



Piko Assessments Sat Feb 17 09:42:16 HST 2018

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| Name                  | Understanding How Climate Change is Affecting Hawaii's High-elevation Ecosystems: An Assessment of the Long-term Viability of Haleakala Silverswords and Associated Biological Communities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Lead Agencies         | U of Hawaii, USGS/PIERC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
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| Partnering Agencies   | PI-CSC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Types                 | - Risk and Vulnerability or Problem-focused                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Area of Applicability | - Regional/Local or Problem-focused                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Focus Area            | - Marine and Terrestrial Ecosystems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Regions               | - Central North Pacific<br>- State Of Hawaii                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Status                | - Ongoing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Description           | The Haleakala silversword plant forms the foundation of a diverse alpine community, and its behavior likely reflects wider ecological responses to climate. This species is already exhibiting patterns of mortality related to climate-driven movement towards higher altitudes. This project aims to understand patterns and causes of recent declines in the Haleakala silversword population that are associated with decreasing precipitation, increasing temperature, and related climate changes in Hawaii's high-elevation ecosystems. Building on extensive research and datasets, this study will collect the demographic and climate data needed to construct a robust population model for the silversword and make future population projections under various climate scenarios. In addition, the project will conduct a range of seedling drought tolerance experiments to clarify causes of recent widespread mortality in the species, and determine methods most likely to lead to restoration success. |
| Url                   | <a href="https://nccwsc.usgs.gov/display-project/4f8c650ae4b0546c0c397b48/5011925fe4b0d78fd4e59baa">https://nccwsc.usgs.gov/display-project/4f8c650ae4b0546c0c397b48/5011925fe4b0d78fd4e59baa</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |