

Exotic Plant Survey and Control

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Crater Lake National Park

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Introduction

The 2004 field season marked year two of an exotic plant location and eradication project for Crater Lake National Park. Locations for survey were prioritized as recommended in the 2003 year-end exotics report. Mowing on the roadsides inhibited further surveying of S. Highway 62 and hastened surveys on North Junction Rd. All roadways and developed areas within the park have now been surveyed for non-native plant occurrences and control measures can assume precedence.

Wendy Coleman, Biological Technician, CRLA, supervised the exotic plant surveys and control actions for the 2004 field season. Julia Richardson, VIP, CRLA, assisted with these tasks and prepared the data in summary of the 2004 exotics project. The program benefited from over 200 hours of volunteer time from The Sierra Club, Youth Conservation Corps., Rogue Community College, The Friends of Crater Lake, and eager N.P.S. employees.

Areas Surveyed

Munson Valley Rd.

N. Junction Rd.

W. Highway 62

Desert Creek Research Natural Area.

Sphagnum Bog Research Natural Area

Pumice Desert Research Natural Area

Llao Rock Research Natural Area

Spruce Lake

Headquarters

Employee Housing (Steele Circle & Sleepy Hollow)

“Boneyard” Quarry (Pinnacles Rd.)

“Cornerstone” and “Phoenix” Proposed Prescribed Fire Units

Areas Controlled

Munson Valley Rd.

Spruce Lake

Headquarters

Employee Housing (Steele Circle & Sleepy Hollow)

W. Hwy 62 (Sections)

W. Rim Dr. (~Diamond Lake Overlook)

N. Entrance Fee Station

Rim Village

S. Highway 62 (known *Centaurea stoebe ssp. micranthos* population)

Highway 138 (Cornerstone Burn Unit Boundary)

Survey Methods

Road corridors were prioritized for exotic plant surveys in 2004 to complete the work done on roadways in 2003. Research natural areas and developed areas not surveyed in 2003 were then the secondary concern. Munson Valley Rd. was revisited to compare population changes since 2003.

Surveys were generally floristic and seasonally appropriate. However, many of the common exotic species are identifiable before the flowering stage which allowed for early surveys on the roadsides. This was particularly important in 2004, as the maintenance division had scheduled roadside mowing early in the season.

Roadsides were surveyed on foot in ½ mile increments, using Oregon Department of Transportation standards for work on road shoulders. Both members of the exotic plant team surveyed the road shoulders to a distance of 4+ meters from the pavement. This allowed for very high coverage of the survey area. All associated turn-outs were also surveyed. When an exotic population was encountered on the roadside, it was documented using the same data form from 2003. Many of these populations were then hand-pulled and documented separately as “Removal Data”.

Munson Valley Rd. was revisited at locations found to inhabit exotic plant species in 2003. Supplemental data was recorded at these locations to indicate changes in these populations over the past year.

Surveys of research natural areas were intuitively controlled with coverage of moderate intensity. Maps containing survey routes in research natural areas are included in this report.

A highly intensive survey was performed at Spruce Lake following an initial assessment of the area. However, surveys of Spruce Lake were conducted using the random meander method, rather than with transects.

Control Methods

Control efforts were focused on Munson Valley Rd. and at Headquarters as these areas were treated by hand pulling in 2003. These populations were generally small and sporadically dispersed. In contrast, Spruce Lake contained several thousand non-native individuals and was approached by targeting the most invasive species for control. Known *Centaurea stoebe ssp. micranthos* (Spotted Knapweed) populations were revisited and reoccurrences were removed. Frequently, removal was performed simultaneously with the survey. All actions of control were performed manually and were often accomplished with the help of volunteers.

Results

It is commonly accepted that the highest concentration of non-native plant species exists on S. Highway 62. Surveys of the S. 62 road corridor were not repeated due to mowing on the roadsides. However, removal of non-native plants was targeted to areas N. of the junction of Highway 62 and Munson Valley Rd. In accordance with the 2003 exotic plant report, these outlying populations were prioritized for control.

Surveys of North Junction Rd. were completed in 2004. Non-native occurrences were observed only twice on North Junction Rd, with the most abundant population existing in the landscape at the North Entrance Fee Station. ***Taraxacum officinale*** (Common Dandelion) was most commonly observed.

In contrast, Munson Valley Rd. hosted a variety of population sizes and species diversity. Large patches of ***Hypericum perforatum*** (St. John's Wort) were observed in areas that were treated by hand pulling in 2003, indicating that recent emergence from the seed bed or re-growth from remnants has occurred. Headquarters also contained a high concentration of exotic species, evidence that work performed by National Park Service employees has impacted the dispersal of non-native seed. However, the species composition differed at Headquarters, consisting mainly of ***Rumex crispus*** (Curly Dock) and ***Rumex acetosella*** (Sheep Sorrel).

W. Highway 62 contained long stretches of roadway that were "weed free". Following a pattern of occurrence typical of our park's boundaries, the highest concentration of non-natives were observed at or near the W. boundary and also along the area known as the "lower corkscrews". The corkscrews area is slated for road construction in 2005 and the old road is to be obliterated. This will open up the opportunity for non-native species establishment, particularly as our worst exotic species respond favorably to disturbance events.

Spruce Lake was thoroughly surveyed and control measures applied in 2004. Refer to **Spruce Lake Exotic Plant Removal Project 2004**, included in this report, for a summary of actions taken there.

Recommendations for 2005

Focus on control efforts. As described in the 2003 exotics report, concentrate on smaller, more peripheral populations before working on large populations like those on Highway 62. However, Highway 62 is a vector for reintroducing exotic plants back into the interior roadway areas where occurrences are presently low. Furthermore, the increasing densities of non-native populations along Highway 62 cannot be ignored and control should be considered. Ideally, manual control of these populations would be implemented. This can only be facilitated if the exotics program is funded to support a work crew.

Increase consideration of removing ***Rumex acetosella*** populations as it has the ability to colonize high elevation meadows. Refer to 2003 observances of ***R. acetosella*** for populations on Munson Valley Rd. that should be targeted. Timeliness of surveys on Munson Valley Rd. in 2004 limited observations of population extent of this species.

A sufficient number of visits spaced throughout the growing season are necessary to accurately document the completeness of the survey and control. Repeat visits to known non-native locations are suggested.

Monitor and continue to apply control to Spruce Lake. John and Kathleen Salinas have expressed interest in adopting Spruce Lake as a volunteer project. Be aware that 3 exotic species occurring at Spruce Lake (***Polygonum lapathifolium***, ***Trifolium repens***, and ***Potentilla norvegica***) do not have control strategies as they are so heavily interspersed with the native vegetation. Research control methods for these species and apply if it does not impact the native vegetation, especially habitat containing ***Carex crawfordii***.

Complete preliminary surveys of quarries and “boneyards” that will be used in 2005 by contractors performing work in the park. Monitor these areas for changes in exotic vegetation.

Address actions proposed in 2003 that were not completed in 2004. This includes Annie Creek, (Sun Creek), and Wizard Island.