# Conservation Agreement and Strategy for Graham's Beardtongue (*Penstemon grahamii*) and White River Beardtongue (*P. scariosus* var. *albifluvis*)

Prepared for

**State of Utah School and Institutional Trust Lands Administration**

**Uintah County, Utah**

**Utah Public Lands Policy Coordination Office**

**Utah Division of Wildlife Resources**

**Rio Blanco County, Colorado**

**Bureau of Land Management**

**U.S. Fish and Wildlife Service**

Prepared by

**SWCA Environmental Consultants**

July 2014

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Prepared for

**State of Utah School and Institutional Trust Lands Administration**
675 East 500 South, Suite 500
Salt Lake City, Utah 84102

**Uintah County**
52 East 100 North
Vernal, Utah 84078

**Utah Public Lands Policy Coordination Office**
5110 State Office Building
Salt Lake City, Utah 84114

**Utah Division of Wildlife Resources**
1594 W. North Temple, Suite 2110
Salt Lake City, Utah 84114

**Bureau of Land Management Vernal Field Office**
170 South 500 East
Vernal, Utah 84078

**Bureau of Land Management White River Field Office**
220 East Market Street
Meeker, Colorado 81641

**U.S. Fish and Wildlife Service**
**Utah Ecological Services Field Office**
2369 Orton Circle, Suite 50
West Valley City, Utah 84119

**U.S. Fish and Wildlife Service**
**Western Colorado Field Office**
445 West Gunnison Avenue, Suite 240
Grand Junction, Colorado 81506

Prepared by

**SWCA Environmental Consultants**
257 East 200 South, Suite 200
Salt Lake City, Utah 84111
(801) 322-4307
www.swca.com

July 22, 2014

# CONSERVATION AGREEMENT AND STRATEGY FOR GRAHAM'S BEARDTONGUE (*PENSTEMON GRAHAMII*) AND WHITE RIVER BEARDTONGUE (*PENSTEMON SCARIOSUS* VAR. *ALBIFLUVIS*)

L. Crist 7/22/2014

Larry Crist, Field Supervisor — Date
U.S. Fish and Wildlife Service, Utah Ecological Services Field Office

Susan Linner, Field Supervisor — Date
U.S. Fish and Wildlife Service, Colorado Field Office

Michael G. Stiewig, Acting Green River District Manager — Date
U.S. Bureau of Land Management, Vernal (Utah) Field Office

Kent Walter, White River Field Office Manager — Date
U.S. Bureau of Land Management, White River (Colorado) Field Office

Kevin S. Carter, Director — Date
Utah School and Institutional Trust Lands Administration

Mike McKee 7-22 2014

Mike McKee, Chair — Date
Uintah County Commission

Kathleen Clarke 7/22/2014

Kathleen Clarke, Director — Date
Public Lands Policy Coordination Office

Gregory Sheehan, Director — Date
Utah Division of Wildlife Resources

Jon D Hill 7/22/2014

Jon D. Hill, Chair — Date
Board of County Commissioners, Rio Blanco County

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Larry Crist, Field Supervisor — Date
U.S. Fish and Wildlife Service, Utah Ecological Services Field Office

Susan Linner, Field Supervisor — Date
U.S. Fish and Wildlife Service, Colorado Field Office

7/25/14

Michael G. Stiewig, Acting Green River District Manager — Date
U.S. Bureau of Land Management, Vernal (Utah) Field Office

Kent Walter, White River Field Office Manager — Date
U.S. Bureau of Land Management, White River (Colorado) Field Office

Kevin S. Carter, Director — Date
Utah School and Institutional Trust Lands Administration

Mike McKee, Chair — Date
Uintah County Commission

Kathleen Clarke, Director — Date
Public Lands Policy Coordination Office

Gregory Sheehan, Director — Date
Utah Division of Wildlife Resources

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Board of County Commissioners, Rio Blanco County

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Larry Crist, Field Supervisor — Date
U.S. Fish and Wildlife Service, Utah Ecological Services Field Office

Susan Linner, Field Supervisor — Date
U.S. Fish and Wildlife Service, Colorado Field Office

Michael G. Stiewig, Acting Green River District Manager — Date
U.S. Bureau of Land Management, Vernal (Utah) Field Office

for Kent Walter, White River Field Office Manager — 7/23/14 Date
U.S. Bureau of Land Management, White River (Colorado) Field Office

Kevin S. Carter, Director — Date
Utah School and Institutional Trust Lands Administration

Mike McKee, Chair — Date
Uintah County Commission

Kathleen Clarke, Director — Date
Public Lands Policy Coordination Office

Gregory Sheehan, Director — Date
Utah Division of Wildlife Resources

Jon D. Hill, Chair — Date
Board of County Commissioners, Rio Blanco County

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Larry Crist, Field Supervisor — Date
U.S. Fish and Wildlife Service, Utah Ecological Services Field Office

Susan C. Linner — July 22 2014
Susan Linner, Field Supervisor — Date
U.S. Fish and Wildlife Service, Colorado Field Office

Michael G. Stiewig, Acting Green River District Manager — Date
U.S. Bureau of Land Management, Vernal (Utah) Field Office

Kent Walter, White River Field Office Manager — Date
U.S. Bureau of Land Management, White River (Colorado) Field Office

Kevin S. Carter, Director — Date
Utah School and Institutional Trust Lands Administration

Mike McKee, Chair — Date
Uintah County Commission

Kathleen Clarke, Director — Date
Public Lands Policy Coordination Office

Gregory Sheehan, Director — Date
Utah Division of Wildlife Resources

Jon D. Hill, Chair — Date
Board of County Commission, Rio Blanco County

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Larry Crist, Field Supervisor — Date
U.S. Fish and Wildlife Service, Utah Ecological Services Field Office

Susan Linner, Field Supervisor — Date
U.S. Fish and Wildlife Service, Colorado Field Office

Michael G. Stiewig, Acting Green River District Manager — Date
U.S. Bureau of Land Management, Vernal (Utah) Field Office

Kent Walter, White River Field Office Manager — Date
U.S. Bureau of Land Management, White River (Colorado) Field Office

Kevin S. Carter, Director — Date
Utah School and Institutional Trust Lands Administration

Mike McKee, Chair — Date
Uintah County Commission

Kathleen Clarke, Director — Date
Public Lands Policy Coordination Office

ACTING DIRECTOR — 7/25/14
Gregory Sheehan, Director — Date
Utah Division of Wildlife Resources

Jon D. Hill, Chair — Date
Board of County Commissioners, Rio Blanco County

7/25/14
Financial Mgr. Date
Division of Wildlife Resources

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Larry Crist, Field Supervisor — Date
U.S. Fish and Wildlife Service, Utah Ecological Services Field Office

Susan Linner, Field Supervisor — Date
U.S. Fish and Wildlife Service, Colorado Field Office

Michael G. Stiewig, Acting Green River District Manager — Date
U.S. Bureau of Land Management, Vernal (Utah) Field Office

Kent Walter, White River Field Office Manager — Date
U.S. Bureau of Land Management, White River (Colorado) Field Office

Kevin S. Carter, Director — 25 July 2014 Date
Utah School and Institutional Trust Lands Administration

Mike McKee, Chair — Date
Uintah County Commission

Kathleen Clarke, Director — Date
Public Lands Policy Coordination Office

Gregory Sheehan, Director — Date
Utah Division of Wildlife Resources

Jon D. Hill, Chair — Date
Board of County Commissioners, Rio Blanco County

Approved as to Form
Sean D. Reyes
ATTORNEY GENERAL
By:

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# 1. BACKGROUND

In August 2013, the U.S. Fish and Wildlife Service (USFWS) proposed to list *Penstemon grahamii* (Graham's beardtongue) and *Penstemon scariosus* var. *albifluvis* (White River beardtongue) as threatened (78 *Federal Register* 47590), and to designate approximately 82,873 acres as critical habitat under the Endangered Species Act (ESA) of 1973 (as amended; 78 *Federal Register* 47832). The Proposed Rule describes potential threats that, based on a USFWS analysis, could impact 91% and 100%, respectively, of the total known populations of Graham's and White River beardtongues. Many of the potential threats described in the Proposed Rule are related to energy development, particularly conventional oil and gas development and oil shale and tar sands development. Because a significant proportion of the species' known occurrences are on state and privately owned lands, Uintah County, the Utah School and Institutional Trust Lands Administration (SITLA), other state agencies, and several private mineral landowners joined the USFWS in the development of the conservation measures described in this Conservation Agreement and Strategy (Agreement). This Agreement for Graham's and White River beardtongues has been developed to expedite conservation measures needed for the long-term persistence and recovery of these species.

The purpose of this Agreement is to identify, avoid, minimize, and mitigate potential threats to Graham's and White River beardtongues and their habitats, and to promote the species' long-term persistence, thereby preventing the need for listing either species. This Agreement formalizes the objectives, timelines, and administration of conservation protocols for these species between the USFWS, Bureau of Land Management (BLM), SITLA, Uintah County, Utah Division of Wildlife Resources (DWR), the Governor's Public Lands Policy Coordination Office (PLPCO), and private landholders. The signatories to this Agreement are the USFWS, BLM, SITLA, Uintah County, PLPCO, and DWR.

This Agreement addresses the following potential threats to Graham's and White River beardtongues: 1) plant mortality, habitat loss, and habitat fragmentation due to energy development, livestock grazing, road construction and maintenance, and off-road vehicles; 2) indirect disturbance to the species and their pollinators from fugitive dust and invasive plant species; 3) lack of range-wide protection; 4) population vulnerability due to small population size, stochastic events, loss of genetic diversity, and inbreeding; 5) mortality, stress, or habitat loss due to climate change and drought; and 6) cumulative interaction of the individual factors listed above.

# 2. GOAL AND OBJECTIVES OF THE AGREEMENT

The goal of this Agreement is to promote the long-term persistence of Graham's beardtongue and White River beardtongue across the ranges of the two species. To this end, this Agreement provides a framework for immediate and future conservation efforts, and addresses the potential threats to the species as discussed in the USFWS Proposed Rule. The conservation actions outlined here will promote the species' persistence, and thereby eliminate the need for listing either species, while protecting the long-term economic sustainability of the area through predictable regulation of land use in Utah and Colorado. This document defines the commitments of signatories regarding conservation actions, including designation of conservation areas, avoidance and minimization measures, surveys, monitoring, and mitigation.

## 2.1. Objectives

There are numerous gaps in the documented understanding of Graham's and White River beardtongue distributions, biologies, habitat associations, and restoration potential. The research and monitoring efforts to be undertaken under this Agreement will inform conservation and restoration measures for these species on both federal and non-federal lands. In addition, research and monitoring will be conducted in a manner that meets the regulatory and scientific needs of the managing agencies by providing scientifically rigorous data that support decision making and the long-term recovery of the species. The following objectives will be pursued under this Agreement to meet the above-stated goal and guide conservation and restoration efforts for the species:

**Objective 1:** Minimize and mitigate direct, indirect, and cumulative threats to both species.

**Objective 2:** Establish conservation areas that protect occupied and unoccupied habitat.

**Objective 3:** Promote stable or increasing populations within identified conservation areas and across the range of the two species.

**Objective 4:** Investigate and demonstrate successful ecological restoration methods for transplanting and repopulating self-sustaining Graham's and White River beardtongue plant populations and community associates (including other oil shale endemic plant species) and pollinators following surface disturbance.

These objectives will be achieved through implementation of this Agreement and the conservation actions outlined herein, and will be implemented through an adaptive management process. The status of Graham's and White River beardtongues will be evaluated regularly by the conservation team (described below) to monitor whether these objectives are being met and to address any additional threats or recovery issues, as well as to acknowledge new population locations, successful transplant and ecological restoration approaches, and other findings with conservation implications for the species. Full implementation of this Agreement and the associated conservation actions will reduce threats to these species that are proposed for listing under the ESA. Further, there are benefits for both species that would not be realized through listing under the ESA (see the following section).

## 2.2. Benefits

Significant portions of the ranges of Graham's and White River beardtongue occur on non-federal lands. Should these species be listed, the ESA would provide regulatory protections for plants on non-federal lands only in certain circumstances, as provided by federal law. In addition, ESA prohibitions for "take" of plants do not apply to non-federal lands. Thus, this Agreement has been designed to provide

protections and mitigation strategies on non-federal lands that might not occur under the ESA. Four USFWS-defined core population areas along with connectivity corridors for White River beardtongue that occur wholly or partially on non-federal lands are being protected under this Agreement. In addition, the conservation areas and actions that will be implemented as part of this Agreement will: 1) facilitate surveys of large tracts of potential habitats for both species on federal and non-federal lands; 2) coordinate survey and monitoring activities among federal, state, and county governments and private entities; and 3) promote the implementation of reclamation and restoration efforts on non-federal lands.

Further, the development and signing of this Agreement demonstrates participation and collaboration between state, county, federal, and private parties. The implementation of this Agreement allocates significant proportions of habitat for both species for conservation on private and state lands, promotes the allocation of financial resources for conservation efforts, and will result in the development of species-specific conservation actions that would not be realized by listing the species under ESA. This Agreement will also promote the involvement of private colleges, commercial entities, and other private land holders, which otherwise might not have participated in conservation efforts.

Finally, the focus of this Agreement is to promote the long-term persistence of Graham's and White River beardtongues across these species' geographic ranges. However, these species co-occur with a suite of oil-shale endemic plant species of various conservation statuses that will also benefit from the conservation strategies outlined here. These species include shrubby reed-mustard (*Hesperidanthus* [*Schoenocrambe*] *suffrutescens*; federally endangered), clay reed-mustard (*Hesperidanthus* [*Schoenocrambe*] *argillaceua*; federally threatened), Barneby's catseye (*Cryptantha barnebyi*; BLM sensitive), and the narrow oil-shale endemics Graham's cryptanth (*Cryptantha grahamii*), ephedra buckwheat (*Eriogonum ephedroides*), dragon milkvetch (*Astragalus lutosus*), and Barneby's thistle (*Cirsium barnebyi*). Other associated rare plant species include Uinta Basin hookless cactus (*Sclerocactus wetlandicus*; federally threatened), sterile yucca (*Yucca sterilis*; BLM sensitive), Goodrich's blazingstar (*Mentzelia goodrichii*; BLM sensitive), and strigose townsendia (*Townsendia strigosa* var. *prolixa*; BLM sensitive).

