

THREATENED, ENDANGERED AND SENSITIVE
PLANT INVENTORY OF THE BEAR RIVER RANGE,
CARIBOU NATIONAL FOREST:
SECOND YEAR RESULTS

by

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ABSTRACT

The portion of the Cache National Forest (NF) administered by the Caribou NF, which encompasses the Bear River Range, is relatively poorly known botanically. Because of the paucity of information on the rare flora of the Bear River Range, a two year project was initiated as a cooperative Challenge Cost-share project between the Caribou National Forest and the Idaho Department of Fish and Game's Conservation Data Center¹ (CDC). In 1990, botanists from the CDC completed the first phase of the Bear River Range floristic study: the inventory of canyons along the east slope of the range, the Logan River - Franklin Basin area, and the southern Bear River crest. A report summarizing the results of phase one was completed last year.

This report summarizes the results of the second year of the project, resulting from 1991 field work. It also summarizes the status of our knowledge of rare plants in the Bear River Range, and makes recommendations for future work.

As a result of our inventory, we now know that three rare plants occur on the Caribou NF in the Bear River Range: (1) *Asplenium viride* - only one known extant site in Idaho; recommended for Region 4 Sensitive Species status; (2) *Musineon lineare* - new discovery for Idaho; already a Region 4 Sensitive Species in Utah; and (3) *Penstemon compactus* - a few, small populations found; already a Region 4 Sensitive Species for Utah. In addition, *Cryptantha caespitosa*, a Region 4 Sensitive Species in Utah, was discovered on the Caribou NF at the southern end of the Preuss Range. Two other Region 4 Sensitive Species occur very near the Caribou NF, and should be added to the Forest's list: *Cypripedium fasciculatum* and *Stipa viridula*.

¹Formerly the Idaho Natural Heritage Program

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INTRODUCTION

The National Forest Management Act and Forest Service policy require that Forest Service land be managed to maintain populations of all existing native animal and plant species at or above the minimum viable population level. A minimum viable population consists of the number of individuals, adequately distributed throughout their range, necessary to perpetuate the existence of the species in natural, genetically stable, self-sustaining populations.

The Forest Service, along with other Federal and State agencies, has recognized the need for special planning considerations in order to protect the flora and fauna on the lands in public ownership. Species recognized by the Forest Service as needing such considerations are those that (1) are designated under the Endangered Species Act as endangered or threatened, (2) are under consideration for such designation, or (3) appear on a regional Forest Service sensitive species list.

The portion of the Cache National Forest (NF) administered by the Caribou NF, which encompasses the Bear River Range, is relatively poorly known botanically. In the summer of 1990, botanists from the Idaho Conservation Data Center¹ (CDC) completed the first phase of the Bear River Range floristic study (Moseley and Mancuso 1990), which was projected to be a two year study. This was the first detailed floristic analysis of the Idaho-portion of the Bear River Range. We documented the presence of three rare plants: *Asplenium viride*, *Musineon lineare* and *Penstemon compactus*. *Musineon lineare* was not known to occur in Idaho prior to our study. Both *Musineon lineare* and *Penstemon compactus* are Category 2 candidates for listing (U.S. Fish and Wildlife Service 1990a) and Intermountain Region Sensitive Species (Spahr *et al.* 1991).

During our 1990 survey, we thoroughly searched the canyons on the east slope of the Bear River Range, and the southern portion of the crest of the range. Our five recommendations for the 1991 phase of the project were: (1) major emphasis should be placed on surveying the canyons on the west slope of the range, (2) continue the survey of the Bear River Crest, north of Bloomington Lake, (3) survey the vernal pool and wetland habitats of the range, (4) verify and clarify the distribution of *Stipa viridula*, a species recently found to occur at the northern tip of the range, and (5) clarify the status of the white-flowered *Erigeron tener* populations discovered in 1990, relative to its relationship to *E. cronquistii* (Moseley and Mancuso 1990). We felt that accomplishing these tasks would fill in the major gaps in our knowledge of Bear River Range floristics.

Because of less-than-expected funding in 1991, we were not able to accomplish all the tasks outlined above. The two areas of focus in phase two of the Bear River Range floristic inventory were to:

1. Survey Canyons on the West Slope of the Range - Much of the focus of our 1990 survey was on the east slope of the range and in the upper Logan River. A quick reconnaissance trip down the Cub River revealed potential habitat for several rare species. Other west-slope canyons may have similar potential. These canyons are lower in elevation than any of the east-slope canyons and have considerably different habitats. This area appears to have the only potential habitat for *Primula maguirei*, a species listed as Threatened, and was the major focus during the 1991 phase of the project.

