

Festuca arundinacea Schreib., TALL FESCUE. Perennial herb, rhizomatous (highly condensed), fibrous-rooted, several–many-stemmed at base, densely cespitose with shoots crowded along rhizome, unbranched above, erect to ascending, 30–100+ cm tall; shoots with basal leaves and cauline leaves, essentially glabrous. **Stems (culms):** cylindrical, 2.6–4.5 diameter, internodes 30–240 mm long, glabrous; internodes hollow. **Leaves:** alternate distichous, simple with sheath; sheath closed only 3 mm at base, 60–270 mm long, short on basal leaves to the longest on flag leaf, ridged, green but pale green on ridges, thin-membranous on margins with exposed margin narrower and generally overlapping most of length, with lobes (auricles) at top, the auricles clasping or descending, = a convex protrusion or clawlike, ciliate; ligule membranous, truncate and sometimes oblique, 0.4–1 mm long, entire or jagged to sometimes ciliate on margin; collar undifferentiated or stiff (\pm cartilaginous), glabrous; blade linear, 90–280 \times 2.5–8 mm (blade of flag leaf generally shorter and narrower than on other leaves), becoming inrolled, minutely toothed on margins, parallel-veined, glabrous, upper surface dark green, lower surface light green. **Inflorescence:** spikelets, in terminal panicles, panicle initially open with spreading lateral branches, 115–300 \times 12–140 mm, later contracted with ascending to appressed branches, spikelets erect, with 2–5 fertile florets + 1 diminutive, sterile terminal floret, bracteate, glabrous, short-awned; peduncle finely ridged, 190–550 mm long, glabrous; rachis straight, with 4–10 nodes and commonly 2 unequal lateral branches per node, rachis and axes of lateral branches mostly triangular in \times -section (nearly circular on lower rachis), minutely scabrous along edges; lateral branches to 110 mm long decreasing upward, at node typically with shorter branch 1/3–2/3 long branch, the shorter branch bearing spikelets or fertile branchlets nearly to base, the long branch unbranched and without spikelets at base for $> 2/3$ length of shorter branch, axes of branches sometimes flexuous and conforming to shape of appressed spikelets; stalk of spikelet 0.3–5.5 mm long. **Spikelet:** ellipsoid slightly compressed side-to-side, 7.2–15 mm long, 1.4–2.5 mm wide but spreading at anthesis, glabrous, breaking above glumes and between florets; **glumes** 2, unequal, lanceolate, lower glume 4.5–5.5 \times 0.8–1.1 mm and 1-veined, upper glume 5.5–6.2 \times 0.8–1.3 mm and 3-veined, \pm keeled (at least lower glume), colorless on margins and at tip, glabrous, not scabrous along veins; rachilla internodes 1–1.3 mm long, scabrous with upward-pointing teeth; **lemma** awned, lanceolate to elliptic, 5–7 \times 0.8–1.6 mm, \pm convex on back, green at base to membranous on margins, purplish red between green and membranous tip, faintly 5(–9)-veined, acute and generally 2-toothed at tip with awn arising between teeth, glabrous or minutely papillate-scabrous along veins, the awn straight, 0.2–2.5 mm long; **palea** lanceolate to elliptic, 4.5–6.5 \times 1–1.3 mm, 2-veined, 2-keeled, partially enveloping ovary and fruit with margins sharply folded along vein, pale green but green along keels, glabrous. **Flower:** bisexual; **perianth (lodicules)** 2, lanceoloid, 0.7–1.1 \times 0.2–0.4 mm, translucent, with swollen base at anthesis becoming flat, persistent during fruit development; **stamens** 3, free, exerted; filaments 2.5–3 mm long, whitish; anthers basifixed, dithecal, linear, 3–4 \times 0.4–0.6 mm long, yellow, longitudinally dehiscent; pollen light yellow; **pistil** 1, at anthesis 1.6–2.5 mm long; ovary superior, obovoid slightly compressed front-to-back, 0.7–0.8 \times 0.3–0.5 mm, green, 1-chambered with 1 ovule; styles 2, 1.5–1.8 mm long, whitish, feathery (plumose) and stigmatic nearly base to tip. **Fruit:** achene (caryopsis), dispersed as floret tightly enclosed within adherent palea and awned lemma + a rachilla segment, awned dispersal unit \pm 7 mm long; achene

oblong compressed somewhat top-to-bottom, ca. 3.5×1.2 – 1.4 mm, brown, concave to somewhat grooved (ventral face) and convex (dorsal face), with whitish flap and remnants of styles on tip; lemma mostly 5-veined, minutely toothed along midvein, awn to 2.5 mm long; palea minutely toothed along keels, membranous tissue between keels concave but free from achene, membranous margins glabrous; rachilla segment appressed, sometimes slightly compressed, 0.6–1 mm long, whitish straw-colored, with short ascending hairs. Late May–late August.

Naturalized. Robust perennial herb used as a turfgrass at recreational sites in range and occasionally found as a weed in ditches or along creek beds or near standing water, e.g., at Malibu Lagoon. *Festuca arundinacea*, tall fescue, has also been treated either as a species of *Lolium* or *Schedonorus*. This species has comparatively wide, flat leaf blades that are scabrous, and the sheath is stiff; it may have paired, slightly hairy, overlapped, clasping auricles, but forms have variations on that theme so that in many cases they are ill-defined and not obvious. Spikelets of *F. arundinacea* have at least three florets. The upper glume is slightly longer than the lower one, and the lemma is about twice as long, typically with a midvein short-scabrous above the glume and often having a very short subterminal awn. The fruit is encased by the bractlets of the floret, and the palea is tightly adherent to the fruit wall.

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