Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*		*

* * * * *

Dated: July 15, 2013.

Daniel M. Ashe,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 2013–18211 Filed 8–5–13; 8:45 am]

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R6–ES–2013–0081; 4500030113]

RIN 1018–AY95

Endangered and Threatened Wildlife and Plants; Threatened Species Status for Graham's Beardtongue (Penstemon grahamii) and White River Beardtongue (Penstemon scariosus var. albifluvis)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service, propose to list Graham's beardtongue (*Penstemon grahamii*) and White River beardtongue (*Penstemon scariosus* var. *albifluvis*) as threatened species throughout their ranges under the Endangered Species Act of 1973, as amended (Act). If we finalize this rule as proposed, it would add Graham's and White River beardtongues to the List of Endangered and Threatened Plants under the Act and extend the Act's protections to these species throughout their ranges.

DATES: We will accept all comments received or postmarked on or before October 7, 2013. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES** section, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in the **FOR FURTHER INFORMATION CONTACT** section by September 20, 2013.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal: *http://www.regulations.gov.* Search for Docket No. FWS–R6–ES–2013–0081, which is the docket number for this rulemaking. Then, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on ''Comment Now!'' If your comments will fit in the provided comment box, please use this feature of *http://www.regulations.gov,* as it is most compatible with our comment review procedures. If you attach your comments as a separate document, our preferred file format is Microsoft Word. If you attach multiple comments (such as form letters), our preferred format is a spreadsheet in Microsoft Excel.

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS–R6–ES–2013–0081; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, MS 2042–PDM; Arlington, VA 22203.

We request that you send comments only by the methods described above. We will post all information received on *http://www.regulations.gov.* This generally means that we will post any personal information you provide us (see the Information Requested section below for more details).

Any additional tools or supporting information that we may develop for this rulemaking will be available at *http://www.fws.gov/mountain-prairie/species/plants/2utahbeardtongues/,* at *http://www.regulations.gov* at Docket No. FWS–R6–ES–2013–0081, and at the Utah Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

FOR FURTHER INFORMATION CONTACT: Larry Crist, Field Supervisor, U.S. Fish and Wildlife Service, Utah Ecological Services Field Office, 2369 West Orton Circle, Suite 50, West Valley City, UT 84119; by telephone at 801–975–3330; or by facsimile at 801–975–3331. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Endangered Species Act of 1973, as amended (Act), if a species is determined to be an endangered or threatened species throughout all or a significant portion of its range, we are required to promptly publish a proposal in the **Federal Register** and make a determination on our proposal within one year. Listing a species as an endangered or threatened species can only be completed by issuing a rule. In the case of Graham's beardtongue, a June 9, 2011, court decision reinstated our January 19, 2006, proposed rule (71 FR 3158) to list Graham's beardtongue as a threatened species and ordered us to reconsider, with all deliberate speed, a new final rule with respect to whether this species should be listed as an endangered or threatened species under the Act. We have determined that enough new information exists to warrant a new proposed rule for the Graham's beardtongue.

This rule consists of a proposed rule to list the Graham's beardtongue and White River beardtongue as threatened species under the Act.

The basis for our action. Under the Act, we can determine that a species is an endangered or threatened species based on any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

We have determined that energy exploration and development are threats to both Graham's and White River beardtongues. In addition, the cumulative impacts of increased energy development, livestock grazing, invasive weeds, small population sizes, and climate change are threats to these species. Therefore, these species qualify for listing under the Act, which can only be done by issuing a rule.

We will seek peer review. We are seeking comments from knowledgeable individuals with scientific expertise to review our analysis of the best available science and application of that science and to provide any additional scientific information to improve this proposed rule. Because we will consider all comments and information we receive during the comment period, our final determinations may differ from this proposal.

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and effective as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The species' biology, range, and population trends, including:

(a) Biological or ecological requirements of these species;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns; and

(d) Historical, current, and projected population levels and trends.

(2) The factors that are the basis for making a listing determination for a species under section 4(a) of the Act (16 U.S.C. 1531 *et seq.*), which are:

(a) The present or threatened destruction, modification, or curtailment of its habitat or range;

(b) Overutilization for commercial, recreational, scientific, or educational purposes;

(c) Disease or predation;

(d) The inadequacy of existing regulatory mechanisms; or

(e) Other natural or manmade factors affecting its continued existence.

(3) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to these species and regulations that may be addressing those threats.

(4) Additional information concerning the historical and current status, range, distribution, and population size of these species, including the locations of any additional populations of these species.

(5) Past and ongoing conservation measures for these species, their habitats or both.

(6) Current or planned activities in the areas occupied by these species and possible impacts of these activities on these species.

(7) Any information on the biological or ecological requirements of these species and ongoing conservation measures for these species and their habitats.

Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made ''solely on the basis of the best scientific and commercial data available.''

You may submit your comments and materials concerning this proposed rule by one of the methods listed in the **ADDRESSES** section. We request that you send comments only by the methods described in the **ADDRESSES** section.

If you submit information via *http://www.regulations.gov,* your entire submission—including any personal identifying information—will be posted on the Web site. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold personal identifying information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *http://www.regulations.gov.* Please include sufficient information with your comments to allow us to verify any scientific or commercial information you include.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *http://www.regulations.gov,* or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Utah Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Background—Graham's beardtongue

Previous Federal Actions

For a detailed description of Federal actions concerning Graham's beardtongue, please refer to the January 19, 2006, proposed rule to list the species with critical habitat (71 FR 3158) and the December 19, 2006, withdrawal of the proposed rule to list the species with critical habitat (71 FR 76024).

The document we published on December 19, 2006 (71 FR 76024), withdrew the proposed listing and critical habitat rule for Graham's beardtongue that we published on January 19, 2006 (71 FR 3158). The December 19, 2006, withdrawal also addressed comments we received on the proposed rule to list Graham's beardtongue and summarized threats affecting the species. The withdrawal of the proposed rule was based on information provided during the public comment period. This information led us to conclude that the threats to Graham's beardtongue identified in the proposed rule, particularly energy development, were not as significant as previously believed and that currently available data did not indicate that threats to the species and its habitat, as analyzed under the five listing factors described in section 4(a)(1) of the Act, were likely to endanger the species in the foreseeable future throughout all or a significant portion of its range.

On December 16, 2008, the Center for Native Ecosystems, Southern Utah Wilderness Alliance, Utah Native Plant Society, and Colorado Native Plant Society filed a complaint in the United States District Court for the District of Colorado challenging the withdrawal of our proposal to list Graham's beardtongue. The court ruled in favor of the plaintiffs on June 9, 2011, vacating our December 2006 withdrawal and reinstating our January 2006 proposed rule.

The best available information for Graham's beardtongue has changed considerably since 2006, when the proposed rule was published and then withdrawn. We believe it is appropriate to publish a revised proposed listing rule to better reflect new information regarding Graham's beardtongue. A revised proposed critical habitat rule for the Graham's beardtongue is published elsewhere in today's **Federal Register**.

Species Information

Taxonomy and Species Description

Graham's beardtongue was described as a species in 1937 as an herbaceous perennial plant in the plantain family (Plantaginaceae). For most of the year when the plant is dormant, it exists as a small, unremarkable basal rosette of leaves. During flowering the plant becomes a ''gorgeous, large-flowered penstemon'' (Welsh *et al.* 2003, p. 625). Similar to other species in the beardtongue (*Penstemon*) genus, Graham's beardtongue has a strongly bilabiate (two-lipped) flower with a prominent infertile staminode (sterile male flower part)—the ''beardtongue'' that typifies the genus. The combination of its large, vivid pink flower and densely bearded staminode with short, stiff, golden-orange hairs makes Graham's beardtongue quite distinctive. Each year an individual plant can produce one to a few flowering stems that can grow up to 18 centimeters (cm) (7.0 inches (in)) tall (with some exceptions), with one to 20 or more flowers on each flowering stem.

Distribution

When we published the proposed listing rule in 2006, there were 109 plant records, or ''points,'' across Graham's beardtongue's known range,

and the total species' population size was estimated at 6,200 individuals. Point data represent a physical location where one or more plants were observed on the ground. Point data are usually collected by GPS and stored as a ''record'' in a geographic information system database.

Since 2006, we have completed many surveys for this species. The range of Graham's beardtongue is essentially the same as it was in 2006: a horseshoe-shaped band about 80 miles long and 6 miles wide extending from the extreme southeastern edge of Duchesne County in Utah to the northwestern edge of Rio Blanco County in Colorado (Figure 1). However, we have identified larger numbers of plants and a greater distribution of the species across its range. Data we compiled from the Vernal and Meeker Field Offices of the Bureau of Land Management (BLM), and Utah and Colorado Natural Heritage Programs (UNHP and CNHP) include 4,460 points representing 31,702 plants. Most of these locations were documented after 2006. Although the overall number of plants has increased with additional surveys, this does not mean the total population is increasing. Rather, we now have a more complete picture of how many total Graham's beardtongue individuals exist, and this number likely has not changed substantially since the species was named in 1937. We assume that the current known range of this species has not change substantially from what it was historically.

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Figure 1. Graham's beardtongue's range.

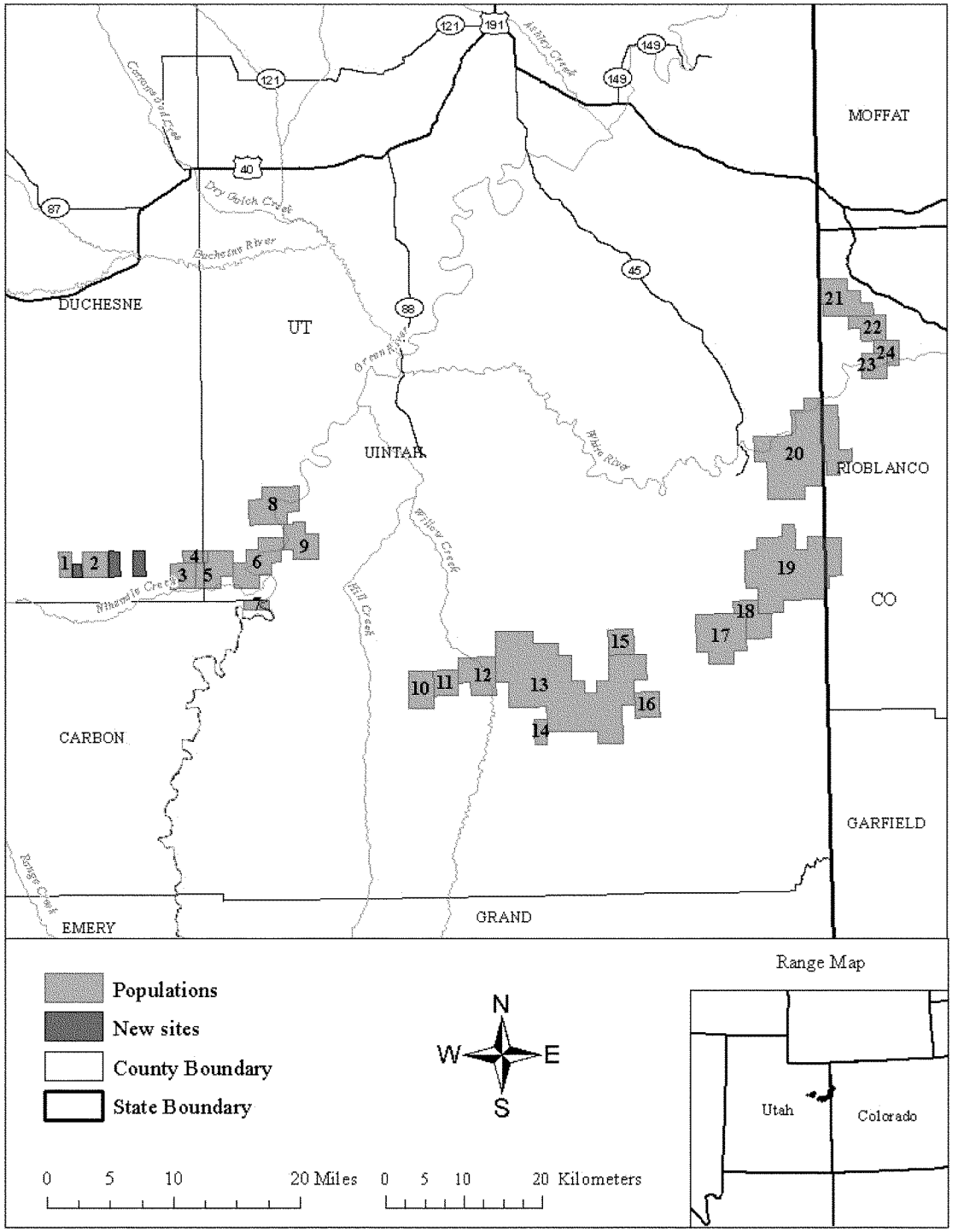

Figure 1. Graham's beardtongue's range.

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We mapped all plant points and grouped them into populations (Figure 1). First, we followed standardized methods used by the national network of Natural Heritage Programs, and identified the species' element occurrences (EO). EOs are plant points that are grouped together based on geographic proximity (NatureServe 2004, p. 6). Natural Heritage Program criteria (NatureServe 2004, p. 6) classifies points into discrete EOs if they are within 2 kilometers (km) (1.2 miles (mi)) of each other and separated by suitable habitat. We did not always have specific habitat suitability information and in these cases relied on the 2-km (1.2-mi) distance as our primary classification factor. Next, we included updated survey information collected from 2006 to the present and determined the number of distinct EOs. Overall, we documented 24 EOs: 20 in Utah and 4 in Colorado. For the purpose

of this proposed listing rule, we consider EOs to be synonymous with populations and hereafter will use the term ''populations'' when describing the distribution of the species (Figure 1).

New sites of Graham's beardtongue were found in May of 2013. Approximately 350 plants were counted, about 1 percent of the known population. Because the number counted was only about 1 percent of the total population, including these additional plants does not perceptibly change our threats analysis. We included the new points in our map (Figure 1). However, information from surveys during the 2013 field season continues to be submitted. Once the field season is completed and we have finalized data, we will update the threats analysis using those data.

The biggest change in the population size and distribution of Graham's beardtongue from the 2006 proposed rule to this proposed rule is that many additional surveys were conducted in the middle of the species' range (populations 10 through 20, see Figure 1), increasing the total population estimate for Graham's beardtongue fivefold. In particular, we now estimate that one population (referred to as population 20) comprises about 23 percent of the species' total population, compared to our estimate of only 2 percent in 2006. In 2006, we noted that population 20 was an important connectivity link between the Utah and Colorado populations of this species, and we still consider this to be true, especially given the large number of plants found in this population.

Approximately 59 percent of the total known population of Graham's beardtongue is on BLM-managed lands, with the remainder on non-Federal lands with State and private ownership (Table 1). This distribution is essentially unchanged from our 2006 finding. A land exchange between the BLM and the State of Utah planned for 2013 will decrease the number of known plants on Federal lands and increase the plants on State lands by 1 percent (see X. Inadequacy of Existing Regulatory Mechanisms below for more details).

Table 1. Number of individuals of Graham's beardtongue by land owner.

	Number of individuals	Percent of total
Federal	18,678	59
Private	8,137	26
State	4,887	15
Tribal	0	0
Total	31,702	100

Two sites of Graham's beardtongue within population 13 (see Figure 1) were monitored from 2004 to 2012, and two additional sites within population 13 were monitored from 2010 to 2012. These sites were stable or slightly declining over the period of study (McCaffery 2013, p. 9). Recruitment for these sites of Graham's beardtongue was low and sporadic (McCaffery 2013, p. 11). In addition, Graham's beardtongue flowered sporadically, indicating that conditions were not always suitable for flowering to occur (McCaffery 2013, p. 9). Small population sizes and low recruitment make this species more vulnerable to stochastic events, and changes in stressors or habitat conditions may negatively impact the long-term growth of these sites (McCaffery 2013, p. 9). No link was found between reproduction and precipitation on a regional level, but it is likely the correct environmental factors driving reproduction and survival have not been measured (McCaffery 2013, p. 10). A combination of several factors could be driving population dynamics of Graham's beardtongue; for example, herbivory and climate could be interacting to influence reproduction. Plants at one of the study sites were negatively impacted by herbivory from tiger moth caterpillars (possibly *Arctia caja utahensis*) (see II. Grazing and Trampling, below), but a cool, wet spring in 2011 reduced herbivory on reproductive plants (Dodge and Yates 2011, pp. 7–8). Further studies are necessary to determine if herbivory or other factors are driving population dynamics of this species.

Habitat

Graham's beardtongue is an endemic plant found mostly in exposed oil shale strata of the Parachute Creek Member and other unclassified members of the Green River geologic formation. Most populations are associated with the surface exposure of the petroleum-bearing oil shale Mahogany ledge (Shultz and Mutz 1979, p. 40; Neese and Smith 1982, p. 64). Soils at these sites are shallow with virtually no soil horizon development, and the surface is usually covered with broken shale chips or light clay derived from the thinly bedded shale. About a third of all known point locations of plants in our files grow on slopes that are 10 degrees or less, with an average slope across all known points of 17.6 degrees (Service 2013, p. 2). The species' average elevation is 1,870 meters (m) (6,134 feet (ft)), with a range in elevation from 1,426 to 2,128 m (4,677 to 6,982 ft) (Service 2013, p. 4). Individuals of Graham's beardtongue usually grow on southwest-facing exposures (Service 2013, p. 1).

Graham's beardtongue is associated with a suite of species similarly adapted to xeric growing conditions on highly basic calcareous shale soils, including (but not limited to) saline wildrye (*Leymus salinus*), mountain thistle (*Cirsium eatonii* var. *eriocephalum*), spiny greasebush (*Glossopetalon spinescens* var. *meionandra*), Utah juniper (*Juniperus osteosperma*), twoneedle piñon (*Pinus edulis*), and shadscale saltbush (*Atriplex confertifolia*) (UNHP 2013, entire). Graham's beardtongue co-occurs with eight other rare species that are similarly endemic and restricted to the Green River Formation, including White River beardtongue.

Biology

Graham's beardtongue individuals may live 20 to 30 years; however, we do not know the plant's average lifespan (Service 2012a, p. 2). Graham's beardtongue is not as genetically diverse as other common, widespread beardtongues from the same region (Arft 2002, p. 5). However, populations 1 through 9 (see Figure 1) have minor morphological differences from the rest of the Graham's beardtongue population (Shultz and Mutz 1979, p. 41) and may, due to geographic isolation, be genetically divergent from the remainder of the species' population, although this hypothesis has never been tested.

Graham's beardtongue usually flowers for a short period of time in late May through early July. Pollinators and flower visitors of Graham's beardtongue include the bees *Anthophora lesquerellae, Osmia sanrafaelae, Osmia rawlinsi;* the sweat bees *Lasioglossum sisymbrii* and *Dialictus* sp.; and the masarid wasp *Pseudomasaris vespoides,* which is thought to be the primary pollinator for Graham's beardtongue (Lewinsohn and Tepedino 2007, p. 245; Dodge and Yates 2008, p. 30). At least one large pollinator, *Bombus huntii* (Hunt's bumblebee), is known to visit Graham's beardtongue (71 FR 3158, January 19, 2006), which is not unexpected due to the relatively large size of Graham's beardtongue's flowers compared to other beardtongues.

Graham's beardtongue has a mixed mating system, meaning individuals of this species can self-fertilize, but they produce more seed when they are cross-pollinated (Dodge and Yates 2009, p. 18). Thus, pollinators are important to this species for maximum seed and fruit production. Based on the size of the largest Graham's beardtongue pollinators (i.e., Hunt's bumblebee), we

expect they are capable of travelling and transporting pollen for distances of at least 700 m (2,297 ft) (Service 2012b, pp. 8, 12). Therefore, maintaining sufficiently large numbers and population distribution of Graham's beardtongue ensures cross-pollination can occur and prevents inbreeding depression (Dodge and Yates 2009, p. 18). Pollinators generally need a diversity of native plants for foraging throughout the seasons, nesting and egg-laying sites, and undisturbed places for overwintering (Shepherd *et al.* 2003, pp. 49–50). Thus, it is important to protect vegetation diversity within and around Graham's beardtongue populations to maintain a diversity of pollinators.

Background—White River beardtongue

Previous Federal Actions

On November 28, 1983, White River beardtongue (as *Penstemon albifluvis*) was designated as a category 1 candidate under the Act (48 FR 53640). Category 1 candidate species were defined as ''taxa for which the Service currently has on file substantial information on biological vulnerability and threat(s) to support the appropriateness of proposing to list the taxa as Endangered or Threatened species. . . . Development and publication of proposed rules on these taxa are anticipated, but because of the large number of such taxa, could take some years'' (48 FR 53641, November 28, 1983). In the February 28, 1996, candidate notice of review (CNOR) (61 FR 7596), we abandoned the use of numerical category designations and changed the status of White River beardtongue to a candidate under the current definition. We maintained White River beardtongue as a candidate species in subsequent updated notices of review between 1996 and 2012, including the most recent CNOR published on November 21, 2012 (77 FR 69994).

On September 9, 2011, we reached an agreement with plaintiffs in Endangered Species Act Section 4 Deadline Litig., Misc. Action No. 10–377 (EGS), MDL Docket No. 2165 (D. DC), to systematically review and address the needs of all species listed in the 2010 CNOR, which included White River beardtongue.

Species Information

Taxonomy and Species Description

White River beardtongue is an herbaceous perennial plant in the plantain family (Plantaginaceae). White River beardtongue is a shrubby plant with showy lavender flowers. It grows up to 50 cm (20 in) tall, with multiple clusters of upright stems. It has long, narrow, green leaves. Like other members of the beardtongue genus and like Graham's beardtongue, it has a strongly bilabiate (two-lipped) flower with a prominent infertile staminode (sterile male flower part), or ''beardtongue.'' Blooming occurs from May into early June, with seeds produced by late June (Lewinsohn 2005, p. 9).

White River beardtongue was first described as a new species, *Penstemon albifluvis,* in 1982 (England 1982, entire). In 1984, the taxon was described as variety *P. scariosus* var. *albifluvis* (Cronquist *et al.* 1984, p. 442). *P. s.* var. *albifluvis* has a shorter corolla and shorter anther hairs than typical *P. scariosus.* White River beardtongue is also unique from *P. scariosus* because it is endemic to low-elevation oil shale barrens near the White River along the Utah-Colorado border (see ''Habitat'' below for more information), while typical *P. scariosus* habitat occurs at higher elevations on the West Tavaputs and Wasatch Plateaus of central Utah (Cronquist *et al.* 1984, p. 442).

Distribution

The historical range of White River beardtongue has not changed since the species was first described in 1982 (England 1982, pp. 367–368). White River beardtongue was first discovered along the north bank of the White River one mile upstream from the Ignacio Bridge (England 1982, pp. 367). The historical range was described as occurring from east central Uintah County, Utah, to Rio Blanco County, Colorado (England 1982, pp. 367).

White River beardtongue's current range extends from Raven Ridge west of Rangely in Rio Blanco County, Colorado, to the vicinity of Willow Creek in Uintah County, Utah. The bulk of the species' range occurs between Raven Ridge and Evacuation Creek in eastern Utah, a distance of about 30 km (20 miles) (Figure 2) (CNHP 2012, entire; UNHP 2012, entire). We acknowledge that herbarium collections from 1977 to 1998 (UNHP 2012, entire) indicate that the species' range might extend farther west to Willow Creek, Buck Canyon, and Kings Well Road. However, we have not revisited these herbarium collection locations to confirm the species' presence; it is possible that the herbarium collections represent individuals of the closely related and nearly indistinguishable Garrett's beardtongue (*Penstemon scariosus* var. *garettii*). Therefore, we consider these to be unverified locations and exclude these records from further analysis of threats (Figure 2).

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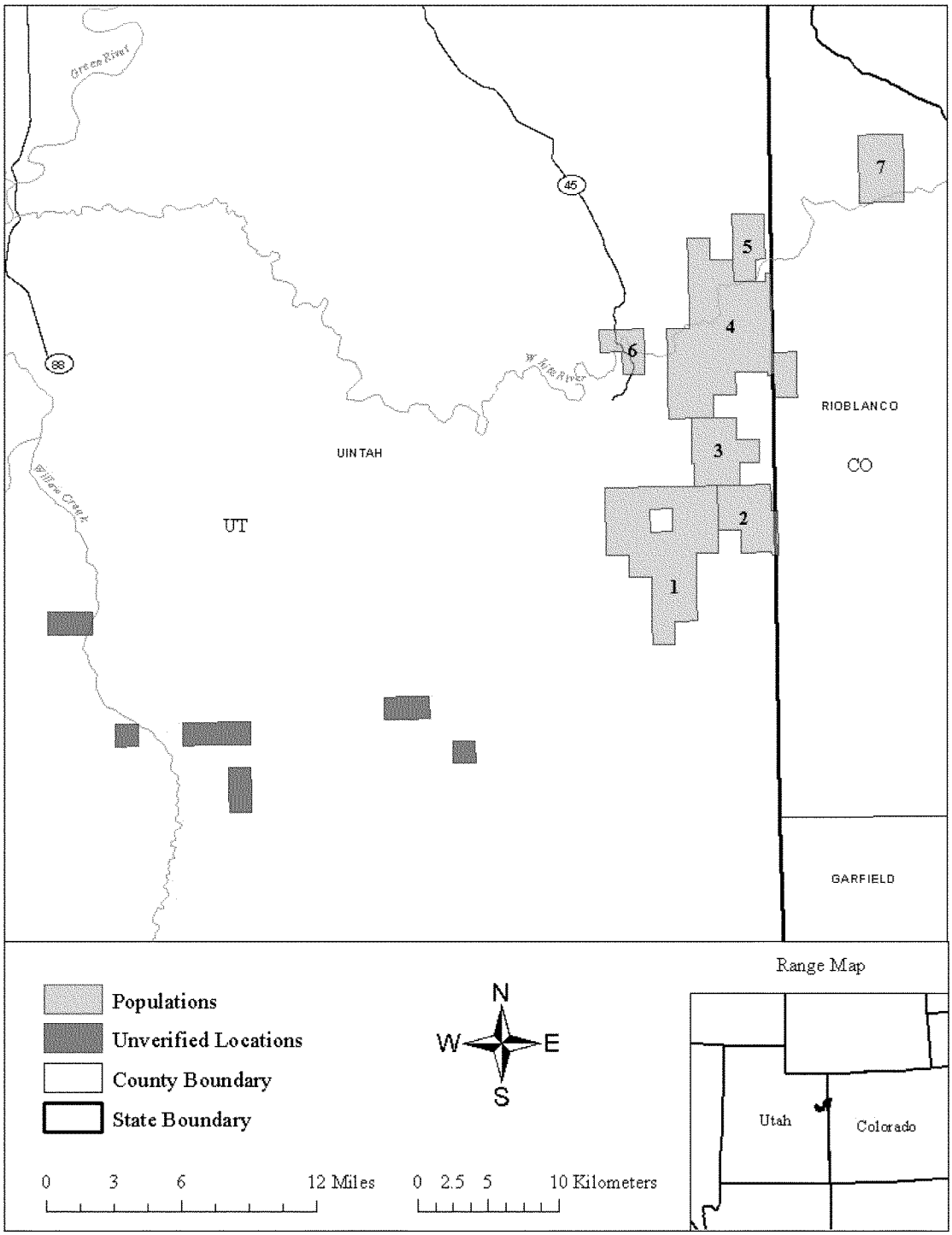

Figure 2. White River beardtongue's range.

