

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

2018 ANNUAL REPORT



Prepared by the Penstemon Conservation Team

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

June 2019

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

2018 ANNUAL REPORT

Prepared by

The Penstemon Conservation Team

**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**

June 28, 2019

CONTENTS

| | | |
|----------|---|-----------|
| 1 | Penstemon Conservation Team Activities | 1 |
| 1.1 | Mitigation Plan..... | 1 |
| 1.2 | Weed Management Plan | 1 |
| 1.3 | Livestock Grazing Management Plan..... | 1 |
| 1.4 | Surface Disturbance Plan..... | 1 |
| 1.5 | Demographic Monitoring Plan..... | 1 |
| 1.6 | Seed Management Strategy..... | 2 |
| 1.7 | Restoration Plan..... | 2 |
| 2 | Implementation of Conservation Agreement in Beardtongue Habitats | 2 |
| 2.1 | BLM Vernal Field Office (Utah) | 2 |
| 2.2 | BLM White River Field Office (Colorado) | 2 |
| 2.3 | SITLA | 3 |
| 2.4 | Uintah County..... | 3 |
| 2.5 | State of Utah/The Nature Conservancy..... | 3 |
| 2.6 | Summary of Financial Contributions by Partnering Agencies..... | 4 |
| 3 | Conservation Agreement Updates..... | 4 |
| 3.1 | Conservation Agreement Addendum..... | 4 |
| 3.2 | Boundary Review and Adjustment | 4 |
| 3.3 | Uintah County Interim Area Overlay Ordinance Amendment | 5 |
| 4 | Data Management Strategy | 5 |
| 4.1 | BLM..... | 5 |
| 4.2 | Manzanita Botanical Consulting..... | 5 |
| 5 | 2018 Field Survey Results | 5 |
| 5.1 | BLM Vernal Field Office (Utah) | 6 |
| 5.2 | BLM White River Field Office (Colorado) | 6 |
| 5.3 | State of Utah | 6 |
| 5.4 | SITLA/Manzanita Botanical Consulting | 6 |
| 6 | 2018 Seed Collections..... | 7 |
| 6.1 | BLM Vernal Field Office (Utah) | 7 |
| 7 | Ongoing Research | 7 |
| 7.1 | BLM Vernal Field Office..... | 7 |
| 7.1.1 | Demographic Monitoring Results | 8 |
| 7.1.2 | Habitat Condition Monitoring Results..... | 9 |
| 7.1.3 | Census Monitoring Results | 9 |
| 7.2 | BLM White River Field Office..... | 9 |
| 7.3 | Red Butte Garden/Utah Nature Conservancy/DNR..... | 10 |
| 7.4 | SITLA/Manzanita Botanical Consulting | 11 |
| 8 | Future Subcommittee work | 11 |
| 8.1 | Demographic Monitoring Plan..... | 11 |
| 8.2 | Livestock Grazing Management Plan | 11 |

| | | |
|-------|---|----|
| 8.3 | Restoration Plan..... | 11 |
| 8.4 | Other Future Activities..... | 11 |
| 8.4.1 | Pollination & Reproductive Success Study..... | 12 |
| 8.4.2 | Climate Monitoring..... | 12 |
| 8.4.3 | Seed Collections..... | 12 |
| 9 | Literature Cited | 12 |

TABLES

| | | |
|-----------------|---|---|
| Table 1. | 2018 Conservation Agreement Financial Contributions by Partner Agencies | 4 |
| Table 2. | 2018 BLM Vernal Field Office Beardtongue Seed Collections | 7 |

APPENDICES

| | | |
|--------------------|--|-----|
| Appendix A. | Conservation Agreement Addendum..... | A-1 |
| Appendix B. | Conservation Agreement Addendum - Maps..... | B-1 |
| Appendix C. | Conservation Agreement Addendum – Conservation Area Locations..... | C-1 |

