| | Species Data: | Index Result: | |
|---|---|---|---|
| Species | *Castilleja chlorotica* | Moderately Vulnerable | |
| English Name | Green-tinged paintbrush | Confidence | Moderate |
| Taxonomic Group | Vascular Plant | (based on entered data) | |
| Geographic Area | South Central Oregon | | |
| | | 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 | 65 | |
| | A 3.9F | 35 | |
| | A <3.9F | 0 | |
| Hamon AET:PET Moisture Metric Scope | < -0.119 | 2 | |
| | -0.119 | 34 | |
| | -0.096 | 56 | |
| | -0.073 | 8 | |
| | -0.05 | 0 | |
| | >-0.028 | 0 | |
| Sea level rise | B1 | N | |
| Natural barriers | B2a | U | Oregon endemic but there does not seem to be a natural barrier preventing movement? |
| Anthropogenic barriers | B2b | N | |
| Climate Change mitigation | B3 | N | |
| Dispersal/Movement | C1 | Inc | Seeds are wind and gravity dispersed (Croft et al. 1997). From personal observation, Castilleja seeds typically don't disperse too far. |
| Historical thermal niche | C2ai | SI | |
| Physiological thermal niche | C2aii | N | |
| Historical hydrological niche | C2bi | N | |
| Physiol. hydrological niche | C2bii | SI | |
| Disturbance dependence | C2c | SI | If fires affect its host species (typically sagebrush) this could affect its vulnerability. |
| Ice/snow dependence | C2d | N | |
| Physical habitat restrictions | C3 | U | |
| Other spp create habitat | C4a | SI | Hemiparastic species that could depend on host plants for survival. |
| Dietary Versatility | C4b | U | |
| Pollinator Versatility | C4c | N | Flowers are pollinated by members of the genera Bombus and Osmia (Croft et al. 1997) |
| Other spp for dispersal | C4d | N | |
| Pathogen sensitivity | C4e | N | |
| 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); SILVIS lab Wildland Urban Interface 2010 layer (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://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**

| 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.