### Climate Change Vulnerability Assessment

**Species:** *Erythranthe inflatula*  
**Common Name:** Disappearing monkeyflower  
**Taxonomic Group:** Vascular Plant  
**Geographic Area:** Oregon

#### Cave/Ground Water Obligate
- No

#### Migratory area included in assessment
- No

**Index Result:**  
**Confidence:** Moderate  
**Less Vulnerable**

**Date Assessed:** 1/14/2020  
**GRank:** G3  
**SRank:** S2

**Assessor:** Sue Vrilakas

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### Climate Change Vulnerability Index Values

(greatest score shown when range was selected)

<table>
<thead>
<tr>
<th>Category</th>
<th>Factor</th>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature Scope</strong></td>
<td>A &gt; 6.0F</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>(predicted increase)</td>
<td>A 5.5F</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A 5.1F</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A 4.5F</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A 3.9F</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A &lt; 3.9F</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td><strong>Hamon AET:PET Moisture</strong></td>
<td>&lt; -0.119</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Metric Scope</td>
<td>-0.119</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.096</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.073</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-0.05</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; -0.028</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Sea level rise</strong></td>
<td>B1</td>
<td>N</td>
<td>Interior species</td>
</tr>
<tr>
<td><strong>Natural barriers</strong></td>
<td>B2a</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td><strong>Anthropogenic barriers</strong></td>
<td>B2b</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td><strong>Climate Change mitigation</strong></td>
<td>B3</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td><strong>Dispersal/Movement</strong></td>
<td>C1</td>
<td>SI</td>
<td>Range within the state is quite broad</td>
</tr>
<tr>
<td>Historical thermal niche</td>
<td>C2ai</td>
<td>N</td>
<td>Mean temperature variation about 60 deg.</td>
</tr>
<tr>
<td>Physiological thermal niche</td>
<td>C2aII</td>
<td>N</td>
<td>Highest value 68.3575; lowest about 42-47; difference 26 - 21</td>
</tr>
<tr>
<td><strong>Historical hydrological niche</strong></td>
<td>C2bi</td>
<td>N</td>
<td>Most recent reports are from eastern OR where it predominantly grows in moist areas, creeks, vernal wetlands, and lakeshores</td>
</tr>
<tr>
<td><strong>Physiol. hydrological niche</strong></td>
<td>C2bII</td>
<td>GI</td>
<td></td>
</tr>
<tr>
<td><strong>Disturbance dependence</strong></td>
<td>C2c</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Ice/snow dependence</td>
<td>C2d</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td><strong>Physical habitat restrictions</strong></td>
<td>C3</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Other spp create habitat</td>
<td>C4a</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td><strong>Dietary Versatility</strong></td>
<td>C4b</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td><strong>Pollinator Versatility</strong></td>
<td>C4c</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Other spp for dispersal</td>
<td>C4d</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td><strong>Pathogen sensitivity</strong></td>
<td>C4e</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td><strong>Competition sensitivity</strong></td>
<td>C4f</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Interspecific Relationship</td>
<td>C4g</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td><strong>Measured genetic variation</strong></td>
<td>C5a</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td><strong>Bottlenecks</strong></td>
<td>C5b</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td><strong>Plant reproductive system</strong></td>
<td>C5c</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td><strong>Phenological response</strong></td>
<td>C6</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td><strong>Documented response</strong></td>
<td>D1</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Modeled change</td>
<td>D2</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Modeled overlap</td>
<td>D3</td>
<td>U</td>
<td></td>
</tr>
</tbody>
</table>

[calculator version 3.02](https://inr.oregonstate.edu/orbic/rare-species/ranking-documentation)
Modeled protected areas | D4 | U |

**Additional Notes:**
Range map created using ArcMap Minimum Mapping Boundary-Convex Hull on ORBIC element occurrence data but edited to include the general non-mappable sites in western Oregon at Brownsville and Grants Pass (Nesom annotations made in 2013). 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).

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 Disappearing monkeyflower (Erythranthe inflatula). Institute for Natural Resources, Portland State University, Portland, OR.