## 2.3. Involved Parties

**USFWS Utah Ecological Services Field Office**
2369 Orton Circle, Suite 50
West Valley City, Utah 84119
(801) 975-3330

**USFWS Western Colorado Field Office**
445 West Gunnison Avenue, Suite 240
Grand Junction, Colorado 81501
(970) 243-2778

**BLM Vernal Field Office**
170 South 500 East
Vernal, Utah 84078
(435) 781-4400

**BLM White River Field Office**
220 East Market Street
Meeker, Colorado 81641
(970) 878-3800

**DWR**
1594 West North Temple, Suite 2110
Salt Lake City, Utah 84114
(801) 538-4716

**SITLA**
675 East 500 South, Suite 500
Salt Lake City, Utah 84102
(801) 538-5100

**PLPCO**
5110 State Office Building
Salt Lake City, Utah 84114
(801) 537-9046

**Uintah County**
52 East 100 North
Vernal, Utah 84078
(435) 781-5380

**Rio Blanco County**
200 Main Street, P.O. Box 599
Meeker, CO 81641
(970) 878-9430

## 2.4. Authority

The signatory parties hereto enter into this Agreement under federal and state law, as applicable, including Section 1(a)(5) of the ESA, in which Congress declares that "encouraging the States and other interested parties, through … a system of incentives, to develop and maintain conservation programs … is a key to … better safeguarding, for the benefit of all citizens, the Nation's heritage in fish, wildlife, and plants." SITLA's participation is based on Utah Code Ann. 53C-2-202, which authorizes the Director of SITLA to "make determinations concerning the management, protection, and conservation" of plant species located on trust lands. As a political subdivision of the State of Utah, Uintah County derives its regulatory authority from the Constitution of the State of Utah and all duly enacted state statutes. In signing this document, the DWR will implement and uphold the protection and conservation actions identified in this Agreement; however, they will not commit any funds toward additional weed management, plant surveys, monitoring protocols, or other research.

All parties to this Agreement recognize that each has specific statutory responsibilities that cannot be delegated, particularly with respect to the management and conservation of species and the management and development of public, state trust, and private land resources. Nothing in this Agreement is intended to abrogate any of the parties' respective responsibilities. This Agreement is also subject to and is intended to be consistent with all applicable federal and state laws and regulations and interstate compacts.

The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. Plant species listed as threatened or endangered under authority of the ESA are protected from unregulated interstate and international trade, but only receive protection on lands under federal jurisdiction or where a federal nexus (such as a federal permit or funding) occurs. In addition, the USFWS, in coordination with federal, state, tribal, and local entities, is provided the authority to develop and implement recovery plans, purchase important habitats, and facilitate federal aid to state wildlife agencies.

Section 4 of the ESA requires species to be listed as endangered or threatened solely on the basis of their biological status and threats to their existence. When evaluating a species for listing, the USFWS considers five factors: 1) damage to, or destruction of, a species' habitat; 2) overuse of the species for commercial, recreational, scientific, or educational purposes; 3) disease or predation; 4) inadequacy of existing protection; and 5) other natural or human-made factors that affect the continued existence of the species. When one or more of these factors imperils the survival of a species, the USFWS may take action to protect it.

A proposed species is any species of fish, wildlife, or plant that is proposed in the *Federal Register* to be listed under Section 4 of the ESA (50 Code of Federal Regulations [CFR] 402.02). Proposed critical habitat is habitat proposed in the *Federal Register* to be designated as critical habitat, or habitat proposed to be added to an existing critical habitat designation under Section 4 of the ESA for any listed or proposed species (50 CFR 402.02). Graham's and White River beardtongue were proposed for listing as threatened in August 2013, with 67,959 acres and 14,914 acres, respectively, of habitat proposed for designation as critical habitat (78 *Federal Register* 47831–47858).

Section 7(a)(4) of ESA requires federal agencies to confer with the Services on species that are proposed for listing. Whereas consultations are required when the proposed action may affect listed species, a conference is required only when the proposed action is likely to jeopardize the continued existence of a proposed species or destroy or adversely modify proposed critical habitat. However, federal action agencies may request a conference on any proposed action that may affect proposed species or proposed critical habitat. The USFWS can also request a conference after reviewing available information, suggesting that a proposed action is likely to jeopardize proposed species or destroy or adversely modify proposed critical habitat.

The USFWS agrees to promote the conservation of candidate, proposed, and listed species, and to informally and formally consult/confer as specified in the Interagency Cooperation Regulations (50 CFR 402) on listed and proposed species, and designated and proposed critical habitat during planning to: 1) assure that activities implemented under these plans minimize or avoid adverse impacts to such species and any critical habitat; 2) assure that such activities implemented under these plans do not preclude future conservation opportunities; 3) use, where possible, consultation procedures specified in 50 CFR 402 to avoid conflicts between elements contained in plans and the requirements for conservation of proposed species and proposed critical habitat; and 4) analyze the effects of the plan on candidate species pursuant to agency planning regulations.

BLM Manual 6840 (*Special Status Species Management*; BLM 2008a) provides guidance for the management and conservation of federally listed and other special-status species and the habitats on which they depend. Methods and procedures of conservation include all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, and transportation. As applied to special-status species, conservation means to use, and the use of, methods and procedures such that there is no longer any threat to their continued existence or need to continue their status as a special-status species. The BLM *Vernal Field Office Record of Decision and Approved Resource Management Plan* (BLM 2008b) provides specific conservation measures for these species.

The national interagency memorandum of understanding (MOU) for the conservation of species tending toward federal listing issued on January 25, 1994 (94-SMU-058) provides the general framework for cooperation and participation among cooperators in conservation of these species. This Agreement is consistent with the provisions of the national interagency MOU.

This Agreement is subject to and intended to be consistent with all applicable federal and state laws and regulations.

# 3. SPECIES INVOLVED

Both Graham's and White River beardtongues are oil shale endemics that are only found in the Uinta Basin of Utah and the Piceance Basin of Colorado (USFWS 2013a, 2013b). The distribution and abundance information presented here is based on the current knowledge for the species. There are large areas within the species' geographic ranges that have not been surveyed. Therefore, there may be large habitat and population areas in addition to those defined here. Further, the survey, monitoring, and research activities agreed to here as part of the conservation actions will likely provide significant contributions to our understanding of the species' ranges, biology, and ecology.

## 3.1. Graham's Beardtongue

Graham's beardtongue is an herbaceous perennial flowering plant in the plantain family (Plantaginaceae). The species was described by D. D. Keck in 1937 based on specimens collected by Graham in 1933 (Graham 1937). Graham's beardtongue plants spend much of the year as small basal rosettes from taproots. From May through June, individual plants produce up to 20 or more pink to lavender flowers on one or more stems that are as high as 20 centimeters (cm; 8 inches) tall (Welsh et al. 2008). Detailed descriptions are provided in *A Utah Flora* (Welsh et al. 2008) and on the Utah rare plant guide website (Utah Native Plant Society [UNPS] 2003–2013).

The species occurs at an elevation range of 1,426–2,128 meters (4,678–6,981 feet). The currently known range of Graham's beardtongue is an approximately 80-mile long, 6-mile-wide "horseshoe-shaped band" that occurs from Rio Blanco County in Colorado south/southwest to the southeastern border of Duchesne County in Utah (USFWS 2013b). Currently, there are 24 known sub-populations of Graham's beardtongue, with an estimated total number of 40,333 plants across their range (USFWS 2013b). Graham's beardtongue occurs on federal and non-federal lands. No plants are currently known to exist on tribal lands (USFWS 2013b), but tribal lands between known populations have not yet been surveyed and there is potential for plants to occur in these areas.

## 3.2. White River Beardtongue

White River beardtongue is a perennial flowering plant in the plantain family (Plantaginaceae). The plant consists of a cluster of stems that grows from a woody taproot up to 50 cm (20 inches) tall. Numerous pale blue to lavender flowers are produced from late May through early July. Detailed descriptions are provided in *A Utah Flora* (Welsh et al. 2008) and on the Utah rare plant guide website (UNPS 2003–2013).

The species occurs at an elevation range of 1,523–2,044 m (4,996–6,706 feet). The currently known range of White River beardtongue extends from Raven Ridge in Rio Blanco County, Colorado, to the vicinity of Willow Creek in Uintah County, Utah (USFWS 2013b), but may extend farther west with additional surveys (USFWS 2013b). The current population estimate for White River beardtongue is 12,215 individuals distributed across eight populations. However, these current estimates are based on partial surveys, and new populations and individuals may be found with additional surveys (USFWS 2013b). White River beardtongue occurs on both federal and non-federal lands. However, these distributions are based on limited information regarding the potential range of the species and limited surveys throughout most of the currently known range.

White River beardtongue is a member of the *P. scariosus* species complex, which comprises four varieties of the species found in the Uinta Basin of Utah (Welsh et al. 2008). White River beardtongue can be

distinguished from the closely related Garrett's beardtongue (*P. scariosus* var. *garrettii*) by leaf width (less than 7 millimeters [mm] vs. greater than 7 mm), corolla color (pale blue to lavender vs. blue), and habitat (calcareous shale vs. non-shale habitats), respectively (Welsh et al. 2008). White River beardtongue and Garrett's beardtongue are suspected to intergrade near the western edge of White River beardtongue's range, and distinguishing the "weakly differentiated varieties" is recognized to be difficult (Welsh et al. 2008).

# 4. DISTRIBUTION AND STATUS OF GRAHAM'S AND WHITE RIVER BEARDTONGUES

The following sections summarize the current knowledge regarding the biology, habitat relationships, and monitoring and research histories for Graham's and White River beardtongues. See the Proposed Rule at 78 *Federal Register* 47590–47611 and 47832-47858 (USFWS 2013a, 2013b) for detailed discussion of each species' conservation status and listing history.

## 4.1. Biology and Ecology

### *4.1.1. Graham's Beardtongue*

#### 4.1.1.1. REPRODUCTIVE BIOLOGY

Graham's beardtongue appears to be capable of self-pollination (Dodge and Yates 2009), but outcrossed pollination increases reproductive success (Dodge and Yates 2009). Dodge and Yates 2008 found that the species' pollinators and flower visitors include many native bee species (*Anthophora lesquerellae*, *Osmia rawlinsi*, *Lasioglossum sisymbrii*, and *Dialictus* spp.). In addition, the *Penstemon* specialist wasp *Pseudomasaris vespoides* is a likely key pollinator for Graham's beardtongue (Dodge and Yates 2009; SWCA unpublished data 2009–2013). Many of these bees are likely ground- and wood-nesting species (Tepedino et al. 1997; Lewisohn and Tepedino 2007). Seed germination is believed to occur in early spring, because the seeds require cold stratification to germinate (Reisor and Yates 2011).

#### 4.1.1.2. HABITAT RELATIONSHIPS

Graham's beardtongue occupies white to tan shale-derived soils of the Green River Formation. Graham's beardtongue typically inhabits shallow, calcareous soils on southwest-facing steep, semi-barren slopes, knolls, and ridges (USFWS 2013b). The soil surface consists of small, shale channers (thin, flat coarse shale fragments) that are high in organic carbon and occur where there is little soil horizon development (USFWS 2013b). Most of the known Graham's beardtongue occurs on soils derived from the Mahogany ledge member of the Green River Formation, known for rich oil shale outcrops (USFWS 2013b).

Graham's beardtongue is found in sparsely vegetated pinyon-juniper woodlands and desert shrub plant communities. The species' habitats typically comprise sparse or no tree cover, sparse shrub cover, and scattered to dense grass and forb cover. Commonly associated plant species include pinyon pine (*Pinus edulis*), Utah juniper (*Juniperus osteosperma*), Utah serviceberry (*Amelanchier utahensis*), alder-leaved mountain-mahogany (*Cercocarpus montanus* var. *alnifolius*), shadscale (*Atriplex confertifolia*), spiny greasebush (*Glossopetalon spinescens* var. *meionandra*), ephedra buckwheat, big buckwheat (*Eriogonum corymbosum*), salina wildrye (*Leymus salina*), bluebunch wheatgrass (*Pseudoroegneria spicata*), and Indian ricegrass (*Achnatherum hymenoides*) (USFWS 2013a, 2013b; Welsh et al. 2008; SWCA unpublished data 2009–2013).

Graham's beardtongue commonly occurs with other Uinta Basin oil shale endemic plant species, including White River beardtongue, ephedra buckwheat, dragon milkvetch, Barneby's catseye, Barneby's thistle, oil shale columbine (*Aquilegia barnebyi*), and shrubby reed-mustard (USFWS 2013a, 2013b; Welsh et al. 2008).

## *4.1.2. White River Beardtongue*

### 4.1.2.1. REPRODUCTIVE BIOLOGY

White River beardtongue has a mixed mating system, with fruits and seeds being produced both by selfing (autogamy and geitonogamy) and by outcrossing (Lewinsohn and Tepedino 2007). However, outcrossing greatly increases the number of fruits and seeds produced (Lewinsohn and Tepedino 2007). Like Graham's beardtongue, pollinators are also important to the successful reproduction of White River beardtongue. Identified pollinators of White River beardtongue include several native solitary bees (*Anthophora* spp., *Ceratina* spp., *Osmia* spp., and *Halictus tripartitus*) that are both ground-nesting and dead-wood–nesting species (Lewinsohn and Tepedino 2007). Similar to Graham's beardtongue, seeds likely germinate in early spring because they appear to need cold stratification to break dormancy (USFWS 2013b).

Similar to Graham's beardtongue, little is known of the dispersal mechanisms for this species. It is likely that wind, gravity, and water play a role in seed dispersal.

### 4.1.2.2. HABITAT RELATIONSHIPS

White River beardtongue occupies similar habitats as Graham's beardtongue. The species occurs on calcareous, shallow soils derived from shales in the Mahogany Ledge member of the Green River Formation, and the two beardtongue species' ranges partially overlap (USFWS 2013b). Similar to Graham's beardtongue, individuals of White River beardtongue generally tend to occupy slopes, ridges, and knolls on southwest-facing slopes (USFWS 2013b).

White River beardtongue also occurs in association with sparsely vegetated pinyon-juniper woodlands and desert shrub plant communities. The plant species associated with White River beardtongue include pinyon pine, Utah juniper, Utah serviceberry, alder-leaved mountain-mahogany, broom snakeweed (*Gutierrezia sarothrae*), shadscale, spiny greasebush, salina wildrye, bluebunch wheatgrass, and Indian ricegrass (USFWS 2013a; Welsh et al. 2008).

Uinta Basin oil shale endemic plant species associates consist of ephedra buckwheat, Barneby's thistle, Graham's cryptantha, many-stem blazingstar (*Mentzelia multicaulis*), and oil shale columbine (USFWS 2013a; Welsh et al. 2008).

# 4.2. Monitoring and Research Histories

There have been few published studies on either species. However, there have been several research and monitoring efforts within the past decade on federally managed lands. The sections below summarize those efforts and the current level of understanding of the species' biologies and distributions.

