

Typha latifolia L., BROAD-LEAVED CATTAIL. Perennial herb, aquatic emergent or in wet mud, clonal forming monospecific colonies, rhizomatous, fibrous-rooted, erect, in range 100–250 cm tall; monoecious; shoots vegetative or fertile in clone, leafy from base to ca. 1/4 height, with 1–3 basal leaves lacking a blade or having a diminutive blade and also with 6–9 cauline leaves having blades, glabrous, not glaucous; rhizome horizontal, cylindrical, 10–15 mm diameter, with airy, white, spongy soft tissue (aerenchyma) enclosing vascular cylinder, covered by scales, the scales lanceolate to narrowly or broadly triangular, 11–15 × 5–15 mm, fibrous, grayish brown; vascular core 5–6 mm diameter, tannish. **Stems:** cylindrical, hidden by leaf sheaths, internodes condensed (basal leaves) to 160 mm long (cauline leaves), smooth. **Leaves:** alternate distichous, simple and sheathing; sheath open, to 560 mm long (cauline leaves), membranous on margins, the margins free on lower leaves or overlapping most of length of upper leaves, truncate or curved approaching blade, with mucilage glands on inner surface, the mucilage glands mostly at sheath-blade transition, roundish to elliptic, colorless but aging brown on membranous margins; ligule absent; blade strap-shaped (wide-linear), 570–1200 × 10–15+ mm, upper 1–2 leaves < inflorescence, gradually tapered 50–100 mm to tip, tough, entire, blunt-acute at tip, parallel-veined, dull, smooth, with mucilage glands on upper surface only at base, in \times -section crescent-shaped at base changing to flat, with conspicuous, longitudinal, air-filled chambers having thin diaphragms (aerenchyma). **Inflorescence:** spikelike, terminal, each stalk erect with 1(–2) spikes of densely and tightly packed pistillate flowers and sterile flowers (lower inflorescence) and with 1(–2) spike of densely packed staminate flowers (upper inflorescence), spikes butted or at most 4 mm apart, sometimes subtended by a leaflike bract, each with thousands of flowers, glabrous; peduncle stemlike, cylindrical, > 650 × 5.7–6.7 mm; bract spreading, open sheath 85–135 mm long and blade 20–50 × 3–5 mm, thin, acutely rounded at tip. **Staminate inflorescence:** cylindrical thick at base and tapered to tip, in range at anthesis 110–150 × 10–15 mm, yellow ochre to tan-colored aging darker; bractlet subtending stalk threadlike but flat, ca. 4 × to 0.05 mm, white to straw-colored; staminate flowers with compound pedicel, with stalk (pedicel or stipe) for pistillate and sterile flowers. **Staminate flower:** **perianth** absent; **stamens** 2–3; filaments 3.5–6.5 mm long, fused most of length, white, flexible; anthers basifixed, dithecal, linear with a swollen tip (connective), (2–)2.8–3.6 mm long, light yellow to yellow with yellowish green on thickened tip, longitudinally dehiscent; pollen light yellow, in clusters of 4 (\pm visible at 30 \times , in several arrangements by having cohesive walls), copious, dry; **pistil** absent. **Pistillate inflorescence:** cylindrical, 120–180+ × 8–12 mm, with even diameter, at anthesis green, short-oblique at base, aging to 3 \times thick and dark brown in fruit; bractlet subtending stalk absent; stalk of flower (stipe) < 0.5 mm long greatly increasing in fruit, of pistillate flower with many fine hairs at base, the hairs ca. 1.5 mm long increasing in fruit, of sterile flower hairs fine, 4–6.5 mm long in lower whorls and 3 mm long in upper whorls. **Pistillate flower:** **perianth** absent; **stamens** absent; **pistil** 1; ovary superior, narrowly fusiform, ca. 0.3 × 0.1 mm, pale green to transparent, 1-chambered with 1 ovule; style 1.5–3.5 mm long, pale green or white at base; stigma narrowly lanceolate, 0.6–0.8 mm long, greenish becoming grayish brown. **Sterile flower** (carpodium): \pm = upper hairs; **perianth** absent; **stamens** absent; **pistil** 1, with sterile ovary, obovoid, ca. 0.7–1.2 × 0.2–0.4 mm, light green, smooth on top, abortive style < 0.3 mm long. **Fruit:** follicle, on hairy stipe, splitting lengthwise in water, 1-

seeded, fusiform, $1.1-1.3 \times 0.25-0.35$ mm + \pm helically twisted persistent style; stipe 3.7–6 mm long with a whorl of basal hairs and helically arranged hairs below midpoint, basal hairs 8–9 mm long, upper hairs 6–7 mm long. **Seed:** fusiform, $1-1.3 \times 0.3$ mm, golden buff, tapered at base, truncate at tip. June–late July.

Native. Emergent aquatic perennial herb known from scattered localities, but overall rare in counties of southern California. *Typha latifolia* is described as a broad-leaved species and being the most common and widespread species of cattail in North America, but in range blades of this species are not always broader than those of tall clones of *T. domingensis*, and its blades tend to be flattish in cross-section. The mucilage cells of *T. latifolia* are smaller and less abundant at the sheath-blade transition than those of its taller cousin. The spikes typically are butted (not interrupted), and the pistillate inflorescence lacks bractlets. Also, *T. latifolia* has pollen grains in tetrads, wherein pollen grains are coherent in beadlike strings or clusters of four. The pistillate spike of *T. latifolia* initially is green, not cinnamon brown, and ages dark brown in fruit. In colder climates, *T. latifolia* is winter-dormant and can tolerate freezing temperatures, but our local plants remain leafy year-round.

At least one population of cattail in range appears to be a sterile hybrid of *T. latifolia* and *T. domingensis*. That putative hybrid is distinguished by resembling *T. latifolia* in leaf and having thick, dark brown spikes, but it has single pollen grains that are judged to be sterile when stained with cotton blue.

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