

## Vascular Plants of Williamson County

*Scleria ciliata* var. *ciliata* – HAIRY NUTSEDGE, FRINGED NUTRUSH [Cyperaceae]

*Scleria ciliata* Michx. var. *ciliata*, HAIRY NUTSEDGE, FRINGED NUTRUSH. Perennial herb, rhizomatous, fibrous-rooted, not rosetted, 1–several-stemmed at base from a creeping rhizome, in range not bunchgrasslike, ascending to suberect, in range 35–70 cm tall; monoecious; shoots with 2 basal leaves and commonly 2 cauline leaves, exposed margins, edges, and ridges short-ciliate with conspicuous hairs; rhizome  $\pm$  horizontal, to 7 cm deep, not branched (not condensed), mostly 4–5 mm diameter enlarged with knob on upper side at each emergent shoot, initially whitish aging dark red, internodes ca. 2 mm long but wider on lower side, with appressed, scales (cataphylls) reduced to brown fibers, broadly triangular, 2–5 mm long, shoots arising from spaced axillary bundles only the the upper side; adventitious roots several at rhizome nodes on lower side and bud concealed by cataphylls. **Stems (culms):** 3-sided with flat faces and 3-angled,  $\pm$  1.5 mm diameter, tough, white where concealed at base and green on exposed aerial shoots, faintly ridged on faces, short-ciliate along edges; solid with scattered vascular bundles. **Leaves:** alternate tristichous, simple with sheath; sheath closed, of the first basal leaf sheath tubular, to 10 mm long, lobed and cut at top, glabrous, of the second basal leaf sheath 3-sided, to 45 mm long and coarsely hairy, of the first cauline leaf (to 50 mm from rhizome) sheath ridged and with blade to 150 mm long, of second cauline leaf with blade to 300  $\times$  3.5 mm (to 5 mm flattened); ligule like structure at top sheath of cauline leaves (contra-ligule), subtruncate to low-rounded with varied short hairs on margin; blade linear long-tapered from base to tip, stiffly pleated (W-shaped in  $\times$ -section), unevenly folded at base, tough, parallel-veined with midrib sunken on upper surface and raised on lower surface, short-ciliate on margins and 1 lateral vein on both surfaces and midrib on lower surface, upper surface lacking stomates. **Inflorescences:** spikelets (“spikes”), in condensed clusters, cluster cymelike subtended by leaflike bract (inflorescence bract), 1 or 2 clusters per shoot, clusters to 20  $\times$  12 mm, terminal but appearing lateral in canopy and later lateral = a lateral shoot at the uppermost cauline node, of staminate and 2-flowered bisexual spikelets (functionally cleistogamous), of the largest terminal cluster having to 8 staminate spikelets positioned above to 4 bisexual spikelets, of small terminal cluster or at cauline node without staminate spikelets and having 2–5+ bisexual spikelets, each spikelet subtended by bract and composed of bracts (bractlets) subtending flowers, each branch with a prophyll at base of axis; inflorescence bract  $\gg$  cluster, lacking a sheath, V-shaped in  $\times$ -section, typically < 110(–170) mm long, conspicuously short-ciliate on margins and along midrib on lower surface; axes culmlike 3-sided to flattened, mostly < 8 mm long successively decreasing with at each cymelike fork, green or crimson; prophyll of each axis segment closed with deep sinus (open), often shallowly 2-lobed, exposed mostly crimson. **Staminate spikelet:** commonly of 15+ flowers, ovoid, 6–7  $\times$  2–3 mm; bractlets (bracts or floral scales) helically alternate, densely overlapping, acuminate-lanceolate, 4.5–6  $\times$  0.7–1 mm, 1-veined, initially greenish aging scarious and pale brown with no dark pigmentation. **Bisexual spikelet:** of 2 unisexual flowers, initially ovate in outline compressed side-to-side, green and crimson, principally of 3 alternate distichous bractlets (bracts or floral scales), in bud folded-ovate later boat-shaped, ca. 5 mm long, green keeled with short awnlike tip, lower 2 bractlets sterile, upper bractlet wider, appearing to have both a short-

stalked pistillate flower and a staminate flower but staminate flower subtended by a fourth, diminutive, membranous bractlet between pistillate and staminate flowers, staminate bractlet membranous, acute-triangular, ca. 1–1.5 mm long, anther exserted to stigmas and self-pollinating before spikelet bractlets spread (cleistogamous). **Staminate flower:** attached to base of bractlet; **perianth** absent; **stamens** 3 (of staminate inflorescence), weakly fused at base, or 1 (of bisexual inflorescent) below base of pistillate flower; filament of staminate inflorescence exserted ca. 1 mm above top of spike, 5–7 mm long, aging red, of bisexual inflorescence slender, 2 mm long; anthers basifixed, of staminate flowers exserted,  $\pm$  2 mm long, longitudinally dehiscent, of bisexual inflorescence anther touching below midpoint stigmatic branches of pistillate flower, ca. 0.5 mm long, yellowish, longitudinally dehiscent; pollen yellowish; **pistil** absent; **staminate spikelet, perianth** absent; **stamens** mostly 3, free; filaments ca. 5–5.5 mm long, aging red; anthers basifixed, 1–1.5 mm long, reddish, longitudinally dehiscent; pollen yellowish; **pistil** absent. **Pistillate flower:** seated on a basal disc (hypogynium at anthesis ca. 0.2 mm long, lower portion ringlike and upper portion 3-lobed and minutely textured; **perianth** absent; **stamens** absent; **pistil** 1, seated on hypogynium; ovary superior, oblong-elliptic to shieldlike, 0.8–1  $\times$  0.35 mm, 1-chambered with 1 ovule; style 3-branched, lower portion short, ca. 0.2 mm long, purple aging knoblike and persistent, the stigmatic branches linear, 1.6–2.3 mm long, purple with colorless papillae, appressing appearing acuminate. **Fruit:** achene, upper half exposed from spreading bracts, 1-seeded, spheric, in range 2–2.3  $\times$  1.8–2.1 mm, glossy white to blackish, immature glossy light green sometimes with 3 black stripes spaced 120° apart tip-to-base, bumpy (tuberculate and verrucose) with an elaborate design of mounds and short ridges, glabrous but tubercles often minutely papillate, with a short beak at tip (= persistent base of style, umbo), beneath achene having a basal, skirtlike disc (hypogynium) (2–)3-lobed, ca. 0.6  $\times$  1.2 mm (narrower than achene), when fresh whitish, not tuberculate, off-white to gray, minutely textured; abscising from a platform (cupula) persistent with the bractlet, ca. 1.5 mm across with 3 domes on upper side, whitish.

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