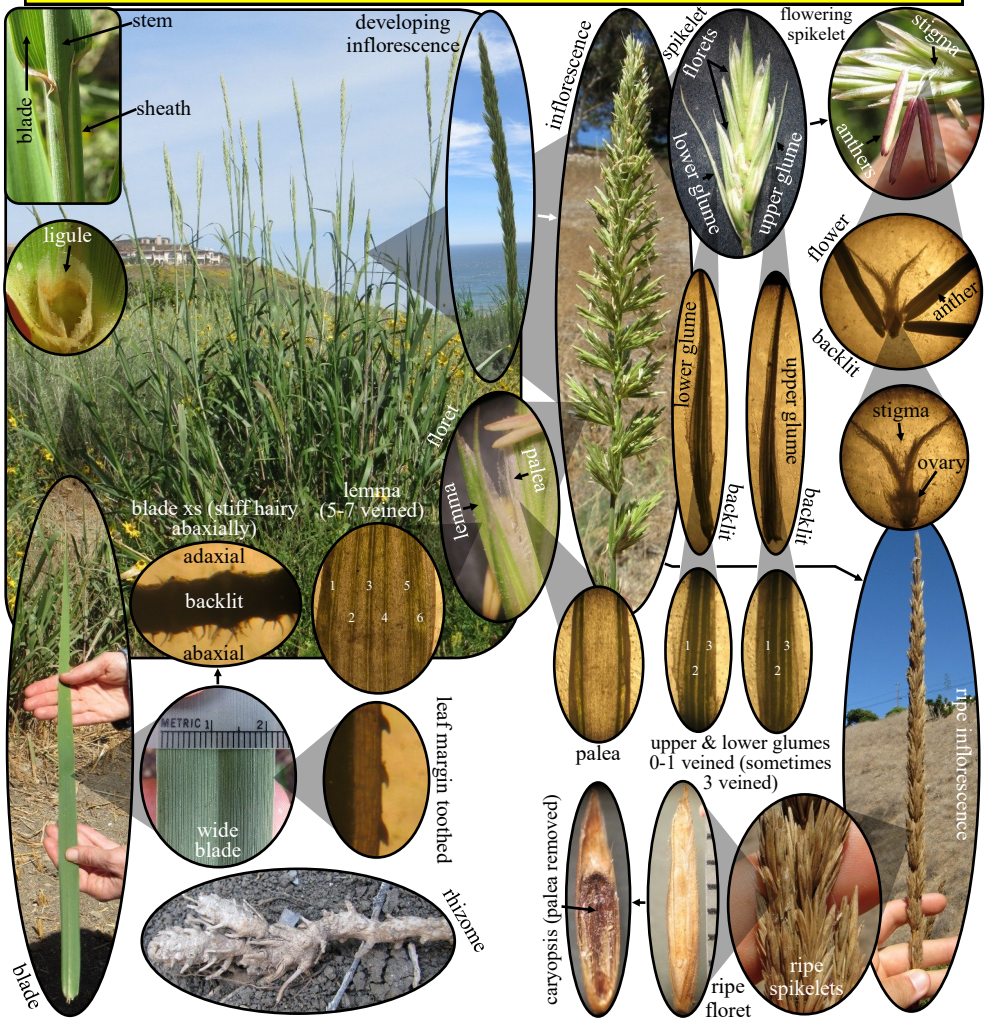
Giant Wild Rye (*Elymus condensatus*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: June - August

Elymus condensatus is a large perennial plant. It is rhizomatous (sometimes not) with rhizomes short and thick. It is found throughout the peninsula. The culms (stems) are erect, tall, and can be dense. The blade is wide and smooth on the abaxial side and rough on the adaxial side. Blade margins are minutely toothed. Auricles are usually absent and the ligule is membranous. The sheath of the leaf is open and glabrous. The inflorescence is a panicle, congested, and made up of 5-35 spikelets. The spikelets are usually pedicellate but can also be sessile and have 3-7 florets. The glumes of the spikelet are narrow, glabrous, keeled, and 0 to 1-veined (sometimes 3-veined). The tips of the glumes taper to a point forming an awn. The lemmas are usually glabrous, have acute tips, can be awned, and 5-7 veined. The palea is transparent. The fruit is a caryopsis contained within the lemma and palea.



