

	<b>Species Data:</b>	<b>Index Result:</b>
Species	<i>Calochortus howellii</i>	<b>Less Vulnerable</b>
English Name	<b>Howell's mariposa lily</b>	<b>Confidence Moderate</b>
Taxonomic Group	Vascular Plant	(based on entered data)
Geographic Area	Josephine, Curry counties	
		GRank G3
Cave/Ground Water Obligate	No	SRank S3
Migratory area included in assessment:	No	Assessor Caitlin Lawrence

**Climate Change Vulnerability Index Values:** (greatest shown when range was selected)

Category	Factor	Score	Comments
Temperature Scope (predicted increase)	A >6.0F	0	
	A 5.5F	0	
	A 5.1F	0	
	A 4.5F	0	
	A 3.9F	0	
	A <3.9F	100	
Hamon AET:PET Moisture Metric Scope	< -0.119	0	
	-0.119	0	
	-0.096	35	
	-0.073	65	
	-0.05	0	
	>-0.028	0	
Migratory Exposure: Climate Change Exposure Index	>7		
	6-7		
	4-5		
	<4		
Sea level rise Natural barriers Anthropogenic barriers Climate Change mitigation	B1	N	
	B2a	N	
	B2b	N	
	B3	N	
Dispersal/Movement  Historical thermal niche Physiological thermal niche Historical hydrological niche Physiol. hydrological niche Disturbance dependence Ice/snow dependence  Physical habitat restrictions  Other spp create habitat Dietary Versatility Pollinator Versatility Other spp for dispersal Pathogen sensitivity	C1	Inc	The genus <i>Calochortus</i> appears to have poor seed dispersal; fruits are borne close to the ground, and seeds are relatively heavy with no apparent morphological adaptations promoting long-distance dispersal (Patterson and Givnish 2003).  Range from 133 inches to 57 inches  Serpentine soils. Specialist, Serpentine Jeffrey pine savannas (Fredricks 1992)  Seed predation may be a threat (Fredricks 1986)
	C2ai	SI	
	C2aii	N	
	C2bi	N	
	C2bii	N	
	C2c	SI	
	C2d	N	
	C3	Inc	
	C4a	N	
	C4b	U	
	C4c	N	
	C4d	N	
	C4e	SI	

Competition sensitivity	C4f	N
Interspecific Relationship	C4g	U
Measured genetic variation	C5a	U
Bottlenecks	C5b	U
Plant reproductive system	C5c	U
Phenological response	C6	U
Documented response	D1	U
Modeled change	D2	U
Modeled overlap	D3	U
Modeled protected areas	D4	U

**Data Sources and Notes:**

Climate and precipitation data from Climate Wizard using the A1B emissions scenario and ensemble average general circulation model. Historical = past 50 years; Future = mid-century (2050s). Species data from ORBIC database. Assessment performed in conjunction with the Element Rank Calculator. Other resources consulted: NREL national wind resources, 50m resolution ([http://www.nrel.gov/gis/data\\_analysis\\_background.html](http://www.nrel.gov/gis/data_analysis_background.html)); SILVIS lab Wildland Urban Interface 2010 layer ([http://silvis.forest.wisc.edu/maps/wui\\_main](http://silvis.forest.wisc.edu/maps/wui_main)); Oregon Department of Geology and Mineral Industries geologic map (<http://www.oregongeology.org/sub/publications/GMS/gms.htm>); US mining claims on federal lands (<http://mrddata.usgs.gov/mine-claim/>); Oregon Protected Areas Database (<http://gapanalysis.usgs.gov/padus/data/>).

Detailed definitions of criteria and methodology can be found in the documentation at <http://www.natureserve.org/conservation-tools/climate-change-vulnerability-index>

**Legend and Definitions**

<b>Affect to Vulnerability:</b>
<b>GI = Greatly increase</b>
<b>Inc = Increase</b>
<b>SI = Somewhat increase</b>
<b>N = Neutral</b>
<b>U = Unknown</b>

**Index Scores:**

**Extremely Vulnerable:** Abundance and/or range extent within geographical area assessed extremely likely to substantially decrease or disappear by 2050.

**Highly Vulnerable:** Abundance and/or range extent within geographical area assessed likely to decrease significantly by 2050.

**Moderately Vulnerable:** Abundance and/or range extent within geographical area assessed likely to decrease by 2050.

**Less Vulnerable:** Available evidence does not suggest that abundance and/or range extent within the geographical area assessed will change (increase/decrease) substantially by 2050. Actual range boundaries may change.

**Insufficient Evidence:** Information entered about a species' vulnerability is inadequate to calculate an Index