## *4.2.1. Distributional Surveys*

Most of the surveys and monitoring for Graham's and White River beardtongue have been agency-led survey efforts and project-specific, pre-disturbance surveys. There are ongoing pre- and post-construction monitoring studies in the species' ranges (SWCA unpublished data 2009–2013). Since 2006, there have been important surveys discovering several large populations of Graham's beardtongue conducted by the Utah Natural Heritage Program (UNHP) paid for by the Utah Endangered Species Mitigation Fund (ESMF) and by Uintah County. In 2013, UNHP surveys documented 738 Graham's beardtongue plants in previously undocumented occupied habitat. In addition, recent surveys of private lands have identified large populations of both species. Large areas of potential habitat on federal and tribal lands have not

been surveyed, and it is expected that additional populations, particularly of White River beardtongue, will be found as more surveys are performed.

### 4.2.2. Habitat Modeling Research

Two predictive habitat models have been developed for Graham's beardtongue (Decker et al. 2006). The habitat models (DOMAIN and Envelope models) were accurate in predicting the full extent of the species' ranges and the patchy distribution of suitable habitats within its range. However, the models did not add insights into the species' local habitat associations. Predictive distribution models for Graham's and White River beardtongues have been developed (Albeke 2014), but they were not yet published at the framing of this Agreement.

The conservation area boundaries presented in this Agreement were based, in part, on geographic information system (GIS) analyses of population density conducted by the BLM Vernal Field Office and endorsed by the USFWS.

### 4.2.3. Life History and Demographic Studies

Published studies on Graham's and White River beardtongue are limited to two pollinator studies (Tepedino et al. 1997; Lewinsohn and Tepedino 2007). There has been ongoing, unpublished work on the species by Red Butte Garden at the University of Utah (Dodge and Yates 2009, 2010). Unpublished studies include a long-term population viability study (McCaffery 2013) and seed bank and germination trials (McCaffery 2013; Reisor and Yates 2011).

Dispersal mechanisms for Graham's beardtongue seeds are poorly understood. It is likely that wind, gravity, and water play some role in the dispersal of seeds. Western harvester ants (*Pogonomyrmex occidentalis*) are known to harvest the seeds of many native sagebrush steppe species (Mull 2003) and other Uinta Basin plants, and may play a role in the dispersal of other native plant species (Mull 2003; MacMahon et al. 2000). However, the role of animal-facilitated seed dispersal in the current or future distribution or viability of Graham's beardtongue is not known.

Researchers from Red Butte Garden have been collecting demographic data on both Graham's beardtongue and White River beardtongue as part of a BLM-funded study since 2004 (McCaffery 2013; Reisor and Yates 2011). These demographic studies have focused on four populations of Graham's beardtongue and three populations of White River beardtongue, and data collected include annual demographic monitoring, soil seed bank sampling, and in situ seed germination trials. Two populations for each *Penstemon* species have been monitored since 2004, with three additional populations (two for Graham's beardtongue and one for White River beardtongue) added in 2010. This report is the only demographic study that has been conducted for either species. The study is expected to continue, with additional population areas added to encompass the ranges of both species, as part of the conservation actions outlined here.

A population viability analysis (PVA) for both species is in development based on these demographic studies (McCaffery 2013). PVA analyses have been performed based on available data as of 2013, with additional analyses to be performed as more data become available. McCaffery (2013) constructed matrix models to determine the likelihood of monitored populations to persist into the future (McCaffery 2013). The results indicated that Graham's beardtongue population growth rates for the two study populations remained static (neither growing nor shrinking in numbers of plants) over the course of 8 years. Results for White River beardtongue were mixed because one population had a declining growth rate whereas the other population's growth rate was increasing. The author concludes that over the course of the monitoring, the populations of both *Penstemon* species remained stable. However, the dataset upon which

the PVA was based is of limited duration and does not represent the full geographic or habitat ranges for either species. The stability and viability of populations will need to be evaluated range-wide under variable habitat and climatic conditions to inform conservation and recovery initiatives for these species.

### 4.2.4. Taxonomic and Genetic Research

There are no published studies on the taxonomic or genetic relationships of these species to date. However, there have been studies of the genetic relationships of other regional *Penstemon* species, specifically regarding genetic population structure in three species of *Penstemon* with similar distributions but differing pollination strategies (Kramer et al. 2011). This study indicates that the landscape interacts with pollination strategy to determine the genetic structure of populations between species, whereby pollinator dispersal capability can strongly influence gene flow between populations. These relationships will be explored as part of pollinator studies as outlined in the conservation actions section of this Agreement (section 6).

### 4.2.5. Restoration and Transplant History

No known habitat reclamation or plant restoration efforts for these species have been performed to date. Oil shale reclamation studies were implemented in the Piceance Basin in the late 1970s and early 1980s (Call and McKell 1982, 1985; Redente and Cook 1981; Reeves et al. 1979), but these studies did not occur within either species' distributional range.

There has been one documented transplant effort for Graham's beardtongue to date. In June 2011, Red Butte Garden biologists transplanted 15 plants from the Seep Ridge Road expansion right-of-way to adjacent, occupied habitats near Seep Ridge Road. An additional 16 plants were moved to facilities at Red Butte Garden in black plastic 1-gallon pots filled with soil from their original location (personal communication, Rita Reisor, Red Butte Garden, with J. Hope Hornbeck, SWCA Environmental Consultants, December 30, 2013). The plants that were transplanted to adjacent habitat did not survive, possibly due to the mid-summer timing of transplantation or drought conditions, but the reasons the in situ transplants were not effective are not known. Nine of the 15 ex situ transplants to Red Butte Garden have survived for two growing seasons and three winters in a large raised bed containing approximately 50:50 Utelite (expanded shale aggregate from the Frontier Formation, northern Utah) and potting soil (personal communication, Rita Reisor, Red Butte Garden, with J. Hope Hornbeck, SWCA, February 11, 2014). Immediate transplantation into well-draining soil is recommended based on these results (personal communication, Rita Reisor, Red Butte Garden, with J. Hope Hornbeck, SWCA, December 30, 2013). Anecdotal evidence from existing populations suggests that Graham's beardtongue has limited tolerance for soil disturbance, but there is insufficient documentation to determine if the species has potential for transplantation.

No transplantation of White River beardtongue has been documented to date. However, anecdotal evidence suggests that White River beardtongue may be more tolerant to transplantation than Graham's beardtongue, because healthy, reproductive plants have been observed in both historically and recently disturbed habitats (i.e., old road cuts, roadside berms, washes, scree slides; SWCA unpublished monitoring data 2009–2013). These observations indicate that the species may have high tolerance for soil/substrate disturbance and seeds may become established on disturbed shale-derived soils, but it is not known if seedlings or adult plants can be successfully transplanted.

### 4.2.6. Information Needs

Although there have been recent studies initiated for these species (Dodge and Yates 2009, 2010; Lewinsohn and Tepedino 2007; McCaffery 2013; Reisor and Yates 2011), there are biological,

ecological, and technical questions that need to be addressed to implement successful conservation measures. Specific information needs will be addressed through monitoring or research initiatives outlined in the conservation actions and that will be implemented as part of this Agreement.

# 5. CONSERVATION AREAS

This section defines the conservation areas proposed under this Agreement. There are 44,373.4 acres proposed as conservation areas under the Agreement. The distribution of these acres within federal and non-federal lands is summarized in Table 1. The distribution of designated conservation areas and interim conservation areas by landownership are shown in Figure 1. Coordinates of the conservation areas are shown in Appendix B.

**Table 1.** Graham's and White River Penstemon Conservation Area Acres Protected Under the Agreement*

| Landowner | Penstemon Conservation Area Acres | Interim Conservation Area Acres |
|---|---|---|
| BLM | 38,486.5 | 0 |
| DWR | 743.5 | 0 |
| SITLA | 2,355.9 | Class A: 1,686.6<br>Class B: 1,327.4 |
| Private | 2,787.4 | 345.5 |
| **Total acres** | **44,373.4** | **3,359.5** |

* Private non-conservation areas = 15,000.2 acres.

Table 1 shows the distribution of designated and interim conservation area acreages by landowner. Definitions of these terms are explained below (see Designation of Conservation Areas). A total of 44,373.4 acres are protected under the Agreement, and an additional 3,359.5 acres on private and state lands will receive interim protections (defined below) as part of the Agreement. Another 15,000.2 acres were identified as potential conservation areas on private lands, but were not included in the Agreement due to active lease or development status.

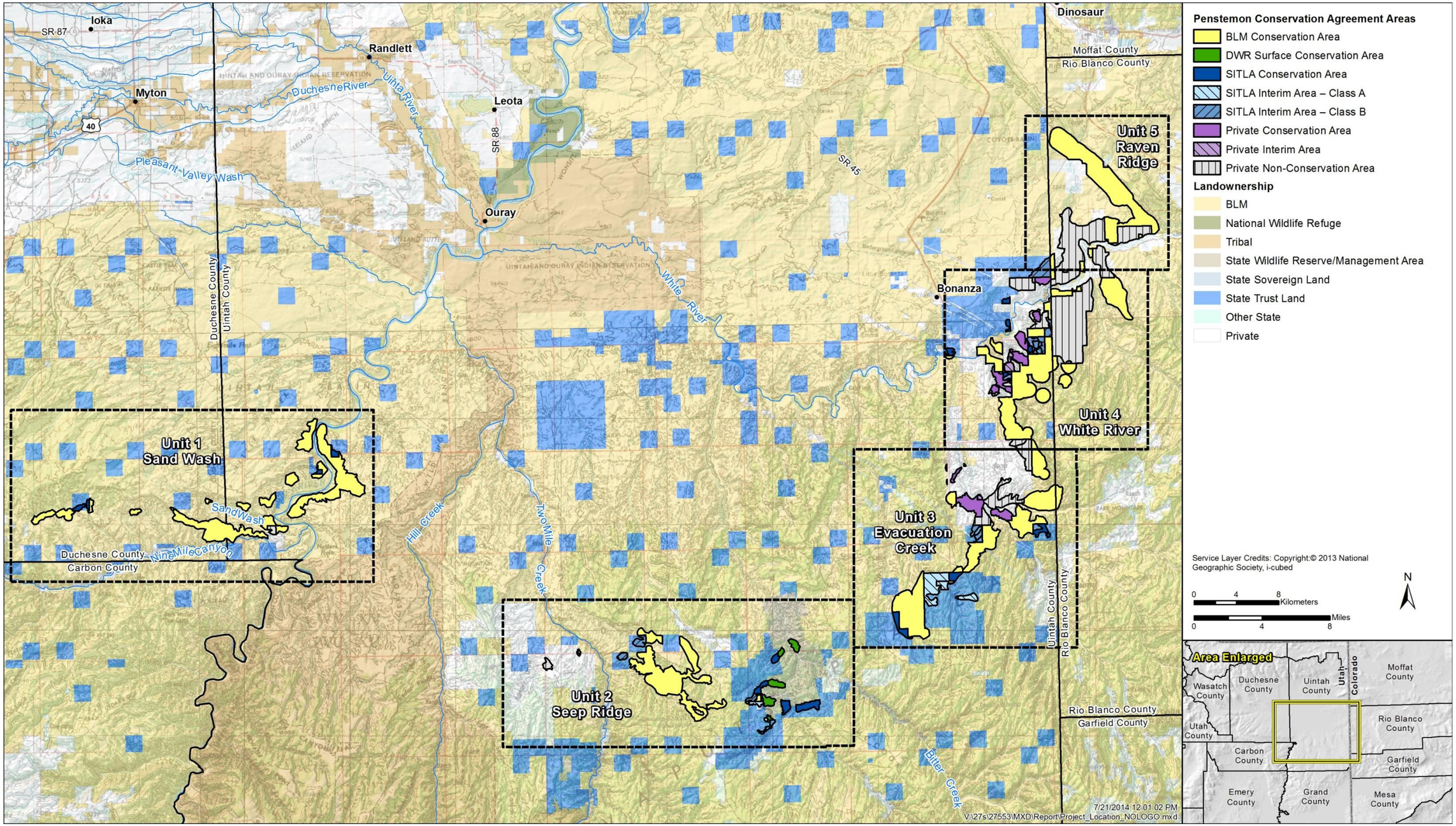


**Figure 1.** Conservation Areas by land owner/manager, status, and unit.

In addition to the conservation areas proposed for Graham's and White River beardtongues above, five White River beardtongue core population areas on private and state lands were proposed for conservation by USFWS, of which four are protected by this agreement. These four core conservation areas comprise 1,422.4 acres on SITLA and private lands, of which 492 acres are designated as conservation areas and 717.3 acres will receive interim protections under this Agreement (Table 2). The remaining 213.1 acres of White River beardtongue core population areas were not included in the Agreement due to active lease or development status.

**Table 2.** White River Penstemon Core Area Acres Protected Under the Agreement*

| Landowner | White River Core Area Acres in Penstemon Conservation Areas | White River Core Area Acres in Interim Conservation Areas† |
|---|---|---|
| SITLA | 24.9 | Class A: 0.0<br>Class B: 0.0 |
| Private | 467.1 | 178.0 |
| **Total acres** | **492.0** | **178.0** |

* Excluded White River *Penstemon* core areas = 213.1 acres.

† SITLA Interim Class A: *likely* to be developed during the 15 year term of the agreement.

SITLA Interim Class B: *unlikely* to be developed during the 15 year term of the agreement.

