

RARE PLANT INVENTORY OF
IDAHO FOREST HIGHWAY 30 PROJECT (U.S. 93),
TWIN CREEK TO LOST TRAIL PASS

by

Robert K. Moseley
Conservation Data Center
Nongame/Endangered Wildlife Program

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Idaho Department of Fish and Game
600 South Walnut, P.O. Box 25
Boise, Idaho 83707
Jerry M. Conley, Director

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SUMMARY

The Idaho Department of Fish and Game's Conservation Data Center was contracted by the Federal Highway Administration, Western Federal Lands Highway Division, to conduct an inventory for rare plant species along about a ten mile section of Highway 93. The section surveyed lies between Twin Creek and Lost Trail Pass, about 30 miles north of Salmon, Idaho. Our inventory consisted of three phases: (1) Presurvey analysis of existing rare plant data for the area; (2) Field survey for populations of target rare plants; and (3) Documenting results.

During July, 1992, I surveyed for rare plants in the project area. No populations of the two target species, *Penstemon lemhiensis* (Lemhi penstemon) and *Collomia debilis* var. *camporum* (flexible collomia), were found. I did, however, find a species that appears to be a new discovery for the state of Idaho, *Chrysosplenium tetrandrum* (northern golden-carpet). One of the four small populations appears to occur within the proposed area of impact. A synopsis of the habitats searched and populations found in the project area is included.

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INTRODUCTION

The Idaho Department of Fish and Game's Conservation Data Center (CDC) was contracted by the Western Federal Lands Highway Division of the Federal Highway Administration to conduct a rare plant inventory of the proposed highway reconstruction of Highway 93, about 30 miles north of Salmon, Idaho. The objective of this inventory is to determine if any rare plant populations occur along about a ten mile stretch of Highway 93, between Twin Creek and Lost Trail Pass on the Montana border (Figure 1). The search included approximately 150 feet on either side of the existing road. Our inventory consisted of three phases:

- (1) Presurvey Analysis - compile all existing rare plant data for the area from the CDC data base and the Salmon National Forest and develop a target list of known or potentially-occurring species in the project area.
- (2) Field Survey - conduct a survey for populations of target rare plants.
- (3) Documentation - prepare summary report and maps of findings; transcribe data into CDC data base.

RESULTS

Presurvey Analysis

No occurrences of rare plant species were known from the project area prior to 1992. An analysis of the distribution of rare plants in the North Fork Salmon River drainage from the CDC data base and Salmon National Forest files, in addition to my personal knowledge of habitats in the project area, indicated that two rare species could potentially occur there: Lemhi penstemon (*Penstemon lemhiensis*) and flexible collomia (*Collomia debilis* var. *camporum*).

Lemhi penstemon is a federal Category 2 candidate for listing under the Endangered Species Act and a Forest Service Sensitive Species for the Salmon National Forest (Moseley *et al.* 1990). The nearest known population to the project area is at 6300 feet elevation near the summit of Granite Mountain, about 4 miles south of Twin Creek. Flexible collomia has no federal candidate status or Forest Service Sensitive Species status but is considered Sensitive in Idaho, by the Idaho Native Plant Society (Idaho Native Plant Society 1992). Plants on the Idaho Native Plant Society Sensitive list include those "with small populations or localized distributions within Idaho that presently do not meet the criteria for classification as Priority 1 (state endangered) or Priority 2 (state threatened), but whose populations and habitats may be jeopardized without active management or removal of threats" (Moseley and Groves 1992).

Figure 1. Idaho Forest Highway 30 (U.S. 93)

Study Area

Field Survey

Lemhi penstemon

Lemhi penstemon occurs in a wide variety of habitats in Lemhi County, Idaho, and adjacent Montana. It has an elevational amplitude of about 5,000 feet, where it occurs from grassland and ponderosa pine woodlands at low elevations in the Salmon River canyon to sagebrush openings in subalpine forests at upper elevations (Moseley *et al.* 1990). None of these habitats occur within the project area. The only openings along Highway 93 that aren't talus are artifacts of overstory removal. These openings occur at the top of roadcuts where trees have been removed. The ground is generally densely vegetated with *Carex geyeri* and *Xerophyllum tenax* with no suitable microsites for Lemhi penstemon.

Flexible collomia

In Idaho, flexible collomia inhabits stabilized talus slopes in the North Fork Salmon River drainage. It is also known from the Bitterroot and Clark Fork valleys in adjacent Montana. Several areas of suitable habitat exist in the project area between Twin Creek and the confluence of the North Fork Salmon River and Moose Creek. No flexible collomia was found on these sites.

Northern golden-carpet

Although I have some additional research to do, it appears that my discovery of northern golden-carpet in the project area is the first record of this species in Idaho. It has a circumpolar distribution, occurring southward in North America from Alaska to British Columbia and Washington, and in the Rocky Mountains to Colorado (Hitchcock 1961). It is rare in Montana where it is known from only a few populations in the Sapphire Range and along Laird Creek near Sula, all in Ravalli County (Lackshewitz 1991). The latter site is just a few miles north of Lost Trail Pass. Lesica and Shelly (1991) consider it Sensitive in Montana. A Sensitive species in Montana is one "that is known from a limited number of populations in Montana, or that occurs principally in restricted habitats considered vulnerable to man-caused disturbances. These species may have a restricted range in Montana, or they may be sparsely distributed over a larger area. Plants designated as Sensitive may possibly become threatened or endangered in the state if impacts to known populations occur." It is a Forest Service Sensitive Species for the Bitterroot National Forest (Reel *et al.* 1989). Northern golden-carpet is also known from Okanogan County, Washington, where it is also considered sensitive by the Washington Natural Heritage Program (1990). It will be recommended for addition to the rare plant list in Idaho at the next Idaho Rare Plant Conference in February 1993, and the Forest Service Sensitive Species list for the Intermountain Region.

