Equisetum laevigatum A. Braun, SMOOTH SCOURING RUSH. Perennial herb, clonal, with photosynthetic stems lasting < 1 year (sometimes overwintering), rhizomatous, fibrous-rooted, 1–several-stemmed at base, stems jointed, unbranched or with whorled ascending branches at particular nodes (sometimes also at ground level), erect to ascending, in range 30–180 cm tall; shoots without foliage, each green stems potentially with a terminal, spore-producing cone (strobilus); rhizomes horizontal and ascending, 2–3 mm wide, blackish. **Stems:** with 14–23 low ridges, principal stems 2–4.5 mm diameter at base, straight, tough, slightly constricted at nodes, each segment green initially lacking a black band on lower internode underneath sheath of older stem segment (sometimes present on 1–several of the lowermost nodes), internodes hollow, typically 14–150+ mm long, scabrous due to silica projections (transverse ridges) in cell walls, with 2 longitudinal lines of sunken stomates within each stem valley; mature wall thin, in ×-section with a ring of canals beneath each rib; lateral branches whorled but not symmetrically so, 6–8-ridged, 30–120+ × 1.2–1.8 mm, ridges appearing short-toothed with abrasive projections. **Leaves:** as many as stem ridges, whorled and fused forming sheath around node with scalelike free portions; sheath narrowly vase-shaped, mostly 8–12 mm long, length > diameter, green with pale margin at tip bordering black band of upper sheath and lobes, the pale margin aging somewhat gray to whitish; free portions of leaf flat and long-tapered, 0.6–0.8 mm wide, with dark black base and unpigmented tips, 1-veined, soon dead and often shedding tips becoming a dark, truncate rim with lobes curved inward, especially at lower nodes tip and adjacent sheath forming a single black band 1–6 mm long; free portions of leaf on lateral branches acuminate, 2–5 × 0.6–0.8 mm, dark brown-black with scarious margins approaching tip, 1-veined, often persistent. **Cone (strobilus):** terminal, narrowly ellipsoid or oblong-ellipsoid with short tip, (10–)14–15 × 4–5 mm (much smaller on slender lateral branches), of whorled, stalked, umbrellalike (peltate) scales (sporangiophores); stalk of cone to 5 mm long, somewhat exserted from sheath, yellowish, with sterile, cuplike collar at the lowest node (annulus), the annulus 1.5 × 4 mm, with ± 8 short teeth, internode to first whorl of sporangiophores 1–1.5 mm long; whorls ± 7 typically with 7–8 sporangiophores per whorl; scale surface of sporangiophore polygonal and typically 6-sided, yellow ochre with a deep purple to black depressed center, aging brown and black, each peltate scale bearing 6 inward-pointing sporangia on concealed surface. **Sporangia:** sausage-shaped, ± 1 mm long, light green. **Spores:** spheric, light green, wrapped with 4 straplike, hygroscopic appendages with expanded ends (elaters).

Native. Perennial herb with mostly annual shoots, found occasionally along creek beds in riparian woodland of several shaded canyons facing the ocean, e.g., Trancas Canyon, where soil remains wet or moist most of the year. *Equisetum laevigatum* has narrow principal stems and slender branches that die within a year (sometimes overwintering), in comparison with the more common, thicker stemmed *E. hyemale*. Except at the base of the plant, most nodes have a single black band, being the tannin-rich upper sheath and free portions of leaves.

A natural hybrid exists between *E. laevigatum* and *E. hyemale* subsp. *affine*, named *Equisetum* × *ferrissii* Clute. It is intermediate in the vegetative characteristics of the two species. This interspecific hybrid has stems that overwinter and produce pointed cones,

but the spores are white and sterile. These clones therefore persist vegetatively via rhizomes, either where a parent is present or not, and should be looked for especially if the two species are found growing together. Because the hybrid has arisen spontaneously at many locations within the ranges of the two parental species, *Equisetum* × *ferrissii* cannot be treated as a properly recognized taxon, which nowadays infers that it started only from a single population (monophyletic).
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