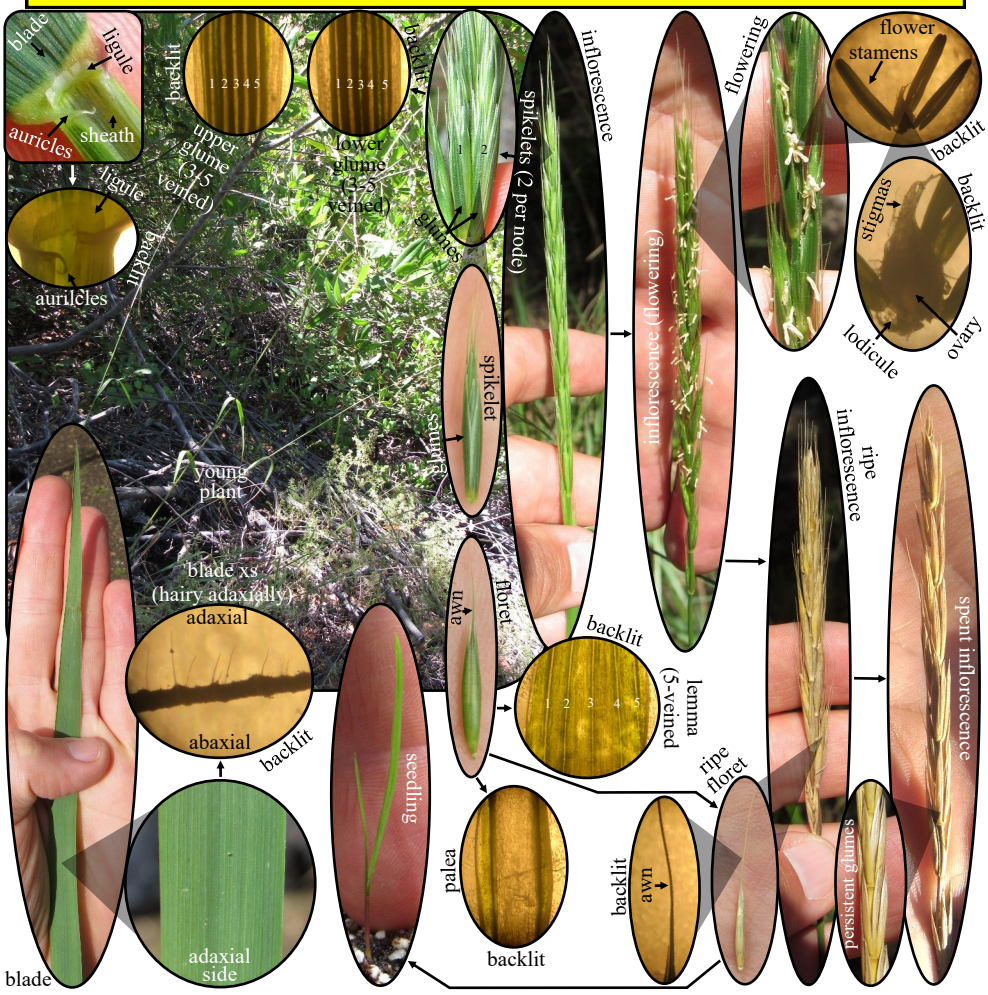
Blue Wildrye (*Elymus glaucus* subsp. *glaucus*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: May - July

Elymus glaucus subsp. *glaucus* is a perennial herbaceous plant. It can be weakly rhizomatous. The overall plant is often glaucous. It has only been found in a few locations on the peninsula. The culms (stems) are erect to somewhat decumbent. The blade is wide and can be glabrous or hairy on the adaxial side and glabrous on the abaxial side. Auricles are present. The sheath of the leaf is open. The ligule is membranous, truncate, and can be entire to somewhat erose. The inflorescence is a spike that is erect with usually 2 spikelets per node (sometimes 1 or 3 per node). Spikelets are usually appressed to the inflorescence and have 2-4 florets (sometimes only 1 or 6 florets). The glumes of the spikelet are subequal, 3-5 veined (sometimes only 1 or 7-veined), and short-awned. The lemma is 5-veined and has an awn that can be short to long and is usually straight. The palea is transparent. The fruit is a caryopsis contained within the persistent lemma and palea.



