

## Vascular Plants of Williamson County

*Quercus fusiformis* – PLATEAU LIVE OAK, TEXAS LIVE OAK [Fagaceae]

*Quercus fusiformis* Small, PLATEAU LIVE OAK, TEXAS LIVE OAK. Tree to shrub, semi-evergreen (early-spring deciduous), occasionally spinescent (hollyleaflike), often clonal, 1–2-trunked, 1-trunked with a few large branches near the ground, or growing in a loose cluster of several trunks (as trees) or somewhat thicketlike clonal from root sprouts, in range old trees possibly 20+ m tall and thickets as low as 2.5 m tall; monoecious; shoots with only cauline leaves, foliage tough and leathery (sclerophyllous), new stems and young leaves covered with tannish stellate hairs having spreading to appressed arms and on emerging foliage with minute, yellowish glandular hairs. **Stems:** when young ridged, with a broad ridge descending from each leaf and a pair of faint ridge from stipules, green,  $\pm$  densely covered with short stellate hairs having appressed to spreading arms and glandular hairs. **Leaves:** helically alternate, simple with or without several teeth (especially on sucker shoots), petiolate, with stipules; stipules 2, attached at node, linear to flat oblong or narrowly lanceolate, 1.5–4 mm long, red-purple to reddish, densely short-ciliate on margins, short stellate-hairy; petiole cylindric, 2–9 mm long, densely stellate-hairy with tannish hairs; blade elliptic or ovate to lanceolate or obovate,  $< 25\text{--}95 \times < 15\text{--}45$  mm, broadly tapered to rounded at base, entire or having 1–5 teeth on each margin, on well-developed teeth having white spine tip to 2 mm long, acute to rounded or slightly notched with short point at tip, pinnately veined with principal veins sometimes slightly sunken on upper surface and midrib raised on lower surface, surfaces aging with inconspicuous, sparse stellate hairs. **Staminate inflorescence:** catkin (ament), of sessile flowers, 1–5 produced from winter bud below new shoot, pendent,  $8.5\text{--}55 \times 5\text{--}7$  mm, flowers alternate but unevenly spaced, 10–26, lacking bracts, pubescent; peduncle cylindric, 3–6 mm long, pale green, covered with tannish stellate hairs; rachis somewhat irregularly angled with ridge descending from flower, 0.5–0.6 mm diameter, pale green, with stellate hairs. **Staminate flower:**  $\pm$  radial, 2.5–4.5 mm across; **perianth (calyx)** unequally to regularly 6-lobed, bell-shaped before anthers dehisce aging spreading to platelike, short-hairy on outer (lower) surface; tube cup-shaped, to 0.5 mm long, green; lobes triangular or deltate to  $\pm$  obovate and often cupped,  $1\text{--}1.5 \times 0.7\text{--}0.9$  mm, red with pale brownish margin to colorless with green midvein, sinuses to or below midpoint; **stamens** (1–)4–7(–9), free; filaments ascending to spreading, 1–1.6 mm long, white, glabrous; anthers basifixed, dithecal, (0.7–)1.2–1.5 mm long including short point at top, light yellow-green often tinged reddish, longitudinally dehiscent; pollen dry, light yellow, copious; **pistil** absent. **Pistillate inflorescence:** spike, of 2–3 pistillate flowers at the top of a comparatively slender, long axillary peduncle,  $\gg$  petiole and to 0.7 mm diameter, on leafy spring shoots after 3–4 new leaves, commonly only at 1 node per shoot, above staminate catkins, bracteate; peduncle ascending, cylindric, straight, and slender, (6–)12–20  $\times$  0.7 mm, densely tan-hairy; rachis short, with extension above flower to 3 mm long; bract subtending and appressed to involucre, ovate, ca.  $1.5 \times 0.75$  mm, short-hairy on outer surface; **involucre** (cupule) bracts helically alternate scales, the scales triangular to deltate, densely short-hairy tomentose. **Pistillate flower:** 2–2.2  $\times$  1.5–1.8 mm (incl. involucre); **calyx**  $\pm$  6-lobed; tube short, greenish, short-hairy on outer (lower) surface; lobes deltate to triangular, to 0.5 mm long, greenish, margins minutely fringed, not clearly observed

because partially concealed by short hairs; **petals** absent; **stamens** absent; **pistil** 1; ovary inferior, ovoid, 2–3-chambered, each chamber with 2 ovules; styles 2–3, ascending but stigmas spreading, ca. 1.5 mm long, fleshy, green and glabrous but stigmas flared and strawberry red to purple-red, the stigmas 0.6–0.9 mm across. **Fruit:** acorn (glans), maturing in fall to early winter of year 1; involucre funnel-shaped to hemispheric or goblet-shaped, in range 8–12+ mm deep and 6–10 mm wide, covering basal 1/3 of nut, scales strongly appressed, not warty but thicker at base, densely short-tomentose with tan hairs, the scales triangular in range ± subtruncate at tip, before maturing red below hairs approaching tip, lacking glandular hairs, inner surface densely short-strigose; nut ± fusiform to ovoid, in range (17–)19–22+ × 9–11+ mm, at maturity dark green with faint longitudinal lines (veins) drying brown to dark brown with lines, basal scar circular, convex, 4–4.6 mm across, acute at tip before drying with beak of purple-red spheroid at top having 3 spreading styles; nut shell internally with scattered short-hairs; peduncle straight and stiff (woody), inconspicuously angled, 20–35 mm long, covered with tannish stellate hairs aging longitudinal cracks and periderm formation.

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