

Stipa miliacea (L.) Hoover var. *miliacea*, SMILLO GRASS. Perennial herb, dormant after summer drought, fibrous-rooted, several–many-stemmed at base, cespitose, branched only belowground at base, with ascending to spreading shoots, in range 55–220 cm tall; shoots formed to the outside of the parent shoot, with only cauline leaves, essentially glabrous. **Stems (culms):** cylindric, to 4 mm diameter, tough, green, internodes (32–)45–155 mm long, smooth; internodes solid or sometimes upper internodes hollow. **Leaves:** alternate distichous, simple with sheath, sometimes bladeless or short-bladed on leaves at ground level; sheath open, commonly < internode (at midshoot 1/2–2/3 internode length), 20–180 mm long, the longest for flag leaf, conspicuously many-ridged, narrowly membranous on margins, glabrous or sometimes inconspicuously puberulent below collar, without lobes (auricles) at top, aging straw-colored, stiff-papery (\pm chartaceous) and conspicuously flaring from stem; ligule membranous, truncate (basal leaf) to rounded (acute), 0.5–1.8 mm long (to 4 mm long on flag leaf), sometimes jagged on margin and also longer ligules often splitting to base, glabrous or sometimes inconspicuously puberulent on hidden surface; blade linear and long-tapered (15–40)100–300 \times (2–3.5)4–12 mm, the widest ca. 1/3 from white collar at base, flat, minutely toothed on margins from base to tip, parallel-veined, dull, glabrous. **Inflorescence:** spikelets, in terminal, open, wispy panicles, panicle lax, ovoid, in range 170–350+ mm long, with widely spaced, alternate distichous nodes having diverging branches, lower nodes with 5 or 7 branches decreasing upward to 1 or 2 branches or branchlets per node; ultimate branchlets typically bearing 2 spikelets (long-stalked and short-stalked) each with 1 floret, bracteate, essentially glabrous, initially short-awned; stalk supporting panicle 100–240 mm long; axes of branches spreading, wiry, minutely ridged, minutely scabrous along ridges, primary branches ascending, 65–100 mm long, swollen at base (pulvinuslike) pressing against each other, often twisted or crooked, thin, flexible, bearing 2–8 secondary branchlets; stalk of spikelet 0.5–3 mm long. **Spikelet:** somewhat compressed side-to-side, breaking above glumes and between florets; **glumes** 2, subequal, spreading 30–45°, acuminate-ovate, 2.8–3.5 mm long, lower glume > upper glume, \pm rounded on back, 3-veined with midvein slightly raised, on lower glume veins not converging at tip, on upper glume with faint lateral veins sometimes arching toward and fusing with midvein above midpoint, minutely scabrous approaching tip, scarious often with purplish red streaks in fruit; **lemma** awned, oval, \pm 1.6 mm long + awn, membranous aging light brown, entire, with margins fused at base < 0.1 mm, 2-toothed at tip with semicircular notch having a subterminal awn, 3-veined with conspicuous midvein and faint lateral veins fusing with midvein near tip, the awn somewhat curved or wavy, 2.9–4 mm long, white aging purple or purple with light tan at base and tip; **palea** ovate, same length as lemma, rounded on back (not 2-keeled), membranous, 2-veined. **Flower:** bisexual; **perianth (lodicules)** 3, lanceolate or 2 narrowly ovate + 1 lanceolate, 0.4–0.6 mm long, translucent, swollen at base, thin and acute at tip; **stamens** 3, free, exposed when lemma and palea spread; filaments threadlike and fragile, 1.5–2 mm long, colorless; anthers dorsifixed, dithecal, narrowly triangular, 1–1.2 mm long, light yellow, arrow-shaped at base, with 2–5 colorless hairs at tip of each sac, longitudinally dehiscent; pollen light yellow; **pistil** 1; ovary superior, obovoid slightly compressed front-to-back, 0.5–0.6 \times 0.2–0.35 mm, light green to yellowish, glabrous, 1 chambered with 1 ovule; styles 2, widely spaced on top of ovary, arching sideways and exerted between lemma and palea, 0.5–0.7 mm long, with numerous stigmatic branches, the branches decreasing in length base to tip.

Fruit: achene (caryopsis), dispersed with tightly adherent lemma and palea; fruit body 1.4–2 × 0.7–1 mm, tannish; lemma awn to 4 mm long or absent. Early June–late July.

Naturalized. Tall perennial grass, widespread throughout the range in open situations, such as in southern oak woodland, along trails through chaparral, and often colonizing wet road cuts and along streams, but also weedy along roadsides in urbanized areas. *Stipa miliacea*, formerly known as a species of *Oryzopsis* or *Piptatherum*, is a summer-flowering grass. Smilo grass is easy to spot with its ascending wispy panicles, but especially easily recognized during summer when the sheath, mostly shorter than the internode, conspicuously flares from the stem. This is one of the few grasses in California with three lodicules; the swollen bases of the lodicules force the lemma and palea to spread widely, thereby fully exposing the parts of the flower.

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