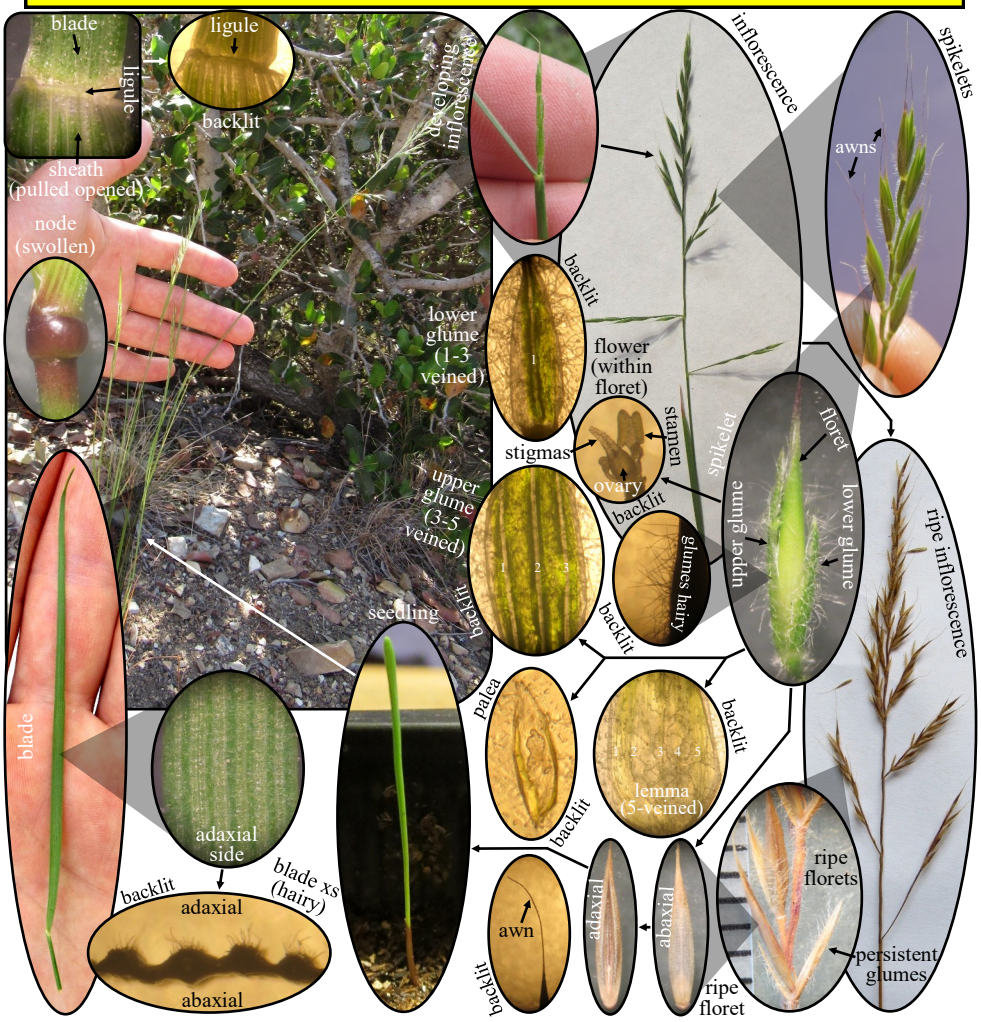
Small Fescue (*Festuca microstachys*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: April - June

Festuca microstachys is an annual herbaceous plant. It has been found in only one location on the peninsula. The culms (stems) are erect and usually glabrous. The sheath of the leaf is open and generally hairy. The ligule of the leaf is short, membranous and usually truncate. The blade of the leaf is usually rolled but can also be flat and is hairy. The inflorescence is a panicle that is erect when young and spreading to reflexed at maturity. The inflorescence is made up of numerous spikelets. The spikelets can have 1-6 florets and most florets are cleistogamous. The glumes of the spikelet are generally hairy and the lower glume (1-3 veined) is smaller than the upper glume (3-5 veined). The lemma of the floret is hairy, 5-veined, and has an awn present. The palea of the floret is generally longer than the lemma and has an apex that is minimally bifid. The fruit is a caryopsis contained within the lemma and palea.



Mexican Sprangletop (*Leptochloa fusca* subsp. *uninervia*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: March - December

Leptochloa fusca subsp. *uninervia* is an annual herbaceous plant. It has been found in only one location on the peninsula. The culms (stems) are erect. The sheath of the leaf is open and generally glabrous. The ligule of the leaf is membranous, gradually narrowing to a tip, and at maturity becoming irregularly lobed. The blade of the leaf is hairy (short stiff hairs) and often has a somewhat raised whitish midrib. The inflorescence is a panicle with branches ascending to spreading and usually completely exserted out from the leaf sheath. The inflorescence is made up of numerous spikelets and each spikelet can have 6-20 florets. The glumes are unequal and 1-veined. The lemma is 3-veined (sometimes 5-veined) and can be light brown, dark green, or a gray color. The lemma tip is usually truncate to obtuse or mucronate. The palea of the floret is subequal to the lemma and is usually hyaline. The fruit is a caryopsis contained within the lemma and palea.

