

Vascular Plants of Williamson County

Stipa leucotricha – TEXAS NEEDLE GRASS, TEXAS WINTERGRASS, TEXAS NASSELLA
[Poaceae]

Stipa leucotricha Trin. & Rupr. (syn. *Nassella leucotricha*), TEXAS NEEDLE GRASS, TEXAS NASSELLA, TEXAS WINTERGRASS. Perennial herb, bunchgrass, rhizomatous (condensed; “not rhizomatous”), canopy wispy, not rosetted, several–many-stemmed at base, cespitose and in old plants forming closely spaced ramets by segmentation, having shoots crowded along rhizome or on new vertical portion with many axillary buds, unbranched aboveground, ascending to arching or spreading, 35–70 cm tall, fertile shoots to 135 cm long; shoots with to 2 basal leaves and 2–3 cauline leaves becoming tightly inrolled concealing the upper blade surface when water-stressed, leaves scabrous when flat or inrolled, with short, stiff, ascending hairs on foliage; rhizomes shallow, slow-creeping and ± horizontal, to 20 mm long, to 4 mm across, obscured by adventitious roots and prophylls and sheaths of basal leaves of crowded aerial shoots; adventitious roots nodal on rhizome and at basal nodes of aerial shoots erupting through basal leaf sheaths. **Stems (culms):** faintly ridged above foliage, to 2 mm diameter near soil level with a flat side, internodes to 200 mm long, stiff-puberulent and short-hairy below each node, the internodes otherwise glabrous where covered by leaf sheath but sometimes minutely pubescent along grooves; internodes of the below the lowest cauline leaf solid, internodes along culm narrowly hollow. **Leaves:** alternate distichous, simple with sheath; prophyll open, triangular and strongly 2-keeled, to 10 × 4 mm (easily viewed along rhizome), tough, whitish, folded along keel 1 mm wide, keel conspicuously short-ciliate, blunt acute at tip; sheath open, ridged, to 185 mm long increasing from basal leaves upward, exposed margin narrowly membranous ascending into a short erect lobe, of basal leaves often short-hairy, overlapped margin sometimes short-ciliate but long-ciliate approaching ligule, the lobe continuous with ligule, silky hairy (sheaths of lower leaves) to glabrous; ligule membranous, truncate, ca. 0.5 mm long, glabrous; collar mostly ca. 0.5(–1.4) mm long, often whitish (opaque), glabrous or with several marginal hairs; blade linear long-tapered to tip, 60–300 × 1–4 mm, the widest at base, flat becoming inrolled upward when stressed, entire and sometimes short-ciliate on margins above midblade, parallel-veined with veins raised on upper surface, upper surface dull and sometimes with short hairs above midblade, lower surface minutely textured (lower leaves) or essentially smooth and glabrous or nearly so. **Inflorescence:** spikelets, in terminal, open panicles with a single rachis, panicle with ascending, flexible and wiry branchlets from widely spaced nodes, to 240 mm long (excluding peduncle), with peduncle and lower branchlets initially enclosed by sheath of flag leaf, commonly 2 unequal branchlets per node each with 1–3 spikelets and paired on 1 side of rachis, the longest branchlet < 150 mm long (including awns), spikelets initially drooping, spikelet with 1 bisexual floret, bracteate, long-awned; peduncle elongating during anthesis, glabrous to sparsely short-hairy with upward-pointing hairs (ascendingly pubescent), rachis and lesser axes slender, < 0.25 mm diameter, internodes to 35(–50) mm long decreasing upward, scabrous along edges; axes of branchlets at a node unequal, lower portion of the longer branchlet to 2× of the shorter branchlet, of the lower nodes with axillary pulvinus for each branchlet and in fruit lower branchlets somewhat spreading from rachis. **Spikelet:** reflexed, narrowly lanceoloid-fusiform not compressed, breaking above glumes with glumes persistent on old panicle, having a swelling beneath the glumes at top

