

## Vascular Plants of Williamson County

*Ulmus americana* – AMERICAN ELM, WHITE ELM [Ulmaceae]

*Ulmus americana*, AMERICAN ELM, WHITE ELM. Tree, winter-deciduous, 1-trunked, with widely spreading major branches and drooping branchlets, in range to 25 m tall; shoots with only cauline leaves, leaves arranged  $\pm$  2-dimensional (plagiotropic), spring shoot having well-developed, dark brown, ovoid axillary buds with straight stipule scars beneath bud; bark deeply fissured; winter axillary bud cataphylls dark reddish brown with appressed golden brown hairs on exposed surfaces aging white, ciliate on margins. **Stems:** cylindrical, somewhat zigzagged, glandular-hairy; winter twigs glabrescent with some short hairs; bark deeply furrowed, brown. **Leaves:** helically alternate, simple, petiolate, with stipules; stipules 2, attached to stem at node, leafy, asymmetrically triangular, 6–6.5  $\times$  2.9–4.3 mm, green, truncate at base, sparsely short-ciliate on margins above midblade, acute at tip, short-glandular hairy, early-deciduous; petiole cylindrical, 3–12 mm long, short glandular-hairy; blade  $\pm$  ovate and asymmetric,  $< 25\text{--}97 \times < 20\text{--}49$  mm, midrib strongly shifted to the shorter side of blade, tapered and distinctly unequal (oblique) at base,  $\pm$  2-serrate on margins, acuminate at tip, pinnately veined having lateral veins parallel (not forked) and evenly spaced, with principal veins sunken on upper surface and raised on lower surface, upper surface glossy dark green with short hairs along midvein, lower surface short glandular-hairy mostly along veins and appearing nonglandular, surface minutely cobblestonelike, and lateral veins with flaring extension to upper side.

**Inflorescence:** umbel-like, drooping, fascicle of 3 flowers axillary to cataphylls from a winter bud, fascicles to 5 per cataphyll, flower pedicillate, bracteate; cataphyll strongly cupped, to 6 mm long, rounded to acute at tip; peduncle  $< 1$  mm long; bractlet subtending pedicel papery, oblong-ob lanceolate to narrowly inverted triangular, 1–2 mm long + hairs, white at base to reddish brown and long-ciliate above midpoint with orange-brown hairs to 1 mm long, early-deciduous; pedicel crooked in bud at anthesis increasing then drooping, 4–5 mm long increasing to 20 mm long in fruit. **Flower:** bisexual, bilateral, ca. 2 mm across; **calyx** (5–)6–7(–8)-lobed, often not symmetric, greenish aging papery brown; tube funnel-shaped, ca. 2  $\times$  2 mm; lobes obtuse or rounded to truncate, 0.8–1 mm long; **corolla** absent; **stamens** (5–)6–7(–8), free; filaments after anthesis exerted and to 3 mm long, white, persistent in fruit; anthers dithecal,  $\pm 1$  mm long, red to brown, longitudinally dehiscent; pollen dehiscent in bud, creamy to pale orange; **pistil** 1, short-stalked (stipe) but at anthesis pistil included within perianth, stalk increasing to 1.5 mm long in fruit; ovary superior,  $\pm$  elliptic with 2 erect, triangular wing extensions (styles) at top, ca. 2 mm long, white, with circular seed chamber below midpoint and thin wings around chamber, villous-ciliate on wing margins with hairs to 1 mm long, 1-chambered with 1 ovule; stigmatic hairs on margins of notch at top. **Fruit:** samara, 1-seeded with wing surrounding seed chamber, indehiscent, elliptic to somewhat ovate and strongly flattened (not inflated), in range ca. 9  $\times$  6 mm, tan, seed chamber  $\pm 3.5 \times 2.7$  mm, tan and wings papery, wing tips to 3 mm long, rounded on outer margin, and slightly overlapped at tip, surfaces veiny with raised veins and glabrous but conspicuously villous-ciliate on margins base-to-tip. **Seed:** ovate strongly flattened, 2.6–2.8  $\times$  1.3–2 mm, yellow-brown, wrinkled.

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