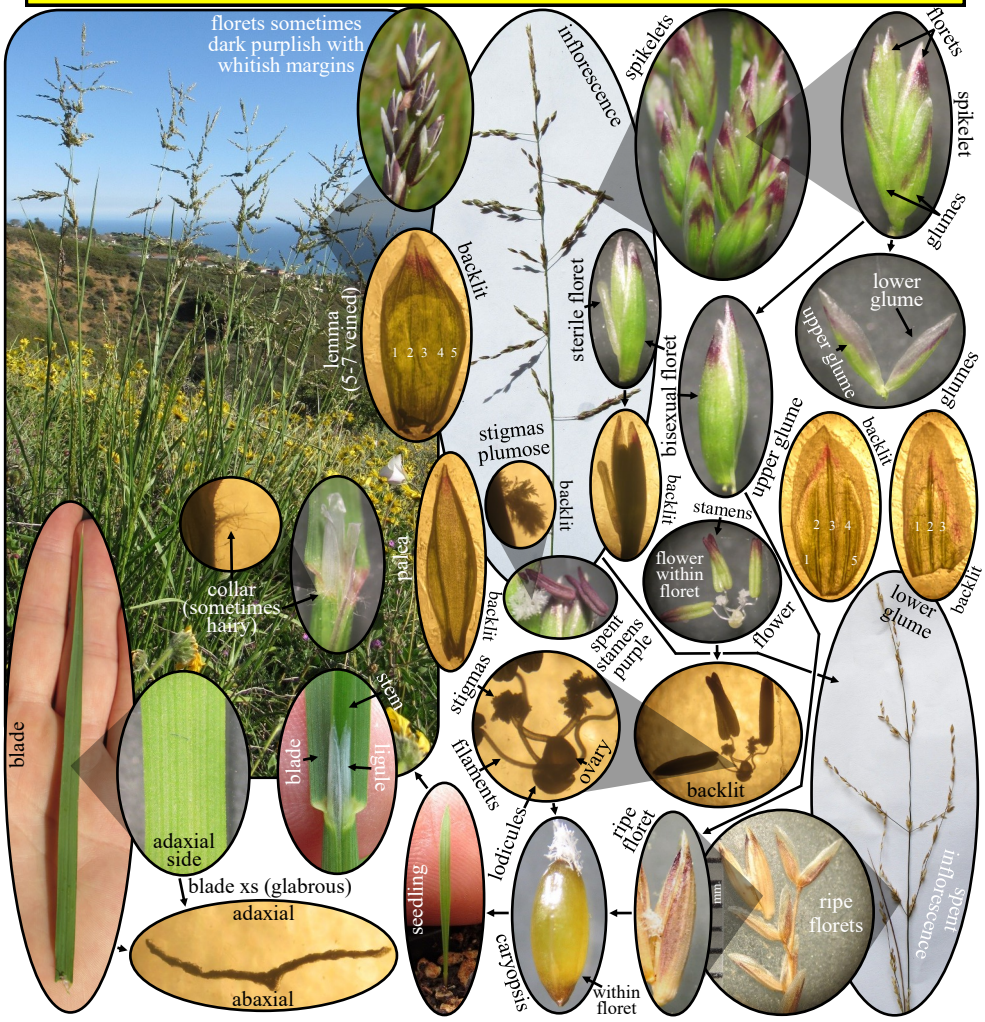
California Melic (*Melica imperfecta*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: April - May

Melica imperfecta is a perennial herbaceous plant. It is found throughout the peninsula. The culms (stems) are generally erect and the overall plant is cespitose. The sheath of the leaf is closed to near the top. The ligule of the leaf is membranous with the tip obtuse or truncate and erose to lacerate. The blade of the leaf is glabrous to somewhat hairy. The inflorescence is a panicle that has branches that can be appressed to spreading. Each branch of the inflorescence can have 3-30 spikelets on it. The spikelets disarticulate above the glumes and each spikelet contains 1 or 2 bisexual florets. Reduced sterile florets are also present in the spikelet and do not resemble the bisexual florets. The lower glume is 3-5 veined. The upper glume is 1-5 veined. The lemma is 5-7 veined, usually glabrous, and unawned. The palea is transparent and close to the length of the lemma. The fruit is a caryopsis.



