

FIELD INVESTIGATIONS OF THREE  
SENSITIVE PLANT SPECIES  
ON THE PAYETTE NATIONAL FOREST:

ALLIUM TOLMIEI VAR. PERSIMILE  
CASTILLEJA ORESBIA AND  
PENSTEMON ELEGANTULUS

by

Robert K. Moseley and Michael Mancuso  
Natural Heritage Section  
Nongame/Endangered Wildlife Program  
Bureau of Wildlife

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

Cooperative Challenge Cost-share Project  
Payette National Forest  
Idaho Department of Fish and Game

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## ABSTRACT

Field investigations of Allium tolmiei var. persimile (Tolmie's onion), Castilleja oresbia (pale Wallowa Indian paintbrush), and Penstemon elegantulus (lovely penstemon) were conducted on the Payette National Forest by the Idaho Department of Fish and Game's Natural Heritage Program. The investigations were a cooperative Challenge Cost-share project between the Department and the Payette NF. Lovely penstemon and pale Wallowa Indian paintbrush are endemic to northeastern Oregon and adjacent Idaho, while Tolmie's onion is endemic to western Idaho in Adams, Washington and Gem counties. All three plants are on the Intermountain Region's Sensitive Plant Species List.

Our field investigation of Tolmie's onion found that it is a narrow endemic restricted largely to Adams County, Idaho, although a few disjunct populations occur in Washington and Gem counties. Within this narrow range, we found that it can be quite common in suitable habitat, although the populations never cover a large area. Because it is a narrow endemic, occurring mostly of Forest Service lands, we recommend that it remain on the Regional Sensitive Species list.

Pale Wallowa Indian paintbrush was found to be common and widespread in stiff sagebrush stands between 3300 to 5000 feet on the west side of the Council Ranger District. Because it is abundant and minimal negative impacts to its habitat are foreseen, we recommend that it be removed from the Regional Sensitive Species list.

The assumption that lovely penstemon occurred on the Payette NF was predicated on the fact that it was geographically intermediate between known populations north of the Seven Devils and in the Owyhee Mountains. Since the Owyhee specimen was probably misidentified, the Payette NF no longer plays this intermediate role. There is no evidence that it occurs on the Forest and our survey in 1990, in conjunction with those of Payette NF botanists, substantiate this fact. We recommend that it be removed from the Regional Sensitive Species list.

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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.

Allium tolmiei var. persimile (Tolmie's onion) is a narrow endemic found largely in Adams County and disjunctly in Gem and Washington counties, Idaho. Castilleja oresbia (pale Wallowa Indian paintbrush) and Penstemon elegantulus (lovely penstemon) are somewhat farther ranging, being endemic to west-central Idaho and adjacent Oregon. Both taxa are on the Intermountain Region Sensitive Species List for the Payette NF (USDA Forest Service 1988). Field investigations of these species were conducted on the Payette NF by the Idaho Department of Fish and Game's Natural Heritage Program through the Cooperative Challenge Cost-share Program.

The primary objectives of these investigations were as follows:

- 1) Survey known populations of Tolmie's onion, pale Wallowa Indian paintbrush, and lovely penstemon and search potential habitats for new populations on the Payette NF.
- 2) Characterize habitat conditions for known populations on the Payette NF.
- 3) Assess population trends, if possible, and threats to existing populations and make management recommendations to the forest based on these assessments.

## RESULTS

During May and June 1990, botanists from the Heritage Program surveyed suitable-appearing habitats for Tolmie' onion, pale Wallowa Indian paintbrush, and lovely penstemon on the Weiser, Council, and New Meadows Ranger Districts. In addition, Payette NF botanists provided location and population information on the three species resulting from their TES (threatened, endangered and sensitive) plant clearances of Roadless Areas (Simpson 1990).

We found that both Tolmie's onion and pale Wallowa Indian paintbrush are common within a narrow range in Idaho; the onion is endemic to the state while the paintbrush also occurs in Oregon. We found no evidence that lovely penstemon occurs on the Payette NF or in Region 4.

Following is a detailed discussion of each species, including information on its taxonomy and identification, range and habitat, conservation status, and recommendations to the Regional Forester and Payette NF concerning its status in Idaho.

Allium tolmiei Baker ex. Wats. var. persimile Ownbey

CURRENT STATUS USFS Region 4 Sensitive Species  
(Payette and Boise NFs)  
USFWS - 3c  
Idaho Native Plant Society - Monitor  
Heritage Rank - G4T2 S2

TAXONOMY

Family: Lilaceae (Lily)

Common Name: Tolmie's onion

Citation: Research Studies of the State College of Washington  
18:29. 1950.

