

Populus trichocarpa Hooker, BLACK COTTONWOOD. Tree, winter-deciduous, colonial forming single-sex clones via spreading roots, when mature with 1–several trunks but also nearby having younger, several-stemmed clones, in range to 20 m tall; dioecious; shoots with resinous, narrowly lanceoloid winter buds, winter bud covered with roundish to narrowly ovate, brownish scales, the lowermost bud scale with ciliate margins, when expanding having young leaves strongly inrolled to upper side (involute), strongly aromatic; bark initially tight, dull light gray, on trunk thick and difficult to remove, with longitudinal creases but mostly not deeply furrowed. **Stems:** initially cylindrical, pubescent with nonglandular short hairs, brown, with transverse leaf scars shallowly inversely triangular having 3 conspicuous vein traces. **Leaves:** helically alternate, simple, petiolate, with stipules; stipules 2, attached to stem, narrowly triangular to narrowly lanceolate or narrowly oblanceolate, 4.5–8.5 mm long, yellowish tan, thin and entire on margins, acute to rounded at ciliate-pubescent tip, deciduous; petiole \pm cylindrical (not channeled), 12–55 mm long, mostly $> 1/3$ blade except for late-summer leaves, pubescent; blade narrowly to broadly ovate or triangular-ovate, 30–80 \times 25–70 mm, broadly tapered to rounded or truncate at base, short-serrate on margins with short-pointed teeth turned toward tip, acute to obtuse at tip, pinnately veined with principal veins raised on both surfaces (especially lower surface), when young resinous, glossy, and puberulent, upper surface aging dull and glabrescent, lower surface with minor veins forming a conspicuous, raised network, becoming glabrescent, light gray, \pm glaucous. **Inflorescences:** unisexual catkins (racemelike), many-flowered, emerging before leaves from base of winter buds on stiff stems, flowers alternate, bracteate, pubescent. **Staminate inflorescence:** catkin (ament) lax and pendent, curving above peduncle, fully expanded long-cylindrical, 50–90 \times 6–10 mm, short-hirsute; peduncle 2–7 mm long; rachis straight, ridged with a ridge descending from each bract, yellowish white to light green, pubescent; bract (bractlet) subtending floral axis (“pedicel”) roundish, 5.5 \times 4.5 mm, abruptly narrowly tapered at base, jagged on margin into 8–10 large teeth, the teeth fringed into finer teeth; floral axis 1.5–2.7 mm long, expanding as base of “involucre”; **involucre** broadly funnel-shaped, 1–1.5 \times 3–4 mm, light green, wavy on rim, short-hirsute, internally glabrous. **Staminate flower:** = stamens (attached to involucre), ca. 3 mm across; **perianth** absent; **stamens** 8–55, free, 2–3 mm long, exerted and often hanging over involucre rim; filaments threadlike, 1–1.5 mm long, white; anthers basifixed, dithecal, 1.1–1.5 \times 0.7–1 mm, purplish red to purplish pink, longitudinally dehiscent and shedding pollen before appearance of new leaves; pollen light yellow, copious, dry, airborne; **pistil** absent. **Pistillate inflorescence:** catkin pendent, curving at base or rachis, with developing fruit long-cylindrical, 80–100 \times 10–13 mm, conspicuously short-pubescent; peduncle flexible, 10–12 mm long increasing in fruit; rachis straight, ridged with a ridge descending from each bract, yellowish white to light green, pubescent; bract (bractlet) subtending short floral axis (“pedicel”) roundish, 5.5 \times 4.5 mm, abruptly narrowly tapered at base, jagged on margin into 8–10 large teeth, the teeth fringed into finer teeth; floral axis < 0.5 mm long, expanding as base of “involucre”; **involucre** broadly funnel-shaped, 2–3.5 \times 4–5 mm, green, wavy on rim, villous at base, internally pubescent. **Pistillate flower:** = pistil (surrounded by involucre), ca. 5 mm across; **perianth** absent; **stamens** absent; **pistil** 1; ovary superior, broadly ovoid, 3–4 \times 3–4 mm, green, 6-ribbed, villous, 1-chambered with 36–45 ovules attached to placentae on outer side; styles absent or < 0.5 mm long; stigmas (2)3, sometimes unequal, broadly fan-

shaped to circular in outline and sometimes 3–6-lobed, 2–3 × 2.3–3 mm, fleshy, light yellowish green, cordate at base, short-crenate on margin, pubescent to villous on outer face, papillate on inner face. **Fruit:** capsule, loculicidal, dehiscing by 3 valves from top downward, many-seeded, shallowly 3-lobed and ovoid, 9–10 × 6.5–7 mm, dull brown and short-hairy, surface elaborately wrinkled, inner surface of valve ± dull tannish brown, the valves recurved to coiled; involucre 2.5–3 mm wide, papery, with rim ± recurved, short-tomentose. **Seed:** with long, silky white hairs attached at 1 end (comose); seed body obovoid to oval and somewhat compressed, ca. 1.4 × 0.6 mm, appearing dull brown when covered with downy coat. Late January–late February.

Native. Winter-deciduous tree occurring in Malibu, Topanga, Rustic, and Arroyo Sequit canyons (SMM), especially in riparian woodland along creeks or canyon bottoms with deep moisture year-round, where it forms single-sex clones. *Populus trichocarpa* formerly was treated as a variety of *P. balsamifera* L., and is closely related to that species native to the northern temperate zone. Where the two local species of *Populus* coexist, black cottonwood tends to finish its flowering and starts to leaf out before Fremont cottonwood begins its spring growth. The catkins of *P. trichocarpa* are more slender, and the rachis is also more slender.

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