**Vascular Plants of Williamson County**

*Solidago juliae* – JULIA’S GOLDENROD [Asteraceae]

*Solidago juliae* G. L. Nesom, JULIA’S GOLDENROD. Perennial herb, generally not clonal, short-rhizomatous, fibrous-rooted, not rosetted, 1–several-stemmed at base, erect to ascending, in range to 70 cm tall; shoots with only cauline leaves, lower cauline leaves of primary shoot withered and absent at flowering, foliage velveteen, uniformly short-villous on stems and leaves, lacking glandular hairs; rhizomes condensed, shallow, internodes short, with several, spreading principal adventitious roots having many secondary roots. **Stems:** cylindric, in range to 5 mm diameter, tough, often red-purple, internodes < 2–6 mm long. **Leaves:** helically alternate, simple and sessile with blade wings to base, without stipules; blade oblanceolate (the lowermost cauline leaves) or narrowly elliptic-linear to linear-oblanceolate to linear to narrowly obovate, in range (5–)12–14 pistillate ray flowers and 4–6 disc flowers, bracteate, short-villous; principal axis with shallow furrows, short-villous, not glandular-hairy; bract subtending peduncle half-sheathing awl-shaped, 1–2 mm long, greenish yellow to yellowish green, short-ciliate on margins; peduncle 1–2.5 mm long, light green, short-villous; **involucre** bell-shaped, 3.5–4 × 1.6–2 mm (rarely 2 fused), phyllaries 13–17, outer phyllaries 4–5, narrowly ovate, < 2 × 0.25–0.5 mm, light yellowish green, 1-veined, short-ciliate on margins, sometimes having several minute, stalked glandular-hairs on back below midpoint, middle and inner phyllaries lanceolate, ca. 2.5 × 0.7 mm; receptacle lacking bractlets (paleae), with a winglike crown separating ovaries of disc flowers, lacking hairs. **Ray flower:** bilateral, < 1 mm across; calyx (pappus) of ca. 30 capillary bristles in 2 series on short rim, subequal to unequal, 1.8–2.4 mm long, white; corolla minutely notched with 2–5 minute teeth (rarely unequally 2-lobed), lacking nonglandular and glandular hairs; tube cylindric, 1.5–1.8 mm, > pappus, greenish to yellowish green; limb spreading to ascending, ob lanceolate to narrowly obovate, in range 1.5–2+ × 0.3–0.5 mm, yellow on both surfaces and faintly 3-veined; stamens absent; pistil 1; ovary inferior, inversely conic, ca. 0.8 × 0.4 mm, translucent but greenish at base, inconspicuously ribbed, sparingly short-hirsute with ascending white hairs, 1-chambered with 1 ovule; nectary disc not evident (corolla somewhat thickened at base; style exserted, 2-branched, 3.5–3.8 mm long, colorless at base, the stigmatic branches ascending, linear, ca. 0.7 mm long, light yellow. **Disc flower:** radial, ca. 2.5 mm across (spreading corolla lobes), ca. 5 mm long; calyx (pappus) of ca. 30 capillary bristles in 2 series on short rim, unequal, mostly 1.8–2.6 mm long, white; corolla 5-lobed, lacking nonglandular and glandular hairs; tube cylindric, 0.8 × 0.35 mm, greenish; throat narrowly funnel-shaped, 1.3–1.5 mm long, ca. 1mm diameter at orifice, colorless with 5 yellow veins to sinuses;
lobes long-triangular, 1.5–2 mm long, light yellow, ascending becoming spreading; **stamens** 5, attached to top of corolla tube; filaments 1.2–1.4 mm long, yellowish; anthers fused into cylinder surrounding style, becoming exserted, basifixed, dithecal, ca. 1.5 mm long incl. triangular appendages, sacs colorless and yellow, longitudinally and inwardly dehiscent; pollen yellow; **pistil** 1; ovary inferior, inversely conic, ca. 0.7 × 0.4 mm, translucent and greenish at base, sparsely short-hirsute with ascending white hairs, 1-chambered with 1 ovule; **nectary disc** not evident; style ca. 3 mm long, 2-branched, lower portion greenish, the stigmatic branches ca. 0.8 mm long, yellow, flat on inner surface, papillate on outer (lower) side. **Fruits:** cypselae (achenes), of ray and disc flowers, monomorphc, inversely narrow tapered from top to base, 1.2–1.6 mm long, brown, weakly 5-ribbed, short-strigose with upward-pointing hairs; pappus capillary bristles ca. 30 in 2 series, spreading, light brown.

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