

Diablo Helianthella (*Helianthella castanea*)

Status

Federal: None
State: None
CNPS: List 1B

Population Trend

Global: Unknown
State: Unknown
Within Inventory Area: Unknown



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Data Characterization

The location database for Diablo helianthella (*Helianthella castanea*) includes 71 data records dated from 1920 to 2004 (California Natural Diversity Database 2005). Forty-two of the occurrences were documented in the last 10 years, and most of the occurrences were documented in the last 20 years. All of the occurrences are believed to be extant. Most of the occurrences are of high precision and may be accurately located, including those within the inventory area.

Very little ecological information is available for Diablo helianthella. 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

Diablo helianthella is endemic to the San Francisco Bay Area, occurring in the Diablo Range, Berkeley Hills, and San Bruno Mountain (California Natural Diversity Database 2005).

Occurrences within the ECCC HCP/NCCP Inventory Area

Thirty occurrences are reported from the inventory area: 28 in Mount Diablo State Park, Los Vaqueros Watershed, East Bay Regional Park District lands; and 2 on private land.

Biology

Physical Description

Diablo helianthella is a perennial herb of the sunflower family (Asteraceae) that grows 10 to 50 centimeters tall (Hickman 1993). It blooms from April through June (California Native Plant Society 2005).

Habitat

Diablo helianthella associated with thin, rocky, well-drained soils. It is found in grassy openings in woodlands, chaparral, and coastal scrub, often at the transition zone between woodland and chaparral (California Natural Diversity Database 2005). It most often occurs at elevations below 2,400 feet but it has been collected from locations as high as 3,800 feet. The species may prefer north facing slopes. Of the 63 specific occurrences, 38 (60%) were on N-facing slopes (NW to NE), which is significantly more than would be expected by chance alone.

Species Associated with Diablo Helianthella

<i>Adenostoma fasciculata</i>	chamise
<i>Artemisia californica</i>	California sage
<i>Avena species</i>	wild oats
<i>Baccharis pilularis</i>	coyote brush
<i>Bromus species</i>	brome grasses
<i>Heteromeles arbutifolia</i>	toyon
<i>Mimulus aurantiacus</i>	bush monkeyflower
<i>Nassella species</i>	needlegrass
<i>Quercus agrifolia</i>	coast live oak
<i>Quercus douglasii</i>	blue oak
<i>Salvia species</i>	sage
<i>Toxicodendron diversilobum</i>	poison-oak
<i>Umbellularia californica</i>	California bay
<i>Wyethia species</i>	mule-ears

Threats

Diablo helianthella is known from only a limited number of occurrences and is 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. Many of the occurrences on park lands are subject to impacts from recreation and associated activities, such as trail construction and maintenance, road maintenance, brush-clearing, and off-trail travel (California

Natural Diversity Database 2005). Diablo helianthella grows in openings in chaparral and at chaparral margins; because chaparral species can invade these open areas in the absence of fire, fire suppression may lead to the loss of suitable habitat. Other threats include urban development, road and utility line construction, grazing, and competition from invasive exotics (California Natural Diversity Database 2005). Grazing and other ground-disturbing activities can also lead to erosion in habitat areas.

Conservation and Management

The long-term maintenance of Diablo helianthella may depend on fires that create openings in the woody overstory of scrub and woodland habitats in which the species occurs.

Species Distribution Model

Model Description

Model Assumptions

Suitable habitat is assumed to be oak savannah, oak woodland, chaparral/scrub above 650 feet.

Rationale

Diablo helianthella is endemic to the San Francisco Bay Area, occurring in the Diablo Range, Berkeley Hills, and San Bruno Mountain (California Natural Diversity Database 2005). Diablo helianthella is associated with thin, rocky, well-drained soils. It is found in grassy openings in woodlands, chaparral, and coastal scrub, often at the transition zone between woodland and chaparral (California Natural Diversity Database 2005).

Model Results

Figure 2 shows the modeled Diablo helianthella habitat within the inventory area. All records fall within modeled suitable habitat. This model likely overestimates the extent of suitable habitat for this species because the model does not limit suitable habitat to east-facing slopes.

Literature Cited

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>

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Hickman, J. C. (ed.). 1993. *The Jepson Manual*. University of California Press,
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