The conservation areas, interim conservation areas, and non-conservation areas presented here comprise six conservation units. The distribution of the conservation areas, interim conservation areas, and non-conservation areas within each conservation unit is shown in Table 3. An estimate of the reasonably foreseeable management for the proposed conservation areas is also summarized for each conservation unit. *Note: The reasonably foreseeable management or development scenarios listed in Table 3 are merely a best guess. These statements do not represent a commitment to management actions on either federal or non-federal lands.*

**Table 3.** Reasonably Foreseeable Management of *Penstemon* Conservation Areas By Landownership and Conservation Unit

| Landowner | Conservation Area Acres | Percentage of Conservation Unit Acres | Percentage of Total Conservation Acres | 0–5 years | 5–15 years |
|---|---|---|---|---|---|
| **Penstemon Conservation Unit 1** | | | | | |
| BLM conservation area | 8,680.6 | 94.9% | 19.6% | Compliance with this Agreement | Compliance with this Agreement |
| SITLA conservation area | 337.7 | 3.7% | 0.8% | Compliance with this Agreement | Compliance with this Agreement |
| Private non-conservation area | 133.0 | 1.5% | - | Unknown | Unknown |
| ***Unit 1 totals*** | ***9,151.3*** | ***100.0%*** | ***20.3%*** | | |
| **Penstemon Conservation Unit 2** | | | | | |

**Table 3.** Reasonably Foreseeable Management of *Penstemon* Conservation Areas By Landownership and Conservation Unit

| Landowner | Conservation Area Acres | Percentage of Conservation Unit Acres | Percentage of Total Conservation Acres | 0–5 years | 5–15 years |
|---|---|---|---|---|---|
| BLM conservation area | 5,273.5 | 67.3% | 11.9% | Compliance with this Agreement | Compliance with this Agreement |
| SITLA conservation area | 866.5 | 11.1% | 2.0% | Compliance with this Agreement | Compliance with this Agreement |
| Utah DWR conservation area | 743.5 | 9.5% | 1.7% | Compliance with this Agreement | Compliance with this Agreement |
| SITLA interim area – Class A | 198.6 | 2.5% | - | See Conservation Action 17 | See Conservation Action 17 |
| SITLA interim area – Class B | 580.1 | 7.4% | - | See Conservation Action 17 | See Conservation Action 17 |
| Private non-conservation area | 174.9 | 2.2% | - | Unknown | Unknown |
| ***Unit 2 totals*** | ***7,837.1*** | ***100.0%*** | ***15.5%*** | | |
| **Penstemon Conservation Unit 3** | | | | | |
| BLM conservation area | 8,595.3 | 61.4% | 19.4% | Compliance with this Agreement | Compliance with this Agreement |
| SITLA conservation area | 721.5 | 5.2% | 1.6% | Compliance with this Agreement | Compliance with this Agreement |
| SITLA interim area – Class A | 1,488.0 | 10.6% | - | See Conservation Action 17 | See Conservation Action 17 |
| SITLA interim area – Class B | 208.0 | 1.5% | - | See Conservation Action 17 | See Conservation Action 17 |
| Private conservation area | 1,246.3 | 8.9% | 2.8% | Compliance with this Agreement | Compliance with this Agreement |
| Private interim area | 42.7 | 0.3% | - | See Conservation Action 17 | See Conservation Action 17 |
| Private non-conservation area | 1,706.5 | 12.2% | - | See Conservation Action 18 | See Conservation Action 18 |
| ***Unit 3 totals*** | ***14,008.3*** | ***100.0%*** | ***23.8%*** | | |
| **Penstemon Conservation Unit 4** | | | | | |
| BLM conservation area | 9,380.3 | 47.0% | 21.1% | Compliance with this Agreement | Compliance with this Agreement |
| SITLA conservation area | 430.3 | 2.2% | 1..0% | Compliance with this Agreement | Compliance with this Agreement |
| SITLA interim area – Class B | 304.0 | 1.5% | - | See Conservation Action 17 | See Conservation Action 17 |
| Private conservation area | 1,541.1 | 7.7% | 3.5% | Compliance with this Agreement | Compliance with this Agreement |
| Private interim area | 302.8 | 1.5% | - | See Conservation Action 17 | See Conservation Action 17 |
| Private non-conservation area | 8,013.3 | 40.1% | - | See Conservation Action 18 | See Conservation Action 18 |
| ***Unit 4 totals*** | ***11,903.4*** | ***100.0%*** | ***25.6%*** | | |

**Table 3.** Reasonably Foreseeable Management of *Penstemon* Conservation Areas By Landownership and Conservation Unit

| Landowner | Conservation Area Acres | Percentage of Conservation Unit Acres | Percentage of Total Conservation Acres | 0–5 years | 5–15 years |
|---|---|---|---|---|---|
| **Penstemon Conservation Unit 5** | | | | | |
| BLM conservation area | 6,657.0 | 55.7 % | 14.8% | Compliance with this Agreement | Compliance with this Agreement |
| SITLA interim area – Class B | 235.3 | 2.0% | - | See Conservation Action 17 | See Conservation Action 17 |
| Private non-conservation area | 4,972.6 | 42.3% | - | Unknown | Unknown |
| ***Unit 5 totals*** | ***11,764.9*** | ***100.0%*** | ***21.2%*** | | |
| **Total conservation area acres** | **44,373.4** | **–** | **70.7%** | **Compliance with this Agreement** | **Compliance with this Agreement** |
| **Total SITLA interim area – Class A acres** | **1,686.6** | **–** | **2.7%** | **See Conservation Action 17** | **See Conservation Action 17** |
| **Total SITLA interim area – Class B acres** | **1,327.4** | **–** | **2.1%** | **See Conservation Action 17** | **See Conservation Action 17** |
| **Total Private interim area acres** | **345.5** | **–** | **0.6%** | **See Conservation Action 17** | **See Conservation Action 17** |
| **Total non-conservation area acres** | **15,000.3** | **–** | **23.9%** | **See Conservation Action 18** | **See Conservation Action 18** |

# 6. CONSERVATION ACTIONS

## 6.1. Formation of a Conservation Team

The parties signatory to this Agreement will form a conservation team dedicated to conservation of Graham's and White River beardtongues, which will oversee and ensure implementation of the conservation actions listed in this document. The conservation team will meet at least annually to review conservation actions and produce an annual report. The conservation actions listed in Table 4 will be overseen by the conservation team.

All parties signatory to this Agreement have the option to have one member assigned to the conservation team to review this Agreement, and review and assess the effectiveness and implementation of the conservation actions in this Agreement. The conservation team will also assist in the development of monitoring plans outlined in this Agreement.

Conservation team members are those who are signatory to this Agreement. Affected non-federal property owners will be invited to conservation team meetings and allowed to present technical information, ideas and their point of view. Other interested parties will be allowed to participate by providing information, ideas and their point of view. The conservation team will be organized within 6 months following the signature of this Agreement. After the Agreement has been signed, the signatories will meet to determine the members of the conservation team and designated representatives. Each signatory reserves the right to appoint and change who their single conservation team representative is at their discretion.

## 6.2. Designation of Conservation Areas

The areas outlined in Figure 1 and encompassed by the coordinates in Appendix B will be designated as a conservation area. The conservation areas delineated in Figure 1 and in Appendix A were developed to represent the ranges of each species, encompass varying site conditions, promote species stability (high-density populations), maintain corridors between populations, and provide for redundancy for each species.

### *6.2.1. On Federal Lands*

Designated **conservation areas** will be managed to identify, mitigate, and minimize impacts to Graham's and White River beardtongue as follows:

- A maximum of 5% new surface disturbance for Graham's beardtongue and 2.5% new surface disturbance for White River beardtongue will be allowed per conservation unit from the date this Agreement is signed.

- Ground-disturbing activities will avoid Graham's and White River plants by 300 feet both inside and outside designated conservation areas.

### *6.2.2. On Non-Federal Lands*

There are three categories of non-federally managed lands: conservation areas, interim conservation areas, and non-conservation areas.

**Conservation areas** will be managed to identify, mitigate, and minimize impacts to Graham's and White River beardtongue, with up to 5% new surface disturbance for Graham's beardtongue and 2.5% new surface disturbance for White River beardtongue per landowner, and with plants avoided by 300 feet from the date this Agreement is signed. New surface disturbance is defined as new or improved roads, permanent structures, or permitted activities.

**Interim conservation areas** are designated areas on SITLA and private lands that will be managed as conservation areas until surface-disturbing activities have been permitted. On SITLA lands once mine permit applications for surface-mining activities are filed with the Utah Division of Oil, Gas & Mining, SITLA may elect to transfer their status in whole or in part to that of a non-conservation area. The SITLA Interim conservation areas are classified as either of the following:

> **SITLA Interim Class A:** Areas deemed by SITLA to be *likely* for surface development and removal from conservation status within the 15-year term of the Agreement.
>
> **SITLA Interim Class B:** Areas deemed by SITLA to be *unlikely* for surface development or removal from conservation status within the 15-year term of the Agreement.

**Non-conservation areas** are designated as those areas in suitable habitat where surface-mining activities will occur unimpeded by this Agreement. It is understood that voluntary conservation measures may take place on these lands, and those voluntary conservation measures will be considered by the conservation team in evaluating the conservation of the species. These voluntary measures will be reported back to the conservation team.

***Incorporating new conservation areas:*** The conservation team will revisit conservation area boundaries on a routine cycle (approximately every 1 to 3 years) and consider adjustments as a result of any new populations identified, restoration activities, changes to habitat conditions, and population increases or decreases. Conservation area boundaries may be reviewed more frequently at the discretion of the conservation team. If surveys identify new populations of either species, then the conservation team may recommend modifications to conservation area boundaries with the consent of the affected landowner. Uintah County will take these recommendations to the private landowner for consideration. In the event that new populations are discovered, the affected landowner may, after consultation with the conservation team, add lands including the new populations to the conservation areas protected under this Agreement, and remove other lands within conservation areas from protection, on the condition that the substitute conservation area represents higher conservation value for the affected species than the area being removed from conservation area status. In general, conservation area modifications should strive to minimize fragmentation and maximize connectivity, with any modifications to conservation area boundaries serving to 1) create new conservation areas around newly identified population areas; 2) expand the boundaries of existing conservation areas; or 3) create corridors between existing conservation areas. Boundaries of conservation areas on non-federal land will be modified only by consensus of the conservation team and consent of the affected landowner.

## 6.3. Management of Conservation Areas

The USFWS assessed potential threats facing the species based on five criteria as required by Section 4(a)(1) of the ESA. Within each criterion, multiple factors that may contribute to the removal or degradation of Graham's and White River beardtongue habitat and its populations were identified (78 *Federal Register* 47590): 1) energy exploration and development; 2) inadequacy of existing regulatory mechanisms; 3) livestock grazing; 4) road construction and maintenance; 5) invasive weeds; 6) small population size; 7) climate change; 8) wildfire; and 9) off-road vehicles (78 *Federal Register* 47590,

August 6, 2013). The threats identified and described by the USFWS (78 *Federal Register* 47590) do not necessarily reflect the views of all signatories to this Agreement.

The Conservation Areas box below summarizes the management requirements for conservation areas, interim conservation areas, and non-conservation areas on federal and non-federal lands. This management is further detailed in Table 4, which summarizes the potential threats to the species and associated impacts, and the conservation actions that will be enacted to address those potential threats.

# Conservation Areas

On both federal and non-federal lands, designated Conservation Areas will be managed to identify, avoid, mitigate, and minimize impacts to Graham's and White River beardtongue from the date the agreement is signed. Where surface-disturbing activities occur, the following management is required:

## Federal Lands

**Surface-Disturbing Activity:**
*Any action that alters vegetation, soils, or surface geology beyond natural site conditions*

### Conservation Area

Surface disturbance limited to 5% and 2.5% additional disturbance for Graham's and White River beardtongue, respectively, per conservation unit

Pre-disturbance surveys for plants within 300 feet of proposed disturbance a minimum of 1 year prior to surface-disturbing activities

Avoid plants by 300 feet. Surface-disturbing activities may occur within 300 feet of plants if it benefits or reduces impacts to the species or its habitat. When this occurs, BLM will first conference with USFWS and the project proponent will mitigate for impacts.

Develop and implement weed management, reclamation, and ecological restoration plans

### Non-Conservation Area

Avoid plants by 300 feet. Surface-disturbing activities may occur within 300 feet of plants if it benefits or reduces impacts to the species or habitat. When this occurs, BLM will first conference with USFWS and the project proponent will mitigate for impacts.

Conform with BLM special status plant species policies

Treat species as BLM sensitive

## Non-Federal Lands

**Surface-Disturbing Activity:**
*New or Improved Road, Permanent Structure, or Permitted Activity*

### Conservation Area

Surface disturbance limited to 5% and 2.5% additional disturbance for Graham's and White River beardtongue, respectively, per land owner

Pre-disturbance surveys for plants within 300 feet of proposed disturbance a minimum of 1 year prior to surface-disturbing activities

Avoid plants by 300 feet. Surface-disturbing activities may occur within 300 feet of plants if it benefits or reduces impacts to the species or habitat and is approved by the conservation team. When this occurs, project proponent will mitigate for impacts.

Develop and implement weed management, reclamation, and ecological restoration plans

### Interim Conservation Area

Manage as a Conservation Area prior to approval of any exploration or plan of operation

Prior to exploration or development, and to the extent feasible, salvage the entire population up to 50 plants or 25% of the total population, whichever is greater

To the extent feasible, salvage seed or plant materials representative of associated oil-shale endemic species from the disturbance area

### Non-Conservation Area

Conservation actions are encouraged, but voluntary

Voluntary conservation efforts may include:

Avoidance or minimization

Minimizing impacts to individual plants

Collect *Penstemon* seed and plant materials

Collect associated species seed and plant materials

Experimental reclamation and restoration treatments

Report voluntary conservation efforts to the Conservation Team

Conservation Team to support and incentivize voluntary conservation actions, restoration efforts, and habitat banking

**Table 4.** Threats to Graham's and White River Beardtongue and Associated Conservation Actions

| Threat and Associated Impacts | Conservation Action |
|---|---|
| **Energy Exploration and Development** | |
| Habitat loss/fragmentation | 1. Conservation areas totaling 44,373.4 acres will be established by this Agreement (see Maps 1–5 in Appendix A). These conservation areas include 5,886.9 acres on private and state lands that may not be protected if the species were listed under ESA. Development and surface disturbance will be minimized and consolidated to reduce habitat fragmentation, in conservation areas by the following actions:<br>• Limiting new surface disturbance to 5% per unit on federal lands and by landowner on non-federal lands for Graham's beardtongue, and 2.5% per unit on federal lands and by landowner on non-federal lands for White River beardtongue<br>• Avoiding plants by 300 feet. Surface disturbing activities may occur within 300 feet of plants if it benefits or reduces impacts to the species or habitat. On non-federal lands surface disturbance within 300 ft of either species will need to be approved by the conservation team. On federal lands if surface disturbance is within 300 ft of either species BLM will first conference with USFWS.<br>• Calculating new surface disturbance from those activities that include a permanent structure, activities that require a permit, or new roads or improvements to existing roads<br>2. Within 1 year of signing the Agreement, the conservation team will develop criteria for the calculation of surface disturbance. The BLM and non-federal partners will conduct an analysis of the amount of existing surface disturbance within conservation areas. The conservation team will examine and modify the surface disturbance limits if needed based on the results of the analysis to allow for flexibility in siting projects and avoiding plants. The results of the disturbance analyses will not reduce new surface disturbance below the limits defined in conservation action 1 above.<br>3. Successful ecological restoration (see Ecological Restoration Section below) may be used in conservation areas on private lands to offset disturbance limits. |
| Direct mortality from surface disturbance | 4. On federal lands, ground-disturbing activities including oil and gas exploration and development will conform with BLM special-status plants species policies, and these species will be treated as a BLM sensitive species. Within designated conservation areas, the BLM will do the following:<br>• Limit new surface disturbance to 5% per unit for Graham's beardtongue and 2.5% per unit for White River beardtongue<br>• Survey for plants within 300 feet of proposed disturbance (see Survey and Monitoring requirements in table notes)<br>• Avoid disturbance within 300 feet of plant. Surface disturbing activities may occur within 300 feet of plants if it benefits or reduces impacts to the species or habitat. When this occurs BLM will first conference with USFWS. .<br>• Minimize and consolidate development to reduce habitat fragmentation<br>Outside conservation areas on federal lands, ground-disturbing activities will be sited to avoid Graham's and White River beardtongue plants by 300 feet.<br>5. On non-federal lands in a conservation area or interim conservation area, new ground-disturbing activities including oil and gas exploration and development proponents will follow these procedures:<br>• Pre-site surveys will be conducted to determine presence and locations of plants (see Survey and Monitoring requirements in table notes)<br>• Surface disturbance will be limited to 5% new surface disturbance for Graham's beardtongue and 2.5% new surface disturbance for White River beardtongue (high-density core population areas on non-federal lands are shown in Maps of Appendix A)<br>• Avoid plants by 300 feet. Surface disturbing activities may occur within 300 feet of plants if it benefits or reduces impacts to the species or habitat and is approved by the conservation team.<br>6. On federal and non-federal lands where new surface disturbance will occur in a conservation area within 300 feet of plants, the project proponent will mitigate for impacts. Within 1 year of signing the Agreement, the conservation team will develop a |

