

*Lemna gibba* L., INFLATED DUCKWEED, WIND BAGS. Perennial herb, floating aquatic, clonal via fragmentation forming dense colonies, fibrous-rooted, tightly rosetted, of mostly 1–3 coherent, highly reduced, horizontal shoots (fronds), with mother frond producing new daughter fronds successively in 2 lateral pouches (daughter fronds initiated on different days and always unequal), the daughter fronds breaking free to become mother fronds; frond = stem (basal portion) + leaf, highly modified, with 2 pouches, each pouch along a straight edge next to base of frond and containing a deep-seated shoot tip to produce either a daughter frond or also an inflorescence (rarely), buoyant with large internal air chambers, upper surface waxy and  $\pm$  nonwetable, glabrous; adventitious root 1 per frond, eccentric and located near stem, in range mostly to  $65 \times 0.2$  mm, sheathed at tip and without root hairs, white or green on young portion, with visible vascular core, if abscised leaving a depressed circular scar. **Stem (stipe):** connecting daughter frond from pouch at base of mother frond, minute, white. **Frond:** at maturity  $\pm$  hemispheroid with inflated lower surface, at maturity mostly obovate (roundish) in outline, when free-floating  $2\text{--}7 \times 2\text{--}6.5$  mm, emerging from pouch roundish and half lens-shaped, upper surface glossy green or with margin having a narrow red edge, entire, acute at original point of attachment at top of pouches, indistinctly several-veined from node with veins extending beyond midfrond and having minute conic papillae along veins on upper surface; pouches open to or above midfrond, to 4 mm long, opening lens-shaped in face view, with membranous margins on lips, the lips appressed to emerging frond or gaping when chamber empty (frond released); lower surface resembling a domed turtle shell (narrowly rimmed) with a network of blisterlike segments (= vertical internal air chambers), grayish green but sometimes tinged purplish red, large blisters on surface to 2.5 mm long, convex surface with sculpturing of cell walls. **Inflorescence:** in range rarely observed, in only 1 pouch axillary to a small frond scarcely exerted, appearing like a bisexual flower (properly interpreted as minute unisexual flowers = 1–2 staminate flowers and 1 pistillate flower), enclosed by bract (spathe), at pollination anthers only exerted from pouch lip, glabrous; spathe surrounding flowers but open at top, membranous and utriclelike, ca. 1 mm long. **Flower: perianth** absent; **stamens** 1–2, free; filament attached to base of pistillate flower, narrowed at base and tip, 1–1.2 mm long, colorless but greenish below anther; anthers basifixed, dithecal, sacs separate, each sac spheroid, 0.3–0.35 mm, pale greenish yellow, obliquely longitudinally dehiscent; pollen pale yellow; **pistil** 1, bottle-shaped,  $\pm$  1 mm long = just below anther; ovary superior, 3-sided ovoid,  $0.6 \times 0.6 \times 0.4$  mm, pale greenish yellow, with 2 prominent edges and 1 flat face, 1-chambered with 2–7 ovules; style tapered and appearing truncate at tip, colorless; stigma indented funnel-shaped. **Fruit:** (not observed) follicle, bursting, several-seeded, 0.6–1 mm long, 2-edged, wall membranous. **Seed:** nearly as long as fruit, with 8–16 distinct ribs. Early August–fall.

Native. Clonal floating aquatic perennial recorded in range but not seen in recent years, expected to be living in full-sun, dense colonies in quiet bodies of water with high levels of nitrogen fertilizer. *Lemna gibba* is easy to identify because it is hemispheric by having the submersed portion inflated due to formation of large internal air chambers, which serve as a flotation device. Flowering of this species is cryptic, and even when in flower only a couple individuals may be found with anthers per thousand fronds examined, so the full range of flowering dates in nature is not known, because so few people have ever bothered to find flowers. Irrigation ditches next to agricultural land just two kilometers west of the

range during summertime may have dense populations of *Lemna gibba* growing with the tiny and rootless *Wolffia columbiana*, which can also be expected in range.

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