Technical Description: Bulb ovoid, one of a cluster, inner coats whitish or pinkish, outer coats grayish or brownish, consisting of an outer opaque or obscurely cellular layer and a thin inner membrane (inner epidermis) with distinct cellular reticulations; leaves 2 per scape, flat, thick, scarcely falcate, 3 to 7 mm broad, entire, about equaling the scape in length, green at anthesis, usually persisting at maturity; scape 10 to 20 cm tall, neither strongly flattened nor broadly winged, usually persistent at maturity; bracts of the spathe 2 or 3, separate or nearly so, ovate to lanceolate, acuminate, 7- to 9-nerved; umbel several- to many-flowered, pedicels slender, less than twice the length of the perianth, becoming flexuous in fruit; perianth segments 8 to 10 mm long, lanceolate, appearing acute, entire, involute at tip, pinkish, becoming somewhat keeled and rigid in fruit, the midribs prominent; stamens nearly equaling the perianth in length, filaments dilated below and united into a cup at the base, anthers oblong, obtuse, yellowish; ovary obscurely if at all crested, style subulate, about as long as the perianth, stigma capitate, entire; seeds dull black, alveoli not pustuliferous (Ownbey 1950).

Nontechnical Description: Tolmie's onion grows to 10 inches tall with one flowering stem (scape), surmounted by a mass of small, pink flowers. The scape is flattened, sometimes with small wings of the edges. Each of the flowers has stamens about equal to the petals in length. It only has two leaves per scape, these being flat, thick, scarcely falcate (curved like a hawk's beak), and about equal in length to the scape. See Appendix 1 for a line drawing Tolmie's onion.

Distinguishing Features and Similar Species: Allium tolmiei var. persimile is closely related to var. tolmiei, differing in its taller scapes, relatively shorter leaves, and relatively longer stamens. Var. platyphyllum differs from var. persimile in its broader leaves, more prominent crest on the ovary, more strongly compressed scape, and stamens shorter than the perianth (Ownbey

1950). Both of these varieties occur in west-central Idaho, but apparently only var. tolmiei occurs near the range of var. persimile. Var. platyphyllum is only known from north of the Seven Devils Mountains.

We also found A. parvum, another scabland onion that can be easily confused with A. tolmiei. It differs by having more elliptic petals that become papery in fruit. Allium parvum was found at lower elevations in the Indian Valley - Midvale area. Allium brandegei is found growing in communities adjacent to Tolmie's onion populations, but is a much smaller onion in every respect and the two are easily distinguished.

The following key, modified from Ownbey (1950), should help distinguish several of the taxa mentioned above:

- A. Petals elliptic or elliptic lanceolate, obtuse to obtusish, becoming papery in fruit, with the midribs scarcely thickened and the tips usually not at all involute; ovary usually crested with 3, low rounded processes ..... A. parvum
- A. Petals lanceolate, appearing acuminate, becoming rigid in fruit, with the midribs noticeably thickened and the tips involute; ovary crestless or more usually crested with processes ..... A. tolmiei
- B. Stamens 1/2 to rarely as much as 4/5 the length of the petals.
  - C. Scape 5 - 12 cm tall (measured from ground level); perianth 6 - 10 mm long; bracts of the spathe 5- to 11-nerved ... var. tolmiei
  - C. Scape 10 - 25 cm tall; perianth 8 - 12 mm long; bracts of the spathe 11- to 19-nerved ..... var. platyphyllum
- B. Stamens nearly equaling the petals in length; scape 10 - 20 cm tall ..... var. persimile

Ownbey's colleague at Washington State University, Hannah Aase, found var. persimile to be a hexaploid (2n=21). Variety tolmiei is a diploid and var. platyphyllum a tetraploid.

## DISTRIBUTION

Range: Although not described until 1950, Marcus Jones collected the first specimen of var. persimile in 1899, near Indian Valley, Adams County (Ownbey 1950). Ownbey's (1950) description only included one other specimen, from a few miles north of the Hornet Guard Station. Later collections by Ownbey and Mingrone (Mingrone 1968) and others did not expand the distribution of the taxon much, although two disjunct populations were discovered, one in Gem County and one in Washington County.

Johnson (1981a) mentions that it occurs as far west as Grant County, Oregon, although no data are known to support this distribution. Meinke (1978) did not cover var. persimile in his rare plant work of northeastern Oregon and Jimmy Kagan (personal communication, Oregon Natural Heritage Program, 1990) indicated that it is not known from Oregon.

Results of an inventory by the Heritage Program and TES clearances by the Payette NF during the spring and summer 1990, indicate that var. persimile is largely confined to Adams County. The two disjunct populations noted above were not intensively investigated, so its distribution in those areas is not fully understood at present. One additional Gem County population was discovered, however.

Within Adams County, var. persimile is locally abundant, being known from 18 populations. A majority of those populations are from the Payette NF (13), while five are on private and/or BLM land. Most populations are large, containing several hundred to several thousand individuals, although five populations contained fewer than 100 plants. All populations cover a small area, however, mostly less than 1 acre. See Appendix 2 for Heritage Program element occurrence records for var. persimile in the Payette NF vicinity. Each record contains information on location, ownership, population data and quality, among other things. Also see Appendix 3 for the mapped locations of known var. persimile populations on or near the Payette NF and Appendix 4 for a list of locations searched unsuccessfully.