¹Formerly the Idaho Natural Heritage Program.

2. Continue Survey of Bear River Crest - Our 1990 inventory concentrated on habitats occurring on the crest of the Bear River Range, since that is where most of the known rare species occurred. We inventoried a major portion of the crest, but a few areas still remained to survey that may contain populations of the three rare species found in 1990. The crest area remaining to be surveyed includes much of the main divide, from Bloomington Lake north to Emigrant Pass, mostly along the High Line Trail. Areas of the main crest north of Emigrant Pass should also be surveyed if a reconnaissance reveals the potential for suitable habitat of any of the target species.

The primary objectives of the 1991 investigation are as follows:

- 1) Compile all available data on the floristics of the northern Bear River Range crest and the west-slope canyons, prior to the field season, with special emphasis being given to rare species that may occur there;
- 2) Conduct an inventory of the northern crest and west-slope canyons, to determine which habitats may harbor rare plant species;
- 3) Document the location of rare plant populations encountered during the survey;
- 4) Assess population trends, if possible, and threats to existing populations of rare plants and make management recommendations to the forest based on these assessments; and
- 5) Make recommendations for future floristic work in the Bear River Range.

RESULTS

Presurvey Results

Prior to the 1991 field season, I compiled existing floristic data for the Bear River crest and the west-slope canyons, from CDC files and from library and herbarium searches. Much of this had been done prior to the 1990 field season (Moseley and Mancuso 1990), but additional information had come to light since that time. Based on these data, I determined that the following ten rare species could occur in habitats along the northern crest or in the canyons of the western slope of the range, and would be the primary objects of our 1991 floristic inventory:

1. *Asplenium viride* (green spleenwort) - A state-rare species known from one extant population in Idaho, near Bloomington Lake (Moseley and Mancuso 1990). While the habitat at Bloomington Lake appears unique for this part of Idaho, it could conceivably occur farther north along the Bear River crest.
2. *Cryptantha caespitosa* (tufted cryptantha) - Tufted cryptantha is a Region 4 Sensitive Species (Spahr *et al.* 1991), whose existence in Idaho has only recently come to light. A collection at the University of Idaho Herbarium indicated that it occurred along the northern end of the Bear River crest.
3. *Cypripedium fasciculatum* (clustered lady's-slipper) - This species was recently observed in the Bear River Range of Utah, a couple of miles south of the Idaho border. It is a Region 4 Sensitive Species (Spahr *et al.* 1991).
4. *Draba maguirei* (Maguire's whitlow-grass) - Populations of this Utah endemic are known from within a few miles of the Idaho border. While we found no evidence of this species in Idaho in 1990, it may occur along the northern crest of the Bear River's. It is on the Region 4 Sensitive Species (Spahr *et al.* 1991).
5. *Erigeron cronquistii* (Cronquist's fleabane) - Another Utah endemic, C2 candidate (U.S. Fish and Wildlife Service 1990a) and Region 4 Sensitive Species (Spahr *et al.* 1991), surveys by the Utah Natural Heritage Program indicated that it occurs very close to the Idaho border in the Bear River Range (Franklin 1990). We did not find this species in Idaho in 1990 (Moseley and Mancuso 1990), but it appears to have a wide altitudinal amplitude and could occur both along the crest and in the west-slope canyons.
6. *Eriogonum brevicaule* var. *loganum* (Logan buckwheat) - This Region 4 Sensitive Species (Spahr *et al.* 1991) is endemic to lower elevations of the Bear River Range, in the vicinity of Logan, Utah, less than 20 miles south of the Idaho border (Welsh and Thorne 1979). This species has the potential to occur at low elevations in the canyons along the west slope of the range.
7. *Musineon lineare* (Rydberg's musineon) - Our discovery of this species near Bloomington Lake in 1990, was its first report for Idaho (Moseley and Mancuso 1990). It is known to have a wide altitudinal amplitude in Utah, so it could occur both along the northern crest and in the west slope canyons. This species is a C2 candidate (U.S. Fish and Wildlife Service 1990a) and a Region 4 Sensitive Species (Spahr *et al.* 1991).

8. *Penstemon compactus* [= *P. cyananthus* var. *compactus* (Cache penstemon)] - Moseley and Mancuso (1990) found several populations of this rare plant along the southern Bear River crest, mostly on the ridges around the upper Logan River. This species was previously considered endemic to Utah, and is a C2 candidate (U.S. Fish and Wildlife Service 1990a) and a Region 4 Sensitive Species (Spahr *et al.* 1991).