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We do not have complete surveys for White River beardtongue and thus do not know the total population for this species. The best total population estimate is approximately 11,423 individuals, excluding the unverified locations. It is quite likely that the total population is higher, and it may be as high as 25,000 plants (Service 2012; Franklin 1994), but we do not have survey data to confirm this higher population level. Therefore, we use the 11,423 population figure throughout our analysis in this proposed rule.

Utah Natural Heritage Program and Colorado Natural Heritage Program data include 20 populations of White River beardtongue in Utah and 1 population in Colorado (Figure 2; see our previous explanation of populations and EOs, or element occurrences, in the ''Distribution'' section for Graham's beardtongue, above). Based on updated survey information from the past few years, we conducted our own analysis in which we combined several of the existing EOs because of close proximity (see *Species Information* for Graham's

beardtongue, above, for more information). Overall, we delineated seven populations in the main portion of White River beardtongue's range. Approximately 62 percent of the known population of White River beardtongue occurs on BLM land, with the remainder occurring on State and private lands (Table 2).

Table 2. Number of individuals of White River beardtongue by land owner.

	Number of individuals	Percent of total
Federal	7,054	62
Private	3,093	27
State	1,276	11
Tribal	0	0
Total	11,423	100

Two sites of White River beardtongue were monitored from 2004 to 2012 (populations 1 and 6, see Figure 2), and one site was monitored from 2010 to 2012 (population 3, see Figure 2). At one site, plants declined over this time, and the other two sites increased slightly (McCaffery 2013, p. 8). White River beardtongue tended to flower each year regardless of new seedling recruitment, in contrast to Graham's beardtongue (McCaffery 2013, p. 9). Like Graham's beardtongue, White River beardtongue is vulnerable to stochastic events as well as increases in stressors or declining habitat conditions (McCaffery 2013, p. 9). Also like Graham's beardtongue, no link was found between reproduction and precipitation on a regional level (McCaffery 2013, p. 10), but this should be studied on a more local scale. In 2009, a significant recruitment event occurred in two of the study populations (Dodge and Yates 2010, pp. 11–12). Many of these seedlings died between 2009 and 2010, but the net result was an increase in population size by the end of the study (Dodge and Yates 2011, p. 6), and this pulse of recruitment had a strong influence on the estimate of population growth (McCaffery 2013, p. 10). Continued monitoring is necessary to determine how frequent recruitment occurs and how this influences the long-term trends of this species. In addition, like Graham's beardtongue, we need further studies to determine what factors are driving population dynamics of White River beardtongue.

Habitat

White River beardtongue is restricted to calcareous (containing calcium carbonate) soils derived from oil shale barrens of the Green River Formation in the Uinta Basin of northeastern Utah and adjacent Colorado. It overlaps with Graham's beardtongue at sites in the eastern portion of Graham's beardtongue's range.

White River beardtongue is associated with the Mahogany ledge. The habitat of White River beardtongue is a series of knolls and slopes of raw oil shale derived from the Green River geologic formation (Franklin 1995, p. 5). These soils are often white or infrequently red, fine-textured, shallow, and usually mixed with fragmented shale. These very dry substrates occur in lower elevations of the Uinta Basin, between 1,500 and 2,040 m (5,000 and 6,700 ft). About one-fifth of all known point locations of White River beardtongue are on slopes of 10 degrees or less, with an average slope for all known points of 19.2 degrees (Service 2013, p. 3). The species grows at an average elevation of 1,847 m (6,060 ft), with a range in elevation from 1,523 to 2,044 m (4,998 to 6,706 ft) (Service 2013, p. 4). White River beardtongue individuals usually grow on southwest-facing exposures (Service 2013, p. 1).

Other species found growing with White River beardtongue include (but are not limited to) saline wildrye (*Leymus salinus*), mountain thistle (*Cirsium eatonii* var. *eriocephalum*), spiny greasebush (*Glossopetalon spinescens* var. *meionandra*), Utah juniper (*Juniperus osteosperma*), twoneedle piñon (*Pinus edulis*), and shadscale saltbush (*Atriplex confertifolia*) (UNHP 2013, entire), and many of the other oil shale endemics also found growing with Graham's beardtongue (Neese and Smith 1982, p. 58; Goodrich and Neese 1986, p. 283).

Biology

This species is probably long-lived due to the presence of a substantial and multi-branched woody stem (Lewinsohn 2005, p. 3), and individual plants living for 30 years are known to occur (Service 2012c, p. 3). Most plants begin to flower when the woody stem reaches 3 to 4 cm (1 to 1.5 in.) in height (Lewinsohn 2005, p. 4), usually in May and June.

The species is pollinated by a wasp, *Pseudomasaris vespoides,* and several native, solitary bee species in the genera *Osmia, Ceratina, Anthophora, Lasioglossum, Dialictus,* and *Halictus* (Sibul and Yates 2006, p. 14; Lewinsohn and Tepedino 2007, p. 235). We consider these pollinators to be medium in size as compared to the larger pollinators generally associated with Graham's beardtongue (see Background–Graham's beardtongue, ''Biology'', above). White River beardtongue has a mixed mating system, meaning it can self-fertilize but produces more seed when it is cross-pollinated (Lewinsohn and Tepedino 2007, p. 234). Thus, pollinators are important to this species for maximum seed and fruit production.

Based on the medium size of White River beardtongue pollinators, we expect the pollinators are capable of travelling at least 500 meters (1,640 ft) and thus are likely to move pollen across this distance (Service 2012b, pp. 8, 13). Although White River beardtongue has low flower visitation rates by pollinators, there is no evidence that pollinators are limiting for this species (Lewinsohn and Tepedino 2007, p. 235). It is important to maintain the diversity of pollinators by maintaining vegetation diversity for White River beardtongue because it stabilizes the effects of fluctuations in pollinator populations (Lewinsohn and Tepedino 2007, p. 236).

We have very little information regarding the genetic diversity of White River beardtongue. This species, like Graham's beardtongue, is likely not as genetically diverse as other common, sympatric beardtongues (Arft 2002, p. 5).

Summary of Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533), and its implementing regulations at 50 CFR part 424, set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(a)(1) of the Act, we may list a species based on any of the following five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or manmade factors affecting its continued existence. Listing actions may be warranted based on any of the above threat factors, singly or in combination. Stressors that fall under each of these factors are discussed below individually. We then summarize where each of these stressors or potential threats falls within the five factors.

We consider a species viable if it can persist over the long term, thus avoiding extinction. A species can be conserved (and is thus viable) if it has the three Rs: Representation, resiliency, and redundancy (Shaffer and Stein 2000). Representation, or preserving some of everything, means conserving not just a species but its associated plant communities, pollinators, and pollinator habitats. Resiliency and redundancy ensure there is enough of a species so

that it can survive into the future. Resiliency means ensuring that the habitat is adequate for a species and its representative components. Redundancy ensures an adequate number of sites and individuals. This methodology has been widely accepted as a reasonable conservation methodology (Tear *et al.* 2005, p. 841).

We participated in expert workshops—including experts from The Nature Conservancy, Red Butte Garden, UNHP, CNHP, the Service, the BLM, and the Natural Resources Conservation Service—in 2008 and 2012, to evaluate the best available scientific information for Graham's and White River beardtongues (The Nature Conservancy 2008, entire; Service 2012c, entire). We used the information from these workshops to complete a species status assessment for both Graham's and White River beardtongues. We determined that both species need the following resources for viability:

- Suitable soils and geology
- Sufficient number of pollinators
- Intact associated and adjacent plant community (both within and outside of suitable or occupied habitat)
- Minimum reproductive effort or reproductive success
- Suitable microclimate conditions for germination and establishment
- Sufficient rain and temperatures suitable for breaking seed dormancy and successful reproduction (natural climate)
- Minimum habitat patch or population size
- Genetic diversity or heterozygosity
- Habitat connectivity and integrity
- Viable, long-lived seedbank
- Minimum number of individuals
- Minimum number of viable populations

The list is the same for both Graham's and White River beardtongues because they grow in similar habitat in the same geographic area, even overlapping in places. However, specifics for each resource can differ between the two species.

To determine the current and future status of Graham's and White River beardtongues, through our species status assessment we evaluated if these resource needs are currently met and how these resources are likely to change in the future. If the resources are not currently met or are predicted to be unmet in the future, we determined the cause of the resource insufficiency. The underlying stressor causing the resource insufficiency is then considered a threat to Graham's and White River beardtongues. We discuss these stressors in the following section.

I. Energy Exploration and Development

Graham's and White River beardtongues are particularly vulnerable to the effects of energy development because their ranges overlap almost entirely with oil shale and tar sands development areas, as well as ongoing traditional oil and gas drilling.

Impacts from energy exploration and development include the removal of soil and vegetation when unpaved roads, well pads, evaporation ponds, disposal pits, and pipelines are constructed (BLM 2008a, pp. 448–449). Increased disturbance from these developments, coupled with climate change (see IX. Climate Change, below), will facilitate the invasion and spread of nonnative species such as cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomeratus*) and Russian thistle (*Salsola tragus*) (Brooks and Pyke 2001, entire; Grace *et al.* 2001, entire; Brooks 2003, p. 432; Friggens *et al.* 2012, entire), which can outcompete native plants and increase the risk of catastrophic wildfires (see VI. Wildfire and VII. Invasive Weeds, below).

Energy developments also result in increased road traffic and consequent increases in dust emissions; for every vehicle travelling one mile (1.6 km) of unpaved roadway once a day, every day for a year, approximately 2.5 tons of dust are deposited along a 305-m (1,000-ft) wide corridor centered on the road (Sanders 2008, p. 20). Excessive dust can clog plant pores, increase leaf temperature, alter photosynthesis, and affect gas and water exchange (Sharifi *et al.* 1997, p. 842; BLM 2012a; Ferguson *et al.* 1999, p. 2), negatively affecting plant growth and reproduction.

Roads may act as a barrier to bee movement by influencing bees to forage on only one side of the road (Bhattacharya *et al.* 2003, pp. 42–43) or within isolated habitat patches (Goverde *et al.* 2002, entire). Although bees and other pollinators are quite capable of crossing roads or other human-disturbed areas, the high site fidelity of bumblebees makes them more apt to remain on one side of a disturbed area (Bhattacharya *et al.* 2003, p. 42). The implication of this type of pollinator behavior for rare plants is that the probability for outcrossing is reduced (Cane 2001, entire), thereby reducing genetic variability and reproductive success.

Habitat loss or fragmentation from energy development can result in higher extinction probabilities for plants because remaining plant populations are confined to smaller patches of habitat that are isolated from neighboring populations (Jules 1998, p. 1; Soons 2003, p. 115). Habitat fragmentation and low population numbers pose a threat to rare plant species' genetic potential to adapt to changing environmental conditions (Mathies *et al.* 2004, pp. 484–486). Smaller and more isolated populations produce fewer seeds and pollen, and thus attract fewer and a lower diversity of pollinators (Paschke *et al.* 2003, p. 1,258; Lienert 2004, p. 62); for a more complete discussion, see section VIII. Small Population Size, below).

Oil Shale and Tar Sands

The Energy Policy Act of 2005 (42 U.S.C. 13201 *et seq.*) establishes that oil shale, tar sands, and other strategic unconventional fuels should be developed to reduce the nation's dependence on imported oil. At 42 U.S.C. 15927(m)(1)(B), the Energy Policy Act identifies the Green River Region, including the entire range of Graham's and White River beardtongues, as a priority for oil shale and tar sand development. Provisions of the Energy Policy Act of 2005 provide economic incentives for oil shale development. For example, previous Mineral Leasing Act of 1920 (30 U.S.C. 181 *et seq.*) restrictions limited oil shale lease sizes to 2,072 hectares (ha) (5,120 acres (ac)), and restricted leasing opportunities to just one lease tract per individual or corporation. Lease size restrictions effectively limited development because of a lack of available acreage to accommodate necessary infrastructure and facilities. The Energy Policy Act of 2005 now allows an individual or corporation to acquire multiple lease tracts up to 20,234 ha (50,000 ac) in any one State, removing the restrictions of the Mineral Leasing Act of 1920 (Bartis *et al.* 2005, p. 48).