Habitat and Associated Species: All known populations of var. persimile in Adams County occur on the Weiser Embayment of the Columbia River basalts (Fitzgerald 1982). Most populations occur in seasonally wet soils that become very dry during the summer. Topographically, they occur in swales, seasonal watercourses, or seeps on hillsides and roadcuts. These sites occur within rigid sagebrush (Artemisia rigida) and mountain big sagebrush (A. tridentata ssp. vaseyana) communities at the lower elevations, to openings within ponderosa pine, Douglas-fir, and even grand fir habitat types at the upper limits of its distribution. Associates in these habitats include Sisyrinchium inflatum, Trifolium

macrocephalum, Lomatium macrocarpum, Camassia quamash, Ranunculus oresterus, Antennaria luzuloides, and Sedum stenopetalum.

A few populations occur on dry hillsides, away from areas of seasonally wet soils. Associates in these Purshia tridentata habitats are Physaria oregana, Chaenactis douglasii, and the rare plant Cryptantha propria. These are apparently marginal habitats and populations, whose reproductive success is highly sensitive to spring weather conditions. The unseasonably warm weather of late March and April 1990, caused var. persimile plants to rapidly produce flowers buds. Severe drought conditions during April, however, arrested development before flowering and caused the entire population to dry out before above average precipitation came during May and June.

#### CONSERVATION STATUS

Conservation Status - Idaho: Variety persimile was initially proposed as a candidate taxon by the Smithsonian Institution soon after the Endangered Species Act was passed. It was later considered a Category 2 candidate by the U.S. Fish and Wildlife Service in 1980 (U.S. Fish and Wildlife Service 1980) and later reclassified as a 3c candidate (U.S. Fish and Wildlife Service 1985). Johnson (1977a) evaluated var. persimile for the Idaho rare plant project of the Idaho Natural Areas Council and recommended Threatened status because of its limited distribution. He later placed it on the Federal Watch List (Johnson 1981a) because of the lack of apparent threats. Heidel (1979) recommended a status of threatened. See also status reports by Packard (1979) and Atwood and Charlesworth (1987a).

Tolmie's onion is on the Forest Service's Intermountain Region Sensitive Species list for the Boise and Payette NFs (U.S. Forest Service 1988; U.S. Forest Service no date a).

The Idaho Native Plant Society has placed var. persimile on their Monitor list of rare plants of the state (Idaho Native Plant Society 1990). The Monitor category of the Idaho Native Plant Society list refers to taxa that are common within a limited range as well as those taxa which are uncommon, but have no identifiable threats (Moseley and Groves 1990).

The Idaho Natural Heritage Program currently ranks var. persimile as G5T2 S2 [G5 = Allium tolmiei is demonstrably secure; T2 = var. persimile is imperiled throughout its range because of rarity or because of some other factor of its biology making it vulnerable to extinction; S2 = since var. persimile is apparently endemic to Idaho, the state (S) rank equals the global rank for the taxon (T); Moseley and Groves 1990].

Conservation Status - Elsewhere: Variety persimile is apparently endemic to Idaho.

Ownership: Of the 21 populations of var. persimile known, 15 occur on National Forest land; 13 on Payette NF and 2 on the Boise NF. At least a portion of two populations occur on land administered by the Boise District, BLM, with the rest occurring on private land.

Threats: Portions of at least eight populations are bisected by roads where habitat has been destroyed. Road maintenance and possibly herbicide applications present continued threats. Heavy cattle grazing in the ephemeral wetlands early in the season appear to negatively affect var. persimile populations. Simpson (1990) noted timber sale road construction and cattle concentrations around springs as being potential threats to certain populations in his study area.

Management Implications: Although some habitat has been destroyed by land-management activities, the overall viability of the taxon appears vigorous. Since it is a narrow endemic, however, and many populations are vulnerable to road construction and maintenance and certain cattle distribution patterns, var. persimile should remain a species of concern in formulating management alternatives.

#### ASSESSMENT AND RECOMMENDATIONS

Summary: Results of our field investigation on the Payette NF in 1990, indicate that Allium tolmiei var. persimile is locally common in suitable habitats within a very narrow range in Adams, Gem and Washington counties, Idaho. The Gem and Washington county portion of its range needs to be more thoroughly investigated, however. Twenty-one populations are now known, mostly from Forest Service land in Adams County. By and large, the taxon appears stable, although roads have destroyed habitat at eight populations and heavy cattle concentrations in seasonal wetlands are impacting others.

Recommendations to the Regional Forester: Based on data discussed in this report, var. persimile still meets Sensitive Species criteria and should remain on the Regional List for the Payette and Boise NFs. The rationale for this recommendation lies in the fact that it is a narrowly distributed endemic, with a major portion of its range on Forest Service land.

Recommendation to Payette National Forest: Allium tolmiei var. persimile remains a rare and localized species, endemic to Idaho. Portions of several populations have been destroyed by road construction in the past, and other threats to population

viability still exist. Although the taxon appears stable at present, it should be given careful consideration in land-management planning on the Payette NF. Those populations being impacted by heavy concentrations of cattle in seasonal wetlands should be monitored as part of an Allotment Management Plan.

