

Vascular Plants of Williamson County

Justicia americana – AMERICAN WATER-WILLOW [Acanthaceae]

Justicia americana (L.) Vahl, AMERICAN WATER-WILLOW. Aquatic perennial herb, rhizomatous, clonal forming monospecific clumps shoreline and in shallow water, fibrous-rooted, submersed axes lax, aerial shoots erect from water surface or shoreline, in range to 75 cm tall (from rhizome); shoots with only cauline leaves, glabrous; adventitious roots along horizontal rhizomes nodal. **Stems:** 6-lobed, to 7×5 mm in diameter, tough, light green striped darker green in shallow furrows, internodes to 70 mm long; in \times -section having a conspicuous ring of 6 dark green vascular bundle opposite lobes and 2 smaller bundles in center of white tissue. **Leaves:** opposite decussate, simple, subsessile with pair connected by ledges across nodes, without stipules; blade narrowly elliptic to elliptic, (40–)80–135+ \times (4–)10–25 mm, tapered at base, entire (faintly marked or with tiny sinus where teeth would be formed), pinnately veined with principal veins somewhat raised and midrib conspicuously raised and whitish on lower surface. **Inflorescence:** condensed spike, axillary on long peduncle, 1–2 ascending peduncles per node in canopy, with opposite decussate flowers, glabrous; peduncle somewhat 4-sided, to 115×1.2 – 1.4 mm, green faintly striped, tough, with thick rind (hypodermis); rachis glabrous; bractlet subtending flower deltate and sheathing about $1/2$, 1 mm, becoming somewhat wider in fruit, sheath covering 2 lateral bracteoles, bracteoles triangular, to 0.8 mm long. **Flower:** bisexual, bilateral, in range ca. 4 mm across; **calyx** 5-lobed scarcely fused at base, light green but whitish at base; lobes narrowly lanceolate, 5 – 6×0.85 – 1 mm, slightly wider and overlapping in fruit, with extremely narrow membranous margin, minutely toothed and fringed on margins, 3-veined with veins converging at tip; **corolla** 2-lipped, appearing 4-lobed, 10–12 mm long, in range white, in bud pale purple with lateral lobes of lower lip folded over upper lip; tube + throat \pm bell-shaped, ca. 5×2.5 mm, with several longitudinal dimples (2 prominent indentations), the indentation on lower side approaching central lobe of lower lip, inside the dimples with a purple spot and separated by a ridge, the indentation on the upper side continuous into upper lip; upper lip notched (2-lobed), ± 6.5 – 7×4 mm, the lobes deltate, ca. 0.5 mm, arching backward, having a centerline channel, with a streak of pale purple on inner surface; lower lip 3-lobed, lateral lobes narrowly obovate and widely spreading, 6.5 – 7×3 mm, rounded at tip, lacking spot, central lobe ovate to obovate, 6.5 – 7×4 mm, with midridge on lower surface, inner surface with array of purple spots extending from throat to within 2.5 mm of rounded tip; **stamens** 2, fused to and decumbent from base of corolla tube; filaments free portion 3–4 mm long, white aging pale purple, fleshy, arising beneath lip sinus, short-villous on corolla next to base of free portion, curved below anther to display anther inward, 3 mm and 4 mm long, yellowish; anthers dorsifixed, dithecal, subequal, 1.8–2 mm long, deep purple, with a terminal sac and other sac attached to side and twisted inward, transversely dehiscent; pollen white; nectary disc conspicuous below ovary, oblique larger on lower side and upper sides with sinuses on sides, 1.2 mm diameter and 0.6 mm thick, light green; **pistil** 1; ovary superior, ellipsoid compressed top-to-bottom, 2×0.8 mm, glossy green, faintly 2-lobed, glabrous, 2-chambered, each chamber with 2 ovules; style ca. 7 mm long, light green at base and white above, with minutely barbed to midpoint; stigma at same level as curved upper anther sacs, capitate, green. **Fruit:** capsule, loculicidal, 2-valved, to 4-seeded,

inverted cello-shaped long-tapered below midpoint and seed chambers, 11–14 × ± 3.3 mm, brown and veiny, with seeds vertically erect and parallel to septum, having beaklike point at top. **Seed:** ± round and extremely flat, ca. 3 × 3 × 0.4 mm, tan to light brown, cupped to one side, notched where attached to funiculus, saucerlike cupped to one side, minutely bumpy especially on margins; on fleshy, enlarged funiculus.

A. C. Gibson