**Table 4.** Threats to Graham's and White River Beardtongue and Associated Conservation Actions

| Threat and Associated Impacts | Conservation Action |
|---|---|
| | standardized procedure to address how mitigation is to occur depending on level of impacts. Examples of mitigation could include payments into a mitigation fund for minor impacts, protection of other occupied areas at a ratio specified by the conservation team, or site-specific mitigation appropriate to each project as determined by the conservation team.<br>7. On non-federal land outside conservation areas and interim conservation areas with approved exploration or plan of operations permits, conservation actions are encouraged but voluntary. Good faith, voluntary actions could include avoidance, minimizing impacts to individual plants, seed collection, plant salvage and transplant, and experimental reclamation and restoration treatments. |
| Indirect disturbance from surface disturbance, including increased dust; introduction and spread of invasive, non-native plant species; and habitat fragmentation | See conservation actions 1–3. |
| Community and habitat loss and disturbance from surface disturbance, including soil and vegetation removal | See conservation actions 1–3. |
| Restricted pollinator movement, mortality and disturbance from roads and associated traffic, and energy emissions | See conservation actions 1–3. |
| Increased sedimentation and erosion | See conservation actions 1–3. |
| Pollinator scarcity | See conservation actions 1-6 |
| **Inadequacy of Existing Regulatory Mechanisms** | |
| Lack of range-wide protection | See conservation actions 1–7.<br>8. The BLM will ensure that ongoing and future federal actions support or do not preclude the species' conservation. All projects in designated conservation areas and their potential to impact the species will be reported in the conservation team's annual report.<br>9. The BLM will retain Graham's and White River beardtongues on the BLM special-status species list as a sensitive species with new ground-disturbing activities avoiding plants by 300 feet (inside and outside conservation areas), and ensure that the effects of proposed projects are analyzed for the species.<br>10. The BLM will consider land exchanges with state and private landowners to expand or otherwise enhance the value of conservation areas on federal lands and facilitate the long-term persistence and recovery of the species, while protecting the long-term economic sustainability of the area.<br>11. The BLM will incorporate the provisions of this Agreement or the latest amendments to this Agreement into its Resource Management Plan planning process, permitting requirements, agency planning documents and budgets. Within 3 months of the signature date of the Agreement, the BLM will incorporate the provisions of this plan into permits and budgets. During the next planning cycle, the BLM will incorporate the provisions of this Agreement into their RMP planning process. The conservation team will provide an annual report on the implementation of this Agreement. The report will also include monitoring results and adaptive management recommendations.<br>12. If federal land within a conservation area is transferred to the State of Utah, the state agrees to maintain the designated conservation areas and protections for the two species in the transferred parcels, or place lands of comparable or greater value to the conservation of the species in conservation areas within the same species unit as approved by the conservation team.<br>13. Uintah County will enact an ordinance with associated enforcement protocols and penalties that adopts the conservation measures in this Agreement, including limiting new surface disturbance in conservation areas to 5% for Graham's and 2.5% for White River beardtongue and avoiding impacts to plants by 300 feet in designated conservation areas on non-federal and non-state lands, within 3 months after the signing of this Agreement.<br>14. SITLA will enact a regulation, order, or lease stipulation, as applicable, within 3 |

**Table 4.** Threats to Graham's and White River Beardtongue and Associated Conservation Actions

| Threat and Associated Impacts | Conservation Action |
|---|---|
| | months of signing this Agreement that will limit new surface disturbance to 5% for Graham's and 2.5% for White River beardtongue, and avoid impacts to plants by 300 feet in designated conservation areas or interim conservation areas on SITLA lands.<br>15. The conservation team will develop and implement a scientifically valid monitoring plan (approved by consensus) to determine trends in plant populations across the range of the species. The plan should include continued monitoring at the current sites established by Red Butte Gardens, and establish additional monitoring sites to capture range-wide variation in habitat, climate, and population processes.<br>16. The conservation team will coordinate annual seed collections in all areas where the species are present (with landowner approval), in accordance with USFWS and Center for Plant Conservation (CPC) guidelines, for placement in storage at Red Butte Garden and the National Center for Genetic Resources Preservation. A seed collection plan will be developed and implemented with approval from the USFWS. |
| Loss of plants/habitat under federal landownership/management | See conservation actions 8–11 and 15–16. |
| Loss of plants/habitat under non-federal ownership/management | In conservation areas on non-federal lands, conservation actions 5–7 and 12–16 would minimize and mitigate any loss of individual plants and habitat.<br>17. On SITLA interim areas (Class A: 1,686.6 acres, Class B: 1,327.4 acres) and private interim areas (345.5 acres) prior to approval of any exploration or plan of operations, these areas will also have a limit of 5% new disturbance for Graham's and 2.5% for White River beardtongue as set forth in conservation action 14. In the event there are surface-mine plan filings that would necessitate the destruction or removal of habitat, SITLA or the landowner, upon election to convert all or part of an interim conservation area to a non-conservation area, will require pre-disturbance surveys, and to the extent feasible in its reasonable judgment, after consultation with the conservation team, salvage a minimum of 50 plants or 25% of the total population size, whichever is greater, and collect seed from 50 plants or 25% of the total population size for long-term conservation at Red Butte Garden of identifiable plants from the disturbance area. To the extent feasible, pre-disturbance surveys should be initiated a minimum of 1 year prior to surface-disturbing activities. To the extent feasible, plants should be salvaged in late fall to maximize survival and likelihood of transplant success. Transplant and monitoring of salvaged plants will be overseen by the conservation team.<br>18. On private lands, conservation actions on occupied habitats outside of designated conservation areas will be entirely voluntary. Plant and seed salvage and other good faith efforts to protect plants and restore habitat will be considered, but will not be mandatory. The conservation team is expected to work with private entities to promote and provide support for conservation actions on private lands, and will consider creation of a conservation credit system for plant salvage, habitat banking, support of conservation initiatives, and other voluntary activities that promote the persistence and recovery of the species. The conservation team should also promote voluntarily restoration and habitat banking or exchanges by private landowners, where landowners would restore occupied habitat or dispersal corridors in anticipation of the need for future revisions of conservation areas on their property or by other private landowners. Allocation or allowances for landowner credits for conservation banks or exchanges would be subject to the authority of the conservation team. The conservation team would also determine how restored populations and habitats would be utilized. |
| Habitat loss and fragmentation | See conservation actions 1–3. |
| **Livestock Grazing on BLM-Managed Lands** | |
| Herbivory of all or part of aboveground portion of vegetative portion of plant | 19. On federal lands where the species co-occur with livestock grazing during the growing season (April through September), the BLM will develop and implement a mitigation and monitoring plan for each allotment within 1 year of signing this Agreement. If monitoring identifies that livestock grazing is negatively affecting the species, the BLM will immediately adjust livestock management in the allotment to ameliorate those impacts. Short-term adjustments may include construction of temporary drift fences to keep livestock away from occupied habitat, and long-term adjustments may include permanent fencing or modifying the grazing schedule. In any adjustment made to allotments, the authorized officer will include consultation, cooperation and coordination with affected permittees, as stipulated in 43 CFR 4130.3-3. The conservation team will be consulted as necessary. The conservation team will be apprised of changes and modifications to |

**Table 4.** Threats to Graham's and White River Beardtongue and Associated Conservation Actions

| Threat and Associated Impacts | Conservation Action |
|---|---|
| | management of allotments through annual reporting to the conservation team. |
| Herbivory of all or part of the inflorescence | See conservation action 19. |
| Trampling of plant and habitat | See conservation action 19. |
| Change in community composition | See conservation action 19. |
| Invasive species invasion, spread, and competition | See conservation actions 19 and 20–24. |
| Alteration of soil characteristics | See conservation action 19. |
| **Road Construction and Maintenance** | |
| Direct mortality from surface disturbance | See conservation actions 1–3. |
| Invasive species invasion, spread, and competition | See conservation actions 20–24. |
| Increased dust emissions | See conservation actions 1–3. |
| Restricted pollinator movement from roads | See conservation actions 1–3. |
| Habitat loss/fragmentation | See conservation actions 1–3. |
| **Invasive Weeds** | |
| Invasion and establishment of non-native plants | 20. Within 1 year of signing the Agreement, the conservation team will develop, fund, and implement a weed management plan (approved by consensus) in conservation areas that includes repeated annual targeted surveys to detect invasions and treatment of invasive species as soon as detected. This plan can be incorporated as part of a range-wide monitoring plan.<br>21. The weed management plan will identify treatment options for each known invasive species in the habitat of the species, with the goal of selecting the most appropriate option that controls weeds and minimizes adverse effects to Graham's or White River beardtongues and their native plant community.<br>22. The conservation team will develop and implement a monitoring protocol in the weed management plan to determine the effectiveness of their actions.<br>23. The conservation team will review and update the weed management plan annually based on surveys, monitoring, and other information sources, and create an annual schedule of work targeting priority areas.<br>24. The weed management plan will develop and adopt best management practices for preventing the spread of invasive and/or exotic plants in the designated conservation areas on federal and non-federal lands. |
| Competition | See conservation actions 20–24. |
| Community alteration | See conservation actions 20–24. |
| **Small Population Size** | |
| Stochastic events | See conservation actions 1–7 and 15–16.<br>25. Historical locations of *Penstemon scarious* var. *albifluvis* near the western end the species' range should be revisited for collection of new voucher specimens and samples for genetic testing. The conservation team will plan and implement a distribution/genetics study to determine overlap and/or division between *Penstemon scarious* var. *garettii* and *Penstemon scarious* var. *albifluvis* geographic ranges as part of this Agreement. |
| Inbreeding depression | See conservation actions 1–7, 15–16, and 25. |
| Lower sexual reproduction | See conservation actions 1–7, 15–16, and 25. |
| Loss of genetic diversity | See conservation actions 1–7, 15–16, and 25. |

**Table 4.** Threats to Graham's and White River Beardtongue and Associated Conservation Actions

| Threat and Associated Impacts | Conservation Action |
|---|---|
| **Climate Change** | |
| Mortality caused by drought | 26. As part of demographic monitoring of the species, a component will be included to study the relationship between precipitation patterns and species' growth, reproduction and recruitment, and mortality. This may be accomplished by establishing weather-monitoring equipment at existing long-term demographic sites currently monitored by Red Butte Garden. |
| Stress, lack of reproduction and recruitment, and mortality caused by shifting rainfall patterns | See conservation action 26. |
| Habitat degradation | See conservation actions 1–3. |
| **Wildfire** | |
| Mortality | 27. Any wildfire planning, suppression activities, and post-wildfire actions on federal and non-federal lands in occupied habitat will include mitigation consistent with the Agreement and include preseason input from the conservation team. |
| Community composition alteration | See conservation actions 20–24 and 27. |
| Post-fire response ground disturbance | See conservation action 27. |
| Increased invasion and competition from invasive species | See conservation actions 20–24 and 27. |
| **Off-Road Vehicles** | |
| Direct mortality | 28. On federal lands, traffic will be limited to designated routes, and routes will be considered for closure, limited use, or re-routing as appropriate to gain compliance and protect designated conservation areas. This will not include any routes claimed by Uintah County as public roads.<br>29. On non-federal lands where off-highway vehicle (OHV) use occurs, wherever possible, landowners and managers will attempt to re-route OHV use away from designated conservation areas and keep traffic on existing roads and trails. |
| Increased dust load | See conservation actions 1–3. |
| Fragmentation of habitat | See conservation actions 1–3. |

***Note*: Survey/Monitoring/Best Management Practices:**

Prior to any surface disturbance in federal and non-federal conservation areas, surveys will be conducted within the area of disturbance and out to 300 feet from the edge of the disturbance to determine species presence, population, and distribution. Surveys will follow standard survey protocol as detailed in the USFWS *Utah Field Office Guidelines for Conducting and Reporting Botanical Inventories and Monitoring of Federally Listed, Proposed and Candidate Plants* (2011).

On all federal and non-federal lands, the landowner/manager will collect seeds and/or salvage a portion of plants from areas to be disturbed to ensure genetic representation of the species. Seeds can be used for restoration but at least a portion of these seeds should be given to Red Butte and Denver Botanic Gardens for long-term storage.

## 6.4. Ecological Restoration

The aim of ecological restoration is to establish a successful, self-sustaining community on reclaimed sites. The target ecological community will be based on locally derived plant composition and structural data (as determined by pre-disturbance surveys, reference sites, or other local data sources).

A restoration plan will be developed by the conservation team. The plan will contain clear goals, quantitative summaries of reference area conditions, and straightforward, measurable criteria for evaluating implementation and success. Ecological restoration will require that species-specific research is implemented and identifies viable site reclamation and ecological restoration methods, and that these results can be synthesized into practical restoration protocols for the species. Restoration areas for

research and demonstration may be designated within conservation areas but must be included in the restoration plan. The restoration of the conservation area to be developed must be funded in advance of development.

A restoration study must be carried out at an ecologically relevant scale for the species (to be determined by the conservation team), and demonstrate successful restoration of a self-sustaining population of the species, and restore its environment (soils, moisture regime, etc.) and associated community components (pollinators, other flowering plants, etc.) prior to surface disturbance in designated conservation areas on non-federal lands. Successful restoration protocols must be identified prior to more than 5% new surface disturbance in conservation areas.

Factors of success will include the following:

- Successful recruitment of the species over at least three generations and one drought period, or 15 years (whichever is longer)
- Stable or increasing population of recruited plants
- Genetic representation
- Lack of inbreeding depression
- Suitability of substrate characteristics and intactness of community components including pollinators and other oil shale endemics such as Dragon milkvetch, oilshale columbine, Barneby's thistle, oilshale cryptantha, Graham's cryptantha, Rollins' cryptantha (*Cryptantha rollinsii*), and ephedra buckwheat where the natural community is biologically similar to the reference community.