As we discussed in our January 19, 2006, proposed rule (71 FR 3158), Graham's beardtongue is closely associated with the richest oil shale-bearing strata in the Mahogany ledge, which makes the species highly vulnerable to extirpation from potential oil shale or tar sands mining (Shultz and Mutz 1979, p. 42; Neese and Smith 1982, p. 64; Service 2005, p. 5). This association is particularly true for the easternmost populations of Graham's beardtongue (populations 10–24, see Figure 1), where approximately 63 percent of all known Graham's beardtongue plants are directly associated with the Mahogany ledge where it outcrops or is less than 152 m (500 ft) below the surface (Service 2013, p. 5). White River beardtongue is also associated with the Mahogany ledge's oil shale-bearing strata. Approximately 69 percent of the known White River

beardtongue plants are directly associated with the Mahogany ledge where it outcrops or is less than 152 m (500 ft) below the surface (Service 2013, p. 5). This shallow overburden (the soil and other material that lies over a geologic deposit) becomes important when evaluating the type of mining (e.g., surface or subsurface) that will be used to extract the oil shale resource. As discussed below, surface mining, in which all surface vegetation and soils are removed, is likely the preferred extraction method in these areas.

The feasibility of oil shale and tar sands development was uncertain when the original proposed listing rule was withdrawn in 2006 (71 FR 76024, December 19, 2006). Our January 19, 2006, proposed rule (71 FR 3158) concluded that Graham's beardtongue was at risk due to the increased potential of energy development, both traditional and oil shale and tar sands. Our December 19, 2006, withdrawal of the proposed rule (71 FR 76024) concluded that oil shale and tar sands development was likely to occur first in the Piceance Basin in Colorado or in other areas that do not overlap with the range of Graham's beardtongue, and to use underground mining technologies that reduce surface disturbance. We further concluded that development of oil shale and tar sands resources in Graham's beardtongue habitat was not likely to occur, if at all, until at least 20 years into the future, and was uncertain due to technological and economic uncertainty. But as discussed below, it is now highly likely that oil shale and tar sands mining will occur across the ranges of both of these species in the near future.

In 2012, the BLM issued an Oil Shale and Tar Sands (OSTS) Final Programmatic Environmental Impact Statement (PEIS) analyzing the impacts of designating public lands as available for commercial leasing for oil shale and tar sands development in Colorado, Utah, and Wyoming. The PEIS opens approximately 144,473 ha (357,000 ac) in Utah and 10,522 ha (26,000 ac) in Colorado for oil shale leasing, and approximately 52,609 ha (130,000 ac) in Utah for tar sands leasing (BLM 2012b, p. ES–10). Although leasing has not yet occurred, it is highly likely to happen in the near future.

In Utah, 40 and 56 percent, respectively, of Graham's and White River beardtongues' total populations overlap the designated oil shale and tar sands leasing areas on BLM lands (Service 2013, p. 6). Existing regulatory mechanisms only provide limited protection to the beardtongues on Federal lands (see X. Inadequacy of Existing Regulatory Mechanisms, below). We know of 18,678 Graham's beardtongue plants on BLM lands, and 12,831 of these (or 69 percent) overlap designated oil shale and tar sands leasing areas. Our data also show that of 7,054 White River beardtongue plants known to occur on BLM lands, 6,389 (or 91 percent) overlap with designated oil shale and tar sands leasing areas. Designated oil shale leasing areas in Colorado do not overlap any known populations for either Graham's beardtongue or White River beardtongue—in fact, designated oil shale areas in Colorado are at least 32 km (20 mi) away from the closest known populations (Service 2013, p. 7).

Oil shale and tar sands development on Federal lands is likely to indirectly impact Graham's and White River beardtongues by increasing habitat fragmentation, fugitive dust, and weed encroachment. A majority of all known Graham's beardtongue and White River beardtongue plants on BLM land occurs where the overburden over the richest oil-shale-bearing geologic stratum is shallow—either outcropping or less than 152 m (500 ft) subsurface (Service 2013, p. 5). Surface strip mining in these areas is likely to be the preferred extraction method (BLM 2012b, p. A–22), which would result in the complete loss of all surface vegetation. Although direct impacts to Graham's and White River beardtongues on Federal lands will be minimized because existing conservation measures protect plants by 91 m (300 ft), the existing conservation measures are inadequate to minimize impacts from the indirect effects listed above or to protect from accidental loss that may occur (see X. Inadequacy of Existing Regulatory Mechanisms, below). These indirect effects are likely to impact 40 and 56 percent of all known plants of Graham's and White River beardtongues, respectively. Neither species is likely to be able to sustain this amount of impact and still be able to persist into the future. Protection of Graham's and White River beardtongues will need to happen on a landscape level to be effective at protecting these species from indirect and cumulative impacts (see XI. Cumulative Effects from All Factors, below) of oil shale and tar sands development, and this type of protection is not currently afforded to either species.

Furthermore, about 41 percent and 38 percent, respectively, of Graham's and White River beardtongues occur on State and private lands where they are afforded no protection. Oil shale and tar sands development here is highly likely to directly remove all individuals of these two species, in particular where these species overlap with the oil-rich Mahogany layer. We estimate that most known Graham's and White River beardtongues on State and private lands occur where the Mahogany layer outcrops or is less than 152 m (500 ft) below the surface (or approximately 26 and 28 percent of the total known populations of Graham's and White River beardtongues, respectively), making these areas more likely to be surface mined. As a result, these areas are the most vulnerable to direct loss if oil shale and tar sands development expands across the region. The remainder of all known plants on State and private lands is likely to be impacted by increased disturbance from oil shale and tar sands development, but at worst may be lost as well. In addition, land ownership throughout the Uinta Basin is a checkerboard of private, State, and Federal ownership. Total losses of Graham's and White River beardtongues on private and State lands will have additional, indirect impacts through habitat fragmentation on those individuals occurring on Federal lands.

In the past, we concluded that oil shale and tar sands development was economically uncertain due to the highly volatile energy market (71 FR 76024, December 19, 2006). Indeed, oil shale and tar sands are more expensive to produce than conventional oil (BLM 2011, entire). In addition, the amount of water required to process these oil sources was considered a technological limitation (BLM 2011, entire). Despite these difficulties, three oil shale projects or explorations are planned on private, State, and BLM lands in Uintah County, Utah. The first project is proposed by Enefit American Oil, which is wholly owned by the Estonian government. In 2011, Enefit acquired all of the assets owned by Oil Shale Exploration Company (BLM 2012b, p. A–76). This includes an oil shale research, development, and demonstration (RD&D) lease property on BLM land in the Uinta Basin, Utah. Enefit's planned operations include completing the RD&D project and expanding operations to the surrounding lands that they privately own. Enefit expects to begin construction of an industrial development complex in 2017, with commercial production online by 2020 (Bernard and Hughes 2012, p. 18; Bernard 2013, p. A–11).

The Enefit project will develop oil shale operations on up to 10,117 ha (25,800 ac) of private and State property using surface and subsurface mining techniques (Enefit 2012, p. 6). Surface mining will occur where the oil shale formation is outcropped or covered by

a minimal amount of overburden (Enefit 2012, p. 6), resulting in the removal of all soils and vegetation in the area. The project area overlaps 19 percent of all known Graham's beardtongue plants and 26 percent of all known White River beardtongue plants (Service 2013, p. 9). At worst, all of the Graham's and White River beardtongues plants growing in this project area will be lost. At best, the Enefit project will fragment habitat and reduce connectivity for both species. Populations 19 and 20 of Graham's beardtongue will be impacted, reducing gene flow between the Utah and Colorado populations of Graham's beardtongue. The Enefit project occurs in the heart of White River beardtongue's distribution, and all Utah populations (excluding the Colorado population, 7, see Figure 2) will become more highly fragmented with more isolated populations that are vulnerable to extinction.

A second project will be conducted by Red Leaf Resources on Utah School and Institutional Trust Lands Administration (SITLA) land, within population 13 (see Figure 1) and overlapping 627 known Graham's beardtongue plants (about 2 percent of all known plants). Oil shale will be surface mined at the site, removing all soils and vegetation in the area. This project was initially planned to begin in 2013 (Bernard and Hughes 2012, entire), but is postponed awaiting the results of preliminary water monitoring (Loomis 2012, entire; Baker 2013, entire). The third project is an application by Ambre Energy to drill oil shale test wells on BLM land in the Vernal Field Office area, planned to begin in 2013. The applicant for this project proposes to drill 6 test wells, 3 of which occur in known Graham's beardtongue habitat, although individual plants will be avoided by 91 m (300 ft). Neither of these projects overlaps with White River beardtongue.

Tar sands lease areas overlap 24 and 3 percent of the total known populations of Graham's and White River beardtongues, respectively. The impacts of tar sands mining will be similar to those from oil shale mining. However, we are aware of only one approved proposed tar sands project in the State of Utah (Loomis 2012, p. 1), and the project does not overlap with any known populations of Graham's beardtongue or White River beardtongue.

In summary, the total impact of the currently planned oil shale development projects alone (Enefit, Red Leaf) is substantial. The likely loss of up to 21 percent (19 percent from Enefit and 2 percent from Red Leaf) of Graham's beardtongue and 26 percent (all from the Enefit project) of White River beardtongue will decrease the viability of both species by reducing total numbers and increasing habitat fragmentation, which will lead to smaller and more isolated populations that are prone to extinction (see VIII. Small Population Size, below). Moreover, the initiation of these projects (including the drilling of test wells on BLM lands) and the recent BLM leasing decisions indicate the renewed interest in oil shale and tar sands mining and the increased likelihood of development across the ranges of these two species. As described above, we estimate that 26 and 28 percent of all known Graham's and White River beardtongues occur on non-federal lands where the Mahogany layer outcrops or is less than 152 m (500 ft) below the surface (the number of Graham's beardtongue on non-federal lands will increase by 1 percent within the next year through a land exchange; see X. Inadequacy of Existing Regulatory Mechanisms, below) and are vulnerable to total loss if oil shale and tar sands development proceeds, which appears likely.

On BLM lands, 40 and 56 percent of all known Graham's and White River beardtongues are located within potential oil shale and tar sands lease areas. Most also occur on Mahogany oil-shale ledge outcroppings or where the overburden is shallow, meaning that surface mining would be the preferable extraction methodology, with the resulting loss of all surface vegetation. By adding the number of plants likely to be impacted by oil shale and tar sands development across all landowners (Table 3), we estimate that as much as 82 and 94 percent of the total known populations of Graham's and White River beardtongues will be vulnerable to both direct loss and indirect negative impacts such as habitat fragmentation from oil shale and tar sands development. These levels of impact are likely to lead to severe declines in both species across their ranges.

Table 3. Total percent of populations likely to be impacted by oil shale and tar sands development.

	Graham's beardtongue		White River beardtongue	
	# plants	% total	# plants	% total
BLM Oil Shale and Tar Sands Lease Areas	12,831	40	6,389	56
Private and State Lands	13,024	41	4,369	38
Total	25,855	82	10,758	94

* Totals may not sum due to rounding.

Traditional Oil and Gas Drilling

Historically, impacts to both beardtongue species from traditional oil and gas development were largely avoided because development within the species' habitat was minimal. However, the previously described Energy Policy Act of 2005 enables leasing of oil and gas and tar sands separately, even when the two are found in the same area. Previously, the law required a combined tar sands/oil and gas lease, effectively delaying leasing and extraction of oil and gas in tar sand areas because of concerns about conflicts between tar sands and traditional oil and gas development. Overall, the Energy Policy Act of 2005 effectively opened the entire range of both species to leasing for oil and gas development and made that leasing more efficient and effective.

The impacts of traditional oil and gas development on Graham's and White River beardtongues are expected to be high (BLM 2008b, p. 457). Although a high level of development within these species' habitats is not yet realized, we expect it to increase in the future. Most of the ranges of Graham's and White River beardtongues are underlain with deposits of traditional hydrocarbon resources, primarily natural gas (Service 2013, p. 8). In the past two decades, oil and gas production in Uintah County, Utah, has increased substantially. For example, oil production in Uintah County increased about 60 percent from 2002 to 2012, and gas production increased about 25 percent over this same time period (Utah Division of Oil 2012, entire). Drilling activities in Uintah County continue to increase: The number of new wells drilled in Uintah

County was 316 in 2009, and 631 in 2012 (Utah Division of Oil 2012, entire).

To quantify how much drilling has occurred within Graham's and White River beardtongues' habitat, we used the following methods to identify an analysis area for impacts to the species based upon the currently known plant locations and adjacent essential pollinator habitat. For Graham's beardtongue, we created an analysis area using known locations plus a distance of 700 m (2,297 ft) for pollinators. For White River beardtongue, we created an analysis area using known locations plus a distance of 500 m (1,640 ft) for pollinators. These distances (700 m and 500 m) were based on pollinator travel distance for important pollinators for each species (see *Species Information,* ''Biology'' for each plant, above). We then calculated the number of wells currently drilled within these areas.