Land managers and field personnel on the Payette NF should be informed of the occurrence of this species in their area. Possible sightings of this plant should be documented by specimens (if the size of the population warrants collecting), and should be sent to the University of Idaho Herbarium (Department of Biological Sciences, University of Idaho, Moscow 83843) for verification of their identity. When sending specimens for identification, always include detailed location, habitat, and pertinent morphological information. Confirmed sightings of this species should be reported to the Idaho Natural Heritage Program for entry into their permanent data base on sensitive species.

Recommendation to Boise National Forest:The distribution of var. persimile is not fully known on the Boise NF at present, although two populations are known from the Emmett Ranger District in Gem County. A status inventory should be conducted as soon as practicable.

Recommendation to the Bureau of Land Management: The distribution of var. persimile is not fully known on BLM land at present, although portions of at least two populations are known from the Boise District in Gem and Adams counties. Allium tolmiei var. persimile should be added to the BLM Sensitive Species list for Idaho and a status inventory should be conducted as soon as practicable.

Castilleja oresbia Greenman

CURRENT STATUS USFS Region 4 Sensitive Species (Payette NF)  
USFWS - 3c  
BLM - Sensitive  
Idaho Native Plant Society - Sensitive  
Heritage Rank - G3 S2

TAXONOMY

Family: Figwort (Scrophulariaceae)

Common Name: Pale Wallowa Indian paintbrush

Citation: Botanical Gazette 48:147. 1909.

Technical Description: Perennial; stems clustered, erect or ascending, usually unbranched, 1 to 2 dm tall, densely puberulent to finely villous or hispidulous, purplish; leaves densely puberulent, remote, lower ones linear, entire, upper ones with 1 to 2 pairs of linear, divergent lobes; bracts broader than the leaves, 3- to 5-parted, puberulent and more or less ciliate, yellowish, mostly not strongly veined; calyx 10 to 25 mm long, yellowish or sometimes purplish, deeply and subequally cleft above and below, its primary lobes again divided usually into 2, linear, usually acute segments 5 to 10 mm long; corolla sometimes shorter, sometimes longer, than the calyx, its lower lip prominent, pouched, pubescent, 2/3 to fully as long as the galea (Cronquist 1959a).

Nontechnical Description: The tightly clustered stems of pale Wallowa Indian paintbrush grow from 6 to 12 inches tall. Each stem has several flowers subtended by a yellow bract, giving the entire plant a bright yellow aspect. The leaves are widely spaced on the stem, with the lower ones being linear and entire and the upper ones being 1 to 2 lobed. The floral bracts are wider than the leaves and are 3 to 5 lobed. The entire plant is puberulent, sometimes densely so. See Appendix 2 for line drawing of pale Wallowa Indian paintbrush.

Distinguishing Features and Similar Species: Cronquist (1959a) states that pale Wallowa Indian paintbrush is somewhat variable and taxonomically connects Castilleja pallescens and C. inverta. In fact, he suggests that pale Wallowa Indian paintbrush and C. inverta should be considered geographical varieties of C. pallescens [in part, this was later done by Holmgren (1984), who treats C. inverta and a variety of C. pallescens]. Cronquist further states that pale Wallowa Indian paintbrush is distinguished from C. inverta by its longer calyx lobes, longer pubescence, and obscurely nerved bracts, but that none of these features provides an absolute criterion for distinguishing the

two. There is no difficulty in telling the three species apart when the morphological characters are used in combination with geographical data; the three taxa are apparently allopatric (Cronquist 1959a).

We found specimens at several populations that have strongly nerved bracts, as in *C. inverta*, but otherwise key to pale Wallowa Indian paintbrush. These specimens have been sent to Noel Holmgren, New York Botanical Garden, for his opinion, but we have yet to get a response.

The following key (modified from Cronquist 1959a; Holmgren 1984a), should help distinguish the taxa mentioned above:

- A. Plants densely and uniformly short-puberulent; inflorescence compact; cauline leaves usually crowded; southwestern Idaho and northcentral and northwestern Nevada ..... *C. inverta*
  
- A. Plants puberulent, but also with some longer hairs, particularly in the inflorescence and on the lower stems; inflorescence ultimately elongate; leaves more remote
  - B. Calyx lobes triangular, usually not more than 3 times as long as broad; western Wyoming and central Idaho ..... *C. pallescens*
  
  - B. Calyx lobes linear; eastern Oregon and adjacent Idaho (Adams, Idaho?, and Valley counties) ..... *C. oresbia*

#### DISTRIBUTION

Range: Pale Wallowa Indian paintbrush occurs widely throughout northeastern Oregon, in Baker, Grant, Umatilla, and Wheeler counties (Meinke 1978; Steele 1981). In Idaho, it is known from Adams County and two disjunct, historical collections from Long Valley in Valley County. There is also a collection from the Gospel Peak region of the Nez Perce NF that needs to be investigated further. This specimen (Henderson 3371 at ID) is aberrant in that it occurs at high elevations on a metamorphic substrate in a whitebark pine woodland.

