



A Framework for Prioritizing Conservation of Listed and At-Risk Species Across Taxa and Installations: A Demonstration Using the Plant Biodiversity and DoD Hotspot of California

Background:

In order to facilitate proactive conservation that can preclude the need to list species under the Endangered Species Act (ESA), the DoD Legacy Resource Management Program with assistance from NatureServe regularly generates comprehensive lists of DoD species at-risk. The number of at-risk species identified on DoD lands exceeds available conservation funding, requiring Services and installations to make critical decisions about which species to manage. Services and installations require, but generally lack, two critical insights to inform decision making and prioritize conservation management: 1) the likelihood that at-risk species will be federally listed and 2) the potential impact of federal listing on the missions of affected installations.

Objective:

The objective of this effort was to use the DoD at-risk plant species list for California to demonstrate the application of a systematic, replicable, and broadly applicable framework for prioritizing species conservation.

Summary of Approach:

We characterized the likelihood that at-risk species will be federally listed based on vulnerability, land ownership, and a diverse suite of environmental predictors related to eleven primary threats that impact populations. Potential encroachment on installation and Service missions was characterized as a function of the number, density, and percent of species populations occurring on-site. This information was incorporated into a Multi-Criteria Decision Analysis to generate priority scores for species. Finally, based on the prioritization output, conservation strategies that Services and installations could pursue were summarized.

Benefit:

The at-risk plant populations found across installation landscapes would present a management burden and a constraint on DoD land use if the species were federally listed. The results

of this effort will allow Services and installations, as well as their partnering federal, state, and NGO land managers, to prioritize species and populations for conservation, thereby ensuring that limited resources are applied effectively and impacts to training and testing missions are minimized or avoided. Moreover, the demonstrated approach is well suited for application to other taxa and regions.

Accomplishments:

This project generated 1) a framework for strategic prioritization of species management that is broadly applicable to other taxa and regions; 2) priority scores for 144 listed and at-risk plants on or near 36 installations and facilities in California; 3) conservation strategies for high-priority species; and 4) threat-impacts data.



Pendleton button-celery (*Eryngium pendletonense*), which has populations on Camp Pendleton MCB, was estimated to be among the highest priority species across the DoD.

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