Within the Graham's beardtongue analysis area, well drilling has occurred at a comparatively slow pace thus far: As of January 2013, 45 well pads were developed or approved within the analysis area for Graham's beardtongue, and 35 of these are in Utah (Service 2013, p. 8). We do not know actual surface disturbance associated with each well, so we estimate 5 acres of surface disturbance per well pad (based on assumptions made in the Vernal BLM Resource Management Plan (RMP) (BLM 2008b, p. 4–3)), including disturbance from associated roads and pipelines. Accordingly, we estimate that 103 ha (255 ac) of Graham's beardtongue habitat are disturbed from energy development, which is less than 1 percent of the total area included within the analysis area across the Graham's beardtongue's range.

Development within the White River beardtongue analysis area is similar; as of January 2013, 13 well pads were developed or approved in the White River beardtongue analysis area, 8 of which are in Utah (Service 2013, p. 8). Using the methods described above, less than 1 percent (26 ha (65 ac)) of the total area included within the White River beardtongue analysis area is likely disturbed by existing oil and gas activities.

Approximately 33 percent of the analysis areas for Graham's beardtongue and 20 percent for White River beardtongue, respectively, on State and Federal land are leased for traditional oil and gas development (Service 2013, p. 11). At the time of this analysis, one planned seismic exploration project overlaps with habitat for both beardtongue species. The initiation of this project indicates that traditional oil and gas development will very likely increase in the habitat of both of these species. Our estimate of impacts is likely an underestimate because we do not have information about how much private land is planned for development.

Although some oil and gas drilling to date has certainly impacted individuals of Graham's and White River beardtongues, development has not been at a high enough level to negatively impact the whole species. Additionally, neither Graham's beardtongue nor White River beardtongue currently appears to suffer from pollinator limitation (Lewinsohn and Tepedino 2007, entire; Dodge and Yates 2009, p. 12). Furthermore, populations monitored for 9 years are stable (Dodge and Yates 2011, entire). However, substantial numbers of Graham's and White River beardtongue individuals (and their habitat) occur in areas that are leased for oil and gas development (Table 4), and thus it is reasonable to conclude that the impacts of oil and gas activity will increase in the future as additional areas are developed.

Table 4. Graham's and White River beardtongue known plants (rangewide) within leased oil and gas areas on both BLM and State lands (Service 2013, p. 11). These were calculated based on oil and gas leases alone and may include overlap with oil shale and tar sands. Percentages may not add due to rounding.

	Graham's beardtongue		White River beardtongue	
	# plants	% total	# plants	% total
BLM Leases	8,829	14	2,547	11
State Leases	4,269	13	1,278	11
Total	13,098	27	3,825	22

Summary of All Energy Development

Several new oil shale projects are planned for the future (by 2020) within Graham's and White River beardtongue habitat. For the two projects occurring on private or State lands (Enefit and Redleaf) for which we have enough information to estimate impacts, substantial impacts are likely to occur for both species: Approximately 21 and 26 percent of the total known populations of Graham's and White River beardtongues in the center of their ranges are vulnerable to direct loss and the effects of increased disturbance. These direct impacts will reduce the redundancy and representation of both species. Although the market for oil shale and tar sands may still be uncertain, the commencement of these projects indicates progress toward imminent future development of oil shale and tar sands resources within the range of these species.

On BLM lands, approximately 40 and 56 percent of all known Graham's and White River beardtongue plants fall within areas that are open for oil shale and tar sands leasing, although these areas have not yet been leased. Twenty-seven and 22 percent of all known Graham's and White River beardtongue plants, respectively, fall within areas that are leased by the BLM and the State of Utah for traditional oil and gas development. Many, but not all, of these lease areas overlap with each other so that combined, we estimate that 50 and 66 percent of Graham's beardtongue and White River beardtongue, respectively, are on BLM lands within areas that are either leased for oil and gas development or open to leasing for oil shale and tar sands (Table 5).

Table 5. Areas identified for energy development for Graham's beardtongue and White River beardtongue across all landowner types. Numbers are not additive because many of these areas overlap.

	Graham's beardtongue		White River beardtongue	
	# plants	% of total	# plants	% of total
Existing BLM oil and gas leases	4,389	14	1,260	11
Vernal BLM Field Office 2013 proposed leases	2,458	8	130	1
Meeker BLM Field Office 2013 proposed leases	1	0	2	0
BLM oil shale and tar sands lease areas	12,831	40	6,389	56
Total Number of Plants that Overlap with All Energy Types on BLM Lands or Leases	15,750	50	7,531	66
Existing State of Utah oil and gas leases	4,269	13	1,278	11
Private and State lands (we assume all of these lands are open to energy development of any kind)	13,024	41	4,369	38
Total Number of Plants that Overlap with All Energy Types Across All Landowners	28,733	91	11,395	100

Even though individuals of these species on BLM lands will be mostly protected from direct loss through the 91-m (300-ft) setback conservation measure, a majority of both species will still be susceptible to the indirect effects of energy development (with an additional 1 percent of Graham's beardtongue likely to experience direct impacts when the land exchange is finalized; see X. Inadequacy of Existing Regulatory Mechanisms, below). In total, we estimate that 91 and 100 percent of Graham's and White River beardtongues are vulnerable to the impacts of all types of energy development across all landowners (Table 5). The indirect impacts from oil and gas development, such as habitat fragmentation and loss, are likely to reduce the resiliency of both species so that they cannot recover from most stressors. In conclusion, we consider energy exploration and development a future threat that will have a significant impact on both species.

II. Grazing and Trampling

Invertebrates, wildlife, and livestock all graze directly on individuals of Graham's and White River beardtongues (Sibul and Yates 2006, p. 9; Dodge and Yates 2010, p. 9; 2011, pp. 9, 12; UNHP 2012, entire). Grazers feed on all parts of the plant, including the seeds, damaging or destroying individual plants and effectively reducing their reproductive success.

It is likely that livestock are not the primary grazers of Graham's or White River beardtongues. High rates of herbivory on both beardtongue species was reported in every year of a 9-year monitoring study (Dodge and Yates 2011, pp. 7, 9). The impact of this herbivory was to reduce fruit and seed production (Dodge and Yates 2011, pp. 7, 9). The herbivory was attributed to rabbits, cattle, large mammals, deer, and invertebrates (Dodge and Yates 2011). In particular, tiger moth caterpillars (possibly *Arctia caja utahensis,* although this identification has not been positively confirmed) were noted on Graham's beardtongue plants at one site in 2009 and 2010 (Dodge and Yates 2011; Tepedino 2012). In these years, herbivory rates (measured by the number of plants browsed) were as high as 59 and 68 percent, respectively (Dodge and Yates 2011, p. 4). The grazing pressure fluctuates, however, as lower herbivory (28.6 percent) was noted in 2011, and plants at this site rebounded in size and reproduction to match other sites that experienced little to no grazing (Dodge and Yates 2011, p. 4).

The level of herbivory within all of the long-term monitoring plots for both beardtongue species fluctuated greatly over the course of the study. For Graham's beardtongue, across all monitoring sites and years, herbivory ranged from 4.7 to 84 percent; for White River beardtongue, herbivory ranged from 1.3 to 91 percent (Dodge and Yates 2011, entire). Herbivory appeared to decrease at times due to delayed plant development from the cool, wet springs of 2010 and 2011 (Dodge and Yates 2011, pp. 10–11). Despite high levels of herbivory, the populations were mostly stable over 9 years of monitoring (McCaffery 2013a, p. 4). Presumably, beardtongues would be adapted to herbivory by native grazers, which may explain why populations continue to remain stable despite high levels of herbivory.

Everywhere Graham's and White River beardtongues grow on BLM lands, they fall within a grazing allotment. This accounts for approximately 59 percent of all known Graham's beardtongue plants and 62 percent of all White River beardtongue plants. Most Graham's beardtongue plants occur within approximately 19 allotments with both sheep and cattle use. Seasons of use vary considerably, with most allotments grazed over the winter (from November or December to April), although some allotments are grazed in the spring and summer (BLM 2008c, pp. J1–4). Most White River beardtongue plants occur within six allotments: four sheep allotments with a season of use from October to May, one sheep allotment (Raven Ridge in Colorado) grazed from November to February, and one cattle allotment with season of use from April to June and October to February (BLM 2008c, pp. J1–4). Grazing in the spring and summer are more likely to directly impact beardtongue individuals than grazing in the winter. In addition, sheep are more likely to graze on forbs than cattle (Cutler 2011, entire); thus beardtongue individuals within sheep allotments are more likely to be grazed than those in cattle allotments. On the other hand, grazing pressure may have less of an impact on the beardtongues than it has in the past—in the past decade, BLM has reduced the number of grazing sheep by half on many of the allotments (Cutler 2011, entire). Grazing also likely occurs across other landowners, although we do not have data on these other lands.

Besides impacts from grazing, which we do not believe is negatively impacting Graham's or White River beardtongue at the species level, domestic livestock can impact rare and native plants by trampling them. As discussed in our 2006 proposed rule for Graham's beardtongue (71 FR 3158, January 19, 2006), trampling from domestic livestock may have localized effects on this species. We believe one population of Graham's beardtongue was eradicated by livestock trampling (Neese and Smith 1982, p. 66). Winter sheep grazing is the principal use across the range of White River beardtongue habitat, where sheep trailing (walking) likely results in damage or loss of plants (Franklin 1995, p. 6; UNHP 2012, entire). It is likely that some individuals of both beardtongue species, and particularly White River beardtongue as it tends to grow on slightly steeper slopes (see *Species Information,* ''Habitat'' for both beardtongues above), are afforded some protection from

trampling by cattle where they grow on steep slopes, as cattle generally avoid steep slopes and primarily graze on gentle slopes. However, this would not prevent trampling by sheep, which are not deterred by steep slopes.

Livestock grazing can negatively impact native plants indirectly through habitat degradation or by influencing plant community composition. Across the Colorado Plateau, livestock trampling and trailing breaks and damages biological soil crusts (Belnap and Gillette 1997, entire); alters plant community composition (Cole *et al.* 1997, entire); spreads and encourages weed seed establishment (Davies and Sheley 2007, p. 179); increases dust emissions (Neff *et al.* 2008, entire); and compacts soils, affecting water infiltration, soil porosity, and root development (Castellano and Valone 2007, entire). Crusts are not known to be a major component of the soils that Graham's and White River beardtongues inhabit, but livestock likely have altered the physical features of the plants' habitats. Although we do not have data indicating how livestock grazing has indirectly impacted Graham's beardtongue or White River beardtongue habitat, the invasive species cheatgrass, purple mustard, halogeton, and prickly Russian thistle have been documented growing with both beardtongues (see VII. Invasive Weeds, below) (Fitts and Fitts 2009, p. 23; CNHP 2012, entire; Service 2012a, entire; UNHP 2012, entire). We assume that grazing has caused ecological changes, including nonnative weed invasion and other physical changes, within beardtongue habitats. We make this assumption because of landscape–level ecological changes—such as annual weed invasion, plant community changes, and loss of biological soil crusts—known to have occurred across the Colorado Plateau due to introduced grazers such as cattle, horses, and sheep (Mack and Thompson 1982, entire; Cole *et al.* 1997, entire). We do not know the extent and severity of these changes.

In summary, herbivory and trampling from grazing on some locations of Graham's and White River beardtongues appear to be severe during some years, and it is likely that similar impacts occur across the ranges of the species. The documented effects of herbivory and trampling on Graham's and White River beardtongues to date are limited to a reduction in reproductive output in some years at specific sites and the possible loss of a historical population, rather than widespread impacts on habitat or population-level impacts on the species. Despite high levels of herbivory, populations appear to be stable. At present, we find that both species have sufficient resiliency, redundancy, and representation to recover from existing grazing and trampling impacts. Thus, we do not consider grazing to be a threat to these species. This factor should continue to be monitored, as the cumulative effects of livestock grazing, particularly habitat alteration, coupled with other disturbances may have a more severe negative effect on beardtongue species (see section XI. Cumulative Effects from All Factors, below, for more details). In particular, changing climate patterns may change the effects associated with herbivory from native grazers (see IX. Climate Change, below).

III. Unauthorized Collection

In our 2006 proposed rule (71 FR 3158, January 19, 2006), we determined that unauthorized collection of Graham's beardtongue may occur, but we never explicitly stated whether we believed it posed a threat to the species. Indeed, Graham's beardtongue is a unique and charismatic species that is prized by collectors and, at least at one point in time, was available commercially online (71 FR 3158, January 19, 2006). We know of no recent attempts to collect this species without proper authorizations. We are not aware of any instances where White River beardtongue was collected without proper authorizations that ensure species conservation. Although unauthorized collection may destroy some individuals, it is not likely to extirpate entire populations or lead to species-level impacts. Therefore, we do not consider unauthorized collection a threat to either beardtongue species.

