

Bidens laevis (L.) Britt., Sterns & Poggenberg, BUR-MARIGOLD. Aquatic annual or short-lived perennial herb, robust, clonal, fibrous-rooted, 1–many-stemmed at base, erect to decumbent, in range 80–200 cm tall; shoots with only cauline leaves, mostly glabrous; adventitious roots numerous at submersed nodes. **Stems:** basal stems cylindric, to 30 mm diameter, upper stems hexagonal with slightly convex faces and rounded angles, ± fleshy when young; internodes hollow. **Leaves:** opposite decussate, simple, sessile with pair fused across node to form 2 narrow flaps, without stipules; blade lanceolate to elliptic, 55–220 × 20–72 mm, symmetric and broadly tapered at base, coarsely serrate and with colorless projections or short-appressed hairs on margins, acuminate at tip, pinnately veined with midrib raised on lower surface, minutely and sparsely short-strigose when young becoming glabrescent, upper surface dark green, lower surface olive green. **Inflorescence:** heads solitary and terminal on long peduncle or with 1–2 peduncles arising from base of an array, head radiate, 40–65 mm across, showy, of 7–13 ray flowers and many disc flowers, bracteate, ± glabrous; peduncle erect (morning) later arching at tip (late afternoon = nodding head), ridged, 25–100 mm long, sometimes with 1–2 leaflike bracts at or above midpoint, strongly arched at tip in fruit; bracts subtending involucre 5–8 ± whorled (calyculus), spreading, oblanceolate, (8–)16–23(–30) × 3.5–5.5 mm, green, twisted and irregularly wavy, sparsely hairy at base, entire to short-ciliate on margins, typically with 5 principal veins at base, aging descending to reflexed; **involucre** at anthesis hemisphere, 10–15 mm wide with phyllaries ascending but later spreading and recurved in fruit, phyllaries 7–13 in ± 2 series (= ray flowers), petal-like, ovate and initially cupped, 8–13(–16) mm long, translucent-yellow, finely striped with many purple parallel veins not converging at tip, minutely ciliate above midpoint, acute at tip; receptacle shallowly convex, with bractlets (paleae) for disc flowers, palea narrowly elliptic to linear-oblanceolate, 8–10 × 1.2–2.5 mm, > disc corolla, width decreasing to center, translucent-yellow and yellow-orange or nearly colorless at the center with purple parallel veins, sometimes orange or aging reddish or purplish at tip, the outermost paleae short-ciliate near tip. **Ray flower:** neuter (sterile), bilateral, 6–13 mm across; **calyx** awns absent; **corolla** 3-toothed or not, 15–29 mm long; tube flattened front-to-back, < 1.5 mm long, yellow-green, sparsely hairy; limb irregularly toothed, obovate to oblong, bright golden yellow with raised veins on lower surface, folded in bud along 2 principal veins, tube and veins on lower surface with scattered short hairs; **pistil** 1, sterile; ovary inferior, rectangular flattened front-to-back, 1.5–2 mm long, nearly glabrous; style and stigmas absent. **Disc flower:** bisexual, radial, ± 2.5 mm across, 7–10 mm long; **calyx** of 2–4 barbed awns, erect, first pair of awns subequal, others (when present) shorter and often unequal, 2.5–3(–4) mm long (long awns) and < 2 mm long (short awns), persistent; **corolla** 5-lobed, glabrous; tube cylindric, 2–2.5 mm long, yellow; throat sharply inflated and bell-shaped, 1.5–2 mm long, light yellow; lobes spreading, equal, narrowly ovate, ± 1 mm long, bright golden yellow, thickish and papillate on upper surface; **stamens** 5, fused at top of corolla tube; filaments short; anthers fused into cylinder surrounding style, fully exerted, basifixed, dithecal, 2 mm long, maroon, longitudinally dehiscent; pollen yellow-orange; **pistil** 1; ovary inferior, wedge-shaped and 2–4-sided, ± 2 mm long, bearing lines of downward-pointing hairs along edges and sometimes on faces, 1-chambered with 1 ovule; style exerted, 2-branched, the branches flat and recurved above anthers. **Fruits:** cypselae, awned (with no awns = sterile flower), fruit body narrowly wedge-shaped, (3.5–

)5.5–6.5 mm long, (2–)3–4-sided and (2–)3–4-ribbed, blackish or red-brown to straw-colored (light-colored fruits mostly sterile); awns 2–4, to 4 mm long, straw-colored with brownish, downward-pointing barbs, persistent. Early August–early December.

Native. Robust wetland herb growing along the banks of Conejo Creek and Callegos Creek on the westernmost edge of the range. These drainage channels are frequently scoured during torrential winter and spring storms, but *Bidens laevis* recovers every year from submersed stems rooted at nodes, behaving as a clonal perennial aquatic herb. Although this species is reported to sometimes have whorled leaves, leaves in our population are always paired, and our plants tend to have solitary heads. The head is erect during morning hours and on cloudy days but may be nodding in late afternoon, and so probably tracks the sun, as does *Helianthus*. Each head is subtended by green bracts (calyculus), which are conspicuous.

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