Understanding the mechanisms related to recruitment for the species and other community components will be important to the restoration process. If available, development of restoration protocols should utilize the previously occupied parcel prior to development of designated conservation areas so that there is no net loss of occupied habitat.

## 6.5. Monitoring and Adaptive Management

The conservation team will develop and implement a monitoring and adaptive management plan to be approved by consensus of the conservation team. The monitoring plans will include the following:

- A weed management plan in and adjacent to designated conservation areas. This plan will address monitoring and treating invasive species.
- A species monitoring plan to determine trends in plant populations across their ranges and identify significant threats to the species.
- Opportunities to develop and fund a peer-reviewed pollinator study to determine movement patterns, characteristics of nesting habitat for suitable pollinators, and characteristics of the native plant community needed to maintain suitable habitat for pollinators, especially the masarid wasp (*Pseudomasaris vespoides*).

The monitoring and adaptive management strategies presented here are intended to guide the development and implementation of this Agreement. Adaptive management is a strategic approach for meeting management challenges under changing conditions and available information. The following steps outline an adaptive management approach for meeting the administration, survey, and monitoring requirements of this Agreement while incorporating new information from surveys, monitoring, and research initiatives (Figure 2):

1. Assess current conditions via baseline inventories and mapping.
2. Define goals and objectives, and plan survey, monitoring, and management approaches.
3. Implement monitoring and management plans and summarize results.

4. Evaluate monitoring, research, and management outcomes; adapt objectives and methods.
5. Communicate and incorporate new information; reassess.

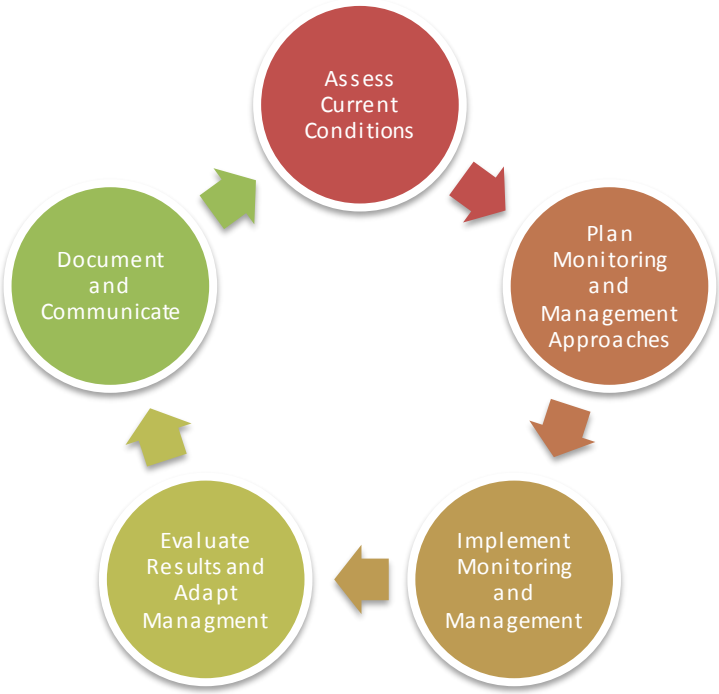


**Figure 2.** Adaptive management strategy for the Agreement.

The implementation of adaptive management will be the responsibility of the conservation team. The implementation of the conservation actions identified in Table 4 will require the development of survey and monitoring, plant and seed salvage, reclamation, weed management, and restoration plans and protocols.

Adaptive management is incorporated in the conservation of Graham's and White River beardtongues through conservation action #6 in Table 4 and under Incorporating New Conservation Areas described above. As new information becomes available, these adaptive management conservation actions will allow for the protection of the areas with high ecological value to the species persistence.

# 7. NON-FEDERAL PARTICIPANT RESPONSIBILITIES AND ACTION ITEMS

The following responsibilities and actions will be undertaken by non-federal participants upon signing this Agreement:

- All designated conservation areas on private lands will be subject to county ordinance or state regulations or similar legal protections in conformance with the conservation actions listed in Table 4.
- SITLA will enact, as applicable depending on the lease status of the lands, a regulation, director's withdrawal order, or joint lease stipulation that will protect designated conservation areas from surface disturbance or other adverse impacts to the species on SITLA lands, to the extent provided in this Agreement.
- Uintah County will enact an ordinance with associated enforcement protocols and penalties that adopts the terms of this Agreement and protects designated conservation areas from greater than 5% new surface disturbance for Graham's beardtongue and 2.5% new surface disturbance for White River beardtongue and avoids plants by 300 feet. Surface disturbing activities may occur within 300 feet of plants if it benefits or reduces impacts to the species or habitat and is approved by the conservation team.
- By signing this document, the Utah Division of Wildlife Resources commits to implement and uphold the protection and conservation actions listed in Table 4 of this agreement, to the extent DWR is legally able to do so; however, DWR is not committing any funds towards additional weed monitoring/management, plant surveys, seed collection, monitoring protocols, research, or other conservation actions. The DWR will not be an active participant on the conservation team.
- Some roads will be required across federal lands for access to minerals occurring on non-federal lands. If access road construction will result in an overall greater than 5% new surface disturbance for Graham's and 2.5% new surface disturbance for White River beardtongue, then the organization responsible for construction will coordinate with the conservation team on the project.
- Avoidance, minimization, and mitigation measures will be developed and applied to the construction and operation of the access roads. Other (non-access) roads that are part of proposed actions will be allowed only in accordance with the 2.5 % and 5% surface disturbance caps for White River and Graham's beardtongues, respectively.

# 8. FEDERAL PARTICIPANT RESPONSIBILITIES AND ACTION ITEMS

The following responsibilities and actions will be undertaken by federal participants upon signing this Agreement:

- All designated conservation areas on federal lands will be managed in conformance with the conservation actions listed in Table 4.
- The BLM will ensure that ongoing and future federal actions support or do not preclude the species conservation. To that end, the BLM shall involve the conservation team at their discretion and the appropriate state agencies in National Environmental Policy Act (NEPA) analysis as cooperators or partners for all projects likely to affect the species and its habitat. All projects in designated conservation areas and their potential to impact the species will be reported in the conservation team annual report.
- The BLM will retain Graham's and White River beardtongues on the BLM special-status species list to ensure that the effects of proposed projects are analyzed for the species.
- The BLM and USFWS will request funding or otherwise commit resources as part of their annual budgets to promote and initiate the conservation actions listed in this Agreement, including but not limited to surveys, monitoring, and restoration research on federal and non-federal conservation areas.
- The BLM will incorporate the provisions of this Agreement or the latest amendments to this Agreement into its resource management planning process, permitting requirements, agency planning documents, and budgets. Within 3 months of the signature date of the Agreement, the BLM will incorporate the provisions of this plan into permits and budgets. The BLM will incorporate the provisions of this Agreement into their resource management planning process during the next plan update.
- If new federal roads result in the mortality of plants, the seed will be collected by the project proponent and deposited with the appropriate CPC-sponsored institution (Red Butte Garden and Denver Botanic Garden).
- Some roads will be required across federal lands for access to minerals occurring on non-federal lands. If new access road construction will disturb more than 5% of Graham's plants and 2.5% of White River plants in a site or more than one site, then the organization responsible for construction will coordinate with the conservation team on the project. Avoidance, minimization, and mitigation measures will be developed and applied to the construction and operation of new access roads. Other (non-access) roads that are part of proposed actions will be allowed only in accordance with the 2.5% and 5% surface disturbance caps for White river and Graham's beardtongues, respectively.
- Wildfire planning, response, and post-wildfire actions on federal and non-federal lands in occupied habitat will be reported annually to the conservation team, which will make recommendations to conserve both beardtongues during wildfire actions.
- On federal lands, BLM will consider additional management prescriptions for routes within designated conservation areas when appropriate; however, this will not include any public rights-of-way claimed by Uintah County.

# 9. FUNDING CONSERVATION ACTIONS

Funding contributions by the signatories to this Agreement are not mandatory, but there have been numerous federal and non-federal conservation activities initiated for these species to date (Table 5). Federally funded conservation efforts include surveys, predictive habitat modeling efforts, long-term demographic monitoring, and PVA. Non-federal activities include surveys and monitoring, habitat inventories, plant salvage, and the development of this Agreement and supporting documents.

**Table 5.** Conservation Actions and Funding To Date

| Conservation Action | Party | Approximate Cost | Time Period |
|---|---|---|---|
| **Federal Funding** | | | |
| Graham's/White River beardtongue demographic monitoring | BLM Vernal Field Office | TBD | 2008–present |
| Graham's/White River beardtongue PVA | USFWS | TBD | 2013 |
| Graham's beardtongue botany blitz (local surveys) | BLM Vernal Field Office/USFWS | TBD | May 2009 |
| Graham's beardtongue botany blitz (local surveys) | BLM Vernal Field Office/USFWS | TBD | May 2011 |
| Graham's beardtongue surveys | BLM Vernal Field Office | TBD | May 2011 |
| Graham's/White River beardtongue predictive habitat modeling | BLM/U.S. Geological Survey (USGS) | TBD | 2012-2014 |
| Graham's/White River beardtongue surveys | BLM/USGS | TBD | 2012-2013 |
| Graham's/White River beardtongue surveys | BLM Vernal Field Office | TBD | May–June 2012 |
| Graham's/White River beardtongue surveys | BLM Vernal Field Office | TBD | May–June 2013 |
| Graham's/White River beardtongue surveys | USFWS | TBD | May–June 2012 |
| Graham's/White River beardtongue surveys | USFWS | TBD | May–June 2013 |
| Graham's/White River beardtongue habitat assessment model | USFWS | $17,318 | 2013–2014 |
| **Private/State Funding** | | | |
| Graham's beardtongue surveys | Utah DNR | $10,000 | 2007 |
| Graham's beardtongue surveys | Uintah County | $7,519 | 2008 |
| Graham's and White River beardtongue surveys | Utah DNR | $10,000 | 2008–2009 |
| Graham's and White River beardtongue surveys | Utah DNR | $7,000 | 2010 |
| Graham's and White River beardtongue surveys and habitat inventories | Enefit American Oil | $25,000 | May–June 2013 |
| White shale habitat inventories | Enefit American Oil | $2,800 | October 2013 |
| White shale habitat inventories | Red Leaf Resources, Inc. | $9,950 | October 2013 |

**Table 5.** Conservation Actions and Funding To Date

| Conservation Action | Party | Approximate Cost | Time Period |
|---|---|---|---|
| Graham's and White River beardtongue conservation agreement and supporting documents | SITLA/Uintah County/ State of Utah | $30,000 | December 2013–January 2014 |
| Graham's and White River beardtongue conservation agreement mapping, analysis, and content | SITLA/Uintah County/ State of Utah | $20,000 | January–April 2014 |
| Graham's and White River beardtongue conservation agreement finalization | SITLA/Uintah County/ State of Utah | Estimated $10,000 | May–August 2014 |

Once the conservation team is formed, it will guide project and conservation measure prioritization and assist in the identification of funding sources. The conservation team will coordinate conservation activities, including in-kind services, in order to provide the greatest benefit to the species and maximize funding and field efforts. It is expected that, although not mandated, funding and/or in-kind services to enact the conservation actions outlined in this Agreement may be provided by the BLM, USFWS, ESMF, SITLA, Uintah County, and private entities. Funding will need to be made available on an annual basis to support survey, monitoring, and research efforts for these species.

Although it is understood that all funding and resource commitments made under this Agreement are contingent upon appropriations by agencies and other entities, all partners should anticipate maintaining funding levels and in-kind services for the duration of this Agreement. Table 6 lists the conservation actions, responsible parties, estimated cost, and timeline required to support this Agreement. In addition, Table 6 demonstrates that multiple funding efforts are currently underway to support the immediate implementation of conservation actions outlined in this Agreement.

**Table 6.** Conservation Actions Funding Under the Agreement

| Conservation Action | Party | Approximate Cost | Time Period |
|---|---|---|---|
| Establishment of the conservation team | Signatories | In-kind labor and materials | 2014 |
| Establishment and management of conservation areas | Signatories | In-kind | 2014–2029 |
| Annual review of conservation actions and conservation area boundaries | Conservation team | In-kind labor and materials | 2014–2029 |
| Annual report | Conservation team | In-kind labor and materials | 2014–2029 |
| Range-wide distribution surveys | ESMF funds | $75,000 via legislative appropriation | April-July 2014 |
| Disturbance ecology and reclamation research | ESMF funds, Uintah County, SITLA, Private entities | $60,000<br>$15,000*<br>$10,000<br>$35,000 | Fiscal year (FY) 2014<br>**In-kind resources committed for FY2014* |
| Penstemon demographic monitoring | BLM/Red Butte Garden | Not available | 2014–ongoing |
| Graham's/White River beardtongue predictive habitat model validation surveys | BLM/USGS | Not available | 2014 |
| Graham's/White River beardtongue surveys | BLM/USGS | Not available | 2014–2017 |

**Table 6.** Conservation Actions Funding Under the Agreement

| Conservation Action | Party | Approximate Cost | Time Period |
|---|---|---|---|
| Penstemon habitat model validation surveys | BLM/USGS | Not available | 2014 |
| Penstemon surveys and habitat inventory | Red Leaf Resources, Inc. | TBD | 2014 |
| Penstemon surveys and habitat inventory | Enefit American Oil | TBD | 2014 |
| Penstemon surveys and habitat inventory | BLM Vernal Field Office | TBD | 2014 |
| Penstemon surveys and habitat inventory | BLM White River Field Office | TBD | 2014 |
| Penstemon habitat ecology and pollinator research | USFWS | TBD | TBD |
| Penstemon habitat assessment and distributional surveys | ESMF partnerships | $40,000–$60,000 plus matching funds and in-kind resources from conservation partners | FY 2014 |
| Penstemon disturbance ecology and reclamation research | ESMF partnerships | $40,000–$60,000 plus matching funds and in-kind resources from conservation partners | FY 2015–FY 2029 as needed |

# 10. AGREEMENT DURATION, TERMS, AND CONDITIONS

This Agreement shall be effective as of the date of the last signature and shall remain in force for a period of fifteen (15) years. This document may be executed in multiple identical original counterparts, all of which shall constitute one agreement. Signatures may be delivered by facsimile copy or electronic scan. Facsimile and electronic scanned signatures shall be binding on the Parties as if they were originals. This Agreement will terminate automatically if there is a listing of either species, whether through the current USFWS listing process or any renewed process directed by any judicial action; this termination clause is included to ensure for the non-federal parties that a single regulatory framework will remain operative in the potential scenario where either species is listed such that the parties are not bound to both the commitments in this agreement and the potentially additive requirements of the ESA.

# 11. NATIONAL ENVIRONMENTAL POLICY ACT COMPLIANCE

This Agreement is being developed for planning purposes. Before any on-the ground actions can occur on federally managed lands, a determination must be made whether or not the conservation actions are consistent with the applicable agency's land use or land management plan and whether or not additional NEPA analysis is required. If conservation actions are determined not to be consistent with a land management plan, then these actions must be incorporated into the applicable agency's land use or land management plan through an amendment or maintenance process before they can be implemented. Actions on lands administered by the state or private lands may not be subject to NEPA analysis.

# 12. FEDERAL AGENCY COMPLIANCE

During the performance of this Agreement, the participants agree to abide by the terms of Executive Order 11246 on non-discrimination and will not discriminate against any person because of race, color, religion, sex, or national origin. No member of delegate to congress or resident commissioner shall be admitted to any share or part of this Agreement, or to any benefit that may arise there from, but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

# 13. AGREEMENT MODIFICATION

Modification of this Agreement requires written consent of all signatories. If these measures prove inadequate for species conservation, the USFWS reserves all obligations required by, and options offered by the ESA, as amended, including listing under the provisions of Section 4 of the Act, subject to termination provision set forth above under the heading entitled "Agreement Duration, Terms, and Conditions" and the provisions below entitled "Disclaimer and Limitations".

# 14. DISCLAIMER AND LIMITATIONS

The non-federal participants to this Agreement entered into this Agreement voluntarily in order to protect the subject species and preclude the uncertainty to themselves, their lessees, and constituents that might result from a listing. The non-federal participants do not agree with the USFWS analysis regarding the type and magnitude of the threats to the species identified in the Proposed Rule. Despite our disagreement with the USFWS conclusions in the Proposed Rule, we are still committed to implementing conservation measures for both species as set forth in, and subject to the terms of, this Agreement. The non-federal participants reserve the right to take any action deemed advisable by them in challenging any listing decision or defending a decision by USFWS to not list either species, and nothing in this Agreement, or the fact of this Agreement, shall be deemed an admission by any party that any basis exists for listing either species. In the event that there is a listing of either species, whether through the current USFWS listing process or any renewed process directed by any judicial action, all obligations imposed and commitments made under this Agreement will immediately become null and void to ensure for the non-federal parties that a single regulatory framework will remain operative in the potential scenario where either species is listed such that the parties are not bound to both the commitments in this agreement and the potentially additive requirements of the ESA. In the event this Agreement is nullified, the non-federal participants may take any actions and permit any activities on lands within their jurisdiction otherwise allowed by law.

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# Appendix A

## Maps 1–5: Graham's and White River Beardtongue Conservation Areas under the Agreement

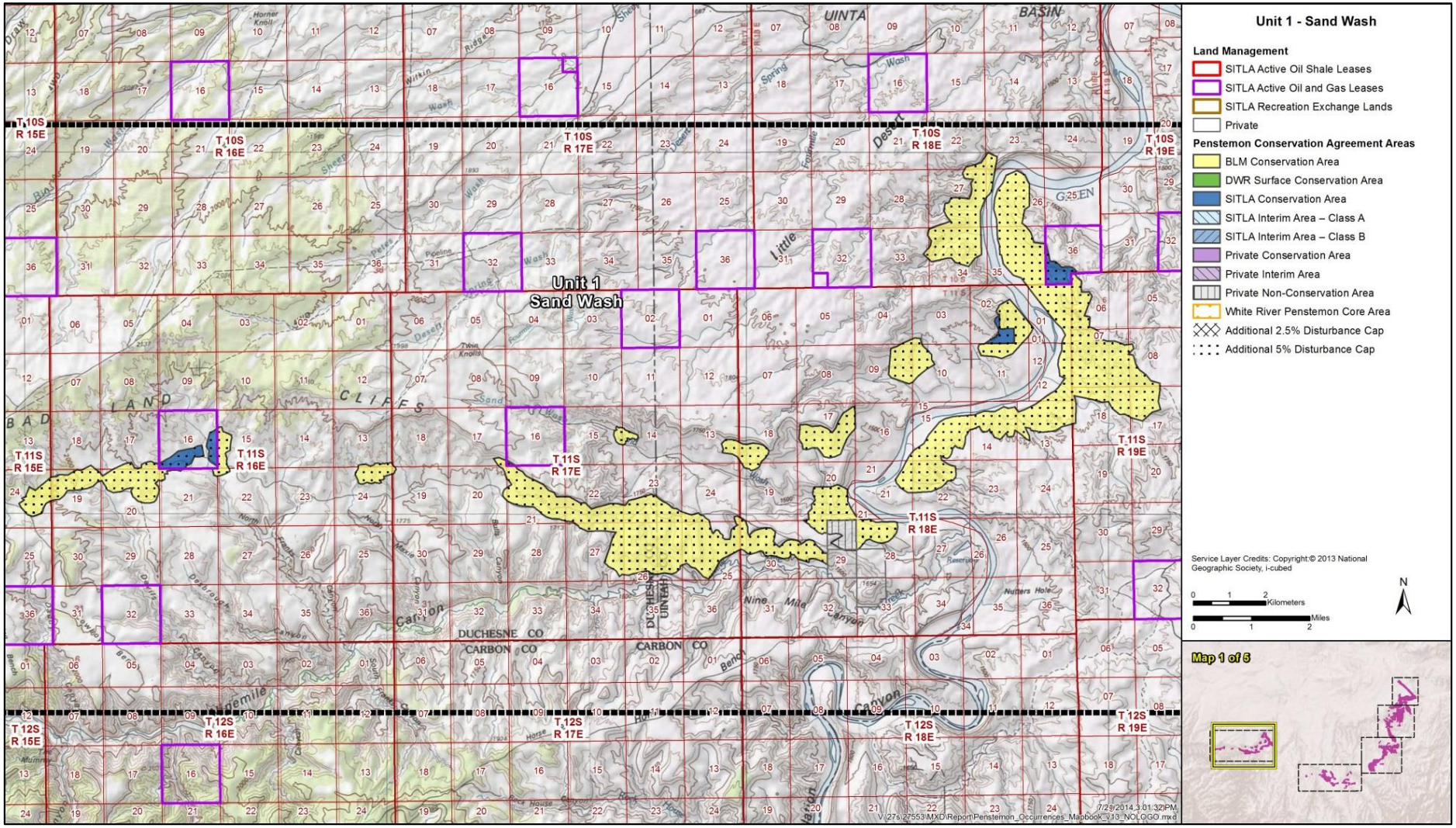


**Figure A-1.** Conservation Unit 1 (Sand Wash) beardtongue conservation areas under the agreement.

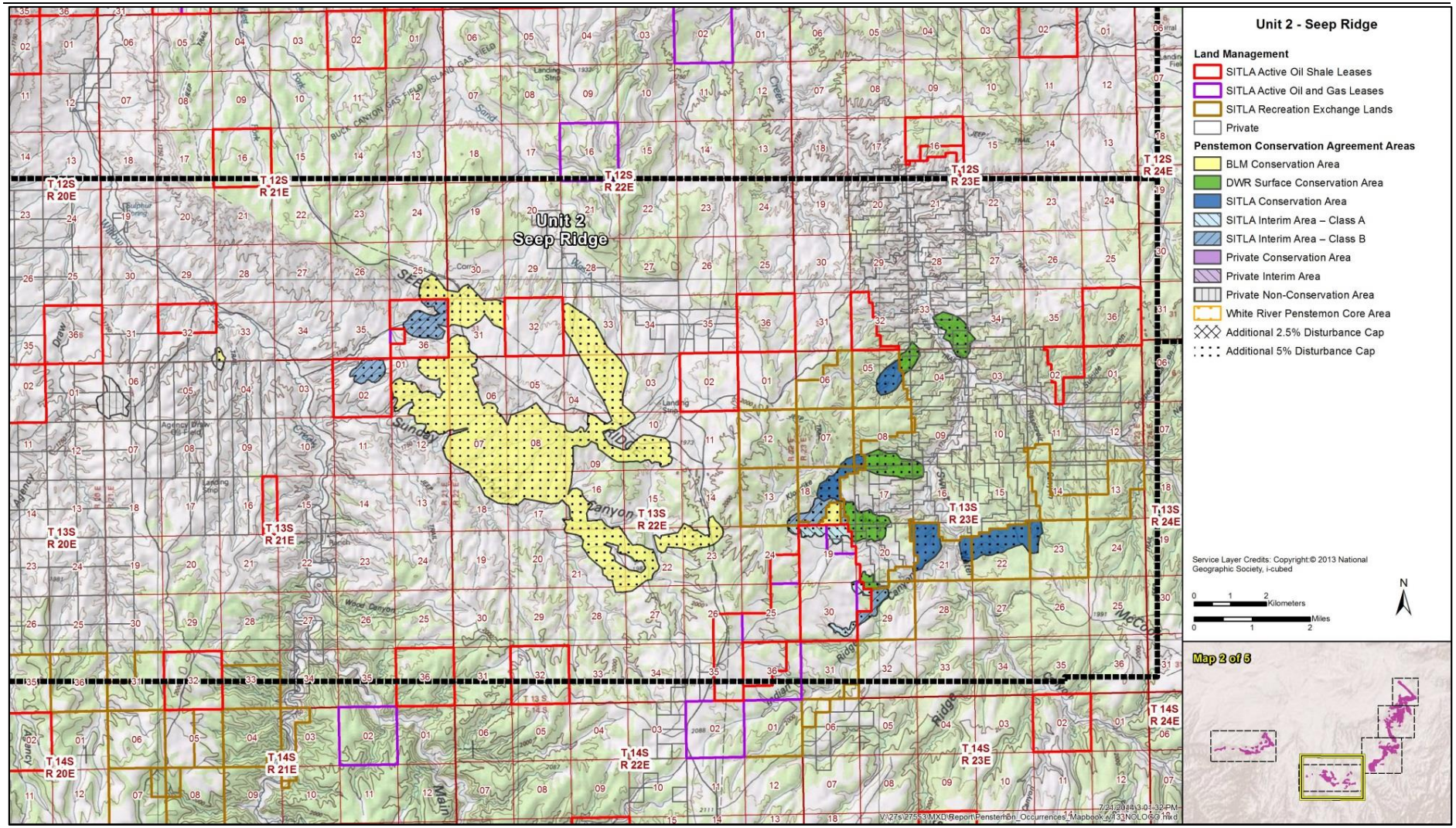


**Figure A-2.** Conservation Unit 2 (Seep Ridge) beardtongue conservation areas under the agreement.

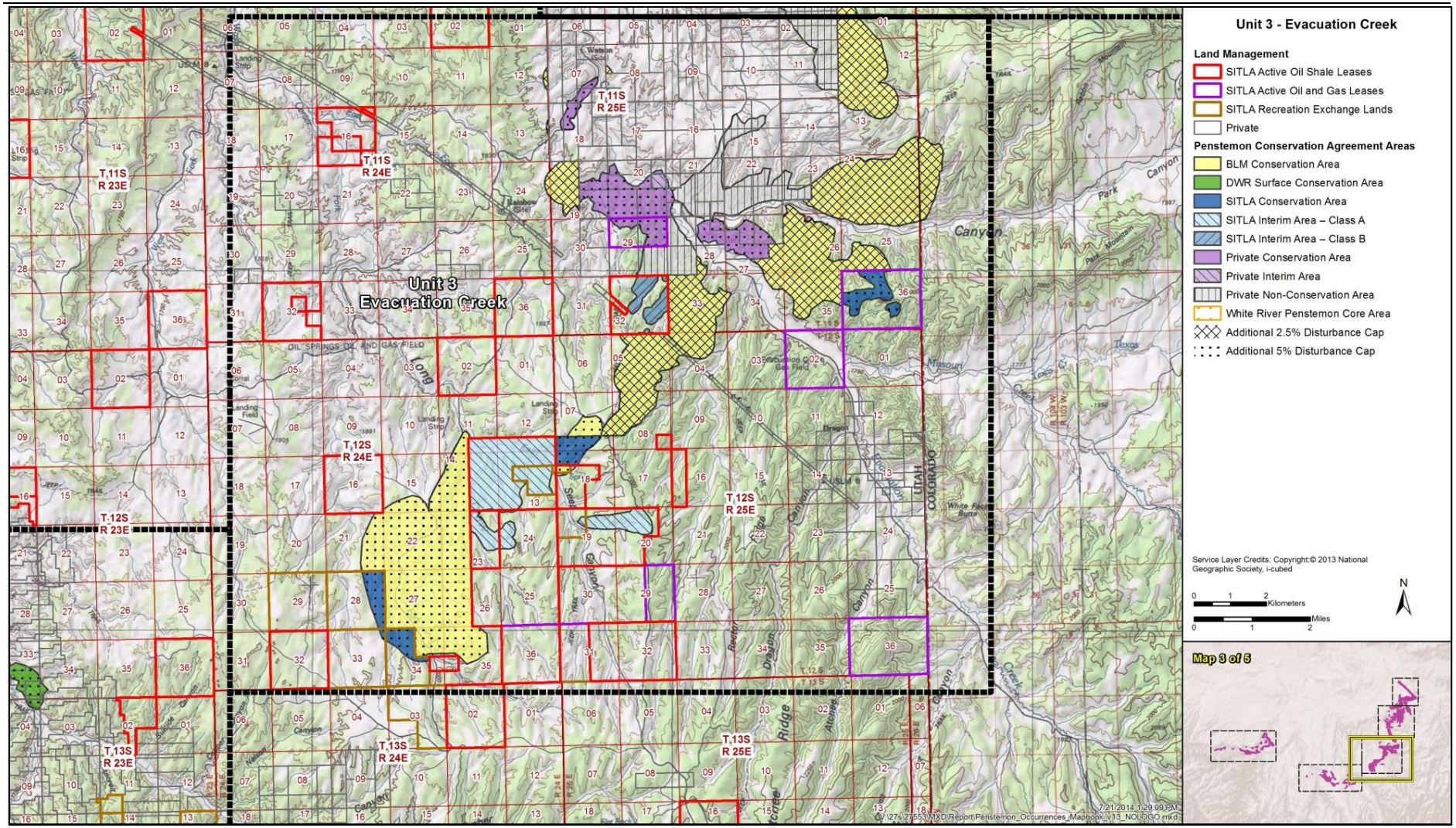


**Figure A-3.** Conservation Unit 3 (Evacuation Creek) beardtongue conservation areas under the agreement.

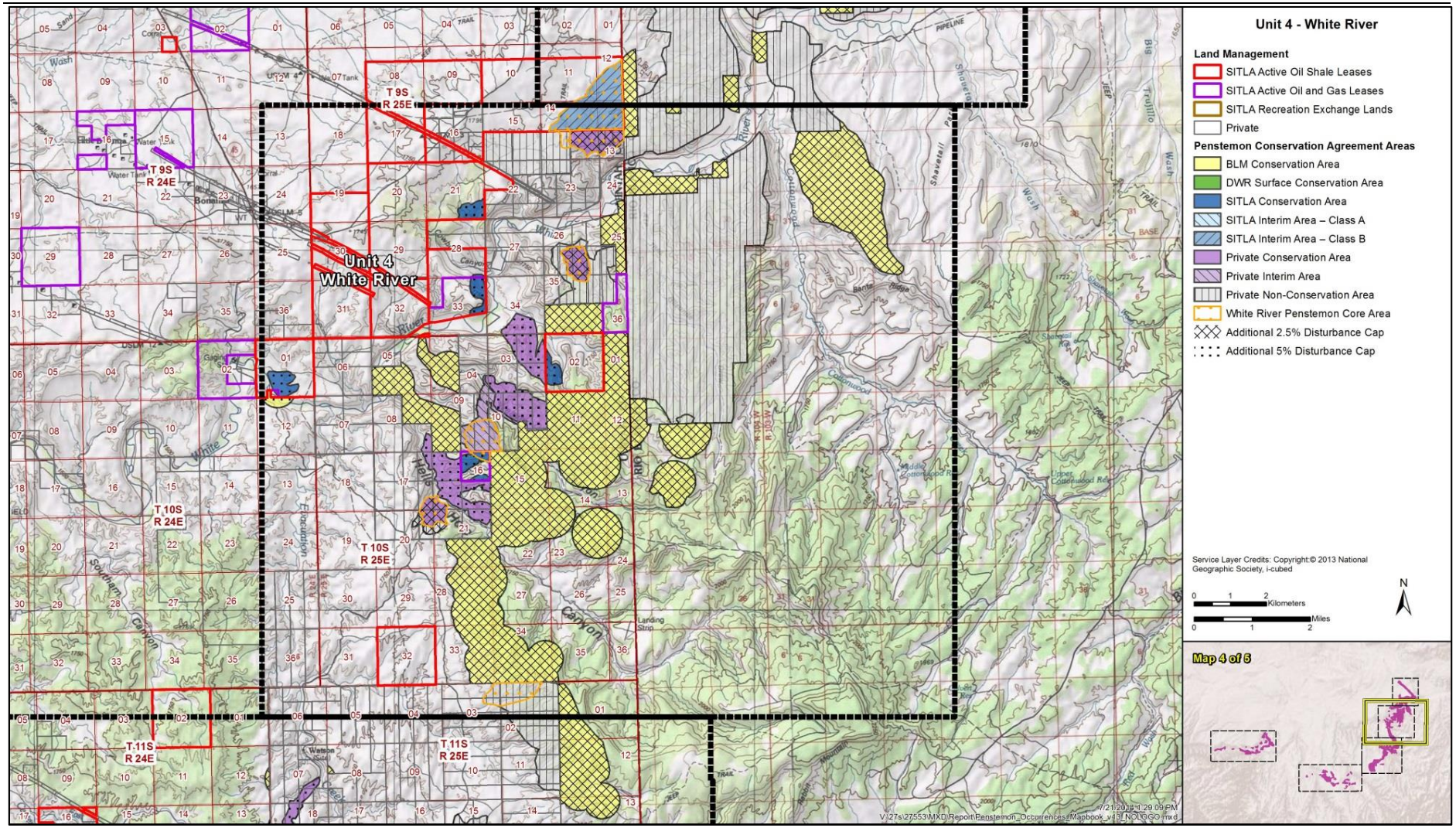


**Figure A-4.** Conservation Unit 4 (White River) beardtongue conservation areas under the agreement.

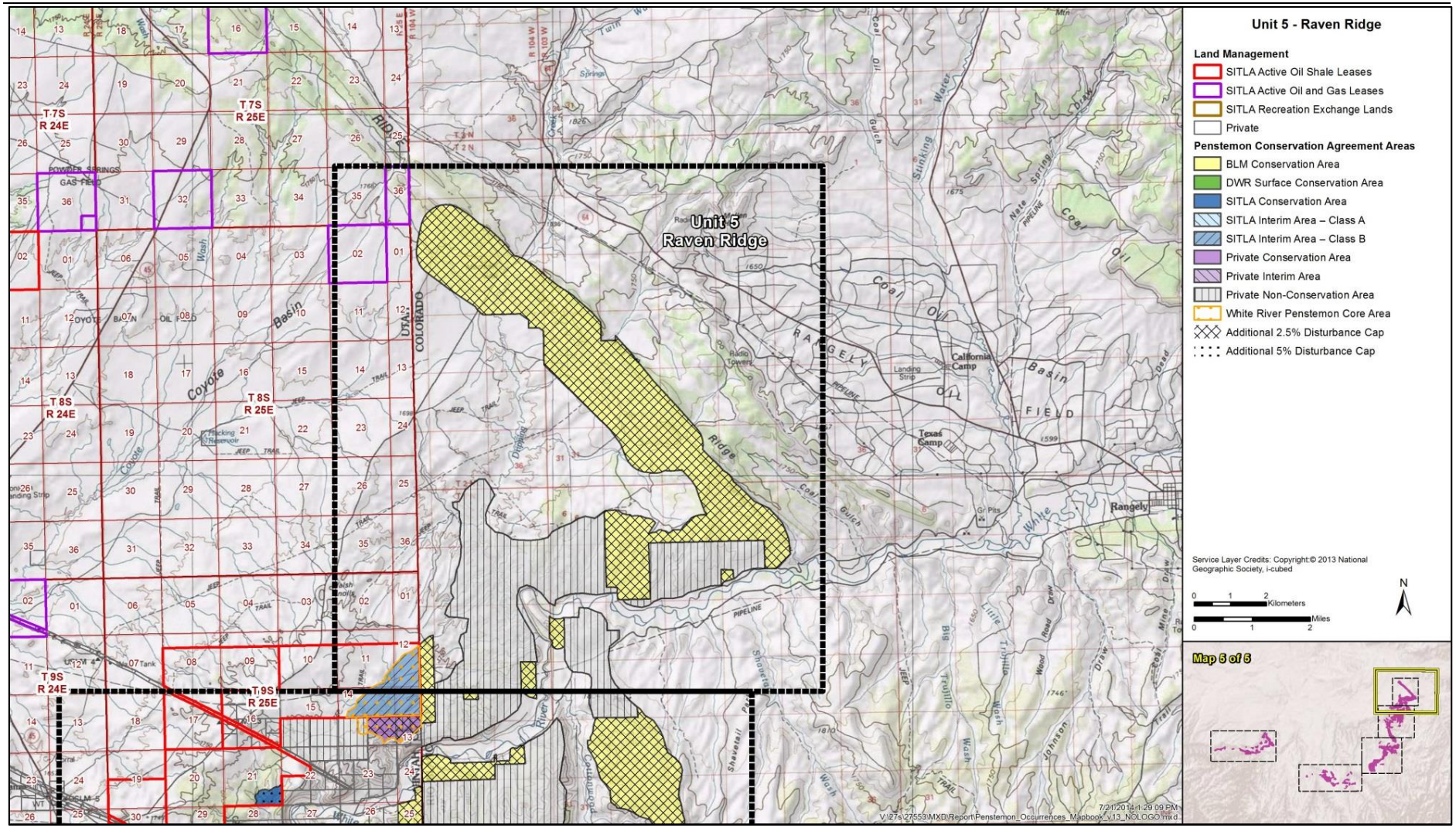


**Figure A-5.** Conservation Unit 5 (Raven Ridge) beardtongue conservation areas under the agreement.

# Appendix B

## Designated Conservation Area Coordinates Table

**Table B1.** Penstemon Conservation Area and Interim Conservation Area Locations by Conservation Unit

| Unit Number | UTM* Easting | UTM Northing |
|---|---|---|
| **Unit 1** | | |
| Conservation area | 592673.00 | 4410142.30 |
| Conservation area | 579630.27 | 4411342.98 |
| Conservation area | 587350.29 | 4409732.43 |
| Conservation area | 572004.78 | 4411011.02 |
| Conservation area | 589926.07 | 4411888.25 |
| Conservation area | 575438.94 | 4411908.34 |
| Conservation area | 586530.86 | 4412367.56 |
| Conservation area | 592205.24 | 4412374.05 |
| Conservation area | 594433.64 | 4414432.75 |
| Conservation area | 597168.91 | 4415244.24 |
| Conservation area | 598047.76 | 4414516.01 |
| Conservation area | 595943.37 | 4418367.10 |
| Conservation area | 583379.23 | 4411586.90 |
| Conservation area | 574319.53 | 4411731.23 |
| Conservation area | 575174.58 | 4412046.99 |
| Conservation area | 598521.40 | 4416882.75 |
| Conservation area | 597019.53 | 4415152.82 |
| **Unit 2** | | |
| Conservation area | 634708.41 | 4393057.63 |
| Conservation area | 630446.02 | 4395728.81 |
| Conservation area | 621660.09 | 4398116.09 |
| Conservation area | 628417.47 | 4399539.86 |
| Conservation area | 639657.84 | 4391835.78 |
| Conservation area | 643349.01 | 4392986.78 |
| Conservation area | 641205.58 | 4392939.59 |
| Conservation area | 638870.20 | 4394716.52 |
| Conservation area | 640237.43 | 4397466.00 |
| Conservation area | 640770.19 | 4398034.30 |
| Conservation area | 642063.04 | 4398732.69 |
| Conservation area | 642198.24 | 4393079.01 |
| Conservation area | 640321.11 | 4395065.84 |
| Conservation area | 639562.39 | 4393445.24 |
| Conservation area | 638647.43 | 4393692.49 |
| Interim area | 639426.85 | 4391654.82 |
| Interim area | 639780.69 | 4391209.78 |

**Table B1.** Penstemon Conservation Area and Interim Conservation Area Locations by Conservation Unit

| Unit Number | UTM* Easting | UTM Northing |
|---|---|---|
| Interim area | 638481.03 | 4393235.17 |
| Interim area | 625788.34 | 4397684.92 |
| Interim area | 627447.76 | 4399083.30 |
| Interim area | 637841.21 | 4393453.14 |
| Interim area | 637574.27 | 4393298.25 |
| Interim area | 638245.67 | 4393729.87 |
| Interim area | 638979.88 | 4390542.28 |
| **Unit 3** | | |
| Conservation area | 659736.27 | 4408061.30 |
| Conservation area | 666069.99 | 4409139.37 |
| Conservation area | 652062.48 | 4400607.09 |
| Conservation area | 657276.58 | 4414812.49 |
| Conservation area | 653200.80 | 4402054.98 |
| Conservation area | 659539.10 | 4412926.97 |
| Conservation area | 665360.91 | 4409631.67 |
| Conservation area | 663837.61 | 4410405.01 |
| Conservation area | 656936.31 | 4412579.75 |
| Conservation area | 665474.53 | 4412457.07 |
| Conservation area | 656853.88 | 4404697.80 |
| Conservation area | 657171.89 | 4405260.37 |
| Conservation area | 658797.45 | 4412035.95 |
| Conservation area | 661737.81 | 4411105.01 |
| Conservation area | 667042.38 | 4412873.16 |
| Conservation area | 665168.54 | 4415947.57 |
| Conservation area | 656892.20 | 4415329.57 |
| Conservation area | 657581.97 | 4405851.93 |
| Interim area | 658564.53 | 4403234.97 |
| Interim area | 657449.87 | 4403241.84 |
| Interim area | 659203.12 | 4408500.70 |
| Interim area | 656157.77 | 4404443.81 |
| Interim area | 655202.11 | 4404369.88 |
| Interim area | 659571.89 | 4412672.41 |
| Interim area | 659731.18 | 4409995.00 |
| Interim area | 659079.26 | 4409642.31 |
| Interim area | 659515.63 | 4409155.56 |
| **Unit 4** | | |

**Table B1.** Penstemon Conservation Area and Interim Conservation Area Locations by Conservation Unit

| Unit Number | UTM* Easting | UTM Northing |
|---|---|---|
| Conservation area | 667684.38 | 4423735.35 |
| Conservation area | 661229.93 | 4426979.99 |
| Conservation area | 656834.64 | 4426502.58 |
| Conservation area | 662276.37 | 4428999.23 |
| Conservation area | 662100.90 | 4431285.75 |
| Conservation area | 662102.46 | 4424189.53 |
| Conservation area | 661642.55 | 4423735.76 |
| Conservation area | 663399.38 | 4425907.41 |
| Conservation area | 663607.28 | 4427547.66 |
| Conservation area | 664325.05 | 4426825.76 |
| Conservation area | 663900.82 | 4422824.30 |
| Conservation area | 660626.18 | 4425836.29 |
| Conservation area | 664912.07 | 4428294.25 |
| Conservation area | 667523.45 | 4432104.13 |
| Conservation area | 666705.02 | 4425440.04 |
| Conservation area | 668019.75 | 4424971.08 |
| Conservation area | 665001.70 | 4429835.09 |
| Conservation area | 662376.41 | 4424504.12 |
| Conservation area | 665548.86 | 4433238.26 |
| Conservation area | 662753.32 | 4424619.55 |
| Conservation area | 672440.68 | 4431865.43 |
| Conservation area | 666079.72 | 4430589.69 |
| Conservation area | 656682.09 | 4426011.90 |
| Conservation area | 661763.94 | 4424667.65 |
| Conservation area | 665568.40 | 4422348.40 |
| Conservation area | 667677.46 | 4434098.54 |
| Conservation area | 661019.81 | 4422940.59 |
| Conservation area | 664714.65 | 4417631.10 |
| Conservation area | 669071.30 | 4434104.32 |
| Conservation area | 669349.66 | 4434138.10 |
| Conservation area | 666485.94 | 4433783.06 |
| Interim area | 665363.55 | 4433851.68 |
| Interim area | 662423.45 | 4425790.22 |
| Interim area | 662385.58 | 4425015.52 |
| Interim area | 662051.15 | 4425378.97 |
| **Unit 5** | | |
| Conservation area | 670071.43 | 4435845.71 |

**Table B1.** Penstemon Conservation Area and Interim Conservation Area Locations by Conservation Unit

| Unit Number | UTM* Easting | UTM Northing |
|---|---|---|
| Conservation area | 669275.94 | 4434627.09 |
| Conservation area | 666461.96 | 4434937.43 |
| Conservation area | 674778.82 | 4437430.75 |
| Conservation area | 671288.75 | 4439140.25 |
| Conservation area | 671288.75 | 4439140.25 |
| Interim area | 665791.22 | 4434667.43 |

*UTM = Universal Transverse Mercator