

## Vascular Plants of Williamson County

*Carex tetrastachya* – BRITTON CARIC SEDGE, FOUR-ANGLE CARIC SEDGE [Cyperaceae]

*Carex tetrastachya* Scheele, BRITTON CARIC SEDGE, FOUR-ANGLE CARIC SEDGE. Perennial herb, rhizomatous, fibrous-rooted, many-stemmed at base, dense colony with ascending to spreading inflorescences to 75 cm long, in range canopy to 60 cm tall; monoecious; shoots with 3–5 photosynthetic leaves, lower leaves transitional from rhizome scales, all leaves basal (even “cauline” leaves attached at shoot base), glabrous and never glaucous; rhizomes highly, densely short-branched, ca. 5 mm diameter and solid, internodes 0.7–1.3 mm long often with a series of closely spaced, vertical crimson stripes aging black, scales (cataphylls) acute-triangular, 2–10+ mm long, initially membranous with brown veins aging pale brown with black veins and eventually decaying as a fibrous covering rhizome; adventitious roots arising from rhizome nodes and splitting bases of leaf sheaths. **Stems (culms):** cylindric (lower plant) to 3-angled above the uppermost foliage, < 3 mm diameter, white at base of stem to green and photosynthetic above; hollow from the base to the lowest node of inflorescence. **Leaves:** alternate tristichous, simple with sheath; sheath (basal leaves) closed, increasing upward, cylindric with a membranous panel approaching top of sheath, the top extending to 1.4 mm above collar and convex; ligule extending from membranous sheath tissue, inverted U-shaped fused < 5 mm to upper surface of blade, < 1 mm high; blade long-tapered to tip (triangular when very short), when young folded upward from midrib, (15–)130–280+ × (2.5)3.5–5.5 mm the widest near base, entire, parallel-veined with narrow midrib low-raised on lower surface, smooth, upper surface with sheen of colorless strips of epidermal cells between veins. **Inflorescence:** spikes of unisexual flowers, terminal, 2–4 per panicle, each spike with 20+ pistillate florets above midpoint and 20+ staminate floret below midpoint (gynecandrous), florets helically alternate, overlapping, and appressed, bracteate, glabrous; node at base of inflorescence solid; bract at basal node subtending the lowest lateral spike, sheathing and short-closed ca. 1 mm with membranous tissue, blade broad-triangular with awnlike tip, to 6 × 4 mm (flattened), center ± keeled, green, and 3-veined having wide membranous margins, the veins low-raised on outer (lower) surface, the awn straight and < 25 mm long (> spike), bract subtending other spikes similar or with shorter awn, 1-veined, and sometimes open; principal axis of panicle zigzagged and hemi-cylindric, to 10 mm long, axis of spike 3-sided, 3.5–5 mm long, solid, lacking prophyll; spike at anthesis narrowly ovoid-ellipsoid, 12–15 × 4.7–5.2 mm enlarging to ovoid and ca. 20 × 8–13 mm in fruit; bractlet of staminate floret membranous with 1-veined green midstripe and wide membranous margins, ovate with short awn or awnlike point at tip, at anthesis ca. 4.5–7 × 2.5–3 mm including point 0.5–1 mm long, of the lowest floret with the longest awn; bractlet of pistillate floret similar to staminate floret but acute and somewhat more narrow mostly lacking awnlike tip; pistillate flower enclosed in sac with narrow opening at top (perigynium), perigynium at anthesis ovate flattened front-to-back, 4–4.5 × 2.6–3 mm, in range aging to ca. 7 × 5 mm in fruit, lower portion to midpoint, roundish, with raised disc-shaped central chamber and winged margins, outer portion of wing colorless, upper portion with medial canal triangular (neck or “beak”) with a pair of teeth ca. 0.3 mm long at orifice, most of neck and lower portion light green, short-ciliate on edges from midpoint, orifice ca. 0.25 mm across. **Staminate flower:** = stamens; **perianth** absent; **stamens** 3,

free, exserted; filaments ca. 2.5 mm long, translucent; anthers basifixed, dithecal,  $\pm 3.5$  mm long, yellowish to cream-colored with papillate colorless tips, longitudinally dehiscent; pollen yellowish to off-white; **pistil** absent. **Pistillate flower:** short-stalked ca. 0.1 mm; **perianth** absent; **stamens** absent; **pistil** 1; ovary superior, obovate in outline compressed plano-convex,  $\pm 1 \times 0.5$  mm, translucent but greenish above midpoint, 1-chambered with 1 ovule; styles 2, 6–7 mm long, lower portion greenish and upper portion in canal and exserted colorless, exserted portion stigmatic to 3.5 mm long, aging reddish. **Fruit:** achene, short-stalked within perigynium; achene in range ovate plano-convex,  $2.3\text{--}2.6 \times 1.6\text{--}2 \times 0.4\text{--}0.5$  mm, greenish (immature) aging tannish; perigynium cupped-ovate winged, 7–8 mm long, wing ca. 1 mm wide, tissue over chamber papery and lack veins, neck  $\pm 1.8$  mm long, teeth at orifice to 1 mm long; exserted portions of styles typically missing.

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