Up to 1990, seven populations were known in Idaho. This year an inventory for the species in Idaho by the Heritage Program and TES plant clearances by Payette NF botanists, discovered 19 new sites. All of the new occurrences and many of the old ones occur on the Council Ranger District in the Wildhorse River and Hornet Creek drainages. The status of the two disjunct populations in Long Valley were not investigated in this study. One historically

known population from 0.5 mile north of New Meadows has been extirpated. The population probably occurred on the basalt outcrop on which the town airstrip is now situated. Also, we were unable to relocate a population, for which we had very sketchy data, from Round Valley, at the north end of the Meadows Valley. We saw no suitable habitat in the area.

Most of the 20 sites visited in 1990, consisted of more than one population. In addition, most populations consisted of several hundred individuals, with several consisting of several thousand and covering many acres.

Our ability of find additional populations in 1990, was limited only by time. Pale Wallowa Indian paintbrush occurs in nearly all Artemisia rigida/Poa secunda (stiff sagebrush/Sandberg's bluegrass) habitats on the Council Ranger District. Simpson (1990) found a similar pattern in the area he was surveying. We have no doubt that more populations will be found as the stiff sagebrush communities are better inventoried. During our inventory, we attempted to locate the boundary of its distribution in Adams County and feel that the map in Appendix 3 reflects that with a high degree of confidence. See Appendix 4 for a list of areas searched unsuccessfully for pale Wallowa Indian paintbrush in Adams and Washington counties.

Habitat and Associated Species: All populations of pale Wallowa Indian paintbrush in 1990, occurred in the stiff sagebrush/Sandberg's bluegrass habitat type (Tisdale 1986). Indeed, Johnson and Simon (1987) found pale Wallowa Indian paintbrush to be a principal indicator species of this habitat type in their study area in northeastern Oregon. They also found it to be more abundant in mid- and late seral stages of this type. Associates in this habitat type include Eriogonum sphaerocephalum, Balsamorhiza hookeri, Lomatium leptocarpum, Frasera albicaulis, Penstemon gairdneri, Sedum stenopetalum, and Antennaria flagellaris. All populations from Adams County occur on the Weiser Embayment of the Columbia River basalts (Fitzgerald 1982).

The stiff sagebrush habitat occurs as scattered stands on gently sloping benches and plateaus where the basalt bedrock is very close to the surface. Most of the plants occurring on these sites are probably rooted in the cracks of the bedrock. The elevational limits of the species in Adams County appears to be between 3300 and 5000 feet, with most populations occurring between 4400 and 4800 feet. The upper elevational limit of pale Wallowa Indian paintbrush coincides with the upper elevation limit of stiff sagebrush habitats in this part of Idaho. On the other hand, the lower elevational limit of the paintbrush is well above the lower limit of stiff sagebrush habitats, which occurs as low as 2200 feet. Stiff sagebrush stands containing the paintbrush can occur within the mountain big sagebrush, ponderosa pine, Douglas-fir and grand fir zones.

## CONSERVATION STATUS

Conservation Status - Idaho: Pale Wallowa Indian paintbrush was initially proposed as a candidate taxon by the Smithsonian Institution soon after the Endangered Species Act was passed. It was later reclassified as a 3c candidate (U.S. Fish and Wildlife Service 1985). Steele (1977) evaluated it for the Idaho rare plant project of the Idaho Natural Areas Council and recommended Threatened status because of its limited distribution. He later placed it on the Federal Watch List (Steele 1981) because of the lack of apparent threats. See also the status reports by Kennison (1980) and Atwood and Charlesworth (1987b).

Pale Wallowa Indian paintbrush is on the Forest Service's Intermountain Region Sensitive Species list for the Payette NF (U.S. Forest Service 1988; U.S. Forest Service no date a). It is also considered Sensitive by the Idaho State Office of the BLM (Moseley and Groves 1990).

The Idaho Native Plant Society has placed pale Wallowa Indian paintbrush on their Sensitive list of rare plants of the state (Idaho Native Plant Society 1990). The Sensitive category of the Idaho Native Plant Society list refers to taxa with small populations or localized distributions within Idaho that presently do not meet the criteria for classification as Priority 1 or 2, but whose populations and habitats may be jeopardized without active management or removal of threats (Moseley and Groves 1990).

The Idaho Natural Heritage Program currently ranks var. persimile as G4 S3 (G4 = Apparently secure throughout its range, though it may be quite rare in parts of its range, especially at the periphery; S3 = either very rare and local throughout its range or found locally in a restricted range or because of other factors making it vulnerable to extinction; Moseley and Grove 1990).

### Conservation Status - Elsewhere:

OREGON - Pale Wallowa Indian paintbrush was once considered rare in Oregon (Meinke 1978), but is now known to be quite common in the northeastern part of the state (Jimmy Kagan, Oregon Natural Heritage Data Base, personal communication, 1990).

