

Brewer's Dwarf Flax (*Hesperolinon breweri*)

Status

Federal: None
State: None
CNPS: List 1B

Population Trend

Global: Unknown
State: Unknown
Within Inventory Area: Unknown



Data Characterization

The location database for Brewer's dwarf flax (*Hesperolinon breweri*) includes 26 data records dated from 1885 to 2003 (California Natural Diversity Database 2005, Calflora 2005). Only 4 occurrences were documented in the last 10 years, but all occurrences are believed to be extant (Calflora 2005, California Natural Diversity Database 2005). Fourteen of the occurrences are of high precision and may be accurately located, including 8 occurrences within the inventory area.

Very little ecological information is available for Brewer's dwarf flax. The literature on the species pertains primarily to its taxonomy. The main sources of general information on this species are the *Jepson Manual* (Hickman 1993) and the California Native Plant Society (2005). Specific observations on habitat and plant associates, threats, and other factors are summarized in the California Natural Diversity Database (2005).

Range

Brewer's dwarf flax is endemic to California, where it is restricted to the Mount Diablo and adjacent foothills in the east San Francisco Bay Area and to the Vaca Mountains of the southern interior North Coast Ranges (Hickman 1993, California Natural Diversity Database 2005). It occurs below 2,900 feet above sea level.

Occurrences within the ECCC HCP/NCCP Inventory Area

Fourteen occurrences of Brewer's dwarf flax occur within the inventory area. Three of the occurrences are in Mount Diablo State Park, 3 in East Bay Regional Park District lands, and 7 within the Los Vaqueros Watershed. One occurrence in Antioch is historic; this population has been extirpated.

Biology

Physical Description

Brewer's dwarf flax, a member of the flax family (Linaceae), is an annual herb that grows 5 to 20 centimeters tall (Hickman 1993). It blooms from May through July (California Native Plant Society 2005).

Habitat

The species grows on rocky soils on serpentine, sandstone, or volcanic substrates. It is associated with grassland, oak woodland, and chaparral communities. It typically appears in areas with low vegetative cover, such as the transition zone between grassland and chaparral or open areas in chaparral.

Species Associated with Brewer's Dwarf Flax

<i>Adenostoma fascicularis</i>	Chamise
<i>Arctostaphylos species</i>	Manzanita
<i>Avena species</i>	wild oat
<i>Calochortus species</i>	fairy-lantern
<i>Ceanothus cuneatus</i>	Buckbrush
<i>Heteromeles arbutifolia</i>	Toyon
<i>Nassella species</i>	Needlegrass
<i>Navarretia pubescens</i>	downy navarretia
<i>Perideridia kelloggii</i>	Kellogg's yampah
<i>Pinus sabiniana</i>	foothill pine
<i>Quercus species</i>	Oak
<i>Streptanthus species</i>	Jewelflower

Threats

Brewer's dwarf flax is known from only a limited number of occurrences and is reported to be endangered in a portion of its range (California Native Plant Society 2005). Population trends are unknown (California Natural Diversity Database 2005), but are likely stable. Brewer's dwarf flax generally occurs on public lands with few identifiable threats. Populations adjacent to trails may be subject to foot traffic or trail maintenance (California Natural Diversity Database 2005).

Conservation and Management

There are no known conservation or management activities occurring in the inventory area to address Brewer's dwarf flax.

Species Distribution Model

Model Description

Model Assumptions

Suitable Habitat: Oak woodland and chaparral/scrub + 500 feet buffer into annual grasslands

Rationale

Brewer's dwarf flax occurs below 2,900 feet above sea level on rocky soils on serpentine, sandstone, or volcanic substrates. It is associated with grassland, oak woodland, and chaparral communities. It typically appears in areas with low vegetative cover, such as the transition zone between grassland and chaparral or open areas in chaparral.

Model Results

Figure 2 shows the modeled Brewer's dwarf flax habitat within the inventory area. All known occurrences fall within modeled suitable habitat for this species (the occurrence in Antioch is assumed to be extirpated).

Literature Cited

- CalFlora. 2005. CalFlora: Information on California plants for education, research and conservation. [web application]. Berkeley, California: The CalFlora Database [a non-profit organization]. Available: <http://www.calflora.org/>. (Accessed: Dec 19, 2005)
- California Native Plant Society (CNPS). 2005. Inventory of Rare and Endangered Plants (online edition, v6-05d). California Native Plant Society. Sacramento, CA. Accessed on Mon, Dec. 26, 2005 from <http://www.cnps.org/inventory>
- California Natural Diversity Database. 2005. RareFind 3, Version 3.0.3 (September 30, 2005 update). California Department of Fish and Game, Sacramento, CA.
- Hickman, J. C. (ed.). 1993. *The Jepson Manual*. University of California Press, Berkeley, CA.