

**CANDIDATE AND LISTING PRIORITY ASSIGNMENT FORM**

**SCIENTIFIC NAME:** *Penstemon grahamii*

**COMMON NAME:** Graham's beardtongue/Graham's penstemon

**LEAD REGION:** 6

**INFORMATION CURRENT AS OF:** March 9, 2004

**STATUS/ACTION:**

New candidate

Continuing candidate

Non-petitioned

Petitioned--Date petition received: Petition submitted October 8, 2002, classifies as "second petition"

90-day positive--FR date:

12-month warranted but precluded--FR date:

Listing priority change

Former LP: 5

New LP: 2

Latest date species first became a Candidate: July 1975

Candidate removal: Former LP:

A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

F - Range is no longer a United States territory.

M - Taxon mistakenly included in past notice of review.

N - Taxon may not meet the Endangered Species Act's definition of *Aspecies.@*

X - Taxon believed to be extinct.

**ANIMAL/PLANT GROUP AND FAMILY:** Flowering Plants - *Scrophulariaceae*.

**HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE:** Colorado and Utah.

**CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE:** Colorado - Rio Blanco County; Utah - Carbon, Duchesne, and Uintah Counties.

**LEAD REGION CONTACT:** Chuck Davis, (303) 236-7400, extension 235.

**LEAD FIELD OFFICE CONTACT:** Laura Romin, (801) 975-3330, extension 142.

## **BIOLOGICAL INFORMATION:**

*Penstemon grahamii* was first collected as a scientific specimen in 1933 by Edward Graham from a site near the confluence of Sand Wash with the Green River in Uintah County, Utah. The species was described in the Scientific literature by David Keck (Keck in Graham 1937). *Penstemon grahamii* is restricted to calcareous soils derived from oil shale barrens of the Green River Formation in the Uinta Basin of northeastern Utah and adjacent Colorado. The species' range is composed of an arc of small scattered populations from the vicinity of Raven Ridge near the White River in Rio Blanco County, Colorado, then westward across southern Uintah County, Utah, to the vicinity of Sand Wash near the Green River and the point where Carbon, Duchesne, and Uintah Counties meet, a distance of about 70 miles. The species total population is estimated at between 5,500 and 7,000 individuals with 36 known occurrences. Five of these occurrences are in Colorado, 1 occurrence each is in Carbon and Duchesne Counties, Utah, with the remaining 29 occurrences in Uintah County, Utah.

A member of the snapdragon family (*Scrophulariaceae*), *Penstemon grahamii* is a relatively low growing species with one to three (occasionally more) stems 0.5 dm (2 inches) to 2 dm (8 in.) tall. Leaves are elliptic to oblanceolate in shape, 1.5 cm (0.6 in.) to 5 cm (2 in.) long, borne both basally and along the stem. The species normally bears two to six flowers per stem. Flowers are pinkish purple 25 mm (1 in.) to 37 mm (1.5 in.) long. The petals are united, forming a floral tube with a pronounced bilateral symmetry. The sterile staminode, the characteristic floral feature of the genus *Penstemon*, is densely golden-orange pubescent and noticeably protrudes beyond the floral tube. The flowers of *P. grahamii* are very large relative to the size of the vegetative plant. The Species is pollinated by large bumble bees.

## **THREATS:**

### **A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range.**

Most of the occupied habitat of *P. grahamii* is within developed and expanding oil and gas fields with several wells and access roads within the species' occupied habitat. The location of *P. grahamii* habitat exposes it to possibility of habitat destruction from off-road vehicle (ORV) use, road, pipeline, and well site construction in connection with oil and gas development. With such a small population and limited occupied habitat, any destruction, modification, or curtailment of the habitat would have a highly negative impact on the species.