Ownership: Sixteen of the extant populations occur on the Payette NF, while seven occur on private land and possibly one on the Nez Perce NF. None are known from BLM land although it is to be expected on BLM ownership on the Wildhorse River - Snake River divide southwest of Bear.

Threats: Nearly all populations are grazed by domestic livestock to some degree. The plant productivity of the stiff sagebrush habitats is very low, however, and livestock do not spend much time grazing these sites. In addition, at least several vigorous populations have survived an era of extremely heavy grazing, being on the Salmon River Sheep Driveway. Some habitat destruction has taken place via road construction, but this has been relatively minor.

Management Implications: Most populations of pale Wallowa Indian paintbrush are large and vigorous. The major disturbance to its habitat is domestic livestock grazing and that appears to have negligible effect. In other words, overall population and species viability in Idaho do not appear to be negatively influenced by current land management activities.

#### ASSESSMENT AND RECOMMENDATIONS

Summary: Results of our field investigation on the Payette NF in 1990, in conjunction with Payette NF botanists, indicate that pale Wallowa Indian paintbrush is common in stiff sagebrush communities in the Hornet Creek and Wildhorse River drainages. Most populations appear viable and the scabland habitats are generally little impacted by land management activities. Overall, we foresee no long-term viability problems for the species in Idaho.

Recommendations to the Regional Forester: Based on data discussed in this report, pale Wallowa Indian paintbrush does not appear to meet Sensitive Species criteria and should be removed from the Regional List. While it is common within a relatively narrow range in Idaho, it is more or less common within in that area. In addition, the species is common in adjacent Oregon and of no conservation concern there.

Recommendation to Payette National Forest: As stated above, we no longer consider pale Wallowa Indian paintbrush to be of conservation concern in Idaho.

Recommendation to the Bureau of Land Management: Pale Wallowa Indian paintbrush is currently on the BLM Sensitive Species List for Idaho. For reasons enumerated above, we recommend that it be removed.

Other Recommendations: The Heritage Program will make a recommendation to the Idaho Native Plant Society, at the 1991 Rare Plant Conference, to reclassify pale Wallowa Indian paintbrush from Sensitive to Monitor, a classification that better reflects its conservation status in Idaho.

Penstemon elegantulus Pennell

CURRENT STATUS USFS Region 4 Sensitive Species (Payette NF)  
USFS Region 1 Sensitive Species (Nez Perce NF)  
USFWS - 3c  
Idaho Native Plant Society - Review  
Heritage Rank - G4 S1

TAXONOMY

Family: Figwort (Scrophulariaceae)

Common Name: Lovely penstemon

Citation: Not. Nat. Acad. Phila. 71:12. 1941.

Technical Description: Plants tufted from a compact, branching, surficial, woody caudex, 1 to 3 dm tall, evidently to obscurely glandular in the inflorescence, otherwise finely hirtellous-puberulent throughout, or more often the basal and lower cauline leaves glabrous or nearly so; leaves entire or more often with a few small, scattered, callous teeth, the basal ones up to about 10 cm long and 1.6 cm wide, the elliptic to lanceolate or ovate blade longer or shorter than the petiole; cauline leaves narrowly lanceolate and sessile to oblanceolate and subpetiolate, up to 5 cm long and 8 mm wide; inflorescence of several few-flowered, not very dense verticillasters; calyx 3 to 6 mm long, the segments ovate, more or less scarious-margined and sometimes erose; corolla blue, generally somewhat glandular-hairy externally (sometimes sparsely or obscurely so), 15 to 22 mm long, 5 to 6 mm wide at the mouth; palate bearded; pollen sac about 1 mm long, opening nearly throughout, essentially glabrous, becoming opposite; staminode bearded toward the recurved, scarcely dilated tip (Cronquist 1959b).

Nontechnical Description: Lovely penstemon is a perennial from a compact, branching, woody caudex, 6 to 15 inches tall. The blue flowers are somewhat glandular-hairy externally, 15 to 22 mm long and 5 to 6 mm wide at the mouth; generally borne in few-flowered and not very dense whorls. The stem leaves are opposite, narrowly lanceolate, while the basal leaves are glabrous or nearly so. Both kinds have entire margins or with a few small, scattered teeth (Caicco 1987). See Appendix 1 for a line drawing of lovely penstemon.

Distinguishing Features and Similar Species: Lovely penstemon can be confused with two other species of Penstemon. It differs from P. humilis in being less pubescent, in tending to have a few teeth on the leaves, and in the larger average size of the flowers. In these features, lovely penstemon resembles P. albertinus; leaves of the latter species, however, are not finely hairy (Cronquist 1959b). Neither P. humilis or P. albertinus are reported from the

Seven Devils Mountains by Bingham (1987), although he lists a total of sixteen Penstemon taxa in his study area.