California Melic (*Melica imperfecta*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: April - May

inflorescence sometimes appressed

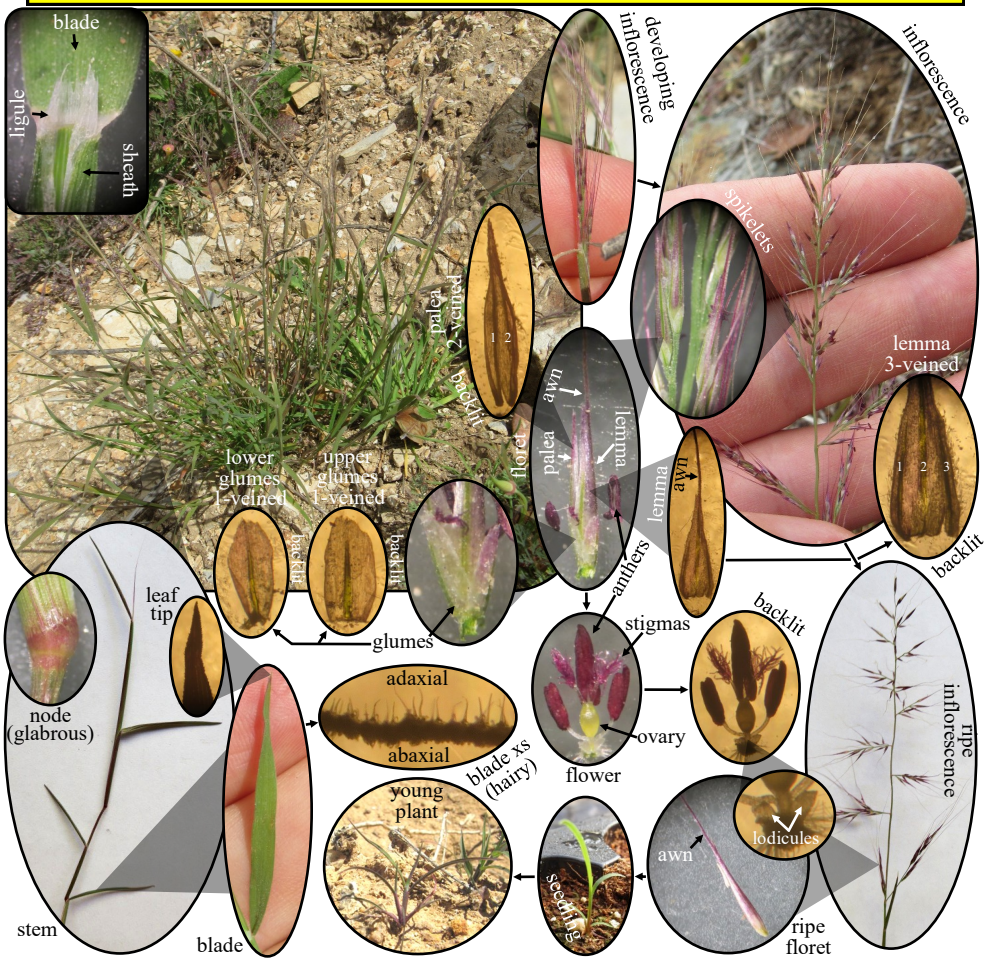
Little Seed Muhly (*Muhlenbergia microsperma*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: March - May

Muhlenbergia microsperma is an annual (sometimes appearing as a short-lived perennial) herbaceous plant. It is found in a few spots on the peninsula, mostly along the coastal bluffs. The culms (stems) are erect towards the top and bent towards the base. The sheath of the leaf is open. The ligule of the leaf is membranous, truncate to obtuse, tip erose to lacerate, and bottom decurrent to sheath. The blade is flat to sometimes involute, it is minutely hairy abaxially, and hairy adaxially. The inflorescence is a panicle with branches ascending to spreading, and the overall inflorescence is often purplish. The spikelets have only one floret. Cleistogamous florets are also present usually within the lower branch axils of the inflorescence. The floret disarticulates above the glumes. The glumes are smaller than the floret and are 1-veined. The lemma is narrowly lanceolate, 3-veined, and the tip has a long usually straight awn. The palea is narrowly lanceolate, less than the lemma, and 2-veined. Anthers are purplish. The fruit is a caryopsis that is reddish-brown.



