

## Vascular Plants of Williamson County

### *Geranium carolinianum* – CAROLINA GERANIUM [Geraniaceae]

*Geranium carolinianum* L., CAROLINA GERANIUM. Annual, rosetted, taprooted, 1-stemmed at base, ascending, in range 10–35 cm tall; shoots with basal leaves and 1–2 soft, “cauline leaves,” a pair of cauline leaves = bracts subtending inflorescence, with long hairs mixed with short hairs, mostly lacking glandular hairs on shoot but with short stalked glandular-hairs in inflorescence. **Stems:** cylindric, in range to 3 mm diameter slightly flared approaching not but swollen above nodes (base of each internode), tough, pinkish to green with reddish tinge at nodes or lower stem reddish, internodes increasing upward, ± short-strigose with downward-pointing hairs and some minute glandular hairs without heads, with many downward-pointed to appressed hairs, having glandular hairs with conspicuous, colorless heads at cauline nodes. **Leaves:** helically alternate (bracts and bractlets within inflorescence = opposite), blade deeply palmately divided with sinuses 2/3–7/8 to base defining 5 or 7 lobes, petiolate, with stipules; stipules 2, attached to petiole as wings from base 2.5–5 mm long on upper side and free portion acuminate, 5–10 × 1.5–2 mm, whitish to pinkish membranous margins aging brownish and papery, outer margin sometimes wavy to midpoint, short-strigose on upper surface, upward-pointing hairs; petiole slender, in range < 50–150 mm long, >> blade, with mixed villous and short-villous hairs (sometimes some hairs strigose) and inconspicuous stalked glandular hairs; blade ± round to widely depressed-ovate in outline, 15–65 × 20–70 mm, lobes wedge-shaped decreasing to oblong at base, to 25 mm wide, with irregular lobes, sublobes, and teeth, of lower leaves lobes generally wedge-shaped, sublobes with sinuses 1/3–1/2 to base, broadly acute with reddish callous at each tip, palmately veined from base with principal veins sunken on upper surface and raised on lower surface, upper surface with scattered, mostly long hairs arching toward tip, lower surface with arching hairs only along veins, sublobes of cauline leaves sometimes with the unusual glandular hairs on lower surface. **Inflorescence:** cyme, 2-flowered, bracteate, initially soft-hairy aging stiffer; bracts subtending cyme stipulelike, acuminate-triangular, 3.5–5 mm long; peduncle (cyme axis) slender, at anthesis to 20 mm long increasing in fruit, with downward-curving hairs and minute glandular hairs; bractlets subtending each pedicel 2 (4 per fork) = stipules, lanceolate, to 4 × 1 mm, 1 stipule of each pedicel fused at base, green with wide membranous margins, short-ciliate on margins; pedicel at anthesis 2–7 mm long, pubescent. **Flower:** bisexual, radial, 6–8 mm across; **sepals** 5, ± erect, overlapping with 3 outer and 2 inner sepals, ovate, 4.5–6.5 × 2.5–3 mm increasing in fruit, including a green or red-tipped awn 1–1.7 mm long, light green with thin, colorless or pinkish margins, 3-veined from base, outer sepals with margins ± inrolled from lateral veins and inner sepals ± flat, veins raised, of the awns with several short, ascending stiff hairs at tip, lower (outer) surface short-pubescent and with minute glandular hairs while having hairs along veins and densely short-ciliate on margins; **petals** 5, easily dislodged, obovate to kite-shaped, 6–8 × 2.2–2.5 mm and = or barely exceeding the awns of sepals but showy when spreading, in range pink to light pink-lavender but white at base, vein 3-forked at base and veins colorless, sparsely short-ciliate on margins just above clawlike base, rounded to shallowly notched or with low shoulder at tip, with several minute glandular hairs on margins; **stamens** 10 in 2 whorls, free, staminodes absent; filaments appressed and erect,

of outer whorl overlapping inner whorl, 2.5–2.9 mm to 3.5–4 mm long within a flower and inner > outer whorl, colorless, cupped-scalelike at base to cylindric approaching top (sometimes rose), sparsely puberulent on back and with several minute glandular hairs above midpoint; anthers dorsifixed (centrifixed), dithecal, kidney-shaped, 0.4–0.6 mm long, pale light yellow or pinkish (pale green with purple edges), longitudinally dehiscent; pollen pale yellow to pale green; **pistil** 1, 2.8–4 mm long, ovary covered with ascending, straight, dense white hairs to 1.3 mm long; ovary superior, 5-lobed, lobes spheroid, green, 5-chambered, each chamber with 1 ovule; style at anthesis ca. 2–3 mm long, with 5 divergent-ascending, stigmatic tips ca. 1 mm long and light yellow-green, lower portion and outer side short-hairy and with minute glandular hairs, stigmatic top and inner side papillate. **Fruit:** schizocarp of 5 1-seeded mericarps, before dehiscence erect, needlelike (= beaks) with swollen base (= see bodies); seed bodies spheroid-oblong, 3–4.5 mm long, thin, aging brown, dehiscent on inner face, with straight, ascending hairs to 1.5 mm long; beak 12.5–19 mm long, terminal branches 1–2 mm long, with short hairs on outer side. **Seed:** oblong-ellipsoid, ca. 1.6–2 mm long, dull brown, in range with an elaborate network of ridges and pits.

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