

Recurved Larkspur (*Delphinium recurvatum*)

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 recurved larkspur (*Delphinium recurvatum*) includes 63 data records dated from 1902 to 2001 (California Natural Diversity Database 2005). Thirteen of the occurrences are more than 50 years old, and only 20 of the occurrences were documented in the previous 10 years, but most of the occurrences are assumed to be extant. Twenty-seven of the occurrences are of high precision and may be accurately located, including 2 of 4 located within the inventory area.

Very little ecological information is available for recurved larkspur. 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

Historically, recurved larkspur was widely distributed in California's Great Valley, ranging from Butte County to Kern County. Most of the known occurrences are in Kern, Tulare, and San Luis Obispo Counties. The species now appears to be very rare outside the southern San Joaquin Valley (California Natural Diversity Database 2005).

Occurrences within the ECCC HCP/NCCP Inventory Area

Four occurrences are reported from the inventory area, 3 of which are on private land southeast of Byron.

Biology

Physical Description

Recurved larkspur is a perennial herb and a member of the buttercup family (Ranunculaceae). Recurved larkspur is distinguished from other larkspur species by its pale blue, recurved sepals (Hickman 1993). The flowering period for recurved larkspur is generally from March through May (California Native Plant Society 2005).

Habitat

Recurved larkspur occurs on sandy or clay alkaline soils, generally in annual grasslands or in association with saltbush scrub or valley sink scrub habitats, ranging in elevation from 100 to 2,000 feet above sea level (California Natural Diversity Database 2005).

Species Associated with Recurved Larkspur

<i>Atriplex polycarpa</i>	allscale
<i>Atriplex spinifera</i>	spinescale
<i>Bromus madritensis</i> ssp. <i>rubens</i>	red brome
<i>Centromadia pungens</i>	common spikeweed
<i>Distichlis spicata</i>	saltgrass
<i>Erodium cicutarium</i>	red filaree
<i>Frankenia salina</i>	alkali heath
<i>Isocoma acradenia</i> var. <i>bracteosa</i>	alkali goldenbush
<i>Lasthenia californica</i>	California goldfields
<i>Sporobolus airoides</i>	alkali sacaton
<i>Suaeda moquinii</i>	bush seepweed

Threats

Recurved larkspur 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 or declining. The principal threat to recurved larkspur has been the historic conversion of much of the alkali habitat of the Great Valley to agriculture. At present, the primary threat to recurved larkspur is overgrazing. Other threats include road and utility line construction and competition from invasive exotics (California Natural Diversity Database 2005)

Conservation and Management

Areas with alkali soils are prepared for agriculture by treating the soils with gypsum or other substances that allow the sodium salts to be leached from the soil by irrigation. This practice alters the soil chemistry, making restoration of former recurved larkspur habitat impractical.

Species Distribution Model

Model Description

Model Assumptions

All alkali grassland within the inventory area was considered suitable habitat for recurved larkspur (i.e., on soils of the Pescadero or Solano soil series [Soil Conservation Service 1977]).

Rationale

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Results

Figure 2 shows the modeled potential habitat of the recurved larkspur within the inventory area. Modeled suitable habitat is restricted to the alkali grassland in the southeast and central portion of the inventory area. Three of the four known occurrences fit well within the boundaries of the model. The record outside the model occurs in a patch of alkali grassland that was below the 10-acre minimum resolution of the land cover mapping.

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>
- 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.
- Soil Conservation Service. 1977. Soil survey of Contra Costa County, California. Concord, CA.