

Scientific Name	Species: <i>Eucephalus gormanii</i>	Index Result: Moderately Vulnerable
Common Name	Gorman's aster	Confidence Low
Taxonomic Group	Vascular Plant	(based on entered data)
Geographic Area	Western Oregon	Date Assessed 1/7/2020
Cave/Ground Water Obligate: No		GRank G3
Migratory area included in assessment: No		SRank S3
		Assessor Sue Vrillakas

Climate Change Vulnerability Index Values: (greatest score 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	11	
	A <3.9F	89	
Hamon AET:PET Moisture Metric Scope	< -0.119	0	
	-0.119	56	
	-0.096	44	
	-0.073	0	
	-0.05	0	
	>-0.028	0	
Sea level rise	B1	N	Ridges and peaks within the current elevation parameters to the north of known range but limited. Plants could potentially migrate north.
Natural barriers	B2a	SI	
Anthropogenic barriers	B2b	N	
Climate Change mitigation	B3	U	
Dispersal/Movement	C1	SI	Species found in small isolated patches at least 52% of the populations range has an increase vulnerability Restricted to peaks and ridges in Cascades, 3700 to 6300 ft. in elevation Highest pixel reading: 109.188; lowest 67.08; difference = 42.108 Plants growing in mid to higher elevations may be more dependent on seasonal precipitation--winter snow or rainfall No required disturbance known Found on mid to higher elevations in Cascades but not alpine Habitat not uncommon None known Not dependent on other species for seed dispersal None known
Historical thermal niche	C2ai	Inc	
Physiological thermal niche	C2aii	Inc	
Historical hydrological niche	C2bi	N	
Physiol. hydrological niche	C2bii	SI	
Disturbance dependence	C2c	N	
Ice/snow dependence	C2d	N	
Physical habitat restrictions	C3	N	
Other spp create habitat	C4a	N	
Dietary Versatility	C4b	U	
Pollinator Versatility	C4c	SI	
Other spp for dispersal	C4d	N	
Pathogen sensitivity	C4e	N	
Competition sensitivity	C4f	SI	

Interspecific Relationship	C4g	U	Majority of plants parasitized by <i>Commandra umbellata</i> with unknown effects
Measured genetic variation	C5a	U	
Bottlenecks	C5b	U	Seed set appears to be low
Plant reproductive system	C5c	Inc	
Phenological response	C6	U	
Documented response	D1	U	
Modeled change	D2	U	
Modeled overlap	D3	U	
Modeled protected areas	D4	U	

Additional Notes:

Range map created using ArcMap Mimumum Mapping Boundary-Convex Hull on ORBIC element occurrence data. Climate and precipitation data from Climate Wizard using the A1B emissions scenario and ensemble average general circulation model: Historical = 1951-2006; Future = mid-century (2050s); Hamon AET:PET moisture metric (Hamon 1961).

References:

Ingersoll, Cheryl. 1989. Draft Interim Management Guide for *Aster gormanii* (Piper) Blake. Oregon Dept. of Agriculture for Mt. Hood National Forest, Sandy, OR. 28 pp.

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:

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

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 score.

Citation:

Oregon Biodiversity Information Center. 2020. Climate Change Vulnerability Index assessment for Gorman's aster (*Eucephalus gormanii*). Institute for Natural Resources, Portland State University, Portland, OR.