Little Seed Muhly (*Muhlenbergia microsperma*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: March - May

following good rain, plants can be quite abundant

overall plants can have a reddish-purple color

overall plant

greenish-red plant

reddish-purple plant

One Sided Blue Grass (*Poa secunda* subsp. *secunda*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: March - August

Poa secunda subsp. *secunda* is a perennial herbaceous plant. It is found in only a few locations on the peninsula. The culms (stems) are slender and erect. The sheath of the leaf is mostly open and is closed for about the last quarter of its length. The ligule of the leaf is membranous and truncate to acuminate. The blade of the leaf is somewhat bluish green, usually flat, thin, soft, generally glabrous (can sometimes be minutely hairy along the veins), and have apices that are narrowly prow-shaped. The blade withers by flowering time. The inflorescence is a panicle with branches erect to spreading. The inflorescence can be contracted at maturity, or it can be widely spreading (spreading is less common). The spikelets are narrowly lanceolate, cylindric, and are made up of 3-10 florets. The glumes are broadly lanceolate, somewhat equal, and the glumes are 3-veined. The lemma is awnless, generally with 5 veins, weakly keeled, and hairy. The palea is keeled and hairy. The fruit is a caryopsis.

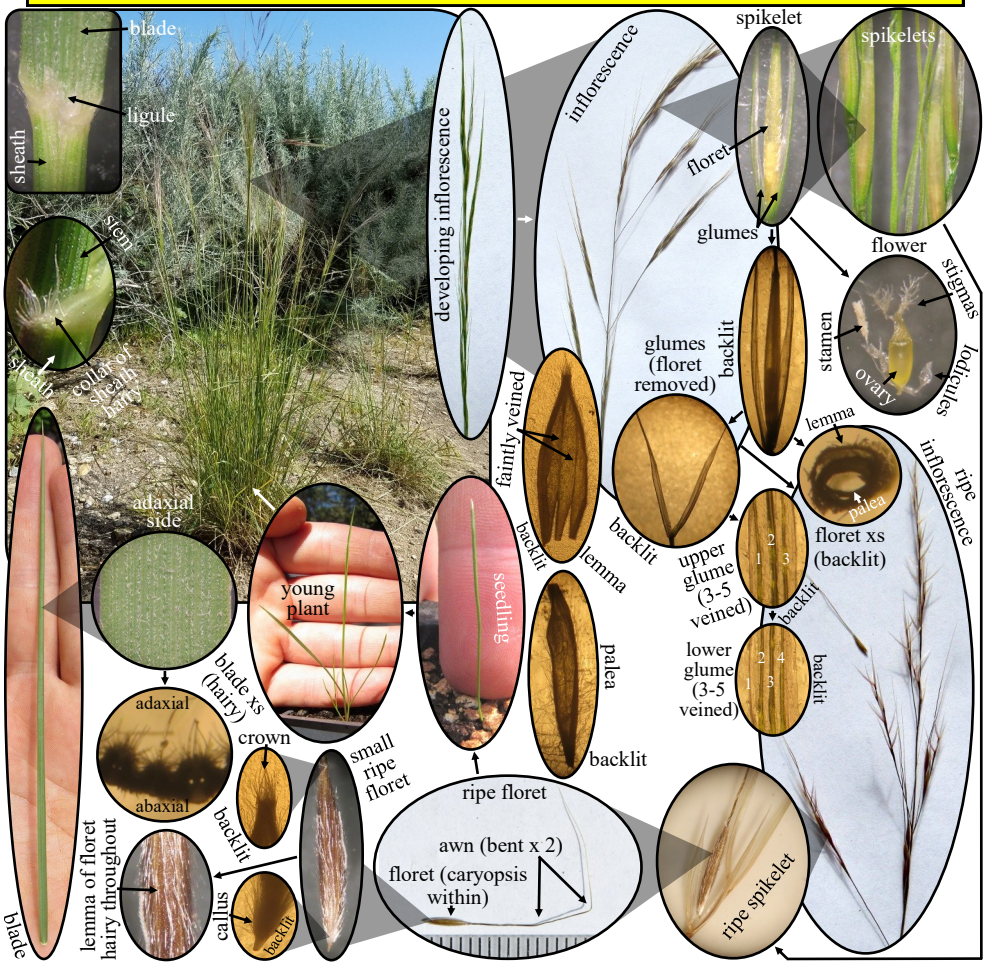
Foothill Needle Grass (*Stipa lepida*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: March - June

