

U.S. Fish & Wildlife Service
Bay Delta Fish & Wildlife Office
Species Account
SOFT BIRD'S-BEAK
Cordylanthus mollis ssp. mollis



CLASSIFICATION: Endangered

Federal Register 62:61916; November 20, 1997

http://ecos.fws.gov/docs/federal_register/fr3177.pdf

This species was listed as rare by the California Department of Fish and Game in July 1979. The California Native Plant Society has placed it on List 1B (rare or endangered throughout its range).

CRITICAL HABITAT: DESIGNATED

Federal Register [72:18517](#) (PDF 1.4MB); April 12, 2007

RECOVERY PLAN: FINAL

Draft Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California

edocket.access.gpo.gov/2010/2010-2279.htm

edocket.access.gpo.gov/2010/pdf/2010-2279.pdf (52 KB)

DESCRIPTION

Soft bird's-beak (*Cordylanthus mollis ssp. mollis*) is an erect annual herb of the broomrape (Orobanchaceae) family. It is being reclassified as *Chloropyron molle* subsp. *molle*. However, it continues to be called *Cordylanthus mollis ssp. mollis* on the Federal List of Threatened and Endangered Wildlife and Plants, and this is the name that will be used in this species account.

Plants grow 10 to 40 centimeters (4 to 16 inches) tall, branching sparingly from the middle and above. Leaves are 1.0 to 2.5 centimeters (less than 0.5 to 1.5 inches) long. They may be entire or pinnately lobed (three to seven lobes). Foliage is grayish-green (often purple-tinged), and covered with very fine hairs bearing glands as well as longer soft non-glandular hairs.

The tubular flowers are pale cream to yellowish at the tip, and crowded together in spikes 5.0 to 15.0 centimeters (2 to 6 inches) long. These spikes support about 3 to 30 flowers, each partially covered by a leafy gray-green to purplish lobed bract that resembles a calyx. The calyx is sheath-like, and encloses most of the corolla tube. The corolla is densely tomentose (woolly) with yellowish white or greenish yellow lips, and often bears purplish pollinator guides. The upper lip of the corolla is beak-like, and encloses the two stamens and a style; there is also an undeveloped sterile pair of stamens. The lower lip of the corolla is pouch-like, and divided into three lobes with the middle rolled or folded. The fruit is a capsule, approximately 8 millimeters (0.3 inch) long. Seeds are 2 to 3 mm (0.1 inch) long.

Flowers appear between July and September. The plant is distinguished by its two functional stamens and by its bracts with two or three pairs of lateral lobes.

Like other members of *Cordylanthus* and related genera, soft bird's-beak is partially parasitic on the roots of other plants. See Hickman(1993) in General Information about California Plants, below, for a detailed description of the species. Other endangered bird's beaks of Northern California include the palmate-bracted bird's-beak and the Pennell's bird's-beak.

Soft bird's-beak is found predominantly in the upper reaches of salt grass/pickleweed marshes at or near the limits of tidal action. It is associated with pickleweed or Virginia glasswort (*Salicornia virginica*), saltgrass (*Distichlis spicata*), fleshy or marsh jaumea (*Jaumea carnosa*), alkali seaheath (*Frankenia salina*) and seaside arrowgrass (*Triglochin maritima*).

Cirsium hydrophilum resembles several other thistles that occur in wetlands, but only one is likely to occur near or in the same brackish tidal marsh habitat in Suisun Marsh. *Cirsium vulgare* (bull thistle), a European weed, is generally found in physically disturbed marsh locations where soil salinity is low.

Summary of field characters for discrimination between *Cirsium vulgare* and *Cirsium hydrophilum* var. *hydrophilum* populations found in Suisun Marsh, Solano County, California (From the Draft Recovery Plan for Tidal Marsh Ecosystems)

Trait	<i>Cirsium vulgare</i>	<i>Cirsium hydrophilum</i>
upper leaf surface, basal leaves	coarsely hairy to bristly and dull in maturity	glabrate (few hairs) to glabrous (hairless) in maturity, lacking bristles, somewhat glossy to glossy
lower leaf surface, basal leaves	thin covering of short woolly hairs, appearing pale green	thick covering of long white cobwebby to woolly hairs, appearing white
rosettes	low number of leaves, most large and few-lobed	large number of leaves, continuous size range, mostly with many lobes
stems	with well-developed wings extending from leaf bases; wings strongly spiny	weakly developed or lacking spiny wings
leaf lobes	straight, parallel edges; spines thicker, longer, harder than <i>C. hydrophilum</i>	curved edges; spines more slender, shorter, less hard than <i>C. vulgare</i>
flowerheads	wide at top of egg-shaped head	tightly constricted at narrow top of egg-shaped head
“seeds” (dry fruits)	tan to brown, with thin walls, dull surface, frequently attached to <i>pappus</i> after dispersal	black to dark brown, thick walls, glossy surface, soon detached from <i>pappus</i> before, during, or after dispersal

DISTRIBUTION

There are currently 11 populations with documented occurrences in nine general areas: Rush Ranch, Hill Slough, Joice Island, Benicia State Recreation Area, Point Pinole, Concord Naval Weapons Station, Fagan Slough, McAvoy Boat Harvor and Denverton.

U.S.G.S. 7.5 Minute Quads: Denverton (481B) 38121118, Fairfield South (482A) 3812221.

THREATS

The fundamental cause of the decline of soft bird's-beak from a locally common to very rare plant was the historical diking of almost all of Suisun Marsh and the conversion of extensive tidal brackish marsh to non-tidal wetlands

Rapid invasion of brackish tidal marsh by *Lepidium latifolium* is a very significant threat to the persistence of soft bird's-beak colonies. *Lepidium latifolium* can readily invade both diked and tidal brackish marshes with low salinity during the growing season.

Cattle grazing and trampling impacts in *tidal* Suisun marshes are currently remote from most existing colonies of soft bird's-beak, but are locally intensive in unoccupied suitable habitat.

REFERENCES FOR ADDITIONAL INFORMATION

There is a special [soft bird's beak species account](#) for 4th, 5th and 6th grade students.

Tank, D.C., J.M. Egger, and R.G. Olmstead. 2009. Phylogenetic classification of Subtribe Castillejinae (Orobanchaceae). *Systematic Botany* 34(1):182-197.

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