9. *Primula maguirei* (Maguire's primrose) - This species is listed as Threatened under the Endangered Species Act (U.S. Fish and Wildlife Service 1990b), being known from only a few sites in the Logan River Canyon (Welsh and Thorne 1979).

10. *Stipa viridula* (green needlegrass) - Green needlegrass is a Region 4 Sensitive Species (Spahr *et al.* 1991) that was recently discovered near the northern end of the Bear River Range, just outside the Forest boundary.

Field Survey Results

With this list of rare species in mind, I searched suitable-appearing habitats in the Bear River Range during July, 1991. See Appendix 1 for areas inventoried during the 1991 field season.

I found that the collection of *Cryptantha* from the northern Bear River crest was not *C. caespitosa*, but a misidentified specimen of *C. humilis*, a close, but widespread, relative. I could not relocate the *Stipa viridula* population near Alexander, and no *Stipa* I observed on the Caribou NF was *S. viridula*. And most frustrating of all, I failed to find any occurrences of any of the target species listed in the previous section. This despite a thorough search of nearly all the canyons of the west slope of the range and along the northern crest, north of Bloomington Lake.

The possibility remains, however, that with further searches by knowledgeable District personnel, some of these species may be found in the Idaho portion of the Bear River Range. In an effort to increase awareness and provide background information on species identification and habitat ecology, the remainder of this report contains a discussion of each of the rare species listed above, except the three covered by our 1990 report (Moseley and Mancuso 1990), *Asplenium viride*, *Musineon lineare*, and *Penstemon compactus*. In addition, the recent discovery of another Region 4 Sensitive Species, *Aster kingii* var. *kingii*, in the Logan Canyon, Utah, area was brought to my attention by Ben Franklin, of the Utah Natural Heritage Program. I have included information on this species in the following discussions.

Following is a synopsis of eight rare plants that could potentially occur on the Caribou NF in the Bear River Range. One species, *Cryptantha caespitosa*, is known from the Forest at the southern edge of the Pruess Range. Included is information on each species' taxonomy and identification, range and habitat, and conservation status in Idaho and elsewhere. Please refer to Moseley and Groves (1990) and Idaho Native Plant Society (1991) for a summary of definitions of the various conservation categories and ranks. See also Appendix 3 for color slides of many of the species discussed below. The final section summarizes our two years of work in the range and I make recommendations for future floristic work in the study area.

Aster kingii* D.C. Eaton var. *kingii

CURRENT STATUS USFS Region 4 - Sensitive
USFWS - None
Idaho Native Plant Society - None
Heritage Rank - G3T2 / UT-S2

TAXONOMY

Family: Asteraceae or Compositae (Aster or Sunflower)

Common Name: King woody aster

Synonymy: *Machaeranthera kingii* (D.C. Eaton) Cronq. & Keck

Description: A member of the sunflower family, King woody aster grows from a well-developed, more-or-less woody root. There are persistent, blackish or dark brown, old leaf bases at the base of the plant. The stems are short (3-12 cm) long and the herbage is covered with glandular hairs. The leaves are basal, 0.8-12 cm long and oblanceolate to spatulate in shape. Flowers occur in clusters of 1-5, standing 8-11 mm high. The inner bracts are often purplish and the tips of at least the outer are bent backward. The ray flowers are white, often fading to pale pink. It is a long-lived perennial, that produces achenes ca. 3.5 cm long.

Similar Species: Variety *kingii* is close to var. *barnebyana*, but different in having stipitate-glands only on the upper part of the inflorescence and less numerous pronounced spinulose teeth on the leaves.

DISTRIBUTION

Range: Known from the Wasatch Mountains in Cache, Juab, Salt Lake, and Utah counties, Utah.

Habitat: Alpine, Douglas-fir and white fir communities in crevices of limestone and dolomite parent materials, between 6,000 and 11,700 feet elevation.

MANAGEMENT IMPLICATIONS

Quite well protected by its habitat. Known threats are from goats, transplanted into the habitat where this species grows, and periodic seasons when mormon cricket populations are large.

PERTINENT REFERENCES

Atwood *et al.* 1991
Spahr *et al.* 1991
Watson 1871
Welsh *et al.* 1987

***Cryptantha caespitosa* (A. Nels.) Payson**

CURRENT STATUS USFS Region 4 - Sensitive
Utah BLM - Sensitive
USFWS - None
Idaho Native Plant Society - Review
Heritage Rank - G3 / ID-S1

TAXONOMY

Family: Boraginaceae (Borage)

Common Name: Tufted cryptantha or caespitose catseye

Synonymy: *Oreocarya caespitosa* A. Nels.

