

Encelia Adans. BRITTLEBUSH

Encelia californica Nutt., CALIFORNIA BRITTLEBUSH, BUSH SUNFLOWER. Shrub, drought-deciduous, many-stemmed at base, 50–150 cm tall; shoots with new leaves bright green, canescent with short, white hairs often appressed, strongly aromatic when crushed. **Stems:** cylindrical but faintly ridged, with 3 ridges descending from each leaf, light green or reddish purple where exposed. **Leaves:** helically alternate, simple, petiolate, without stipules; petiole channeled, 4–35 mm long, sometimes appearing railed or winged by presence of blade tissue; blade broadly ovate or rhombic to lanceolate or trowel-shaped, 20–80 × 7–48 mm, truncate to rounded or broadly tapered at base, entire to serrate or remotely toothed on margins, acute to acuminate at tip, commonly 3-veined at base (if 5-veined the lowest pair less pronounced and the veins lateral to midrib sometimes branching immediately) with principal veins slightly sunken on upper surface and raised on lower surface, with scattered, ± appressed soft hairs aging somewhat rough. **Inflorescence:** typically solitary heads, terminal on long peduncles, head radiate, 35–70 mm across, with 9–27 ray flowers and ± 200 disc flowers, bracteate, hairy; peduncle 45–260 mm long, moderately to sparsely pubescent with short ascending or curved hairs most of length, densely villous to pilose approaching head; bracts along peduncle leaflike but sessile, linear to lanceolate, < 25 mm long, light green, canescent; **involucre** hemispheric, 10–14 × 10–18 mm, phyllaries 18–36 in 2–3 series, lanceolate, 7–11 × 1.8–3.5 mm, thick, entire, acute to blunt at tip, densely long-tomentose to villous and short-glandular (including exposed inner surface); receptacle flat to slightly convex, 6.5–8 mm wide, with conspicuous bractlets (paleae) subtending disc flowers, each palea folded and enclosing ovary, keeled, as long as disc flower or ending at lower corolla throat, mostly white but greenish approaching tip and having wine-red veins and keel, the tip rounded with conspicuous nonglandular and glandular hairs, the nonglandular hairs mostly reddish at base to colorless at tip or some colorless throughout, the glandular hairs shorter, colorless and glistening. **Ray flower:** sterile, bilateral, ± 8 mm across; **calyx (pappus)** absent; **corolla** typically 3-lobed, bright yellow; tube short-cylindric, 4–5.3 mm long, rapidly expanding; limb obovate to narrowly fan-shaped, 10–25 × 5–12 mm, equally or unequally 2-lobed, the lobes unlobed or 1 or both further lobed, sometimes with a small fingerlike lobe between 2 large lobes, faintly parallel-veined; **stamens** absent; **pistil** aborted, < 1 mm long, colorless or white. **Disc flower:** bisexual, radial, 2 mm across; **calyx (pappus)** absent; **corolla** 5-lobed, 4.5–5.5 mm long; tube narrow, cylindric, pale green, with colorless glandular hairs; throat abruptly expanded at base, 2.5–3 mm long, pale green below and wine-red above midpoint, glabrous; lobes spreading to recurved, triangular-ovate, 0.7–0.8 mm long, dark purple, exposed surface conspicuously papillate, in bud outer surface glandular-hairy; **stamens** 5, fused with corolla at base of throat; filaments 1.5–2 mm long, brownish; anthers fused into cylinder surrounding style, slightly exserted, basifixed, dithecal, 2–2.7 mm long, orange-yellow striped reddish brown with yellow ovate appendages, aging darker, longitudinally dehiscent; pollen golden yellow. **pistil** 1; ovary inferior, obovate and strongly compressed, 3–4.3 × 1.5–2.1 mm, whitish, ciliate on margins and with hairs on 1 face, the hairs ascending to erect and 0.7–1 mm long, 1-chambered with 1 ovule; style exserted, 5–6 mm long, 2-branched, the branches recurved, 1–2 mm long, expanding and triangular at tips, golden yellow, short papillate-hairy on outer (lower) surface, flat and glabrous on inner,

exposed surfaces. **Fruits:** cypselae (disc flowers), strongly compressed-obovoid, in range 4.5–6.5 × 2–2.5 mm, dark grayish brown, shallowly notched at tip, densely ciliate on thin, ± cartilaginous edge, sparsely long-hairy on faces, the hairs very fine, 1–1.5 mm long and colorless, ascending on lateral edge and faces, erect on fruit tip. Late November–late August.

Native. Drought-deciduous shrub codominant in certain phases of coastal sage scrub, including on coastal bluffs, and frequently occurring in low chaparral throughout the range. *Encelia californica* is often the first showy flower to appear in inland coastal sage scrub, and in special years a population can produce abundant heads in early February; if rains have been plentiful. Individuals can be found in flower during summer drought, especially along the coast. A hand lens should be used to observe the intense coloration of disc flowers. Species of *Encelia* have large, flat, soft-hairy fruits.

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