of stalk, glossy green and glabrous; with glumes spreading after fruit abscised; **glumes** 2, erect, subequal with lower glume > upper glume, narrowly lanceolate; lower glume 18–22 × 0.7–1.3 mm with margins incurved (to 2.2 mm when flattened), mostly 3(5)-veined, having ridged midvein base to tip and lateral veins 1/4–3/4 glume length and not converging at tip; upper glume 15.7–20 × 0.7–1.3 mm with margins incurved (to 2.2 mm when flattened) and 5–6-veined at base having, with midvein extending to or nearly to tip and lateral veins ca. 1/4 to 3/4 glume length, green at base and along ridged veins, membranous and tinged purplish red from between veins to tip and on margins, narrowly acuminate at tip with membranous margins sometimes tightly inrolled and appearing short-awned; callus ca. 4 mm long, sharp-pointed at base, straight, densely stiff-hairy with hairs to 2.5 mm long; **lemma** awned, body narrowly lanceoloid to fusiform, in range 9.2–10.7 × 1–1.3 mm, with strongly overlapping margins, tough, 5–7-veined (obscured by hairs and sometimes concealed by overlapping margin), silky with appressed to ascending hairs base to tip, minutely warty, callused at base, slightly constricted below tip forming a crown, long-awned from top of crown, the callus 1.5–2.5 mm long, densely strigose-pilose with ascending hairs to 0.8 mm long, the crown 0.6–1.1 long, 0.6–0.75 mm wide at rim, with an erect ring of hair from rim 0.25–1.1 mm long; awn in range 70–86 mm long, 0.4–0.55 mm wide at base, typically with 2 bends, tawny to spirally striped greenish and brownish, the basal segment 12–25 mm long, ± straight, twisted, with ascending hairs ca. 0.7 mm long, the middle segment 13–18 mm long, slightly twisted and sometimes wavy, with ascending hairs > 0.5 mm long, the terminal segment 32–47 mm long, straight, very short hairy or scabrous; **palea** lanceolate, 2–2.7 × 0.3–0.7 mm, veins obscure, keels absent, membranous but firmer (± chartaceous) at base, rounded at tip, glabrous. **Chasmogamous flower:** **perianth (lodicules)** 2, erect, narrowly oblong (planklike) to oblanceolate or spatulate, 0.6–3 × 0.2–0.9 mm, translucent, swelling and bulbous at base and oblique at top, at anthesis fleshy (chasmogamous) or not fleshy (cleistogamous form), flat and membranous after anthesis; **stamens** 3, free, exerted; filaments threadlike, 4 mm long aging to 9 mm long, white; anthers basifixed, dithecal, equal, 3.5–5.5 mm long, light yellow to pale green or light green sometimes tinged purple-red, with short stiff hairs to 0.4 mm long at tip, longitudinally dehiscent; pollen light yellow to whitish; **pistil** 1; ovary superior, cylindrical or oblong to obovoid or oblong-ellipsoid, 0.5–2 × 0.3–0.6 mm, yellowish or greenish to pale green, glabrous, 1-chambered with 1 ovule; styles 2, spreading and exerted sideways and coiled from near midpoint of lemma, 2.5–3 mm long, translucent, feathery with stigmatic hairs to 1 mm long most of length (plumose) but absent on basal 0.2 mm. **Cleistogamous flower:** in range, not observed, anthers < 2 mm long. **Fruit:** achene (caryopsis), tightly enveloped by lemma with long awn, narrowly fusiform (torpedo-shaped), in range 5–6 × 1 mm + white remnant of styles at tip, green drying light reddish brown; body of lemma forming chamber for achene ca. 7 × 1.5 mm, light brown (appearing olive with immature fruit), having an elaborate, glossy network of thickenings, the crown with a ring of stiff erect hairs to 0.8 mm long; awn 52–70+ mm long, 0.4–0.5 mm wide at base, gently twisted below midpoint and with 1 obvious smooth bend and often a second lower but minor bend above midpoint, tawny to spirally striped greenish and brownish.

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