1 PENSTEMON CONSERVATION TEAM ACTIVITIES

The Penstemon Conservation Team was established in 2014 and comprises the signatories of the Penstemon *Conservation Agreement and Strategy for Graham's beardtongue* (*Penstemon grahamii*) and *White River beardtongue* (*P. scariosus* var. *albifluvis*) (Penstemon Conservation Team 2014). The conservation agreement should be cited as follows:

Penstemon Conservation Team. 2014. *Conservation Agreement and Strategy for Graham's Beardtongue* (*Penstemon grahamii*) and *White River Beardtongue* (*P. scariosus* var. *albifluvis*). Prepared for the State of Utah School and Institutional Trust Lands Administration; Uintah County, Utah; Utah Public Lands Coordination Office; Utah Division of Wildlife Resources; Rio Blanco County, Colorado; Bureau of Land Management; and U.S. Fish and Wildlife Service. Prepared by SWCA Environmental Consultants, Salt Lake City, Utah. July 22, 2014.

All plans and reports for the Utah Conservation Team are available electronically on the SITLA website at:

<https://trustlands.utah.gov/in-your-community/conservation/penstemon-conservation-project/>

Information included in this annual report summarizes Penstemon Conservation Team (PCT) activities from January 1 – December 31, 2018.

1.1 Mitigation Plan

There were no changes to the Mitigation Plan (PCT 2015a) in 2018.

1.2 Weed Management Plan

There were no changes to the Weed Management Plan (PCT 2015b) in 2018.

1.3 Livestock Grazing Management Plan

There were no changes to the Livestock Grazing Management Plan (PCT 2015c) in 2018.

1.4 Surface Disturbance Plan

There were no changes the Surface Disturbance Plan (PCT 2015d) in 2018.

1.5 Demographic Monitoring Plan

The Penstemon Range-wide Demographic Monitoring Plan (PCT 2017a), initially implemented by BLM VFO in 2017, was continued in 2018. The monitoring methods were revised in 2018, with phase one (flowering) and phase two (fruiting) combined into a single visit rather due to staffing and logistical issues. Also, pollinator observations were not completed in 2018 because

the protocol needs to be reviewed due to issues noted during the 2017 pilot monitoring season. In June 2018, BLM VFO botanists monitored 34 plots total (17 White River beardtongue and 16 Graham's beardtongue).

1.6 Seed Management Strategy

The White River *Penstemon* and Graham's *Penstemon* Seed Management Strategy (PCT 2017b) fulfills the commitment to develop a seed bank, as described in Table 4 action 16 of the Agreement (PCT 2014), and provides standardized procedures for the development and implementation of seed collection and seed storage for Graham's and White River beardtongues. There were no changes to plan in 2018.

1.7 Restoration Plan

The Restoration Plan Subcommittee developed an early draft Beardtongue Restoration Plan in late 2017. The plan will be revisited in 2019 and finalized in 2020.

2 IMPLEMENTATION OF CONSERVATION AGREEMENT IN BEARDTONGUE HABITATS

2.1 BLM Vernal Field Office (Utah)

In 2018, the Vernal BLM did not authorize any disturbance or permits within the BLM surface Conservation Units. No new mineral materials permits were granted in or near *Penstemon* conservation areas or habitat. A parcel of land near Watson is currently being transferred as an in-lieu selection to SITLA. This parcel does not include any known *Penstemon grahamii* or *P. scariosus* var. *albifluvis*¹ habitat or conservation areas but does contain Green River shale outcrops. These outcrops were surveyed by BLM botanists in 2017 and no occurrences of either species were found.

Methods for assessing livestock grazing and weed impacts in beardtongue habitats were incorporated into the BLM VFO demographic monitoring implemented in summer 2017 and continued in 2018. These methods are expected to be further revised in 2019.

