

*Persicaria amphibia* (L.) S. Gray, WATER SMARTWEED. Aquatic and shoreline perennial herb, clonal forming monospecific colonies, rhizomatous and spreading via stolons, fibrous-rooted, typically with an unbranched shoot from each node of stolon (submersed or terrestrial), erect to ascending, 20–250 cm tall; shoots with only cauline leaves, strigose with upward-pointing hairs becoming glabrate, lower shoots sometimes  $\pm$  glabrous, not gland-dotted; stolons horizontal, partially buried in bottom debris (when submersed), straight with long internodes, glabrous, hollow; adventitious roots numerous at nodes. **Stems:** cylindric, to 11 mm diameter, distinctly swollen just above each node, often rose-red, mostly glabrous (concealed beneath pubescent ocrea) to sparsely strigose where not covered by ocrea (upper plant), occasionally also with stalked glandular hairs approaching inflorescence, often markedly bent at nodes; hollow. **Leaves:** helically alternate, simple, petiolate (sessile), with stipules; stipules (2) fused into a cylinder and sheathing stem (ocrea), basally fused to margins of petioles and typically with stem between petiole margins, 10–50 mm long, truncate, membranous and pinkish becoming brown or reddish brown, aging brittle and fracturing, sometimes ciliate on margin, with 11–14 parallel veins above midpoint, strigose becoming glabrate (glabrous); petiole  $\pm$  hemi-cylindric above ocrea, wide base encircling stem ca.  $2/3$ , 3–65 mm long, wide base encircling stem  $2/3$ , strigose becoming glabrate or short-strigose on flat side; blade lanceolate to narrowly ovate or oblong-ovate, in range 80–170  $\times$  25–80 mm, flat, rounded to tapered at base, entire, acuminate to acute at tip, pinnately veined with midrib raised on both surfaces, strigose becoming glabrate or hairs persisting on margins. **Inflorescence:** spikelike panicle, terminal, erect, solitary or with a shorter lateral panicle arising on peduncle, each panicle cylindric, 40–110  $\times$  8–17 mm, of 5–9-flowered cymes, cymes many, overlapping, and dense, uninterrupted or just the lowest cyme separated by an internode to 13 mm long, bracteate, densely glandular-hairy with stalked hairs having pinkish or yellowish to red heads; bract subtending peduncle leaflike, 10–85  $\times$  8–30, with a strigose ocrea, the ocrea typically  $<$  15 mm long; peduncle of main inflorescence  $<$  30 mm long, densely glandular-hairy above ocrea; bract subtending peduncle of lateral inflorescence awl-shaped, to 6 mm long, strigose, with ocrea ca. 1.5 mm long, strigose or glandular-hairy; bract subtending 1–2(–3) flowers triangular to deltate, 2–2.5 mm long, acute to acuminate at tip, greenish along midrib, long-ciliate on margins, strigose and glandular-hairy; axis ridged and densely glandular-hairy; bractlet subtending pedicel membranous like ocrea, broadly obovate and mostly forked, 1–2.5 mm long, glabrous or  $\pm$  strigose along veins and ciliate or not at tip; pedicel  $\pm$  erect, cylindric, at anthesis 1.5–2 mm long increasing ca.  $2\times$  in fruit, straight, light yellow to white at base to deep pink above, glabrous, persisting after flower abscises. **Flower:** bisexual, radial, fully open 4 mm across, protandrous; **perianth** 5-lobed in 2 whorls, 4–5.5 mm long, dark pink aging lighter and sometimes light lime green or yellowish green at base, not keeled or winged, lacking glandular dots, persistent; tube cuplike, 1–1.5 mm long; lobes (tepals) overlapping, oval, 1.3–2 mm wide; **nectary disc** 5-lobed, dark rose to dark red, fused to perianth tube for ca. 0.8 mm, the lobes tongue-like and 0.2 mm long; **stamens** 5, fused to perianth tube below sinuses, exerted before perianth spreads; filaments 2.7–4 mm long, white to pale yellow, flat 0.3 mm at base; anthers  $\pm$  versatile, dithecal, 1–1.2 mm long, dark pink, longitudinally dehiscent; pollen pale yellow to pink; **pistil** 1, 3.6–4.5 mm long; ovary superior, compressed-ovoid, 1–1.8  $\times$  0.9–1.5 mm, glossy yellowish or whitish at base to reddish above, 1-chambered with 1 ovule;

styles 2, fused at or below midpoint and wishbonelike, white or pink, thick below fork, the branches ascending, 1.6–2 mm long; stigmas capitate, inversely conic, finely papillate on upper surface. **Fruit:** achene, thick lens-shaped, 2.5–3 × 2.4–2.8 × 1.7–2 mm, glossy dark maroon-brown or dark oxblood-brown, smooth to minutely granular; enclosed by persistent perianth still pink at maturity. Mid-June–Mid-January.

Native. An aquatic perennial herb, widespread around the world, found here growing in shallow fresh water and shorelines of ponds as well as along drainage channels.

*Persicaria amphibia* forms extensive clones mostly via horizontal stolons slightly embedded in the substrate; each stolon has nodal adventitious roots, and an erect shoot forms at each node. The shoot may be only vegetative but often forms a terminal, cylindrical, bright pink inflorescence of crowded cymes, and also there may be a smaller lateral inflorescence. When growing within tule (*Schoenoplectus*), shoots of water smartweed supported by the stems of tule can grow into the canopy, and those plants can exceed two and a half meters in height, but self-supporting clones typically are less than a meter tall.

B. A. Prigge & A. C. Gibson