

## Howell's mariposa lily (*Calochortus howellii*)



### THREATENED



Flower (left), habit (center), and habitat (right) of Howell's mariposa lily. Photos by Robert Meinke (left and right) and Melissa Carr (center). If downloading images from this website, please credit the photographer.

### Family

Liliaceae

### Plant description

Howell's mariposa lily is a bulbous perennial, 2-4 dm tall, that bears a single large basal leaf (averaging 30 cm in length). These deep green, somewhat leathery basal leaves are distinctly parallel-veined with rows of hairs on the undersides that correspond to the veins. The broadly cup-shaped, showy flowers have three white to cream-colored petals 2.7-3 cm long, each with a lime green petal spot that is covered with dark purple hairs. The upper portions of the petals have few or no hairs. Each stem usually produces one or two (sometimes three) flowers, which develop into 2-cm-long capsules that remain erect until seeds are released. Plants begin to bloom in mid June and can continue into August under ideal conditions. In most populations, many more vegetative than reproductive plants occur, with only a relatively few mature individuals flowering each year. The number of plants flowering varies greatly among years and is dependent on seasonal conditions.

### Distinguishing characteristics

Howell's mariposa lily is closely related to *Calochortus umpquaensis* (Umpqua mariposa lily) and superficially resembles this species. However, the Umpqua mariposa lily has a dark petal spot and pendant capsules averaging 4 cm in length, whereas Howell's mariposa lily has a lime green petal spot covered with dark hairs and erect capsules averaging 2 cm in length. Additionally, the ranges of the two do not generally overlap, as the Umpqua mariposa lily is largely restricted to the Umpqua River drainage. However, isolated populations of this species have been periodically reported from serpentine deposits outside this area.

*Calochortus howellii* is also easily distinguished from the common *Calochortus uniflorus* (meadow mariposa lily), which has pink flowers, distinctive blue pollen, few or no hairs on the petals, glaucous leaves, and often produces bulblets at the leaf base.

*Calochortus tolmiei* (cat's ear mariposa lily), another common mariposa lily, typically

has white or yellowish white petals, which can be purple-tinged and are usually distinctly hairy on the upper portions. Additionally, petals of this widespread species are noticeably smaller (1.2 - 2.5 cm long) than those of *C. howellii*.

### **When to survey**

Due to potential difficulties in identifying Howell's mariposa lily, surveys should be conducted when plants are in flower (June and July).

### **Habitat**

Howell's mariposa lily is typically found on dry, rocky slopes with serpentine derived soils in the Illinois River valley. These soils are wet in early spring as plants emerge, but dry quickly as the season progresses. Vegetation is sparse and associated species include *Pinus jeffreyi*, *Calocedrus decurrens*, *Arctostaphylos viscida*, *Ceanothus pumilus*, *Eriophyllum lanatum*, *Allium amplexans*, and *Triteleia hyacinthina*.

### **Range**

Populations of *Calochortus howellii* are concentrated along the Illinois River drainage in southwest Oregon. The northernmost occurrence is located a few miles west of Selma, with populations extending south along the Illinois to within a few miles of the California border. This species has not been reported from California.

### **Oregon counties**

Curry, Josephine

### **Federal status**

Species of Concern

### **Threats**

*Calochortus howellii* is threatened by damage due to off-road vehicle use and mining. Although the serpentine soils in which this species occurs are generally resistant to weed invasions, competition from serpentine-tolerant exotic species is also a potential threat.

### **Did you know?**

Gold was first discovered in Oregon within one kilometer of a present-day population of Howell's mariposa lily.

### **Current/Recent ODA projects**

Demography of *Calochortus howellii*: revisited after 20 years

### **References**

Fredricks, N.A. 1989. Morphological comparison of *Calochortus howellii* and a new species from southwestern Oregon, *C. umpquaensis* (Liliaceae). *Systematic Botany* 14:7-15.

Fredricks, N.A. 1992. Population biology of rare mariposa lilies (*Calochortus*: LILIACEAE) endemic to serpentine soils in southwestern Oregon. PhD Dissertation. Oregon State University, Corvallis, OR.

ORNHIC (Oregon Natural Heritage Information Center). 2003. Oregon Natural Heritage Information Center Database. Oregon Natural Heritage Information Center, Portland, Oregon.