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1991 Preliminary
report to the
Gallatin National
Forest on field
surveys for

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Preliminary report to the Gallatin Nation



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Preliminary Report to the Gallatin National Forest
on field surveys for Claytonia lanceolata var. flava.

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16 August 1991

This is an abridged report

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Introduction

A survey of the East, Main and West Boulder River drainages, and selected areas of the Gallatin National Forest for Claytonia lanceolata var. flava, was completed during the week of June 3-7, 1991. This short report briefly outlines population information that will be contained in a final full report, due December 31, 1991.

East Boulder River Drainage

Numerous large populations and subpopulations of Claytonia lanceolata var. flava were located on Forest Service and private lands. These populations were located both above and below the proposed tailings ponds within the drainage. Populations located within this drainage are outlined in Figures 1 and 2. As the map indicates, there are tens of thousands of plants in several populations. The legal descriptions for these occurrences are as follows:

T3S R13E Section 29, SW $\frac{1}{4}$ - 100-200 plants.

T3S R13E Section 31, SE $\frac{1}{4}$ - Small population along stream, 20+ plants.

T3S R13E Section 32, NW $\frac{1}{4}$ - Three subpopulations of 200, 50, and 50 plants.

T4S R13E Section 4, NW $\frac{1}{4}$ NE $\frac{1}{4}$ - Open meadow population, 1000+ plants.

T4S R13E Section 4, SE $\frac{1}{4}$ NE $\frac{1}{4}$ - 10,000+ plants.

T4S R13E Section 3, central - Four subpopulations with 10,000+, 1000+, 1000+, and 25 plants.

T4S R13E Section 2, S $\frac{1}{2}$ and Section 11, N $\frac{1}{2}$ - Seven subpopulations of 20, 1000+, 1000+, 5, 20, 10,000+, 100+, and 3,000+ plants.

T4S R13E Section 12, central - One population with 10,000+ plants.

The tailings ponds and affected area will impact four subpopulations, two containing approximately 1000 plants each, and two smaller subpopulations containing 5 and 50 plants respectively.

Main Boulder River Drainage

The Main Boulder River drainage may at one time have contained more habitat which supported populations of Claytonia lanceolata var. flava. However, much of the native habitat of

the drainage has been altered extensively through housing development (mostly cabins, second homes, ranches, and church camps), some of it prior to 1941. There were, however, several small populations of C. lanceolata var. flava in this drainage on Forest Service land.

The sites are as follows:

T4S R12E Section 25, SW $\frac{1}{4}$ - Ca. 20 plants in a small meadow.

T6S R12E Section 35, NW $\frac{1}{4}$ - Ca. 250 individuals on small open bench on the northern edge of the Hells Canyon Campground.

Populations were also located on private land within the drainage. These sites include:

T5S R12E Section 23, SE $\frac{1}{4}$ - Ca. 15 plants along the roadside in a small patch of undisturbed habitat.

T5S R12E Section 35, SW $\frac{1}{4}$ - Tens of thousands of plants on a sagebrush knoll, extending down to the meadow adjacent to the Main Boulder River.

West Boulder River Drainage

One small and one large population were located on the West Boulder River drainage. Both are within the Absaroka-Beartooth Wilderness. The sites are as follows:

T3S R11E Section 25, SE $\frac{1}{4}$ SW $\frac{1}{4}$ - Ca. 25 plants in small opening bisected by the West Fork Boulder River trail.

T4S R11E Section 2 - Ca. 10,000 plants in three subpopulations, in the open areas of West Boulder Meadows.

Surveys in other areas of the Gallatin National Forest.

After determining the extent and concentration of populations in the Boulder River drainages, surveys were continued to determine the range of C. lanceolata var. flava on the Gallatin National Forest. These surveys resulted in the location of four new populations in the Gallatin River drainage. These sites are as follows:

T4S R4E Section 28, NW $\frac{1}{4}$ SW $\frac{1}{4}$ - Ca. 200-300 plants in the horse pastures at the Squaw Creek Guard Station.

T7S R4E Section 16, NW $\frac{1}{4}$ SW $\frac{1}{4}$ - Ca. 250-500 plants in a moist meadow south of the Porcupine Guard Station.

T7S R4E Section 33, NW $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ - Ca. 400-500 plants in the open meadow areas of Red Cliff Campground (north loop).

T8S R4E Section 27, SW $\frac{1}{4}$ NW $\frac{1}{4}$, Section 28 SE $\frac{1}{4}$ NE $\frac{1}{4}$, NE $\frac{1}{4}$ SE $\frac{1}{4}$ - Tens of thousands of plants on open slopes south of Cinnamon Guard Station.

A number of areas were searched within the Gallatin River drainage system that did not contain C. lanceolata var. flava. However, it is a large area to cover, and there is much unsurveyed habitat with potential to support populations of C. lanceolata var. flava. In addition, three populations of C. lanceolata var. flava were located in 1990 on private land (Flying D Ranch) just north of Spanish Peaks, one of which is within a mile of Gallatin National Forest lands.

Claytonia lanceolata var. flava was not found in areas searched in the Hyalite Canyon and Hyalite Reservoir vicinity. The meadows in this area did however support large populations of C. lanceolata var. lanceolata.

Conclusion

Based on population information acquired from this study and other sources, the Montana Natural Heritage Program state rank for Claytonia lanceolata var. flava will be changed from S1 (critically imperiled in Montana because of extreme rarity, 5 or fewer occurrences), to S3 (rare in Montana, 21 to 100 occurrences). Populations are widespread across the state and occurrences are known from 10 counties in Montana including: Granite, Beaverhead, Silver Bow, Deerlodge, Madison, Gallatin, Sweet Grass, Park, Cascade, and Meagher. Electrophoretic analysis indicates that populations in the East Boulder River drainage are within the flava complex, but are fairly divergent genetically compared to other sampled flava populations. There is also variation among all the populations sampled. This means that each population is genetically distinct to some degree. In order to maintain the genetic diversity of the species, it would be important to preserve as much of each major population as possible. Management for the East Boulder River C. lanceolata var. flava populations should focus on protection for those populations and subpopulations not found within the area impacted by the mining development.



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