Species: *Lomatium engelmannii*
Species English Name: Englemann's desert-parsley
Taxonomic Group: Vascular Plant
Geographic Area: Josephine and Curry counties

Cave/Ground Water Obligate: No
Migratory area included in assessment: No

**Climate Change Vulnerability Index Values:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Factor</th>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Scope (predicted increase)</td>
<td>A &gt;6.0F</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A 5.5F</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A 5.1F</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A 4.5F</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A 3.9F</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A &lt;3.9F</td>
<td>100</td>
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<tr>
<td>Hamon AET:PET Moisture Metric Scope</td>
<td>&lt; -0.119</td>
<td>0</td>
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<tr>
<td></td>
<td>-0.119</td>
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<tr>
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<td>-0.096</td>
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<td>-0.073</td>
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<td>-0.05</td>
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</tr>
<tr>
<td></td>
<td>&gt;=-0.028</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Sea level rise</td>
<td>B1</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Natural barriers</td>
<td>B2a</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Anthropogenic barriers</td>
<td>B2b</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Climate Change mitigation</td>
<td>B3</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Dispersal/Movement</td>
<td>C1</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Historical thermal niche</td>
<td>C2ai</td>
<td>Inc</td>
<td>Found across a wide precip range, but high precip areas.</td>
</tr>
<tr>
<td>Physiological thermal niche</td>
<td>C2aII</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Historical hydrological niche</td>
<td>C2bi</td>
<td>N</td>
<td>Serpentine endemic.</td>
</tr>
<tr>
<td>Physiol. hydrological niche</td>
<td>C2bii</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Disturbance dependence</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>Physical habitat restrictions</td>
<td>C3</td>
<td>Inc</td>
<td></td>
</tr>
<tr>
<td>Other spp create habitat</td>
<td>C4a</td>
<td>SI</td>
<td>Usually in a Jeffrey Pine forest association in Oregon (NatureServe)</td>
</tr>
<tr>
<td>Dietary Versatility</td>
<td>C4b</td>
<td>U</td>
<td></td>
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<tr>
<td>Pollinator Versatility</td>
<td>C4c</td>
<td>N</td>
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<tr>
<td>Other spp for dispersal</td>
<td>C4d</td>
<td>N</td>
<td></td>
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<tr>
<td>Pathogen sensitivity</td>
<td>C4e</td>
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<tr>
<td>Competition sensitivity</td>
<td>C4f</td>
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<tr>
<td>Interspecific Relationship</td>
<td>C4g</td>
<td>U</td>
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</tr>
<tr>
<td>Measured genetic variation</td>
<td>C5a</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Bottlenecks</td>
<td>C5b</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Plant reproductive system</td>
<td>C5c</td>
<td>U</td>
<td></td>
</tr>
<tr>
<td>Phenological response</td>
<td>C6</td>
<td>U</td>
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</tr>
<tr>
<td>Documented response</td>
<td>D1</td>
<td>U</td>
<td></td>
</tr>
</tbody>
</table>

**Climate Chan
gge Vulnerabilit
ty Index Values:**

<table>
<thead>
<tr>
<th>Category</th>
<th>Factor</th>
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<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRank</td>
<td>G3</td>
<td></td>
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</tr>
<tr>
<td>SRank</td>
<td>S1</td>
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<tr>
<td>Assessor</td>
<td>Caitlin Lawrence</td>
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</tbody>
</table>

**Comments:**

- **Less Vulnerable**
- **Very High**

(entered data)
<table>
<thead>
<tr>
<th>Modeled change</th>
<th>D2</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modeled overlap</td>
<td>D3</td>
<td>U</td>
</tr>
<tr>
<td>Modeled protected areas</td>
<td>D4</td>
<td>U</td>
</tr>
</tbody>
</table>

**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); SILVIS lab Wildland Urban Interface 2010 layer (http://silvis.forest.wisc.edu/maps/wui_main); US mining claims on federal lands (http://mrdata.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**

<table>
<thead>
<tr>
<th>Affect to Vulnerability:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GI = Greatly increase</td>
<td></td>
</tr>
<tr>
<td>Inc = Increase</td>
<td></td>
</tr>
<tr>
<td>SI = Somewhat increase</td>
<td></td>
</tr>
<tr>
<td>N = Neutral</td>
<td></td>
</tr>
<tr>
<td>U = Unknown</td>
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</tr>
</tbody>
</table>

**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.