Description: A member of the borage family, tufted cryptantha has a mat-forming habit, growing to a height of 0.5-1.5 dm, from a woody rootstock. The basal leaves are persistent, forming a dense mat and are up to 3 cm long. The stem leaves are scattered and similar to or somewhat smaller than the basal ones. The petals are white, forming a tube at the base, which is about as long as the sepals. The flower cluster is rather compact. This perennial flowers from May to June. It produces a fruit that consists of 4 hard nutlets.

Similar Species: A distinctive species in its range based on its small, low perennial habit, and small flowers (3-4 mm long).

DISTRIBUTION

Range: Tufted cryptantha is known from southeastern Wyoming and northeastern Utah (Uintah Basin), and disjunct to the north in Bear Lake County, Idaho. For many years the only record of tufted cryptantha in Idaho was a collection by J.F. Macbride (s.n., NY), made in 1910, from simply "Montpelier". Michael Mancuso discovered the only three known extant populations in the state, 80 years later in 1990, from the southern end of the Preuss Range and in the Pegram Creek drainage, east of Montpelier. One of the Preuss Range populations is on the Caribou NF, on the ridge between Telephone Draw and Montpelier Reservoir (Mancuso #210, ID), while the second is about two miles to the southeast, on a State of Idaho school endowment section at Geneva Summit. The third (Mancuso #216, ID) is on BLM land in the Pine Gap Research Natural Area/Area of Critical Environmental Concern (RNA/ACEC). See Appendix 2 for the mapped locations of the three known populations of tufted cryptantha in Idaho.

A collection by C.A. Wellner (#3481, ID) from the northern Bear River crest, along the eastern boundary of the Burton Canyon Research Natural Area, was originally identified as *Cryptantha caespitosa*. My investigations in 1991, indicate that it was a misidentified collection of *C. humilis*.

Habitat: The known Idaho populations occur on exposed ridgelines with shallow, shaly soils in a low sagebrush (*Artemisia arbuscula*) or black sagebrush (*Artemisia nova*) community associated with *Agropyron spicatum*, *Eriogonum brevicaulis*, *Haplopappus acaulis*, *Astragalus utahensis*, *A. spatulatus*, *Arenaria nuttallii*, and *Cymopterus* sp. The Telephone Draw population consisted of about 100 plants widely scattered over a two acre area. At Geneva Summit, the tufted cryptantha population consisted of less than 50 plants on a few square yards. The Pine Gap RNA/ACEC population also consists of less than 50 plants confined to a small ridgeline area.

MANAGEMENT IMPLICATIONS

While no long-term data are available, no near-term threats to the Idaho populations were observed in 1990; cattle grazing was minimal and transitory on these sites. Road construction could effect the Geneva Summit population. One population is protected in the Pine Gap RNA/ACEC.

In Utah, some habitat areas occur where oil production is underway. Other areas are grazed and used as bedding grounds for domestic livestock. The cumulative effects of these impacts have not been determined.

RECOMMENDATIONS

Tufted cryptantha is currently a Region 4 Sensitive Species in Utah, for the Ashley NF. Based on evidence presented here, it should be considered sensitive in Idaho, for the Caribou NF. The Caribou NF should undertake a systematic status inventory as soon as practicable to determine its full distribution, abundance, and conservation status on the Forest.

The Idaho BLM should also add tufted cryptantha to their sensitive species list. The Idaho Falls District BLM should undertake a systematic status inventory as soon as practicable to determine its full distribution, abundance, and conservation status on lands they administer.

PERTINENT REFERENCES

Atwood *et al.* 1991
Cronquist 1984
Higgins 1971
Payson 1927
Spahr *et al.* 1991
Welsh *et al.* 1987

***Cypripedium fasciculatum* Kellogg ex. Wats.**

CURRENT STATUS USFS Region 4 - Sensitive
USFS Region 1 - Sensitive
USFS Region 6 - Sensitive
USFWS - 3c
Idaho Native Plant Society - Priority 2
Heritage Rank - G3 / ID-S3

TAXONOMY

Family: Orchidaceae (Orchid)

Common Name: Clustered lady's-slipper or brownie lady's-slipper

Synonymy: *Cypripedium pusillum* Rolfe, *C. fasciculatum* var. *pusillum* Hooker, and *C. knightae* Nelson.