Plants suspected to be lovely penstemon in Owyhee County (Johnson 1981b) are probably a misidentification of P. albertinus and/or P. humilis. Holmgren (1984b) states that P. albertinus intergrades with P. humilis in the Owyhee Mountains, and a clear distinction between the two is often difficult. Given this confusion, it is a distinct possibility that the Hitchcock and Muhlick collection (22585 at WTU) was misidentified. Also, Holmgren (1984b) does not include lovely penstemon in his treatment of the Intermountain penstemons.

#### DISTRIBUTION

Range: The range of lovely penstemon is restricted to the western portion of Nez Perce and Idaho counties, Idaho, and Wallowa County, Oregon. All of the Idaho sites are on the edge of Hells Canyon, overlooking the Snake River.

There is no evidence for it being present on the Payette NF. Johnson (1981b) states that lovely penstemon "may be on ..... Payette NF". He may have made this assessment given that the Payette NF is in an intermediate geographical position relative to the known collections north of the Seven Devils Mountains and the collection from Owyhee County discussed above. Since the Owyhee County collection is now assumed to be a misidentification, the Payette NF does not play the geographical-linkage role it once did.

During our surveys of the Wildhorse River, Weiser River, Hornet Creek drainages and the Cuddy, West, and Hitt mountains, we found no lovely penstemon populations. Botanists from the Payette NF, while conducting TES plant clearances on the Council Ranger District, also did not find any (Simpson 1990).

The nearest known Idaho population of lovely penstemon is approximately 35 miles due north of suitable habitat on the Payette NF. The Oregon populations are at a similar latitude on the opposite side of Hells Canyon.

Habitat and Associated Species: According to Johnson and Simon (1987), lovely penstemon occurs in low coverage in their Eriogonum douglasii/Poa secunda and Eriogonum strictum/Poa secunda associations, where it has a constancy of 75% and 29% respectively. The scabland communities occur on basalt ridgetops, ridge brows and windswept saddles. Associated species include Agropyron spicatum, Bromus tectorum, Polygonum dougalsii, Achillea millefolium, Allium acuminatum, and Erigeron chrysopsidis.

## CONSERVATION STATUS

Conservation Status - Idaho: Lovely penstemon was initially proposed as a candidate taxon by the Smithsonian Institution soon after the Endangered Species Act was passed. It was later considered a Category 2 candidate by the U.S. Fish and Wildlife Service in 1980 (U.S. Fish and Wildlife Service 1980) and later reclassified as a 3c candidate (U.S. Fish and Wildlife Service 1985). Johnson (1977b) evaluated lovely penstemon for the Idaho rare plant project of the Idaho Natural Areas Council and recommended Threatened status because of its limited distribution. He also recommended Threatened status during a revision of the rare plant list for Idaho (Johnson 1981b). See also Heidel (1979) and status reports by Greenleaf (1980) and Atwood and Charlesworth (1987c).

Lovely penstemon is on the Forest Service's Intermountain Region Sensitive Species list for the Payette NF (U.S. Forest Service 1988; U.S. Forest Service no date a) and the Northern Region for the Nez Perce NF (USDA Forest Service no date b).

The Idaho Native Plant Society has placed lovely penstemon on their Review list of rare plants of the state (Idaho Native Plant Society 1990). The Review category of the Idaho Native Plant Society list refers to taxa which may be of conservation concern, but for which we have insufficient data upon which to base a recommendation regarding their appropriate classification (Moseley and Groves 1990).

The Idaho Natural Heritage Program currently ranks lovely penstemon as G4 S1 (G4 = Apparently secure throughout its range, though it may be quite rare in parts of its range, especially at the periphery; S1 = Critically imperiled in Idaho because of extreme rarity or because of some factor of its biology making it especially vulnerable to extinction; Moseley and Groves 1990).

### Conservation Status - Elsewhere:

OREGON - Lovely penstemon was once considered a very rare species in Oregon (Meinke 1978), and appeared on the Oregon List 3 [taxa limited in abundance throughout their range but currently stable (Oregon Natural Heritage Data Base 1983)]. It was later dropped from the rare plant list in Oregon (Oregon Natural Heritage Data Base 1985), largely as a result of field work by Charlie Johnson (Ecologist, Wallowa-Whitman NF, personal communication, 1988).

Ownership: Known populations of lovely penstemon occur on the Nez Perce NF, Hells Canyon National Recreation Area (administered by the Wallowa-Whitman NF), private and possibly State of Idaho and BLM land. No populations are known from the Payette NF.

Threats: Not applicable to the Payette NF.

Management Implications: Not applicable to the Payette NF.

#### ASSESSMENT AND RECOMMENDATIONS

Summary: The assumption that lovely penstemon occurred on the Payette NF was predicated on the fact that it was geographically intermediate between known populations north of the Seven Devils and the Owyhee Mountains. Since the Owyhee specimen was probably misidentified, the Payette NF no longer plays an intermediate role. Also, there is no evidence that it occurs on the Forest and our survey in 1990, in conjunction with those of Payette NF botanists, substantiate this fact. The nearest known population of lovely penstemon is approximately 35 mile due north of suitable habitat on the Payette NF.

