

U.S. Fish & Wildlife Service  
Bay Delta Fish & Wildlife Office  
Species Account  
SUISUN THISTLE  
*Cirsium hydrophilum* var. *hydrophilum*

CLASSIFICATION: Endangered  
Federal Register 62:61916; November 20, 1997  
[http://ecos.fws.gov/docs/federal\\_register/fr3177.pdf](http://ecos.fws.gov/docs/federal_register/fr3177.pdf)

STATE LISTING STATUS AND CNPS CODE:

The California Native Plant Society has placed it on List 1B (rare or endangered throughout its range). The California Department of Fish and Game has not listed it.

CRITICAL HABITAT: DESIGNATED

Federal Register 72:18517 [TEXT](#) | [PDF](#) (1361 KB); 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](http://edocket.access.gpo.gov/2010/2010-2279.htm)  
[edocket.access.gpo.gov/2010/pdf/2010-2279.pdf](http://edocket.access.gpo.gov/2010/pdf/2010-2279.pdf) (52 KB)



Suisun Thistle  
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DESCRIPTION

Suisun thistle is a perennial herb in the Asteraceae (aster) family. In the pre-flowering phase it grows as a short, broad, vegetative rosette with large leaves, approximately 0.3 to 0.9 meter (1 to 3 feet) long. The leaves have deep lobes with spines up to 1 centimeter (nearly 0.5 inch) long at the tips.

The juvenile vegetative phase lasts until plants are large enough to flower. During the mature phase the rosette bolts, and develops a 1 to 1.5 meters (3 to 5 feet) leafy stem in the second year or later. Stems are

typically branched above the middle of the main stem, but up to 15 stems may occasionally branch from the base of single large plants.

Leaves on stems are much smaller, more deeply lobed, and spiner than juvenile leaves of the rosette. The reduced stem leaves either clasp the stem at their bases, or have ear-like appendages near the stem. Stem leaves become progressively smaller near the top of the plant.

The egg-shaped flowerheads, 2.5 centimeters (1 inch) long, are composed of small individual florets united into a single unit. Many rose-purple corollas protrude. Flowerheads occur either as solitary units or in clusters. The bracts of the flowerheads have a distinct green, glutinous ridge on the back that distinguishes this from other *Cirsium* species in the area. The cypsalae, seed-like dry fruits similar to an achene, are about 4 to 5 millimeters (0.2 inch) long, and glossy dark brown to black with thick, hard outer walls.

*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** (From recovery plan – See above)

Trait	<i>Cirsium vulgare</i>	<i>Cirsium hydrophilum</i>
<b>upper leaf surface, basal leaves</b>	coarsely hairy to bristly and dull in maturity	glabrate (few hairs) to glabrous (hairless) in maturity, lacking bristles, somewhat glossy to glossy
<b>lower leaf surface, basal leaves</b>	thin covering of short woolly hairs, appearing pale green	thick covering of long white cobwebby to woolly hairs, appearing white
<b>rosettes</b>	low number of leaves, most large and few-lobed	large number of leaves, continuous size range, mostly with many lobes
<b>stems</b>	with well-developed wings extending from leaf bases; wings strongly spiny	weakly developed or lacking spiny wings
<b>leaf lobes</b>	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>
<b>flowerheads</b>	wide at top of egg-shaped head	tightly constricted at narrow top of egg-shaped head
<b>“seeds” (dry fruits)</b>	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>

*Reproduction.* *Cirsium hydrophilum* is monocarpic, dying after one year of seed reproduction. Its vegetative period is usually one year (biennial), but if small vegetative plant size or unfavorable environmental conditions delay flowering, it may regenerate from the central root crown for more than one year. Flowering occurs throughout the summer in most years, and continues through production of ripe seedheads.

Pollination has not been studied, but field observations indicate that thistle colonies in the marsh (both native and non-native species) attract large swarms of bees that visit and apparently pollinate the flowers.

*Habitat and environmental conditions.* *Cirsium hydrophilum* is associated with the upper intertidal marsh plain near the smallest branches of natural small *tidal* creeks, banks, ditches, and *marsh* edges that are very infrequently flooded. Artificial ditch edges and natural creek bank habitats are similar in size, form, and vegetation, but ditches are less stable and more prone to invasion by *non-native* plants.



## DISTRIBUTION

Suisun thistle was once widespread in Suisun Marsh, but in the last two decades has been found in only four localities: Grizzly Island, Peytonia Slough, Rush Ranch, and, Hill Slough. These populations have been in decline in the 1990s and 2000s.

U.S. Geological Survey 7 ½ Minute Quads: Denverton (481B) 3812128, Fairfield (482A) Fairfield South.

## THREATS

The fundamental cause of the decline of Suisun thistle 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* (Known by several common names including Broadleaved Pepperweed, Pepperwort, or Peppergrass, Dittander, Dittany and Tall Whitetop) is a very significant threat to Suisun thistle colonies. *L. latifolium* can readily invade both diked and tidal brackish marshes with low salinity during the growing season. Its colonies are especially dense and vigorous in better-drained marsh areas where Suisun thistle is most likely to occur. *L. latifolium* is especially invasive on physically disturbed marsh soils and where vegetation cover has been reduced.

Cattle grazing and trampling impacts in tidal Suisun marshes are currently remote from most existing colonies of Suisun thistle, but are locally intensive in unoccupied suitable habitat. Feral hogs pose a significant threat to the Rush Ranch population.

### Tidal Marsh Threats

Tidal marsh species occur in a variety of *tidal marsh* habitats where they are limited by the requirements of moisture, *salinity*, topography, soil types, and climatic conditions. Adjacent *uplands* and *ecotone* areas are also crucial habitats for many of these species.

Primary threats to all the listed species include:

- Historical and current habitat loss and fragmentation due to urban development, agriculture, and diking related to duck hunting; altered hydrology and salinity;
- Non-native invasive species
- Inadequate regulatory mechanisms;
- Disturbance
- Contamination
- Sea level rise due to climate change
- Risk of extinction due to vulnerability of small populations in the face of random naturally occurring events.

## REFERENCES FOR ADDITIONAL INFORMATION

[General references about California plants](#)

[Sacramento Fish & Wildlife Office California Plant References](#)

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