At least 18 of the 36 *P. grahamii* occurrences are currently leased for oil and gas development, including 5 of the 6 largest occurrences. Currently at least 43 wells are within or adjacent to *P. grahamii* populations. The two largest occurrences of *P. grahamii*, with 45 percent of the species total population, are within a mile of 13 different wells. During 2002 and continuing into 2003, three separate large scale seismographic oil and gas exploration projects occurred in or adjacent to the range of *P. grahamii*. One, the Veritas project, encompassed virtually the entire range of the species in Uintah County, Utah. Historically the most intense oil and gas development in the Uinta Basin of Utah and Colorado has taken place to the north and east of the *P. grahamii* range. If oil and gas development at that magnitude moves into the occupied range of *P. grahamii* it could overwhelm the species population.

If commercial oil shale recovery becomes a reality, maintenance of most populations of *P. grahamii* would be very difficult. Virtually every population is associated with high grade oil bearing strata of the Evacuation Creek Member of the Green River Formation (i.e., the Mahogany Zone).

Recoverable coal deposits occur in the Raven Ridge population of *P. grahamii* in Colorado. In addition, commercially valuable deposits of zeolite also occur in Raven Ridge. Historically, Gilsonite was mined in *P. grahamii* habitat in Uintah County Utah adjacent to the Colorado State line. Currently Gilsonite is mined north of White river just north of the species range near Bonanza. However, Gilsonite reserves still occur within the range of *P. grahamii*.

The ORV use is expanding rapidly in the Uinta Basin. Federal Lands managed by the Bureau of Land Management in Uinta Basin is one of the few areas remaining where there is little or no restriction of ORV use and is being advertised to the general public as such. Utah State registration of ORVs is up 294 percent in the past 5 years.

#### B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes.

Collection of plants and seeds is a significant threat due to the desire of rock-garden enthusiasts to obtain this very attractive plant. The seeds of *P. grahamii* are advertised for sale in rock-gardening catalogs. Should the locations of these populations become commonly known they could become devastated by amateur and professional plant collectors.

#### C. Disease or Predation.

The species is heavily grazed by wildlife (rodents, rabbits and possible deer) and by livestock (primarily sheep). Livestock trampling is affecting some populations. Historic overgrazing is thought to have caused the extirpation of some *P. grahamii* populations.

#### D. The Inadequacy of Existing Regulatory Mechanisms.

No Federal or State laws or regulations specifically protect *P. grahamii*. The BLM administratively recognizes this species for special management consideration, but does not have the legal authority to require Federal mineral lease holders to modify their mineral recovery plans and on-the-ground actions solely to protect this species. Many populations occur on private lands patented for oil shale mining. Likewise, significant populations occur on State lands. Populations on these non Federal lands have no protection. The State of Utah has proposed a land exchange with the BLM to exchange State lands elsewhere in Utah for Federal lands in the Uinta Basin. In this proposed land exchange a significant portion of the population of *P. grahamii* would pass to State control and lose the limited protection it now receives.

#### E. Other Natural or Manmade Factors Affecting its Continued Existence.

With increasing disturbance to its habitat, *P. grahamii* becomes increasingly vulnerable to infestation of both exotic and native weeds. These species compete with *P. grahamii*, further reducing its population and possibly causing local extirpations. Little is known concerning the species' pollination biology. The status of its potential pollinators, like the species itself, is vulnerable to habitat degradation and fragmentation. Twenty of the species' 36 occurrences

have less than 100 individuals. Most populations of *P. grahamii* may not be at levels that would ensure the species' long-term demographic stability. Given the effects of habitat degradation and fragmentation caused by humans, the effects of deleterious natural phenomena, such as drought, are potentially enhanced and may lead to extirpations of local occurrences or possible extinction.

**BRIEF SUMMARY OF REASONS FOR REMOVAL OR LISTING PRIORITY**

**CHANGE:** N/A.

**FOR RESUBMITTED PETITIONS:**

- a. Is listing still warranted? YES
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? YES
- c. Is a proposal to list the species as threatened or endangered in preparation? NO
- d. If the answer to c. above is no, provide an explanation of why the action is still precluded:

Since publication of the 2002 CNOR, the publication of a proposed rule to list this species has been precluded by other higher priority listing actions, and based on work scheduled we expect that will remain the case for the remainder of Fiscal Year 2004. Almost the entire national listing budget has been consumed by work on various listing actions taken to comply with court orders and court-approved settlement agreements, emergency listing, and essential litigation-related, administrative, and program management functions. We will continue to monitor the status of *P. grahamii* as new information becomes available. This review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures.