Stipa lepida is a perennial herbaceous plant. It is found throughout the peninsula. The culms (stems) are slender and erect. The sheaths of the leaves are open and are somewhat hairy. The collar of the leaf is hairy. The blade of the leaf is flat or can have margins that are somewhat inrolled. The blade is also only hairy on the adaxial surface. The ligule is membranous, short, and truncate to rounded. The inflorescence is a panicle with branches ascending to spreading. Each branch can have 1-6 spikelets. There is 1 floret per spikelet and the florets are terete. The florets are 4-7 mm long. The glumes (5.5-15 mm long) are longer than the floret, 3-5 veined, almost equal in length, and are narrowly lanceolate with tips acuminate. The lemma tightly hugs around the palea and caryopsis. The lemma is faintly 3-7 veined. The awn of the lemma is 12-55 mm long and bent at maturity (usually 2 times). The lemma body is generally uniformly hairy in age. The lemma crown is distinct from the lemma and is hairy. The palea is shorter than the lemma and has no veins. The fruit is a caryopsis.



Foothill Needle Grass (*Stipa lepida*)

Order: *Poales*

Family: Poaceae (Grass Family)

Flowers: March - June

dormant patch of *S. lepida*

dormant
S. lepida

not dormant
S. lepida

Nodding Needle Grass (*Stipa cernua*)

Order: Poales

Family: Poaceae (Grass Family)

Flowers: February - July

Stipa cernua is a perennial herbaceous plant. It is found in one location on the peninsula. The culms (stems) are tall and numerous. There are numerous basal leaves with sheaths that are open and usually glabrous. The blade of the leaf is flat or can have margins that are inrolled. The ligule is membranous, short, and truncate to rounded. The inflorescence is a panicle with the branches ascending to spreading. There is 1 floret per spikelet and the florets are terete. The glumes are 3-5 veined and the lower glume is slightly larger than the upper glume. The glumes are also longer than the floret and have tips that are acuminate. The lemma tightly hugs around the palea and caryopsis. The lemma is faintly 3-7 veined. The lemma in age is hairy at the base and on the nerves with no hairs present between nerves. The awn is usually bent 2 times and is 6 to 11 cm. The fruit is a caryopsis.

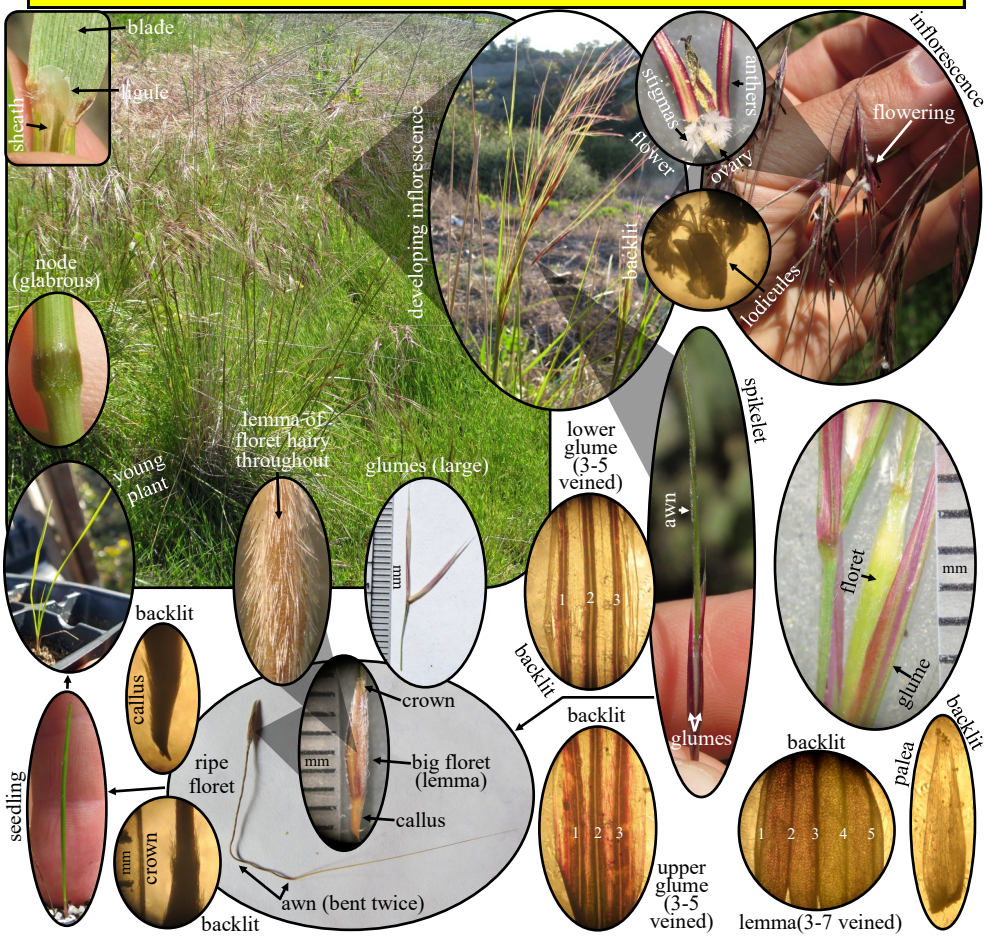
Purple Needle Grass (*Stipa pulchra*)