2.2 BLM White River Field Office (Colorado)

The BLM White River Field Office authorized surface disturbing activities associated with oil and gas developments on approximately 11.4 acres in Conservation Areas in Rio Blanco County,

¹ Recent research on genetic diversity and relationships in the *Penstemon scariosus* complex (Rodríguez-Peña et al. 2018; Stevens unpublished data) suggests that *P. scariosus* var. *albifluvis* is a distinct taxon (*P. albifluvis*) due to both its isolated geographic distribution and statistically significant genetic separation from other species in the *P. scariosus* complex. However, some of these findings have not been published and are being further investigated by *Penstemon* specialists at Brigham Young and Ohio State Universities (Mikel Stevens and Andi Wolfe, respectively, and others). In order to maintain consistency with the 2014 *Penstemon* Conservation Agreement and associated documents, the *Penstemon* Conservation Team will continue to use *P. scariosus* var. *albifluvis* as the species name until such time as the species has been formally renamed.

Colorado. These activities included a single well pad with three wells, an access road to the well pad, and a pipeline placement within an existing CO BLM road. The BLM WRFO provided the project details to the team for review and the team approved the proposed mitigation. In addition, the WRFO noted some disturbance from dispersed hiking and hunting activities in Conservation Areas, but the amount of disturbance that occurred is unknown. Surveys for projects proposed within suitable habitat (including Conservation Area Units) for these species were completed in 2018. The Liberty pipeline project is currently proposed in occupied habitat for White River beardtongue; this project was reviewed by the Conservation Team but has not been approved by BLM VFO.

2.3 SITLA

SITLA provided funding in support of the implementation of the Penstemon Conservation Agreement totaling \$6,966.62 in 2018. No new leases were issued within Penstemon conservation Areas in 2018.

A pre-disturbance survey was conducted in a SITLA Interim A conservation area in the Holliday Block in June 2018. No beardtongue plants or potential habitats were found in the area to be disturbed, but there is approximately four acres of high-quality shale barrens habitat within the 300-foot buffer. Twenty-eight (28) Graham's beardtongue individuals were found approximately 300-350 feet from the proposed project area. Because the plants were not inside the 300-foot buffer, and because the proposed surface disturbance is minimal and will not occur in potential shale habitat, no further action was required under the Conservation Agreement.

On September 1, 2018, SITLA issued an oil and gas lease that encompasses part of an interim Class B conservation area (S32 T11S R25E).

2.4 Uintah County

Uintah County actively participated as a Team member throughout 2018. Uintah County provided funds for technical support for amendments to the Uintah County Interim Overlay Zone ordinance established as part of the 2014 agreement. The purpose of the amendments was to clarify language in the ordinance.

2.5 State of Utah/The Nature Conservancy

The State of Utah Department of Natural Resources ESMF program provided \$60,000 in FY2018 (July 1, 2017 to June 30, 2018) to support pollinator and reproductive success research for *P. scariosus* var. *albifluvis*. This project also received \$40,000 in support from The Nature Conservancy Utah.

2.6 Summary of Financial Contributions by Partnering Agencies

The Penstemon Conservation Team met eight times in 2018, including four conference calls and four in-person meetings in Vernal, Utah. The direct funds and in-kind contributions associated with these meetings and other Agreement-related activities are summarized in Table 1.

Table 1. 2018 Conservation Agreement Financial Contributions by Partner Agencies

| Partner | Direct Funds | In-Kind (hours) |
|-------------------------------|------------------|-----------------|
| BLM - CO | \$15,000 | 57 |
| BLM - UT | 0 | 685 |
| Utah DNR | \$60,000 | 42 |
| The Nature Conservancy – Utah | \$40,000 | 0 |
| PLPCO | 0 | 19 |
| Rio Blanco County | 0 | 8 |
| SITLA | \$6,967 | 130 |
| Uintah County | \$757 | 20 |
| USFWS - CO | 0 | 75 |
| USFWS - UT | 0 | 200 |
| TOTAL | \$122,724 | 1,236 |

A similar level of participation by the Agreement partner agencies is expected in 2019.

3 CONSERVATION AGREEMENT UPDATES

3.1 Conservation Agreement Addendum

The Agreement signatories discussed the benefits of extending the Agreement by five years in order to provide a 20-year agreement. All signatories agreed to extend the Agreement by five years in a signed Addendum to the Conservation Agreement and Strategy for Graham's Beardtongue (*Penstemon grahamii*) and White River Beardtongue (*P. scariosus* var. *albifluvis*). Private landowner properties that are currently included in the Agreement will not be required to keep their lands as conservation areas after 2029 (15 years) but may voluntarily remain a part of the Agreement through 2034 (20 years).

