

Muhlenbergia rigens (Benth.) A. Hitchc., DEER GRASS. Perennial herb, rhizomatous (not creeping), fibrous-rooted, caespitose, several–many-stemmed at base, 35–150 cm tall; shoots with tough, persistent cauline leaves, cauline leaves to 10 per shoot, glabrous to scabrous with ascending pubescent or puberulent hairs and short-toothed epidermal cells. **Stems (culms):** cylindric, to 5 mm diameter, internodes 2–130 mm long, smooth, glabrous. **Leaves:** alternate distichous, simple with sheath; sheath open, 150–220 mm long, with overlapping margins, rounded, mostly glabrous but scabrous approaching blade, without lobes (auricles) at top; ligule firm to papery, truncate, in range 2–4 mm long, continuous with sheath margin extending slightly above ligule on 1 side, commonly splitting lengthwise in several places, jagged on margin and sometimes short-ciliate; blade long-acuminate linear, in range 90–930 × 2–5 mm, flat below midblade but becoming inrolled when water-stressed, inrolled above midblade and cylindric portion tapering to a long, fine tip, parallel-veined with 9–11 principal veins and raised on both surfaces, having a minor vein between most principal veins, upper surface smooth to at least midblade and ridged above, ridges flat-topped, pubescent in grooves. **Inflorescence:** spikelets, in terminal, spikelike panicles, panicle condensed and cylindric, on long peduncle, fertile portion of numerous short, appressed branches, condensed and cylindric, in range 210–440 × 5–9 mm, spikelet with 1 floret, bracteate, lacking awns; peduncle in range 200–280 mm long; rachis ridged, commonly with 1(–2) fertile lateral branches per node (rarely appearing opposite), commonly with diminutive and sterile branchlets at basal nodes; axes minutely scabrous, primary branches ascending, in range 2–33 mm long, bearing short lateral branches and stalked spikelets, generally fertile to base (naked at base to 20 mm); stalk of spikelet 1.6–5 mm long, scabrous-puberulent approaching spikelet or on lateral margin from base to tip. **Spikelet:** lanceoloid and not compressed, in range 3.2–3.8 × 0.7–1 mm, grayish green or grayish olive green generally scabrous, breaking above glumes; **glumes** 2, ± subequal, membranous, 1.8–3 × 0.7–0.8 mm, < spikelet, lower glume < upper glume, light yellowish tan to light grayish tan, acute to obtuse or narrowly truncate and minutely jagged at tip, typically 1-veined, minutely scabrous-puberulent on back or only along vein; callus with ascending straight hairs 0.2 mm long; **lemma** lanceolate, in range 3–3.5 × 0.6–0.7 mm, grayish green or grayish olive green, acute to minutely 2-toothed at tip or obtuse with a short point, 3-veined, scabrous-puberulent on back or sometimes only along midvein and on margins; **palea** narrowly lanceolate, (2.3–)3–3.4(–3.8) × 0.5–0.6 mm, generally lemma > palea, grayish green or grayish olive green, 2-keeled along veins, scabrous-puberulent. **Flower:** bisexual; **perianth (lodicules)** 2, fan-shaped to oblong, 0.25–0.5 mm long, light yellow, initially fleshy; **stamens** 3, free; filaments threadlike, 2.2–3 mm long, whitish; anthers exserted, basifixed, dithecal, linear to narrowly oblong but anther sacs becoming divergent at both ends, in range 1.6–2.1 × 0.4–0.6 mm, light yellow to yellow becoming purplish red-tinged, deeply arrow-shaped at base and cleft at tip, longitudinally dehiscent; pollen pale yellow; **pistil** 1; ovary superior, lanceoloid to ovoid, 0.6–1 × 0.3–0.4 mm, greenish, 1-chambered with 1 ovule; styles 2, exserted sideways near lemma midpoint, touching at base, 0.5–0.75 mm long, pale green and translucent; stigmas dark purplish red, ± feathery with numerous, stigmatic hairs 0.7–0.9 mm long congested at tip of style. **Fruit:** achene (caryopsis), enclosed within lemma and palea, narrowly fusiform, 1.8–2.2 mm long, brownish, finely textured. Late June–early October.

Native. Perennial bunchgrass observed occasionally in southern oak woodland and riparian woodland in canyon bottoms and along rocky drainages. The vegetative plant of *Muhlenbergia rigens* is very different from other muhlies in range, and deer grass has a long, slender inflorescence in which the branchlets are appressed, so that rarely does it the panicle appear wider than a pencil.

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