Order: Poales

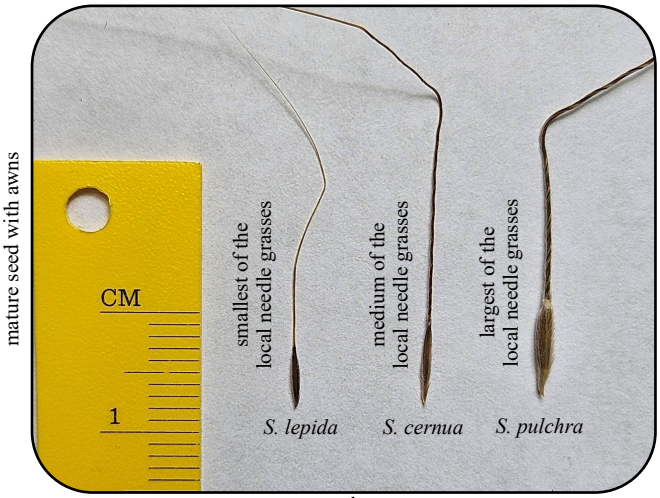
Family: Poaceae (Grass Family)

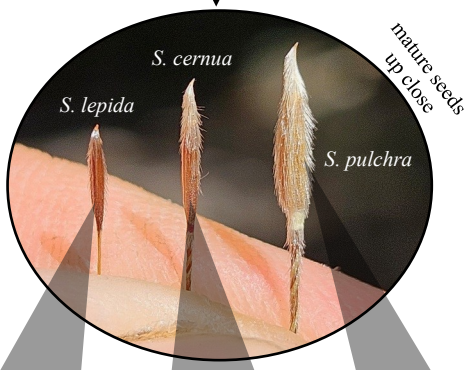
Flowers: March - June

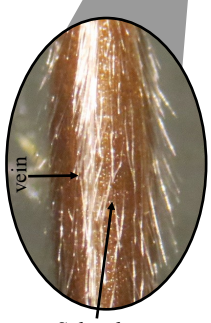
Stipa pulchra is a perennial herbaceous plant. It is found in only a few locations on the peninsula. The culms (stems) are thick and generally erect. The sheaths of the leaves are open and somewhat hairy. The collar of the leaf is hairy. The blade of the leaf is flat or can have margins that are somewhat inrolled. The blade is also only hairy on the adaxial surface. The ligule is membranous, short, and truncate to round-ed. The inflorescence is a panicle with branches ascending to spreading. Each branch can have 2-6 spikelets. There is 1 floret per spikelet and the florets are terete. The florets are long (7.5-11.5 mm). The glumes are long (12-20 mm), usually longer than the floret, 3-5 veined, almost equal in length, and are narrowly lanceolate with tips acuminate. The lemma tightly hugs around the palea and caryopsis. The lemma is faintly 3-7 veined. The awn of the lemma is strongly bent 2 times at maturity and is 38-100 mm long. The lemma is uniformly hairy in age. The lemma crown is distinct from the lemma and is hairy. The palea is shorter than the lemma and has no veins. The fruit is a caryopsis. This plant is the largest of the local needle grasses.



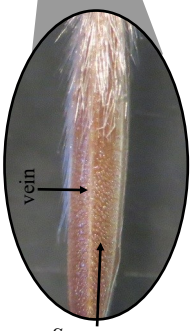
comparison of *S. lepida*, *S. cernua*, & *S. pulchra*



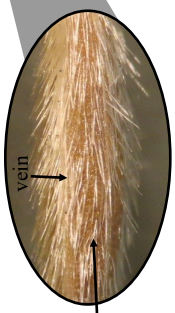




S. lepida
lemma hairy between veins (veins also hairy) in mature seeds



S. cernua
lemma usually not hairy between veins in distal portion of mature seeds



S. pulchra
lemma is usually hairy throughout but can be sometimes be glabrousish in mature seeds