

Vascular Plants of Williamson County

Populus deltoides subsp. *deltoides* – SOUTHERN COTTONWOOD, EASTERN COTTONWOOD
[Salicaceae]

Populus deltoides Marsh. subsp. *deltoides*, SOUTHERN COTTONWOOD, EASTERN COTTONWOOD. Tree, winter-deciduous, not clonal, with 1–3 thick trunks, in range < 38 m tall; dioecious; shoots with long-petiolate leaves, having resinous, lanceoloid-ovoid winter buds, somewhat aromatic, glabrous or sparsely short-pilose; bark initially tight, dull tannish gray, on trunk thick and difficult to remove, coarsely and deeply fissured on trunk and major branches, light brown. **Stems:** initially ridged becoming cylindrical, with transverse leaf scars, leaf scars narrowly crescent-shaped; young twigs somewhat knobby with leaf bases and sets of terminal bud scars, gray and brownish green; pith 5-angled and spongy whitish. **Leaves:** helically alternate, simple, petiolate, with stipules; stipules 2, attached at base of petiole and node junction extending across node, triangular-linear to strap-shaped, 8–18 × 1.2–2 mm, ± green, long-tapered base-to-tip, with wavelike teeth on margins, glutinous, early-deciduous, initially fleshy drying flat, with straight hairs to 0.2 mm long; petiole cylindrical above base to compressed side-to-side to flattened above midpoint, 50–70 mm long, initially short-pilose, at top with 3(–6) light green, short-stalked, obovoid, fingerlike, or paddlelike glands 0.4–1.4 mm long; blade truncate to subcordate at base, serrate and puberulent-ciliate on margins, having (6–)12–20(–30) per margin and inrolled during early development, short-acuminate at tip, pinnately veined with principal veins raised on lower surface, upper surface puberulent, lower surface when developing exposed surface puberulent to short-pilose aging glabrescent, hidden portion glabrous. **Inflorescences:** unisexual catkins, racemelike, emerging before leaves from base of winter buds on stiff stems, many-flowered, flowers alternate, bracteate, glabrous. **Staminate inflorescence:** catkin (ament) lax and pendent, lanceoloid-cylindrical, initially 50–70 mm long increasing 2× during pollen discharge and flowers maturing from the top of inflorescence to the base, when fully expanded to 140 × 13–15 mm; peduncle short, to 5 mm long; rachis often arching downward at base and ± straight to tip, cylindrical or inconspicuously ridged on lower aments, smooth, pale green base-to-tip; bract (bractlet) subtending floral axis (“pedicel”) 0.5–1 mm with persistent base; floral axis 1–2 mm long at first dehiscence of anthers increasing 2–3×; **involucre** appearing like a perianth, broad and spreading, ± platelike (not funnel-shaped) aging with edges somewhat turned downward, 2.5–2.8 mm across, light green, glabrous. **Staminate flower:** = stamens attached to involucre, 4.5–9 mm across; **perianth** absent; **stamens** ca. 60, attached to and scattered on inner surface of involucre, exerted and hanging over involucre rim; filaments threadlike, mostly 1–1.4 mm long, white; anthers basifixed, dithecal, 0.9–1.4 mm long, yellow or purple-red, longitudinally dehiscent; pollen pale yellow; **pistil** absent. **Pistillate inflorescence:** catkin lax and nodding, with developing fruits 80–145 mm long, 25–40-flowered, glabrous; peduncle at anthesis < 5 mm long not increasing in fruit, with bud scars at base; rachis ± smooth and not ridged but with bases of bracts raised (cushions), each base with a crescent-shaped scar of bracts; bract (bractlet) subtending floral axis and somewhat cupped over flower bud, scooplike, 4–5 mm long including long fringes on margins above midpoint and at tip, white and cream-colored aging reddish to brown and scarious, abscising around anthesis at base cushion on floral axis; floral axis (pedicel) at

anthesis to 3.5 mm long ascending and increasing 2× in fruit, green, expanding as base of “involucre”; **involucre** funnel-shaped, ca. 2 mm long, green but paler and thinner on uneven rim, aging scarious and appressed to fruit base. **Pistillate flower:** = pistil (surrounded by involucre), 4–5 mm across (= ascending stigmas; **perianth** absent; **stamens** absent; **pistil** 1; ovary superior, ± ovoid, 2.5–4 × 2.4–3 mm, green, glabrous, 1-chambered with many ovules attached typically to 4 placentae on outer side; style short; stigmas (3–)4, ascending to spreading, from narrow at base lobed and broadly fan-shaped, 3–4 mm long and wide, fleshy, yellow-green, crisped, wavy, lobes with jagged margin, persistent. **Fruit:** capsule, loculicidal, dehiscent by (3)4 valves reflexed from top downward, 30+-seeded, ovoid, 9–11 × 6.5–8 mm, glabrous; pedicel > fruit at base of inflorescence decreasing upward with pedicel < fruit approaching tip. **Seed:** with long, silky, white hairs attached at 1 end (comose); seed body before drying oblanceoloid to oblong, 3.5–4 × 0.8–1.1 mm, white, drying flattened, somewhat twisted, and darker, appearing glabrous on faces.

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