

Chenopodium L. GOOSEFOOT

Chenopodium californicum (S. Watson) S. Watson, CALIFORNIA GOOSEFOOT, SOAP PLANT. Perennial herb, thick-taprooted with caudex, many-stemmed at base, decumbent to ascending, 25–70(–90) cm tall; shoots with only cauline leaves, initially with clear, spheric particles (appearing \pm glandular on young growth, sparsely farinose), nonaromatic; root deep-seated with caudex 50–80 mm belowground, like a sugar beet (*Beta vulgaris*), to 80 mm diameter, gradually tapered, surface gray-brown, flesh whitish with arcs of thickening. **Stems:** cylindric (belowground stem) and conspicuously ridged (aboveground stem), to 8 mm diameter, magenta belowground, ridges descending from each aboveground leaf, internodes 5–50 mm long, sparsely farinose. **Leaves:** helically alternate, simple, petiolate, without stipules; petiole 3-angled or 5-angled and deeply channeled, 10–110 mm long (scaling with blade length); blade deltate to narrowly triangular, 30–110 \times 20–105 mm, thin, truncate or cordate to lobed (hastate) at base, coarsely serrate-dentate and wavy on margins, acute to acuminate at tip, pinnately veined with 3 or more principal veins diverging from petiole and raised on lower surface, dull green (glaucous), sparsely farinose. **Inflorescence:** dense spikelike panicle of helically arranged flower clusters (glomes), terminal, 50–500 \times 5–12 mm, somewhat interrupted, glome to 12-flowered, \pm spheric, 3–6 mm across, flowers subsessile and most open at the same time along axis, bracteate; axis many-ridged, sparsely farinose; bract subtending each glome below mid-inflorescence leafy, reduced upward to scales, the smallest leafy bracts subsessile and narrowly ovate, 15 \times 5 mm, entire, the scaly bracts awl-shaped, 2–3 mm long; glome axis $<$ 2 mm long; pedicel $<$ 0.8 mm long. **Flower:** bisexual to functionally pistillate with diminutive stamens or pistillate without any stamen remnants, \pm radial, 1 \times 1.5 mm; **perianth** calyxlike, 4–5-lobed, green, farinose becoming glabrate; tube cup-shaped, 0.5 mm long increasing to 1 mm long in fruit; lobes \pm 0.5 mm long, jagged and colorless on margins, obtuse or rounded to truncate at tip, not covering mature fruit; **stamens** (0 or 1–)3–5 (some or all diminutive and sterile), included; filaments flat, 0.2–0.7 mm long, whitish; anthers dorsifixed, dithecal, 0.6 mm long, greenish yellow but often reddish at tip, longitudinally dehiscent; pollen pale yellow; **pistil** 1; ovary superior, ovoid and compressed side-to-side or spheroid, 0.5–0.7 mm long, 1-chambered with 1 ovule, with style (beak) shorter than stigmas; stigmas 2, barely exerted, 0.3–0.5 mm long. **Fruit:** achene (utricle), indehiscent with fruit wall strongly adherent to seed, vertical, spheroid to oblong and slightly compressed side-to-side, 1.2–2.2 \times 1.3–2.2 mm, dull brown to black, sometimes frosted tannish, finely textured. Late January–mid-April.

Native. Perennial herb occasionally encountered throughout the range in grassland, coastal sage scrub, and southern oak woodland. *Chenopodium californicum* has many spreading shoots arising from and often resting on the ground, but with ascending to spreading inflorescences. Many flowers are functionally pistillate having diminutive stamens, but occasionally one can observe a pistillate flower with no trace of stamens.

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