Description: This member of the orchid family has numerous fibrous roots and grows to a height of 3 dm. The stems are slender with, long, soft, sticky hairs. There are 2 opposite leaves 4-11 cm long, 2.5-7.5 cm wide with few to no hairs. The bracts surrounding the flowers are 3.5 cm long and 6-13 mm wide. There are 2-4 small flowers per stem. The sepals are lanceolate in shape, 1.5-2.5 cm long, and 3-6 mm wide. The petals are broadly ovate with a small greenish-yellow lip. The lip is spherical-shaped and 8-14 mm long with a purplish margin that is deeply infolded. This perennial flowers in June and July. The fruit is an obovoid-ellipsoid capsule, 1.5-2.0 cm in length. It produces numerous small seeds. See photos in Appendix 3 of clustered lady's-slipper and its habitat.

Similar Species: A distinctive orchid with 2 broad, opposite leaves above the middle of the villous-viscid stem, 2-4 purplish-brown-lipped flowers in a tight cluster just above the leaves.

DISTRIBUTION

Range: In the Rocky Mountains, clustered lady's-slipper is known from Colorado, Utah, Idaho, Wyoming, and Montana. It also occurs in the Cascade and related ranges in Washington, Oregon, and California. It is considered a rare species in all states in which it occurs. In Idaho it is known only from the northern part of the state. Leila Shultz, from Utah State University, observed a single plant in a lodgepole pine stand on the east slope of Doubletop Mountain in Cache County, Utah. This site is only about two miles south of the Idaho-Utah border, and clustered lady's-slipper is, therefore likely to occur in similar habitats in the upper Logan River area of Idaho, at least.

Habitat: The habitat in which clustered lady's-slipper occurs in northern Idaho (relatively moist, low-elevation, mixed coniferous forests) does not occur on the Caribou NF. Sources indicate that in Utah, it occurs in duff among spruce-fir or lodgepole pine forests and along shaded streams between 7,940-9,840 feet elevation, a habitat more similar to those found in the Bear River Range of the Caribou NF.

MANAGEMENT IMPLICATIONS

In Oregon and Idaho, timber harvesting appears to be the biggest threat, along with road building and recreational impacts. In Utah, timber harvesting and livestock grazing appear to present the most imminent threats to lady's-slipper populations.

RECOMMENDATIONS

Clustered lady's-slipper is currently a Region 4 Sensitive Species in Utah, for the Ashley and Wasatch-Cache NFs. Based on evidence presented here, it should be considered sensitive in Idaho, for the Caribou NF. The Caribou NF should undertake a systematic status inventory as soon as practicable to determine its full distribution, abundance, and conservation status on the Forest.

PERTINENT REFERENCES

- Atwood *et al.* 1991
- Brownell and Catling 1987
- Holmgren 1977
- Kagan 1990
- Lorain 1991
- Spahr *et al.* 1991
- Welsh *et al.* 1987

***Draba maguirei* C.L. Hitchc.**

CURRENT STATUS USFS Region 4 - Sensitive
USFWS - 3b
Idaho Native Plant Society - None
Heritage Rank - G2 / UT-S2

TAXONOMY

Family: Brassicaceae or Cruciferae (Mustard)

Common Name: Maguire draba or Maguire rockcress

Synonymy: *Draba maguirei* var. *burkei* C.L. Hitchc.

Description: A member of the mustard family, Maguire draba grows in tufts with substoloniferous branches. The flowering stalk is 2-20 cm tall. The leaves are 3-15 mm long, 1-4 mm wide, and obtuse to acute with cilia on the margins. The sepals and petals are yellowish. A perennial, this draba flowers in May and June, fruiting in July and August. The fruit is 4-9 mm long and ovate to lanceolate with 2-8 seeds. See photos in Appendix 3 of Maguire draba and its habitat.

Similar Species: A distinctive species.

DISTRIBUTION

Range: Currently known only from northern Utah, in Box Elder, Cache, and Weber counties. At one time was considered likely to occur in adjacent Idaho. Results of our two year floristic study in the Bear River Range of Idaho would tend to discount that notion.

Habitat: Talus slopes and rocky outcrops, 5,400 to 8,700 feet elevation.

MANAGEMENT IMPLICATIONS

Heavy recreational use, campgrounds, tourism, and highway construction are the most significant impacts to this species.