**LAND OWNERSHIP:** Most of the species population is on public land managed by BLM, with some populations on private, State of Utah, and Ute Tribal land.

**PRELISTING:** None

**REFERENCES:**

- Cronquist, A., A.H. Holmgren, N.H. Holmgren, J.L. Reveal, P.K. Holmgren. 1984, Intermountain Flora, Vascular Plants of the Intermountain West, U.S.A., Volume Four Subclass *Asteridae* (except *Asteraceae*). The New York Botanical Garden, Bronx, New York. 573pp.
- Keck, D.D. in E.H. Graham. 1937. Botanical Studies in the Uinta Basin of Utah and Colorado. Ann. Carnegie Museum 26:1-432.

- Neese, E., and F. Smith. 1982. Threatened and Endangered Plant Inventory for the Oil Shale RMP, Bookcliffs Resource Area, Utah. Unpublished status report on file with the Bureau of Land Management, Vernal, Utah. 89pp. + appendices.
- Nitschke-Sinclear, J. 1989. Report on the Special Status Plant Inventory Conducted on the Diamond Mountain Resource Area, 1989. Unpublished status report on file with the Bureau of Land Management, Vernal, Utah. 13pp.
- Robertson, E. 2002. Graham=s Penstemon, Petition to List Graham=s Penstemon (*Penstemon grahamii*) as Threatened or Endangered under the Endangered Species Act, and for the designation of Critical Habitat; Petition for an Emergency Listing Rule under the Endangered Species Act. Paonia, Colorado. 121pp.
- Shultz, L.M., and K.M. Mutz. 1979. Threatened and Endangered Species of the Willow Creek Drainage, Uinta Basin, Utah. Unpublished status report on file with the Bureau of Land Management, Vernal, Utah. 74pp. + appendices.
- Welsh, S.L., N.D. Atwood, S. Goodrich, and L.C. Higgins. 1993. A Utah Flora, Second Edition, revised. Brigham Young University Press, Provo, Utah. 986 pp.

## LISTING PRIORITY

T H R E A T			
MAGNITUDE	IMMEDIACY	TAXONOMY	PRIORITY
High	Imminent	Monotypic genus	1
		Species	2*
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

**Rationale for listing priority number:**

Magnitude: Most of the occupied habitat of *P. grahamii* is within developed and expanding oil and gas fields with several wells and access roads within the species' occupied habitat. The location of *P. grahamii* habitat exposes it to possibility of habitat destruction from ORV use, road, pipeline, and well site construction in connection with oil and gas development. With such a small population and limited occupied habitat, any destruction, modification, or curtailment of the habitat would have a highly negative impact on the species.

Imminence: The potential threats of large scale oil and gas development within the habitat of *P. grahamii* is considered to be much more imminent as a result of greatly increased seismic survey and petroleum leasing by the Federal Government of its habitat area. The State of Utah also has proposed the exchange of much of the species habitat on Federal lands for State lands elsewhere in Utah.

**APPROVAL/CONCURRENCE:** Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, annual retentions of candidates, removal of candidates, and listing priority changes.

Approve: Ralph Morgenweck  
Regional Director, Fish and Wildlife Service

March 12, 2004  
Date

Concur: Steve Williams  
Director, Fish and Wildlife Service

April 5, 2004  
Date

Do not concur:  
Director, Fish and Wildlife Service

Date

Director's Remarks:

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Date of annual review: March 9, 2004  
Conducted by: Laura Romin and Bekee Megown

Comments: Lead for this species in the Utah Field Office has been temporarily assigned to Laura Romin.