

Boggs Lake hedge hyssop (*Gratiola heterosepala*)



THREATENED



Flowers (left), habit (center), and habitat (right) of Boggs Lake hedge hyssop. Photos by Thomas Kaye. If downloading images from this website, please credit the photographer.

Family

Plantaginaceae

Plant description

Boggs Lake hedge hyssop is a semi-aquatic annual with erect, striate stems 2-10 cm high, stout, tubular, and glabrous below, slender above, and glandular-pubescent in the inflorescence. Leaves are opposite, each pair arranged on the stem at right angles to the pair above and below, the lowermost linear-lanceolate and 1-2 cm long, the upper reduced, obovate, rounded or emarginate, and 2-5 mm long. Flowers are few and borne on slender, erect, glandular-pubescent pedicels lacking bracts. Sepals are unequal, the lower two distinct, 4-6 mm long, oblong, obtuse, and emarginate, the upper three fused for 1/3 their length or more, the middle lobe emarginate, broader and longer than the lateral two. The corolla is tubular and 5-lobed, 6-8 mm long, the lobes 1-2 mm long, the upper pair yellow and fused nearly to the tip, the lower three white with deeper sinuses. The corolla tube is yellow, somewhat curved, quadrate, exceeding the calyx, and pilose with gland-tipped hairs on the external surface and a few simple hairs within. Stamens 2, with short, slender filaments attached approximately midway on the tube below the upper pair of corolla lobes. The capsule is pear-shaped, about equaling the persistent calyx.

Distinguishing characteristics

Two other *Gratiola* species overlap in range with Boggs Lake hedge hyssop: *G. ebracteata* and *G. neglecta*. *Gratiola ebracteata* is distinguished from Boggs Lake hedge hyssop by entirely white or purplish corolla lobes and sepals that are longer, pointed, and separate nearly to their bases; *G. neglecta* is distinguished by entirely white or purplish corolla lobes, corollas often more than two times the length of the calyces, and calyces immediately subtended by a pair of bractlets.

When to survey

Surveys for Boggs Lake hedge hyssop should be completed when the species is flowering, from April to July, depending on conditions.

Habitat

Boggs Lake hedge hyssop occurs in vernal pools, marshy regions on the margins of reservoirs and lakes, and in human-made habitats including borrow pits and cattle ponds, most often in clay substrates. In Oregon, it occurs in seasonal wetlands within an area of open juniper and sagebrush at 1630 m (5360 ft).

Associated plant species at the Oregon site include *Downingia laeta*, *Eleocharis palustris*, *Epilobium pygmaeum*, *Marsilea vestita*, *Plagiobothrys scouleri*, *Psilocarphus brevissimus*, and *Veronica* sp. The most frequent associate of Boggs Lake hedge hyssop throughout its entire range is *Gratiola ebracteata*.

In California, wetlands containing Boggs Lake hedge hyssop occur among annual grassland, *Quercus* woodland, *Juniperus* woodland, or coniferous forest at elevations ranging from 8-1580 m (25-5170 ft).

Range

Boggs Lake hedge hyssop is known from only one occurrence in Oregon, in southern Lake county near the California border, within the Northern Basin and Range ecoregion.

The vast majority of Boggs Lake hedge hyssop sites occur in California. These are primarily concentrated within the Modoc Plateau, with two secondary areas of occurrence located in the southeastern and northeastern portions of the Sacramento Valley. The species also occurs within the Southern Sierra Foothills, Solano-Colusa, Lake-Napa, and Northwestern Sacramento Valley Vernal Pool Regions.

Oregon counties

Lake

Federal status

Species of Concern

Threats

Habitat loss and degradation due to residential, commercial, and agricultural development is a major threat to this species. Additional threats include invasion by exotic weeds, particularly *Taeniatherum caput-medusae*; hydrological alterations such as excavation and damming; trampling by livestock; and road erosion. A number of Boggs Lake hedge hyssop occurrences are very small and are at risk of extirpation due to chance events.

Conservation planning

A U.S. Fish and Wildlife Service [Recovery Plan](#) for vernal pool ecosystems of California and Southern Oregon was released in 2005 and addresses conservation needs of Boggs Lake hedge hyssop.

Did you know?

Boggs Lake hedge hyssop was first collected from Lake County, California in 1923 but it was not described until 1954. For decades, the species was known only from Boggs Lake, California, until a new California site was discovered in 1961, followed by discoveries of sites throughout California beginning in the late 1970s. The Oregon occurrence of Boggs Lake hedge hyssop was discovered in 1980.

References

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