PERTINENT REFERENCES

Atwood *et al.* 1991
Hitchcock 1941
Moseley and Mancuso 1990
Spahr *et al.* 1991
Welsh *et al.* 1987

Erigeron cronquistii Maguire

CURRENT STATUS USFS Region 4 - Sensitive
USFWS - C2
Idaho Native Plant Society - None
Heritage Rank - G2 / UT-S2

TAXONOMY

Family: Asteraceae or Compositae (Aster or Sunflower)

Common Name: Cronquist daisy

Synonymy: None

Description: A member of the sunflower family, Cronquist daisy has short, closely-branched caudices with leaf bases from several seasons. It is commonly 3-7 cm tall with simple, erect stems. There are several conspicuous basal, spatulate leaves, 2-5 cm long with a slender petiole. There are 5 or less leaves along the stem. The flowering heads are solitary (occasionally 2), 3-5 mm high with short spreading hairs and fine glands. The disc is 5-8 mm wide. The bracts are thin, the inner broad with prominent green margins and purple tips, the outer narrower. The ray flowers occur 10-20 per head, are 5-6 mm long, and are white or pinkish. The pappus consists of 12-20 very slender, fragile bristles. See photos in Appendix 3 of Cronquist daisy and its habitat.

Similar Species: Similar to *Erigeron tener*, but with obtuse to rounded basal leaves and the pappus being shorter than the disk corolla. Flower color was once considered distinctive in each species, with *E. tener* having blue to red-purple rays flowers versus white to pink in *E. cronquistii*. Collections of white-flowered daisies made by CDC botanists in the Bear River Range of Idaho, in 1990, were determined to be *E. tener* by Arthur Cronquist of the New York Botanical Garden (Moseley and Mancuso 1990).

DISTRIBUTION

Range: Presently known from the Bear River Range in Cache County, Utah, and once considered likely to occur in adjacent Idaho. Results of two years of floristic investigation by the Idaho CDC, tend to discount that likelihood.

Habitat: Crevices in limestone cliffs and talus between 5,740 to 9,880 feet elevation.

MANAGEMENT IMPLICATIONS

It is subject to potential impacts from summer homes and highway construction, along with industrial development and heavy recreational use in the Logan Canyon area.

PERTINENT REFERENCES

- Atwood *et al.* 1991
- Maguire 1944
- Moseley and Mancuso 1990
- Spahr *et al.* 1991
- Welsh and Thorne 1979
- Welsh *et al.* 1987

***Eriogonum brevicaule* Nutt. var. *loganum* (A. Nels.) Welsh**

CURRENT STATUS USFS Region 4 - Sensitive
USFWS - 3c
Idaho Native Plant Society - None
Heritage Rank - G4T2 / UT-S2

TAXONOMY

Family: Polygonaceae (Buckwheat)

Common Name: Logan buckwheat

Synonymy: *Eriogonum loganum* A. Nels.

Description: A member of the buckwheat family, Logan buckwheat grows from a woody, branching caudex, 2-4 dm in diameter, and 1.5-3 dm high. The stems are 1-2.5 dm long and leafy at the base, with a dense cluster of flowers at the top. The herbage is covered densely with white, wool-like hairs. The leaves are narrowly elliptic, 2-7 cm long. The flowers are cream to yellow and 2.5-4.0 mm long with oblong-obtuse sepals. This long-lived perennial flowers in late June. The fruit, achenes, are 3.0-3.5 mm long, brown, and ripen in July. See photos in Appendix 3 of Logan buckwheat and its habitat.

Similar Species: Logan buckwheat differs from other varieties of *E. brevicaule* in being short caulescent, with the internodes of the stem obscured by white tomentum.

DISTRIBUTION

Range: Endemic to Cache, Rich, and Morgan counties, Utah. To be expected in the Cache Valley, Oneida County, Idaho.

Habitat: Sagebrush-bunchgrass and rocky outcrop communities between 4,790 to 7,790 feet elevation.

MANAGEMENT IMPLICATIONS

Housing projects, roadways, and associated facilities are threats to known populations of Logan buckwheat.

PERTINENT REFERENCES

Atwood *et al.* 1991
Reveal 1973
Spahr *et al.* 1991
Welsh and Thorne 1979
Welsh *et al.* 1987

***Primula maguirei* L.O. Williams**

CURRENT STATUS USFS Region 4 - Sensitive
USFWS - Threatened
Idaho Native Plant Society - None
Heritage Rank - G1 / UT-S1

TAXONOMY

Family: Primulaceae (Primrose)

Common Name: Maguire's primrose

Synonymy: None

Description: A member of the primrose family, Maguire's primrose is a low growing, tufted perennial with from 1 to several, slender flower stalks. The leaves are broadly spatulate, 3-7 cm long and are grouped at the base of the plant. Flowers occur in groups of 1-3 at the top of each stalk. The 5-petaled flowers are red-purple. It flowers from mid-April to June. Its fruit is a cylindrical capsule, 5 mm long. Individual plants die back in the fall and overwinter by the perennial root. See photo in Appendix 3 of Maguire's primrose and its habitat.