IV. Off-Highway Vehicle Use

The use of off-highway or off-road vehicles (OHVs) may result in direct loss or damage to plants and their habitat through soil compaction, increased erosion, invasion of noxious weeds, and disturbance to pollinators and their habitat (Eckert *et al.* 1979, entire; Lovich and Bainbridge 1999, p. 316; Ouren *et al.* 2007, entire; BLM 2008b, pp. 4–94; Wilson *et al.* 2009, p. 1). To date, little OHV use has occurred within the ranges of Graham's beardtongue and White River beardtongue. For example, unauthorized OHV use was observed at four locations within White River beardtongue occupied habitat 10 to 20 years ago (UNHP 2012, entire). Federal and industry personnel were increasingly using OHVs in oil and gas field surveys and site location developments prior to 2008. However, since 2008, the revised Vernal Field Office Resource Management Plan (RMP) limits all vehicles to designated routes (BLM 2008c, p. 46). This protective measure provides conservation benefits within the habitat of Graham's and White River beardtongues. Given the low levels of documented unauthorized OHV use and the protections provided by the BLM Vernal RMP, we do not consider OHV use a threat to either beardtongue species.

V. Road Maintenance and Construction

Roads that cross through rare plant habitat can destroy habitat and populations, increase road dust, and disturb pollinators (Trombulak and Frissell 2000, entire). We consider this issue separately from roads created for oil and gas development, discussed above (see I. Energy Exploration and Development, above), although the effects are the same.

Many unpaved county roads cross through Graham's and White River beardtongue habitat, and most of these roads have existed for decades. Plants located near unpaved roads are prone to the effects of dust, fragmentation, and pollinator disturbance (see I. Energy Exploration and Development, above, for a thorough discussion of road effects). Conflicts can also arise from new paved roads or road upgrades, as described below.

In 2012, Seep Ridge Road, a formerly unpaved county road crossing through occupied Graham's beardtongue habitat, was re-aligned and paved. At least 322 individuals were within 300 feet of the proposed right-of-way. This project resulted in direct impacts to at least 31 Graham's beardtongue individuals that were transplanted out of the widened road right-of-way. The transplants will be revisited in 2013, but we do not expect any of them to have survived due to the drought conditions during the transplant (Dodge 2013, entire). The paving of Seep Ridge Road reduces the impacts of fugitive dust on the population of Graham's beardtongue bisected by the road. However, the widened road corridor directly decreased the number of plants on the east side of the road and may impede pollinator movement, leading to this population of Graham's beardtongue becoming more isolated. This patch may be more susceptible to extinction, although further study of this population and its genetic diversity should be undertaken.

Two of the long-term monitoring plots for Graham's and White River beardtongues are immediately adjacent to unpaved roads, and these populations were stable over the 9 years of the study (Dodge and Yates 2011, pp. 9, 12;

McCaffery 2013a, p. 4). However, one monitoring plot of White River beardtongue produces fewer flowers and fruits than other sites of White River beardtongue, potentially because of increased disturbance due to the nearby road (Dodge and Yates 2011, p. 12).

In summary, road maintenance and construction can destroy habitat and fragment populations, but this impact is site-specific and does not occur across the entire range of the species. Besides the Seep Ridge Road project, these types of projects occur infrequently, and we are not aware of other road construction or maintenance projects that have occurred, or are proposed to occur, in areas where they would impact Graham's beardtongue or White River beardtongue. Therefore, we do not consider road maintenance and construction to be a threat to either beardtongue species.

VI. Wildfire

In 2012, the Wolf Den Fire, believed to be started by dry lightning, burned 8,112 ha (20,046 ac) in Uintah County, including 394 ha (974 ac), approximately 1.5 percent, of the area within 700 m (2,297 ft) of known points of Graham's beardtongue and approximately 563 known plants (1.8 percent of the total known number of plants). No individuals of White River beardtongue were affected by this fire. Fires do not occur frequently in Graham's beardtongue or White River beardtongue habitat, but fire frequency and intensity is likely to increase with increased invasive weeds and climate change (see sections VII. Invasive Weeds, IX. Climate Change, and XI. Cumulative Effects from All Factors, below, for more information). At present, we do not expect wildfires at a large enough scale to pose a threat to either species. In addition, we do not yet know how these species respond to fire. It is likely that with patchy, low-intensity burns they would be able to re-sprout from their roots, which we have documented in the field for Graham's beardtongue (Brunson 2012, entire). We do not consider wildfire alone a threat to either species.

VII. Invasive Weeds

We noted the presence of the invasive, nonnative weeds cheatgrass and halogeton in Graham's beardtongue habitat in our 2006 proposed rule (71 FR 3158, January 19, 2006). Prickly Russian thistle and purple mustard also occur in Graham's and White River beardtongue habitat (Service 2012c, entire). The weeds have not been noted as highly prevalent in the barren oil shale soils where the beardtongue species grow, although this has never been directly studied. However, these invasive weeds are numerous in the habitat and plant communities immediately adjacent to beardtongue species habitat, most notably along disturbances (for example, roads and well pads) (Service 2012c, entire).

The spread of nonnative, invasive species is considered the second largest threat to imperiled plants in the United States (Wilcove *et al.* 1998, p. 2). Invasive plants—specifically exotic annuals—negatively affect native vegetation, including rare plants. One of the most substantial effects is the change in vegetation fuel properties that, in turn, alters fire frequency, intensity, extent, type, and seasonality (Menakis *et al.* 2003, p. 282; Brooks *et al.* 2004, entire; McKenzie *et al.* 2004, entire). Shortened fire return intervals make it difficult for native plants to reestablish or compete with invasive plants (D'Antonio and Vitousek 1992, pp. 68–77). Invasive weeds can exclude native plants and alter pollinator behaviors (D'Antonio and Vitousek 1992, pp. 68–77; DiTomaso 2000, p. 257; Mooney and Cleland 2001, pp. 74–75; Traveset and Richardson 2006, pp. 211–213). For example, cheatgrass outcompetes native species for soil, nutrients, and water (Melgoza *et al.* 1990, pp. 9–10; Aguirre and Johnson 1991, pp. 352–353).

Cheatgrass is a particularly problematic nonnative, invasive annual grass in the Intermountain West and, as discussed above, has been documented in Graham's and White River beardtongue habitat. If already present in the vegetative community, cheatgrass increases in abundance after a wildfire, increasing the chance for more frequent fires (D'Antonio and Vitousek 1992, pp. 74–75). In addition, cheatgrass invades areas in response to surface disturbances (Hobbs 1989, pp. 389–398; Rejmanek 1989, pp. 381–383; Hobbs and Huenneke 1992, pp. 324–330; Evans *et al.* 2001, p. 1,308). Cheatgrass is likely to increase due to climate change because invasive annuals increase biomass and seed production at elevated levels of carbon dioxide (Mayeaux *et al.* 1994, p. 98; Smith *et al.* 2000, pp. 80–81; Ziska *et al.* 2005, p. 1,328).

We have limited information on how much invasive weeds have impacted Graham's and White River beardtongues across their ranges, although it is likely that this is a factor that will increase in the future due to increased disturbance from oil and gas development, grazing (see II. Grazing and Trampling, above), and climate change. We do not currently consider invasive weeds alone to be a threat to either beardtongue species. However, with the amount of energy development that is likely to occur across the ranges of both species in the future (see I. Energy Exploration and Development, above), and given the likelihood that invasive species will increase with climate change (see XI. Cumulative Effects from All Factors, below), we conclude that invasive weeds are a future threat to these species.

VIII. Small Population Size

We lack complete information on the population genetics of Graham's and White River beardtongues. Preliminary genetic analysis shows that both beardtongues have less diversity than more common beardtongue species that have overlapping ranges (Arft unpublished report 2002). As previously described (see Background, ''Biology'' for both plants, above), both species have mixed mating systems and are thus capable of producing seed through self-fertilization or cross-pollination. However, the highest number of seeds and fruits are produced when flowers are cross-pollinated (Lewinsohn and Tepedino 2007, pp. 233–234). Increased disturbance and habitat fragmentation resulting in smaller population sizes could negatively impact both species because there would be fewer plants available for cross-pollination.

Small populations and species with limited distributions are vulnerable to relatively minor environmental disturbances (Given 1994, pp. 66–67). Small populations also are at an increased risk of extinction due to the potential for inbreeding depression, loss of genetic diversity, and lower sexual reproduction rates (Ellstrand and Elam 1993, entire; Wilcock and Neiland 2002, p. 275). Lower genetic diversity may, in turn, lead to even smaller populations by decreasing the species' ability to adapt, thereby increasing the probability of population extinction (S.C.H. and Kohn 1991, pp. 4, 28; Newman and Pilson 1997, p. 360).

Populations of either species with fewer than 150 individuals are more prone to extinction from stochastic events (McCaffery 2013b, p. 1). Overall, it appears that Graham's beardtongue has many small populations scattered across its range, although the largest population (population 19, which will be impacted should the Enefit project continue as planned) contains more than 10,000 plants. Of the 24 populations of Graham's beardtongue, approximately 15 contain fewer than 150 known plants. That means more than half the known populations are more prone to extinction from stochastic events due to small population size.

However, these populations account for 1 percent of the total known number of plants of Graham's beardtongue. Additionally, the numbers in our files do not necessarily represent complete population counts; some populations likely contain more plants and some fewer. On the other hand, its scattered distribution may contribute to Graham's beardtongue's overall viability and potential resilience. For example, small-scale stochastic events, such as the erosion of a hillside during a flood event, will likely impact only a single population or a portion of that population. Even larger, landscape-level events such as wildfires are not likely to impact the species as a whole (see section VI. Wildfire, above). We do not find that small population size is currently a species-level concern for Graham's beardtongue, although this is likely to change after oil shale development occurs (see XI. Cumulative Effects from All Factors, below).

White River beardtongue has only seven populations, and two of these have fewer than 150 individual plants. These two smaller populations account for less than 1 percent of the total species' population. As with Graham's beardtongue, these counts are based on incomplete surveys and are not necessarily representative of actual conditions on the ground. In addition, large areas of suitable habitat remain unsurveyed, so this species may be more widely distributed and populations are likely to have different numbers of plants than presented here. However, this species' range is much smaller than that of Graham's beardtongue, and thus we conclude that White River beardtongue may be more prone to extinction from landscape-level events.

In the absence of information identifying threats to the species and linking those threats to the rarity of the species, we do not consider small population size alone to be a threat. A species that has always been rare, yet continues to survive, could be well equipped to continue to exist into the future. This may be particularly true for Graham's and White River beardtongues. Many naturally rare species have persisted for long periods within small geographic areas, and many naturally rare species exhibit traits that allow them to persist, despite their small population sizes. Consequently, the fact that a species is rare does not necessarily indicate that it may be in danger of extinction in the future.

Based on Graham's and White River beardtongues' current population numbers and preliminary demographic analyses showing populations are, for the most part, stable, we conclude that small population size is not currently a threat to these species. However, this may change in the future as energy development in these species' habitat increases and the populations become smaller and more fragmented (see section XI. Cumulative Effects from All Factors, below).

IX. Climate Change

Our analyses under the Act include consideration of ongoing and projected changes in climate. The terms ''climate'' and ''climate change'' are defined by the Intergovernmental Panel on Climate Change (IPCC). ''Climate'' refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (IPCC 2007, p. 78). The term ''climate change'' thus refers to a change in the mean or variability of one or more measures of climate (e.g., temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007, p. 78). Various types of changes in climate can have direct or indirect effects on species. These effects may be positive, neutral, or negative and they may change over time, depending on the species and other relevant considerations, such as the effects of interactions of climate with other variables (e.g., habitat fragmentation) (IPCC 2007, pp. 8–19). In our analyses, we use our expert judgment to weigh relevant information, including uncertainty, in our consideration of various aspects of climate change.

Climate change is potentially impacting Graham's and White River beardtongues now, and could continue to impact these species into the future. Over the last 50 years, average temperatures have increased in the Northern Hemisphere and extreme weather events have changed in frequency or intensity, including fewer cold days and nights, fewer frosts, more heat waves, and more hot days and nights (IPCC 2007, p. 30). In the southwestern United States, average temperatures increased approximately 1.5 degrees Fahrenheit (°F) compared to a 1960 to 1979 baseline (Karl 2009, p. 129). Climate modeling is not currently to the level of detail at which we can predict the amount of temperature and precipitation change precisely within the limited ranges of these two beardtongue species. Therefore, we generally address what could happen under current climate projections based upon what we know about the biology of these two species.

Climate changes will continue as hot extremes, heat waves, and heavy precipitation will increase in frequency, with the Southwest experiencing the greatest temperature increase in the continental United States (Karl 2009, p. 129). Annual mean precipitation levels are expected to decrease in western North America and especially the southwestern States by mid-century (IPCC 2007, p. 8; Seager *et al.* 2007, p. 1,181), with a predicted 10- to 30-percent decrease in precipitation in mid-latitude western North America by the year 2050 (Milly *et al.* 2005, p. 1). These changes are likely to increase drought in the areas where Graham's and White River beardtongues grow.

