Rare Plant Inventory

Introduction

The Klamath Region is renowned for its rich floristic diversity, including many rare plant species, many of which have small populations, very limited ranges and occur nowhere else in the world. Park managers are concerned that anthropogenic impacts, ranging from direct effects of roads, fire management, or campground traffic, to more global environmental change (e.g., climate change, pollution, altered disturbance regimes) may threaten rare plants in the parks. In the face of an ever changing environment, managers need baseline information about rare plants population sizes, locations, and habitats. This information is essential to effectively managing rare and sensitive plant populations for their continued viability.

Klamath Network Botanist searches the Crater Lake rim for rare plant species.

In 2003, the Klamath Inventory and Monitoring Network conducted rare plant inventories in all six Network parks, to fill information gaps pertaining to rare plant species distribution and abundance. Three approaches were used in the inventory: (1) Targeted surveys in localized habitats believed to harbor distinctive species, such as springs, rocky outcrops, and small meadow openings; (2) Revisits to locations of historic populations; and (3) Quantitative belt samples to provide unbiased estimates of rare plant habitat conditions and to provide the opportunity for understanding the habitat requirements of rare species. Klamath Network staff met with park botanists to decide which inventory techniques would be employed in each park.

Inventory Objectives

- Determine the distribution and abundance of selected rare plants in each park and characterize the environments in which they occur.
- Help managers assess the rare plant resources of each park and the viability of these plant populations in a changing world.

Results

Crater Lake National Park
Three known rare species populations were relocated: Mt. Mazama collomia (*Collomia mazama*), analogue sedge (*Carex simulata*), and Crawford's sedge (*Carex crawfordii*). Also, a sundew hybrid (*Drosera* x *obovata*) was found; this rare hybrid species was new to the park list.

Del Norte County iris (*Iris innonminata*) observed in Redwood National and State Parks.

Lassen Volcanic National Park
Three new species are now known from the park as a result of targeted surveys: the rare white beak sedge (*Rhynchospora alba*) and the more common water sedge (*Carex aquatilus* var. *aquatilus*) and Elmer's blue-eyed grass (*Sisyrinchium elmeri*).

Lava Beds National Monument
No rare plant species were observed.

Continued on next page...

Rare Plant Inventory (continued)

Oregon Caves National Monument
No rare species were observed, but two new species were documented for the park: Nuttall's toothwort (*Cardamine nuttalli* var. *covilleana*) and whiskerbrush (*Linanthus ciliatus*).

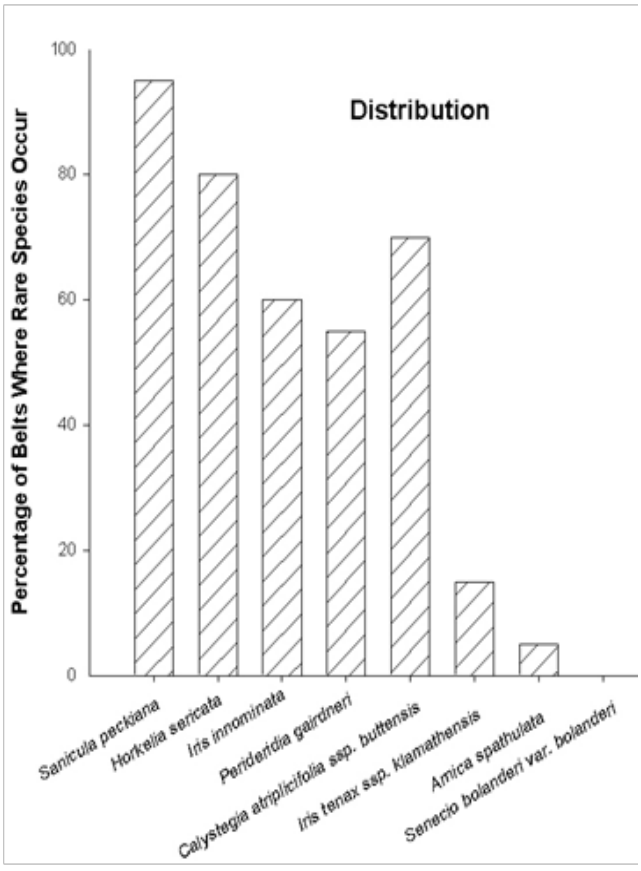
Redwood National and State Parks
Two targeted surveys were performed. Rare plants found at one site included Peck's blacksnakeroot (*Sanicula peckiana*), nightblooming false bindweed (*Calystegia atriplicifolia* ssp. *buttensis*), Gardner's yampah (*Perideridia gairdneri*), Del Norte County iris (*Iris innominata*), Bolander's ragwort (*Senecio bolanderi* var. *bolanderi*), Klamath arnica (*Arnica spathulata*), and silky horkelia (*Horkelia sericata*). Rare plants found at the other site included Klamath arnica (*Arnica spathulata*), Siskiyou indian paintbrush (*Castilleja miniata* var. *elata*), Oregon goldthread (*Coptis laciniata*), Del Norte County iris (*Iris innominata*), Bolander's ragwort (*Senecio bolanderi* var. *bolanderi*), nightblooming false bindweed (*Calystegia atriplicifolia* ssp. *buttensis*), Siskiyou false hellebore (*Veratrum insolitum*), California pinefoot (*Pityopus californicus*), and Bolander's lily (*Lilium bolanderi*).

From left to right: *Drosera angelica*, *D. x obovata* (a *D. angelica* -- *D. rotundifolia* hybrid), and *D. rotundifolia*. Collected from Crater Lake National Park.

Whiskeytown National Recreation Area
Rare plants were found at some but not all of the existing historic sites in the park. We recorded populations of Sanborn's onion (*Allium sanbornii* var. *sanbornii*), Oettinger's trillium (*Trillium ovatum* ssp. *Oettingeri*), blue elderberry (*Sambucus mexicana*), and Shasta County arnica (*Arnica venosa*).

Discussion

In this 5 month field inventory, we relocated many known rare plant populations and found new ones, in a modest survey effort. This suggests that there is much to be learned about rare species. Therefore, further inventory is warranted. We recommend targeted searches as the preferred approach for locating new rare species. Rare plants were non-randomly distributed in the parks and showed strong affinities with distinctive habitats, such as rocky outcrops (especially of unusual parent materials, such as serpentine), riparian zones, sphagnum peatlands, and meadow margins. More detailed and extensive sampling of such habitats is likely to yield both new populations of known rare species and new species to each park.



Distribution frequency of rare plants from a site at Redwood.

More Information

For complete information, please contact Sean B. Smith, KLMN Botanist, at Sean_B_Smith@nps.gov or (541)-552-8570.

http://science.nature.nps.gov/im/units/klmn/Inventories/Rare_Plant/Fleck_Rare_Plants.cfm