

Species:
Eucephalus vialis
Wayside aster
 Vascular Plant
 Western Oregon

Index Result:
Less Vulnerable
Confidence High
 (based on entered data)
 Date Assessed 1/13/2020
 GRank G3
 SRank S3
 Assessor Sue Vrillakas

Scientific Name
 Common Name
 Taxonomic Group
 Geographic Area
 Cave/Ground Water Obligate: No
 Migratory area included in assessment: No

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	0	
	A <3.9F	100	
Hamon AET:PET Moisture Metric Scope	< -0.119	0	
	-0.119	0	
	-0.096	88	
	-0.073	12	
	-0.05	0	
>-0.028	0		
Sea level rise	B1	N	Populations not close to the sea
Natural barriers	B2a	N	
Anthropogenic barriers	B2b	N	
Climate Change mitigation	B3	N	
Dispersal/Movement	C1	N	Disperses vegetatively or by wind About 1/3 of range in temperature variation of 37-47 deg; 2/3 in 47-57 deg variation Highest value: 66.3362; lowest: 34.5360; difference = 31.8002 May be impacted by increase of fire frequency and intensity. Less intense fire may promote populations by increasing high light conditions (Thorpe, Massatti and Kaye 2009).
Historical thermal niche	C2ai	Inc	
Physiological thermal niche	C2aii	N	
Historical hydrological niche	C2bi	N	
Physiol. hydrological niche	C2bii	N	
Disturbance dependence	C2c	SI	
Ice/snow dependence	C2d	U	
Physical habitat restrictions	C3	U	
Other spp create habitat	C4a	N	
Dietary Versatility	C4b	U	
Pollinator Versatility	C4c	U	
Other spp for dispersal	C4d	N	
Pathogen sensitivity	C4e	N	
Competition sensitivity	C4f	SI	
Interspecific Relationship	C4g	N	None known
Measured genetic variation	C5a	U	
Bottlenecks	C5b	U	
Plant reproductive system	C5c	Inc	Reproduces sexually and vegetatively; seed set low in some populations, <4.3% (Thorpe, Massatti and Kaye, 2009)

Phenological response	C6	N	
Documented response	D1	U	
Modeled change	D2	U	
Modeled overlap	D3	U	
Modeled protected areas	D4	U	

Additional Notes:

Only evaluated those *Eucephalus vialis* populations from Douglas County northward. Plants in SW Oregon (Jackson and Josephine counties) considered something else. Range map created using ArcMap Minimum 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:

Thorpe, Andrea S., Robert T. Massatti, and Thomas N. Kaye. 2009. Experimental habitat manipulation of wayside aster (*Eucephalus vialis*). Progress Report. A Cooperative Challenge Cost Share Project funded jointly by Bureau of Land Management, Eugene District, National Fish and Wildlife Foundation and Institute for Applied Ecology. 34 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 Wayside aster (*Eucephalus vialis*). Institute for Natural Resources, Portland State University, Portland, OR.