We do not have a clear understanding of how Graham's and White River beardtongues respond to precipitation, although generally plant numbers decrease during drought years and recover in subsequent seasons that are less dry. Graham's beardtongue may not respond as quickly as White River beardtongue to increased winter and spring moisture immediately preceding the growing season (Lewinsohn and Tepedino 2007, pp. 12–13). In addition, Graham's beardtongue flowering is sporadic and may be responding to environmental factors that we have not been able to measure in the field, such as precipitation. Graham's beardtongue may need more than one year of normal precipitation to recover from prolonged drought (Lewinsohn 2005, p. 13), although this hypothesis has not been tested. Conversely, current analyses indicate that there is no association between regional precipitation patterns and population demographics (McCaffery 2013a, p. 4), although regional weather stations used in the analysis are not likely to pick up site-specific precipitation that is more likely to influence these species' vital rates.

That these beardtongues are adapted to living on such hot and dry patches of soils (even more so than other native species in the same area) may mean they are better adapted to withstand stochastic events such as drought. However, increased intensity and frequency of droughts may offer Graham's and White River beardtongues populations fewer chances to recover and may lead to a decline in both species. Some estimate that approximately 20 to 30 percent of plant and animal species are at increased risk of extinction if increases in global average temperature exceed 2.7 to 4.5 °F (1.5 to 2.5 °C) (IPCC 2007, p. 48). By the end of this century, temperatures are expected to exceed this range by

warming a total of 4 to 10 °F (2 to 5 °C) in the Southwest (Karl 2009, p. 129).

Accelerating rates of climate change of the past 2 or 3 decades indicate that the extension of species' geographic range boundaries toward the poles or to higher elevations by progressive establishment of new local populations will become increasingly apparent in the relatively short term (Hughes 2005, p. 60). The limited range of oil shale substrate that Graham's and White River beardtongues inhabit could limit the ability of these species to adapt to changes in climactic conditions by progressive establishment of new populations. However, some experts believe that it may be possible for these species to move to other aspects within their habitat in order to adapt to a changing climate (Service 2012c, entire). For example, Graham's beardtongue is typically observed on west or southwest-facing slopes (see *Species Information,* ''Habitat'' for Graham's beardtongue, above). White River beardtongue exhibits a similar characteristic, although this species is more evenly distributed on different slope aspects (see *Species Information,* ''Habitat'' for White River beardtongue, above). It may be possible for these species to gradually move to cooler and wetter slope aspects (for example, north-facing hillsides) within oil shale soils in response to a hotter drier climate (Service 2012c, entire), but only if these types of habitat are within reasonable seed-dispersal distances and only if these habitats remain intact with increasing oil and gas development.

In summary, climate change is affecting and will affect temperature and precipitation events in the future. We expect that Graham's and White River beardtongues, like other narrow endemics, may be negatively affected by climate change-related drought. Current data are not reliable enough at the local level for us to draw conclusions regarding the impacts of climate change threats to Graham's and White River beardtongues. It is likely that the impacts of climate change will be more severe if oil and gas development destroy and fragment the habitat both species will need for refuge from an increasingly dry, hot climate, thus decreasing both species' resiliency, redundancy, and representation (see XI. Cumulative Effects from All Factors, below).

X. Inadequacy of Existing Regulatory Mechanisms

Federal

Within Colorado, the Raven Ridge Area of Critical Environmental Concern (ACEC) was established, in part, to protect listed and candidate species, including Graham's and White River beardtongues (BLM 1986, p. 2, BLM 1997, p. 2–17). The Federal Land Policy and Management Act (FLPMA) (43 U.S.C. 1701 *et seq.*) directs BLM, as part of the land use planning process, to give priority to the designation and protection of ACECs. FLPMA defines ACECs as ''areas within the public lands where special management attention is required . . . to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards'' (Sec. 103(a)). Designation as an ACEC recognizes an area as possessing relevant and important values that would be at risk without special management attention (BLM 2008b, p. 4–426).

Following an evaluation of the relevance and importance of the values found in potential ACECs, the BLM determines whether special management is required to protect those values and, if so, to specify what management prescriptions would provide that special management (BLM 2008b, p. 4–426—4–436). To protect listed and candidate species including the beardtongues, the Raven Ridge ACEC restricts motorized travel to existing roads and trails and includes a no surface occupancy (NSO) stipulation for new oil and gas leases within the ACEC (BLM 1997, p. 2–19, 2–44). The NSO designation prohibits long-term use or occupancy of the land surface for fluid mineral exploration or development to protect special resource values (BLM 2008c, p. 38). However, NSO stipulations do not apply to valid existing rights (BLM 1997, pp. 2–31), which account for 14 and 11 percent of the total known populations for Graham's and White River beardtongues, respectively. For example, an area that was leased for mineral development before the ACEC was established would not be subject to the NSO stipulation and could potentially develop well pads and associated infrastructure within an ACEC.

Eighty-seven percent (33 of 38) of all known Graham's beardtongue plants in Colorado occur within the Raven Ridge ACEC. About 2 percent (28 of 1,187) of the known White River beardtongue plants in Colorado also occur within the Raven Ridge ACEC. We expect the NSO stipulation will continue to provide sufficient protection to the plants in the ACEC. Twenty-one percent of the Raven Ridge ACEC is currently leased, and the NSO stipulations are in effect for this entire area. An additional 30 percent of the Raven Ridge ACEC was proposed for leasing in 2013, but the lease sale is now deferred for further analysis (BLM 2013, entire). To date, no wells have been drilled or approved within the Raven Ridge ACEC (Service 2013, p. 12). There are no ACECs established for either Graham's beardtongue or White River beardtongue in Utah.

Both species are listed as BLM sensitive plants in Colorado and Utah, which affords them limited policy-level protection through the Special Status Species Management Policy Manual #6840, which forms the basis for special status species management on BLM lands (BLM 2008a, entire). The BLM currently gives candidate species the same protection as listed species, and for both beardtongue species, conservation measures incorporated by the Vernal Field Office include a 91-m (300-ft) setback from surface-disturbing activities (BLM 2008c, p. L–16).

If these species were not candidates or listed under the Act, Graham's and White River beardtongues would likely remain BLM-sensitive plant species. The BLM currently requires 46 m (150 ft) between surface disturbance and BLM-sensitive plant species (Roe 2011, pers. comm.). If kept in place, these conservation measures will provide some level of protection to these species. However, we do not consider this distance sufficient to effectively prevent negative impacts associated with surface-disturbing activities or to protect unoccupied habitat to serve as a refuge for either species with climate change (see, I. Energy Exploration and Development for a discussion of fugitive dust travel distances). Additionally, the 46-m (150-ft) buffer for sensitive plant species is not official policy for the Vernal Field Office and could potentially change with new management or under specific project scenarios.

In 2007, a voluntary 5-year conservation agreement for Graham's beardtongue was signed by the Service, the BLM, and the Utah Department of Natural Resources (DNR). The agreement intended to create a program of conservation measures to address potential threats to Graham's beardtongue at the Federal, State, and local levels. The agreement includes the following conservation measures:

- Identify all occupied habitat of Graham's beardtongue.
- Census all occurrences of the species.
- Identify at least six permanent population monitoring sites throughout the species' range and conduct

population monitoring studies for Graham's beardtongue in each of those sites.

- Maintain Federal ownership of all occupied habitat.
- Avoid or minimize impacts to the species and its habitat from permitted surface disturbances, subject to valid existing lease rights and other valid existing rights.

Since the conservation agreement was signed, the BLM has funded surveys for both species, adding 4,000 new Graham's beardtongue points and 400 new White River beardtongue points to our files. In addition, a monitoring program on several populations of both species was initiated in 2004, and was funded partially with BLM money, through 2012.

However, BLM will not be able to retain Federal ownership of all occupied habitat, as recommended in the conservation agreement. The Utah Recreational Land Exchange Act of 2009 (Public Law 111–53, signed August 19, 2009) directed the exchange of lands within Grand, San Juan, and Uintah Counties, Utah, between the BLM and SITLA. The Act directs the Secretary of the Interior to convey to the State of Utah all rights, title, and interests to the Federal lands identified on the associated Grand County and Uintah County maps. Several of the parcels that will be transferred to SITLA include 346 known individual Graham's beardtongue plants within populations 13 and 16. We expect that more plants occur in these parcels than have been counted to date, so actual losses are likely to be higher. SITLA has not expressed an interest in protecting Graham's beardtongue on lands they manage (see discussion under ''State'' below) so any Graham's beardtongue individuals on parcels transferred to the State will be unprotected from energy development. These new SITLA lands occur in areas of high potential energy development (see I. Energy Exploration and Development, above). Although the land exchange is not yet final, we expect it to move forward as planned.

FLPMA requires the BLM to develop and revise land-use plans when appropriate (43 U.S.C. 1712(a)). The BLM developed a new resource management plan (RMP) for the Vernal Field Office to consolidate existing land-use plans and balance use and protection of resources (BLM 2008c, pp. 1–2). Through the Vernal Field Office RMP, the BLM commits to conserve and recover all special status species, including candidate species (BLM 2008c, p. 129). However, the RMP special status species goals and objectives do not legally ensure that all Federal actions avoid impacts to Graham's beardtongue or White River beardtongue. Conservation measures implemented by the BLM have not fully prevented impacts (for example, well pad development or road maintenance and construction in occupied habitat as discussed previously in I. Energy Exploration and Development, and V. Road Maintenance and Construction) to Graham's beardtongue or White River beardtongue. Therefore, we conclude that increased energy development in Graham's and White River beardtongue habitat will increase the direct loss of habitat and decrease the long-term ability to implement more effective conservation measures (see I. Energy Exploration and Development, above).

During oil and gas development activities that have occurred to date, the BLM minimized some impacts to Graham's beardtongue and its habitat through incorporation of conservation measures through section 7 consultation under the Act. Under the Act, Federal agencies are required to conference on species that are proposed for listing, including Graham's beardtongue, if their actions are likely to jeopardize the species. In practice, the BLM has conferenced on Graham's beardtongue for any proposed projects within its habitat. Conservation measures include moving well pad and pipeline locations to avoid direct impacts to the species. These measures minimize direct impacts to the species, particularly at the current low rates of development that have occurred in the habitat.

At current minimal levels of energy development (at the time of this analysis, 45 wells in Graham's beardtongue analysis area and 13 wells in White River beardtongue analysis area), we conclude that existing conservation measures, such as a 91-m (300-ft) setback are sufficient to protect these species. However, additional energy development is very likely to occur across the ranges of these two species at a high level. Existing conservation measures are not sufficient to protect these species from the increased indirect effects, such as habitat fragmentation and pollinator disturbance, that will result from more energy development.

State

No State laws or regulations protect rare plant species in either Utah or Colorado. Approximately 15 and 11 percent of all known plants of Graham's and White River beardtongues, respectively, occur on State land. After the land exchange, about 16 percent of all known Graham's beardtongue plants will be located on State lands.

The 2007 Graham's beardtongue conservation agreement was signed by the Utah DNR, the Service, and the BLM (see the section above, ''Federal,'' for a more thorough description of the conservation agreement). However, the agreement was not signed by local-level officials with Uintah County, or by SITLA, which manages most of the State lands where Graham's beardtongue is found. To date, SITLA has not required project proponents to protect Graham's beardtongue, White River beardtongue, or other rare or listed plant species on SITLA-managed lands in the Uinta Basin where oil and gas development (traditional or oil shale and tar sands) exists.

Local

As stated above, approximately 26 and 27 percent of all known plants of Graham's and White River beardtongues, respectively, occur on private lands. We are not aware of any city or county ordinances or zoning that provide for protection or conservation of Graham's and White River beardtongues and their habitats.

Summary of All Regulatory Levels

In summary, we find that existing conservation measures instituted by the BLM do not sufficiently address the identified threats to Graham's and White River beardtongues. Both species are afforded some protection on BLM lands as candidate and proposed species; however, the minimal protection provided to date would be reduced if we find that Graham's and White River beardtongues do not meet the definition of an endangered or threatened species. For example, if both species were removed from the candidate species list, the BLM would likely reduce the 91-m (300-ft) distance between disturbance and known plant locations to 46 m (150 feet), which we do not believe would sufficiently protect the plants or their pollinators. Additionally, as a species without listing status, the BLM would not conference with the Service on projects impacting Graham's beardtongue or White River beardtongue. At current low levels of energy development, a 91-m (300-ft) setback is sufficient to protect these species from negative impacts, but at full field development (one wellpad every 40 acres) or complete removal of vegetation and top soil (as would occur with oil shale or tar sands development), a 91-m (300-ft) setback distance is not sufficient to protect against landscape-level habitat fragmentation, loss of pollinator habitat and population connectivity, increased dust, and invasive weeds.

There are no existing regulations at the State or local levels to protect either species from the identified threat of energy development. Neither Graham's nor White River beardtongues has regulatory protection for approximately 41 and 38 percent, respectively, of the total number of known plants, where they occur on State or private lands. As such, the plants will receive no regulatory protection from the future threat of energy development (and this will increase by 1 percent for Graham's beardtongue after the land exchange takes place) on State or private lands.

Because of these issues, existing regulatory mechanisms are inadequate to protect the species from the threats we anticipate in the future, specifically energy development.