Similar Species: Similar to other primroses, but different in having the calyx 5.5-7.5 mm long, and obovate, and 4-5 mm wide corolla lobes.

DISTRIBUTION

Range: Known only from Cache County, Utah, in Logan Canyon.

Habitat: Damp ledges and shaded crevices along canyon walls in coniferous forests. It is found mainly on north- and east-facing, moss-covered cliffs composed of carboniferous limestones and dolomites. Elevation are between 4,800 and 6,600 feet.

MANAGEMENT IMPLICATIONS

Casual collection by hikers and destruction by rock climbers threatens the populations.

PERTINENT REFERENCES

Atwood *et al.* 1991
Spahr *et al.* 1991
Welsh and Thorne 1979
Welsh *et al.* 1987
Williams 1936

***Stipa viridula* Trin.**

CURRENT STATUS USFS Region 4 - Sensitive
USFWS - None
Idaho Native Plant Society - Sensitive
Heritage Rank - G4 / ID-S1

TAXONOMY

Family: Poaceae or Graminae (Grass)

Common Name: Green needlegrass

Synonymy: *Stipa parviflora* Nutt., *Stipa nuttalliana* Steud.

Description: A member of the grass family, green needlegrass grows in tufts, 5-11 dm tall. The sheaths are hairy along the margins and the old sheath bases are persistent. The leaf blades are flat to curled, 2-6 mm wide. The ligule is 0.5-2.0 mm long and the panicle is narrow, 10-25 cm long. The glumes are membranous, 8-13 mm long, and taper to a sharp tip. The lemma is brown and leathery, 5.0-6.5 mm long, narrowing to a "whitish" neck. The awn is 20-35 mm long with the 2 lower segments twisted. The callus is short and the palea is less than 1/2 as long as the lemma.

Similar Species: Similar to several other needlegrasses. Some distinguishing features include awns averaging less than 35 mm; awns glabrous or only scabrous throughout their length, not at all pubescent; palea less than half as long as the lemma and glabrous; lemma at maturity narrowed toward the apex into a whitish neck to about 1mm long.

DISTRIBUTION

Range: Largely a northern Great Plains species, green needlegrass it is at the periphery of its range in Idaho, where it is known from Owyhee, Clark, Elmore, and Caribou counties. The Caribou County site is near the intersection of U.S. Highway 30 and State Route 34, near Alexander. I was unable to relocate this population in July 1991. This site is within a mile of the Caribou NF.

Habitat: Adapted to a wide range of soil textures, but does especially well on clay soils. Occurs in xeric sagebrush-grass communities. Elevations between 4,500 and 7,050 feet.

MANAGEMENT IMPLICATIONS

Little is known of its distribution and abundance in Idaho.

RECOMMENDATIONS

Green needlegrass is currently a Region 4 Sensitive Species in Idaho, for the Boise and Targhee NFs. Based on evidence presented here, it should be considered sensitive for the Caribou NF. The Caribou NF should undertake a systematic status inventory as soon as practicable to determine its full distribution, abundance, and conservation status on the Forest.

PERTINENT REFERENCES

- Spahr *et al.* 1991
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- Welsh *et al.* 1987

SUMMARY AND RECOMMENDATIONS

Prior to initiation of the Bear River Range floristic inventory in 1990, little was known of the occurrence of rare plant species there. The last two years of field investigations in the range has brought to light the occurrence of several rare plant species, for which the Caribou NF should give special consideration. Below is a summary of the species and the recommendations made by the Idaho Conservation Data Center:

***Asplenium viride*:** The population on the Bloomington Lake headwall represents the only one known extant in Idaho. This species should be added to the Region 4 Sensitive Species List for the Caribou NF [see Moseley and Mancuso (1990) for further information and recommendations].

***Cryptantha caespitosa*:** Although the Bear River Range collection of this species turned out to be misidentified, tufted cryptantha does occur on the Caribou NF in the Montpelier Reservoir area. It is currently a Region 4 Sensitive Species in Utah; the Caribou NF should be included. Further, species specific surveys should be conducted on the Forest (for further details, see information and recommendations contained in this report).

