

Bidens frondosa L, STICKTIGHT. Annual, robust, taprooted, 1-stemmed at base, branched throughout typically with a pair of ascending branches at each node, erect, in range 70–150 cm tall; shoots with only cauline leaves, in range short-hairy. **Stems:** ± 4-sided or 6-sided with rounded angles or oblong in \times -section, to 12 mm diameter, with 3 ridges descending from each leaf base, longitudinally channeled below nodes, tough, green becoming striped deep purplish red, conspicuously deep red-purple at or just above nodes, short-villous becoming glabrescent, internodes often 80–180 mm long, short-tomentose with shaggy whitish to grayish hairs around base of each lateral branch and adjacent main stem just above each node; solid, pith white. **Leaves:** opposite decussate, odd-1-pinnately 3-foliolate or 5-foliolate, lateral leaflets opposite (subopposite), petiolate with pairs connected by 2 ledges across node, without stipules; petiole channeled, in range 10–65 mm long, the channel conspicuously deep red-purple at base, short-tomentose or short-strigose base-to-tip; blade deltate to ovate in outline, 40–120 \times to 150 mm; rachis channeled, 0–40 mm long; petiolules 0–5 mm long, asymmetrically winged; blade of leaflets lanceolate to broadly ovate, in range 20–85 \times 12–35 mm, terminal leaflet often the longest but when 5-foliolate basal leaflets often \geq terminal leaflet, broadly tapered to long-tapered at base and lateral leaflets oblique, serrate (dentate) on margins, acuminate at tip, pinnately veined with principal veins somewhat raised on lower surface, upper surface green and puberulent, lower surface light green and white short-hairy (hirtellous). **Inflorescence:** heads, in terminal and axillary, cymelike arrays, array open, often with subsets of 3 heads, head discoid (out of range also radiate), 9–12 mm across, in range of 20–60 flowers, bracteate; bract subtending each branch of inflorescence, of lower branches leaflike and typically 3-foliolate, reduced upward and eventually 1-foliolate; branch and branchlet axes ascending, the lowest axes 50–140 mm long, reduced upward, sparsely short-villous mostly at nodes; peduncle irregularly 4–5-ridged, 20–100 mm long, sometimes bearing a bract; bracts subtending involucre (5–)8(–11) (calyculus), appearing whorled and arising from cuplike base, ascending in flower becoming spreading in fruit, ± leafy, narrowly oblanceolate, 6.5–24 \times 1.3–4 mm, often coarsely and remotely ciliate on margins, pinnately veined but only midrib conspicuous on smaller calyculus bracts, sparsely puberulent or glabrous, upper surface often darker green; **involucre** bell-shaped to hemispheric, 7–10 mm wide (excluding calyculus) increasing in fruit, phyllaries (6–)8(–12) in 1–2 series, 6–7 \times 2.7–3.5 mm long, green at base to yellowish green above becoming orange-brown, membranous on margins, acute to acuminate at tip but rounded and minutely short-villous on point, finely parallel-veined, sometimes aging striped or spotted purplish red; receptacle flat, with bractlets (paleae) for disc flowers, palea lanceolate to linear, 6–8.5 mm long, yellowish green, scarious on margins, acute at tip, parallel-veined, becoming yellow-orange or reddish at tip. **Ray flower:** in range not observed. **Disc flower:** bisexual, radial, ± 1 mm across, 2.4–3.1 mm long; **calyx (pappus)** of 2(3) barbed awns, awns erect, subequal, 0.5–3.5 mm long, persistent; **corolla** 5-lobed, glabrous; tube cylindrical, 1–1.3 mm long, light yellow to light greenish yellow becoming green; throat expanding to orifice, 1–1.5 mm long, yellowish; lobes triangular, 0.4–0.6 mm long, vivid yellow to orange-yellow, thickish on margins; **stamens** 5, fused at top of corolla tube; filaments 0.5–0.7 mm long, yellowish; anthers fused into cylinder surrounding style, included, basifixed, dithecal, 0.6–1 mm long, deep purple, longitudinally dehiscent; pollen strong orange-yellow; **pistil** 1; ovary inferior, shield-

shaped, $1.7\text{--}2 \times 1\text{--}1.5$ mm, of outer flowers wider than inner flowers, thin on lateral margins, strigose with upward-pointed hairs, 1-chambered with 1 ovule; style 2–3.5 mm long, faintly 5-lobed above midpoint, **nectary** cup-shaped at base, style 2-branched, the branches exserted, widely spreading, stigmatic and papillate-hairy at acute tip. **Fruits:** cypselae, 2(3)-awned, dark grayish brown, strigose with wartlike base and upward-pointing hairs, acute on 2(3) lateral angles, somewhat dimorphic grading from shorter and wider outer fruits to longer and narrower inner fruits; body of outer cypselae strongly flattened and shield-shaped, $\pm 5 \times 2.5\text{--}3$ mm, with a faint median ridge or line on the broad faces, warty; body of inner cypselae strongly flattened and narrowly wedge-shaped to oblanceolate, to $7.5 \times 1.5\text{--}2.3$ mm, typically ribbed on convex outer face and flat or concave on inner face, warty with scattered stiff, upward-pointing brownish hairs having persistent swollen bases; awns from 0.5 mm long on outer cypselae to 2.5–3.5 mm long on inner cypselae, with brown, downward-pointing barbs, persistent. Late August–early October.

Naturalized. Annual to date only observed a few times growing on wet margins of ponds and lakes. *Bidens frondosa* is a distinctive species with opposite leaves and branches, and blooms during late summer. Elsewhere sticktight has radiate heads, but to date only disc flowers have been observed in range, although ray flowers should be expected. The calyculus in this species is very leafy and consists of different sizes of bracts, and in fruit the head is packed with very flat cypselae having the typical 2 awns (pappus) for the genus (*Bidens* = “two tooth”).

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