XI. Cumulative Effects From All Factors

The stressors discussed above pertain to the 5 listing factors described in the Act:

A. The present or threatened destruction, modification, or curtailment of habitat or range (energy exploration and development, off-highway vehicle use, grazing, road maintenance and construction, wildfire, invasive weeds);

B. Overutilization for commercial, recreational, scientific, or educational purposes (unauthorized collection);

C. Disease or predation (grazing and trampling);

D. The inadequacy of existing regulatory mechanisms; and

E. Other natural or manmade factors affecting the species' continued existence (climate change, small population size).

The combination of many of the factors described above is likely to increase the vulnerability of these species.

We conclude that the future development of oil shale (and to a lesser extent, tar sands) alone is a threat to both Graham's and White River beardtongues. The impacts of this development include a reduction in population numbers, increased fragmentation, and habitat loss, impacting as much as 82 and 94 percent of the total known populations of Graham's and White River beardtongues, respectively. If we include potential impacts from traditional oil and gas development, then 91 and 100 percent of Graham's and White River beardtongues, respectively, will be impacted by all types of energy development.

Both species will experience a reduction in total population sizes, and may lose entire populations from oil shale development. Smaller populations, as discussed above (see VIII. Small Population Size) are more prone to extinction, and these smaller populations will also experience more severe effects of other factors. For example, incremental increases in habitat alteration and fragmentation from increased energy development (including oil shale, tar sands, and traditional oil and gas) will increase weed invasion and fugitive dust, as well as increase the severity of impacts from other factors such as grazing, as grazers become more concentrated into undisturbed areas, and road maintenance, as more roads are constructed.

Climate change is likely to augment the ability of invasive, nonnative species to out-compete native plant species and also reduce the ability of native plant species to recover in response to perturbations. Climate change may also change the effects of grazing events from native grazers to the extent that reproduction of either beardtongue species is hindered so that populations are no longer resilient. This underscores the need to protect not only the associated plant communities within Graham's and White River beardtongue habitat, but those immediately adjacent to beardtongue habitat (Service 2012c, entire).

Without cohesive, landscape-level regulatory mechanisms in place to protect Graham's and White River beardtongues from development on public lands, as development increases, habitat fragmentation and negative effects associated with it are likely to increase, despite site-specific conservation measures to protect these species. In conclusion, we find that energy development alone, especially oil shale and tar sands development, is a threat to these species. Additionally, the synergistic effects of increased energy development, livestock grazing, invasive weeds, small population sizes, and climate change are threats to these species.

Proposed Determination

Standard Under the Act

Section 4 of the Act, and its implementing regulations at 50 CFR part 424, set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(b)(1)(a), the Secretary is to make endangered or threatened determinations required by section 4(a)(1) solely on the basis of the best scientific and commercial data available to her after conducting a review of the status of the species and after taking into account conservation efforts by States or foreign nations. The standards for determining whether a species is endangered or threatened are provided in section 3 of the Act. An endangered species is any species that is ''in danger of extinction throughout all or a significant portion of its range.'' A threatened species is any species that is ''likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' Per section 4(a)(1) of the Act, in reviewing the status of the species to determine if it meets the definition of endangered or threatened, we determine whether any species is an endangered species or a threatened species because of any of the following five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or manmade factors affecting its continued existence.

Proposed Listing Status Determination

After a review of the best available scientific information as it relates to the status of the species and the five listing factors described above, we have determined that Graham's and White River beardtongues meet the definition of threatened species (i.e., are likely to become endangered throughout all or a significant portion of their ranges within the foreseeable future).

Graham's and White River beardtongues are currently stable species with relatively restricted ranges limited to a specific soil type. The existing numbers of individuals and populations are sufficient for these species to remain viable into the future. Population viability analyses show that monitored populations of both species are, for the most part, currently stable. However, we conclude that habitat loss and fragmentation from energy development, particularly oil shale and tar sands, are a future threat to Graham's and White River beardtongues (Factor A). Oil shale and tar sands overlap most of the known habitat of these species. As oil shale and tar sands projects proceed across the ranges of both species, up to 82 and 94 percent of the total known populations of Graham's and White River beardtongues could be impacted. Two proposed oil shale projects on State and private lands are likely to result in the direct loss of 21 and 26 percent of the total known populations of Graham's and White River beardtongues, and this development is likely to begin within the next few years. These projects will

increase habitat fragmentation and isolate populations of both species. The combined impacts of traditional oil and gas and oil shale and tar sands development is likely to be high because approximately 91 and 100 percent of the total known populations for Graham's and White River beardtongues, respectively, overlap with all planned or potential energy development. In addition, there are no existing regulatory mechanisms that protect these species on State or private lands (Factor D), and the existing conservation measures on public lands will not afford sufficient protection from the indirect impacts of energy development. Cumulative impacts, such as increased development resulting in smaller, more fragmented populations that are more prone to extinction and increased invasion by nonnative weeds, are likely to be exacerbated by climate change (Factor E). As a result of these future threats, the viability of these species is likely to be severely diminished.

The Act defines an endangered species as any species that is ''in danger of extinction throughout all or a significant portion of its range'' and a threatened species as any species ''that is likely to become endangered throughout all or a significant portion of its range within the foreseeable future.'' We have carefully assessed the best scientific and commercial information available regarding the present and future threats to these species, and have determined that Graham's and White River beardtongues meet the definition of threatened species under the Act. Substantial threats are not currently occurring. However, threats are likely to occur in the future, within the next 20 years, at a high intensity and across both species' entire ranges. Because these threats place these species in danger of extinction at some point in the future and they are not in immediate danger of extinction, we find these species meet the definition of threatened species, not endangered species. Therefore, on the basis of the best available scientific and commercial information, we propose listing Graham's and White River beardtongues as threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Significant Portion of the Range

In determining whether a species is threatened or endangered in a significant portion of its range, we first identify any portions of the range of the species that warrant further consideration. The range of a species can theoretically be divided into portions an infinite number of ways. However, there is no purpose to analyzing portions of the range that are not reasonably likely to be both (1) significant and (2) threatened or endangered. To identify only those portions that warrant further consideration, we determine whether there is substantial information indicating that: (1) The portions may be significant, and (2) the species may be in danger of extinction there or likely to become so within the foreseeable future. In practice, a key part of this analysis is whether the threats are geographically concentrated in some way. If the threats to the species are essentially uniform throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats applies only to portions of the species' range that are not significant, such portions will not warrant further consideration.

If we identify portions that warrant further consideration, we then determine whether the species is threatened or endangered in these portions of its range. Depending on the biology of the species, its range, and the threats it faces, the Service may address either the significance question or the status question first. Thus, if the Service considers significance first and determines that a portion of the range is not significant, the Service need not determine whether the species is threatened or endangered there. Likewise, if the Service considers status first and determines that the species is not threatened or endangered in a portion of its range, the Service need not determine if that portion is significant. However, if the Service determines that both a portion of the range of a species is significant and the species is threatened or endangered there, the Service will specify that portion of the range as threatened or endangered under section 4(c)(1) of the Act.

We evaluated the current range of Graham's and White River beardtongues to determine if there is any apparent geographic concentration of potential threats for either species. Both species are highly restricted in their ranges and the threats occur throughout their ranges. Having determined that both species are threatened throughout their entire ranges, we must next consider whether there are any significant portions of the ranges where the Graham's and White River beardtongues are in danger of extinction or likely to become endangered in the foreseeable future.

We found no portion of the Graham's and White River beardtongues' range where potential threats are significantly concentrated or substantially greater than in other portions of their range. Therefore, we find that factors affecting these species are essentially uniform throughout their range, indicating no portion of the range of either species warrants further consideration of possible endangered or threatened status under the Act. Therefore, we find there is no significant portion of the Graham's and White River beardtongues' range that may warrant a different status.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation by Federal, State, Tribal, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act requires the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and preparation of a draft and final recovery plan. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan identifies site-specific management actions that set a trigger for review of the five factors that control whether a species remains endangered or may be downlisted or delisted, and methods for monitoring recovery

progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (comprised of species experts, Federal and State agencies, nongovernment organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our Web site (*http://www.fws.gov/endangered*), or from our U.S. Fish and Wildlife Service, Utah Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribal, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

If these species are listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the States of Utah and Colorado would be eligible for Federal funds to implement management actions that promote the protection or recovery of Graham's and White River beardtongues. Information on our grant programs that are available to aid species recovery can be found at: *http://www.fws.gov/grants*.

Although Graham's and White River beardtongues are only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for this species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action is likely to adversely affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal agency actions within the species habitat that may require conference or consultation or both as described in the preceding paragraph include: Oil and gas leasing, exploration, and permitting; oil shale research; authorization of transmission towers, pipelines, and power lines; reclamation actions; travel management; and authorization of road maintenance by the BLM. Other types of actions that may require consultation include construction and management of gas pipeline and power line rights-of-way by the Federal Energy Regulatory Commission or provision of Federal funds to State and private entities through Federal programs, such as the Service's Landowner Incentive Program, State Wildlife Grant Program, and Federal Aid in Wildlife Restoration program.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered and threatened plants. All prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61 and 50 CFR 17.71, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale in interstate or foreign commerce, or remove and reduce the species to possession from areas under Federal jurisdiction. In addition, for plants listed as endangered, the Act prohibits the malicious damage or destruction on areas under Federal jurisdiction and the removal, cutting, digging up, damaging, or destroying of such plants in knowing violation of any State law or regulation, including State criminal trespass law. Certain exceptions to the prohibitions apply to agents of the Service and State conservation agencies. Utah does not have any law protecting listed species, and Colorado's Endangered Species law does not currently cover plants. Therefore, listing under the Act will offer additional protection to these species.

The Act, 50 CFR 17.62, and 50 CFR 17.72 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered and threatened plants under certain circumstances. Such permits are available for scientific purposes and to enhance the propagation or survival of the species. We anticipate that the only permits that would be sought or issued for Graham's beardtongue or White River beardtongue would be in association with research and recovery efforts. Requests for copies of the regulations regarding listed species and inquiries about prohibitions and permits may be addressed to U.S. Fish and Wildlife Service, Ecological Services, P.O. Box 25486—DFC, Denver, CO 80225–0486 (telephone 303–236–4256; facsimile 303–236–0027).

Peer Review

In accordance with our joint policy published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our listing determinations for these species are based on scientifically sound data, assumptions, and analyses. We will invite these peer reviewers to comment during the public comment period.

We will consider all comments and information we receive during the comment period on this proposed rule during preparation of a final rulemaking. Accordingly, the final decision may differ from this proposal.

Public Hearings

The Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposal in the **Federal Register**. Such requests must be sent to the address shown in the **FOR FURTHER INFORMATION CONTACT** section. We will schedule public hearing on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Persons needing reasonable accommodations to attend and

participate in a public hearing should contact the Utah Ecological Service Field Office at (801) 975–3330 as soon as possible. To allow sufficient time to process requests, please call no later than one week before the hearing date. Information regarding this proposed rule is available in alternative formats upon request.

Required Determinations

Clarity of the Rule

Executive Order 12866 requires each agency to write regulations that are easy to understand. We invite your comments on how to make this rule easier to understand including answers to questions such as the following: (1) Are the requirements in the rule clearly stated? (2) Does the rule contain technical language or jargon that interferes with its clarity? (3) Does the format of the rule (grouping and order of sections, use of headings, paragraphing, etc.) aid or reduce its clarity? (4) Would the rule be easier to understand if it were divided into more (but shorter) sections? (5) Is the description of the rule in the **SUPPLEMENTARY INFORMATION** section of the preamble helpful in understanding the emergency rule? What else could we do to make the rule easier to understand?

Send a copy of any comments that concern how we could make this rule easier to understand to Office of Regulatory Affairs, Department of the Interior, Room 7229, 1849 C Street NW., Washington, DC 20240. You also may email the comments to this address: *Exsec@ios.goi.gov.*

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with listing a species as an endangered or threatened species under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited in this rule is available on the Internet at *http://www.regulations.gov* at Docket No. FWS–R6–ES–2013–0081 or upon request from Larry Crist, Field Supervisor, U.S. Fish and Wildlife Service, Utah Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT** section).

Authors

The primary authors of this proposed rule are the staff members of the U.S. Fish and Wildlife Service, Utah Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; 4201–4245, unless otherwise noted.

■ 2. In § 17.12(h), add entries for ''*Penstemon grahamii*'' and ''*Penstemon scariosus* var. *albifluvis*'' in alphabetical order under FLOWERING PLANTS to the List of Endangered and Threatened Plants to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
FLOWERING PLANTS							
*	*	*	*	*	*	*	
Penstemon grahamii	Graham's beardtongue.	U.S.A. (UT, CO)	Plantaginaceae	T	.....	NA	NA
*	*	*	*	*	*	*	
Penstemon scariosus var. *albifluvis*.	White River beardtongue.	U.S.A. (UT, CO)	Plantaginaceae	T	.....	NA	NA
*	*	*	*	*	*	*	

* * * * *

Dated: July 15, 2013.

Rowan W. Gould,

Acting Director, U.S. Fish and Wildlife Service.

[FR Doc. 2013–18334 Filed 8–5–13; 8:45 am]

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