***Cypripedium fasciculatum*:** Clustered lady's-slipper is not currently known from the Caribou NF, but is known from the Wasatch-Cache NF, within two miles of the Caribou. It is currently a Region 4 Sensitive Species in Utah; the Caribou NF should be included. Further, species, specific surveys should be conducted on the Forest (for further details, see information and recommendations contained in this report).

***Musineon lineare*:** Our discovery of this species on the Bloomington Lake headwall represents a new addition to the state's flora. It is currently a Region 4 Sensitive Species in Utah; the Caribou NF should be included [see Moseley and Mancuso (1990) for further information and recommendations].

***Penstemon compactus* (= *P. cyananthus* var. *compactus*):** Seven small occurrences of Cache penstemon are known from Idaho, all on the Caribou NF in the upper Logan River - Franklin Basin area. It is currently a Region 4 Sensitive Species in Utah; the Caribou NF should be included [see Moseley and Mancuso (1990) for further information and recommendations].

***Stipa viridula*:** Green fescue is known to occur within about a mile of the Caribou NF at the northern end of the Bear River Range. Suitable habitat exists on the Forest. It is currently a Region 4 Sensitive Species for the Boise and Targhee NFs in Idaho; the Caribou NF should be included. Further, species specific surveys should be conducted on the Forest (for further details, see information and recommendations contained in this report).

Because of time and funding constraints, we did not accomplish all the items recommended in 1990 (Moseley and Mancuso 1990). Aside from the species inventory recommended above, the two major recommendations that remain are:

1. Vernal Pond and Wetland Habitats - The Bear River Range has numerous structural basins created by complex faulting patterns. These internally drained basins (e.g., Egan Basin and Gibson Basin) contain ponds and wetlands that are seasonally flooded during the late spring and early summer, as the snow pack melts, but can become very dry by late summer. The vernal ponds and wetlands can range in size from just a few square yards to well over one hundred acres, and can vary greatly in the degree to which they dry out. Whatever the case, the annual fluctuation of water level creates a very unique and extreme environment for plant and animal growth and survival. The vernal pools, for instance, are usually inhabited by specially adapted plants that are highly habitat-specific. Many of the species in these habitats are also known to have limited distributions.

2. *Erigeron cronquistii* - *Erigeron tener* - To better clarify the status of the white-flowered *Erigeron tener* collections made in the southern Bear River Range in 1990, it would be useful to make more collections to see just where it gives way to *Erigeron cronquistii* (see Moseley and Mancuso 1990 for further details).

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Appendix 1

List of areas floristically inventoried in 1991,
Bear River Range, Caribou National Forest.
(from south to north, more or less;
detailed field maps available from the Conservation Data Center)

Canyons of the West Slope

Oxkiller Canyon
Flat Canyon
Deep Creek
Crooked Creek
Maple Creek
Cub River
Hillyard Canyon
Carter Creek
Birch Creek
Strawberry Canyon
Williams Canyon
Oneida Narrows
South Ant Canyon
Whiskey Creek
Cheatbeck Canyon
Burton Canyon
Nelson Canyon

Northern Crest

Ridges around the German Dugway Road
Ridges between Copenhagen Basin and State Highway 36
Selected areas of the crest between State Highway 36 and Soda Point

Appendix 2

Location of *Cryptantha caespitosa* in Idaho.

Map 1. Overview of the distribution of *Cryptantha caespitosa* in Idaho. Portion of the 1963 Caribou National Forest map.

Map 2. Telephone Draw and Geneva Summit populations. Portion of the 1970 Montpelier Canyon 7.5' USGS quadrangle.

Map 3. Pine Gap RNA/ACEC population. Portion of the 1970 Pegram Creek 7.5' USGS quadrangle.

Appendix 3

Slides of selected rare species and their habitats
that potentially occur on the Caribou National Forest in the Bear River Range.
[see Moseley and Mancuso (1990) for slides of *Asplenium viride*,
Musineon lineare, and *Penstemon compactus*]

1. Clustered lady's-slipper.
2. Clustered lady's-slipper habitat in northern Idaho.
3. Maguire draba.
4. Close-up of Maguire draba leaves. Note distinctive cilia on leaf margins.
5. Maguire draba habitat near Tony Grove Lake, Cache County, Utah.
6. Cronquist daisy.
7. Cronquist daisy habitat in Logan Canyon, Cache County, Utah. Camera case on rock outcrop in center of picture indicates location of Cronquist daisy.
8. Close-up of Logan buckwheat flowers and leaves.
9. Logan buckwheat plant near Logan, Cache County, Utah.
10. Maguire primrose on mossy ledges of limestone cliff, Logan Canyon, Cache County, Utah.