Recommendations to the Regional Forester: Since there is no evidence that lovely penstemon occurs in Region 4, it should be removed from the Regional Sensitive Species List.

Recommendation to Payette National Forest: See above section.

Recommendation to the Bureau of Land Management: Lovely penstemon occurs on Wapshilla Ridge in Nez Perce County, an area where the BLM administers several parcels of land and is in the process of trying to exchange for additional acreage. Suitable habitat for lovely penstemon occurs on the existing BLM parcels. It should be added to the BLM Sensitive Species list for the state, and status inventory should be conducted for this high priority species as soon as practicable.

Other Recommendations: The Heritage Program will make a recommendation to the Idaho Native Plant Society, at the 1991 Rare Plant Conference, to reclassify lovely penstemon from Review to Priority 2, a classification that better reflects its conservation status in Idaho.

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## Appendix 1

Line drawings of Allium tolmiei var. persimile,  
Castilleja oresbia, and Penstemon elegantulus.

1. Allium tolmiei var. persimile (from Ownbey 1969)
2. Castilleja oresbia (from Cronquist 1959a)
3. Penstemon elegantulus (from Cronquist 1959b)

## Appendix 2

Element occurrence records for  
Allium tolmiei var. persimile  
on or near the Payette National Forest.

## Appendix 3

Locations of Allium tolmiei var. persimile,  
Castilleja oresbia on or near the Payette National Forest.

- Map 1. Allium tolmiei var. persimile - overview of distribution on or near the Payette NF. Portion of 1967 Payette NF map.
- Map 2. Allium tolmiei var. persimile - Occurrences in the vicinity of Bear and Cuprum. Portion of 1957 Cuprum 15' quadrangle.
- Map 3. Allium tolmiei var. persimile - Occurrences in the upper Crooked River area. Portion of 1986 Rocky Comfort Flat 7.5' quadrangle, provisional edition.
- Map 4. Allium tolmiei var. persimile - Occurrences on Rocky Comfort Flat. Portion of 1986 Rocky Comfort Flat 7.5' quadrangle, provisional edition.
- Map 5. Allium tolmiei var. persimile - Occurrence in upper Mill Creek. Portion of 1986 Crooked River Point 7.5' quadrangle, provisional edition.
- Map 6. Allium tolmiei var. persimile - Occurrence along Lick Creek. Portion of 1986 Weasel Gulch 7.5' quadrangle, provisional edition.
- Map 7. Allium tolmiei var. persimile - Occurrences in the lower Wildhorse River vicinity. Portion of 1957 Copperfield 15' quadrangle.
- Map 8. Castilleja oresbia - overview of distribution in Idaho showing location of known populations; others to be expected in stiff sagebrush habitats within hatched area. Portion of 1967 Payette NF map.

## Appendix 4

List of areas searched for Allium tolmiei var. persimile,  
Castilleja oresbia, and Penstemon elegantulus  
on the Payette National Forest in 1990.

New Meadows Valley and vicinity

Round Valley

Near airport

Price Valley

West side of valley between New Meadows and Kimberland Meadows

Bear-Cuprum basin (Wildhorse River drainage)

Flat Creek

Bear Creek

Indian Creek

Rocky Comfort Flat

Crooked River "bench" Road (FS #060)

Wildhorse River Road

Lick Creek - Fawn Creek

Coyote Gulch

upper Crooked River

Windy Widge

Huntley Gulch

West Fork Weiser River

Grouse Creek

West Fork Road

Fort Hall Hill

Lost Creek - Lost Valley Reservoir

Cuddy Mountain

Hornet Creek

Mill Creek

Johnson Creek

East Brownlee Creek

Foothills of West Mountains

Middle Fork Weiser River - Fall Creek

Mill Creek Summit - Little Weiser River

Dewey Creek

Cold Springs Summit

Hitt Mountains

Mann Creek

West Pine Creek

Middle Brownlee Creek

Mill Creek - Blue Spring Creek

## Appendix 5

Slides of Allium tolmiei var. persimile and Castilleja oresbia, and their habitats on the Payette National Forest.

1. Allium tolmiei var. persimile - close-up of flowers; note stamens are about equal in length to petals.
2. Allium tolmiei var. persimile - close-up of plant; note two, broad, succulent, slightly falcate leaves.
3. Allium tolmiei var. persimile - seasonal-watercourse habitat in upper Mill Creek (004); onion plants are in foreground around pack.
4. Allium tolmiei var. persimile - hillside seep habitat at Flat Creek (014) in stiff sagebrush community; note onion plants beginning to dry and turn brown in foreground.
5. Castilleja oresbia - close-up of plant; note entire lower leaves and lobed upper leaves and bracts.
6. Castilleja oresbia - associated with stiff sagebrush.
7. Castilleja oresbia - close-up of stiff sagebrush/Sandberg's bluegrass habitat type with Castilleja oresbia (near camera case).
8. Castilleja oresbia - overview of stiff sagebrush/Sandberg's bluegrass habitat type with Castilleja oresbia (yellow plants scattered throughout stand, especially visible in lower right).