I found four small populations of northern golden-carpet along three creeks in the vicinity of the project area, Twin Creek, Vine Creek and State Creek (Figure 2). The Twin Creek population begins outside the area of

Figure 2. Location of northern golden-carpet populations in and around the project area.

impact. On Vine Creek, the population is also probably outside the construction area of impact. Two populations occur along State Creek, one upstream and the other downstream from the highway. Of these, only the downstream population may be within or is near the edge of the reconstruction impact zone.

I thoroughly searched all drainage bottoms for about 100 yards upstream and downstream of Highway 93 in the project area, including (arranged south to north):

- Trapper Gulch - suitable; none found
- Twin Creek - 1 population
- Vine Creek - 1 population
- State Creek - 2 populations
- Cool Gulch - suitable; none found
- West Fork - suitable; none found
- North Fork Salmon River - suitable; none found
- three draws between North Fork and Moose Creek:
 - Draw 1 - not suitable; no water
 - Draw 2 - suitable; none found
 - Draw 3 - suitable; none found
- Moose Creek - suitable; none found
- Little Moose Creek - suitable; none found
- three draws between Little Moose Creek and Lost Trail Pass:
 - Draw 1 - suitable; none found
 - Draw 2 - suitable; none found
 - Draw 3 - suitable; none found

Northern golden-carpet occurs on moss-covered logs, rocks and gravels adjacent to small creeks and rivulets. The well-developed moss cover indicates that this is a relatively stable riparian environment, one that is not flooded yearly by spring runoff. The riparian vegetation is relatively dense at the known populations and the canopy coverage is high for both overstory coniferous dominants and understory shrubs. The community in which northern golden-carpet occurs falls within the *Abies lasiocarpa*/*Streptopus amplexifolius* habitat type, *Streptopus amplexifolius* phase (Steele *et al.* 1981). Associated woody species include *Picea engelmannii* and *Cornus stolonifera*, *Alnus sitchensis*, and *Ribes hudsonianum*. Associates in the herbaceous layer include the liverwort *Marchantia polymorpha* and the vascular plants *Carex disperma*, *Epilobium watsonii*, *E. alpinum*, *Equisetum arvense*, *Athyrium felix-femina*, *Pyrola secunda*, *Geum macrophyllum*, *Cardamine oligosperma*, *Smilicina stellata*, *Thalictrum occidentale*, and *Delphinium columbianum*.

Population data for the four populations of northern golden-carpet in the vicinity of the project area are as follows:

Twin Creek - 30-70 mature plants seen in three small clumps, two on north side of creek, one on south. Total area occupied is about 40 square feet. The mature plants had dehiscent fruits and were turning yellow, making them quite distinctive in the lush-green herbaceous vegetation of this habitat. Numerous small, dark green seedlings occurred in the immediate vicinity of mature plants. It appears that seeds disperse only a short distance.

Vine Creek - Ten mature plants were at a similar stage of development as those at Twin Creek.

Several seedlings were observed, having similar characteristics as at Twin Creek. Population area is about one square foot.

State Creek Upstream - Four mature plants and a large number of seedlings were seen with similar characteristics as those at Twin and Vine creeks. Population area is just a few square feet.

State Creek Downstream - About 20 plants with a few seedlings occupied a ten square foot area. These also had dehiscent fruits and were turning yellow.

Because it was only recently discovered in Idaho, no status survey of northern golden-carpet has ever been conducted outlining its distribution, abundance, biology, threats to long-term viability, and appropriate conservation status. Therefore, it is difficult to assess the implications of the potential loss of the downstream State Creek population to the species' viability in Idaho. Although some limited inventory has taken place on the Bitterroot National Forest, no status survey or conservation strategy has been completed for northern golden-carpet in Montana, that would be helpful in analyzing the effects of road construction on Idaho populations.

Because of this paucity of management information and because there are so few populations known from Idaho, totaling around 100 mature individuals, a conservative approach should be taken. All populations should be protected from destruction. Although the effect of placing a population at the edge of the road right-of-way is not understood, certain aspects of road construction may be detrimental to the State Creek Downstream population. If northern golden-carpet requires or prefers moderate to dense shade, placing the population closer to the "edge" by opening the canopy and altering riparian community composition may have detrimental effects. In addition to changing the light regime, the moist-site habitats may also be sensitive to changes in the hydrologic regime, such as flow alteration and increasing sediment loads.

Documentation

The results of this inventory were documented in three ways:

- (1) A summary of my findings are included in this report, which will be submitted to the Federal Highway Administration, Western Federal Lands Highway Division, in Vancouver WA.
- (2) The one rare plant population found in the project area, the State Creek Downstream population of northern golden-carpet, was plotted on large-scale engineering maps provided by the Federal Highway Administration. Final copies of the maps were submitted to the Federal Highway Administration office in Vancouver, WA. Duplicate copies used for field work are deposited at the CDC office in Boise.
- (3) Location and population data of northern golden-carpet populations found in the vicinity of the reconstruction project were entered into the CDC's map, computer and manual data files for rare plants in Idaho. This data base is widely used by many individuals and agencies in Idaho, for planning, management, and conservation purposes.

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