A copy of the Addendum is presented as Appendix A.

3.2 Boundary Review and Adjustment

According to section 6.2 in the Agreement the Team must revisit conservation area boundaries every one to three years. In November of 2017 the Team began a general review of the existing conservation areas and boundaries while also considering new scientific information. New

scientific information included in the examination of areas includes genetic research, survey data, population density analysis, population viability analysis, and connectivity analysis. This review is nearing completion and will be finalized in early 2019. Any boundary modifications must meet the criteria established in section 6.2 of the Agreement.

3.3 Uintah County Interim Area Overlay Ordinance Amendment

In 2018, the Penstemon Conservation Team worked with Uintah County to amend the Interim Area Overlay Zone Ordinance. The ordinance language was amended to clarify permitting requirements for surface disturbance and several sections defining surface disturbing activities and mitigation were added. Details on the process for removing an interim area from the Agreement were also added. On July 20, 2018 the Uintah County Commission met in a special session to accept the amended ordinance language and to review the removal of two parcels from the Penstemon Conservation Overlay Zone with associated zoning map changes. These changes are reflected in the Penstemon Conservation Agreement Addendum (Appendix A).

4 DATA MANAGEMENT STRATEGY

All reports, publications, data, and literature mentioned in this annual report are compiled in the Penstemon Conservation Team Google Drive site, hosted by SITLA, and are accessible to all conservation team members. Disturbance shapefiles are updated and managed by Uintah County.

4.1 BLM

Any Utah BLM survey data for the beardtongues is submitted to the Utah Natural Heritage Program and Utah Fish and Wildlife Ecological Services Field Office. Any Colorado BLM survey data for the beardtongues is submitted to the Colorado Natural Heritage Program and Colorado Fish and Wildlife Service Field Office.

4.2 Manzanita Botanical Consulting

Any data collected by Manzanita Botanical Consulting in 2018 have been submitted to the Penstemon Conservation Team for inclusion in this and future annual reports.

5 2018 FIELD SURVEY RESULTS

Surveys for Graham's and White River beardtongue were conducted by multiple entities in 2018. Agency surveys focused on unsurveyed areas in and near the Book Cliffs White River beardtongue population, and on potential habitats in the Willow Creek and Sunday School Canyon areas. Survey results are summarized below.

5.1 BLM Vernal Field Office (Utah)

In 2018, BLM Botanists and interns surveyed for *P. grahamii* and *P. scariosus* var. *albifluvis* in several areas on BLM-administered lands. Several of these surveys were specific to proposed projects within modeled suitable habitat for one or both species. The 2018 surveys focused on Sunday School Canyon, Willow Creek, and Agency Draw. Project-specific surveys were completed for the proposed Liberty pipeline, and a building stone permit in Buck Canyon. In addition, a survey for *P. grahamii* and *P. scariosus* var. *albifluvis* was conducted for a lease reinstatement on the West Tavaputs Plateau, south of Nine Mile Canyon and east of Cottonwood Canyon. This area is within modeled suitable habitat for both species but is outside of their currently known ranges and had not been previously surveyed. Suitable habitat was identified during the survey, but no occurrences of either species were found in the survey area.

In total, 2,993 *P. scariosus* var. *albifluvis* and 919 *P. grahamii* plants were documented on BLM-administered lands in Utah during the 2018 surveys. Survey data collected in 2018 will be reported to the Utah Natural Heritage Program and U.S. Fish and Wildlife Utah Ecological Services Field Office.

In 2019, BLM botanists and interns will continue surveys to fill in data gaps within modeled suitable habitat for both species and will complete project-specific surveys as applicable. In addition, surveys within modeled high potential suitable habitat in areas that have not been previously surveyed will continue.

5.2 BLM White River Field Office (Colorado)

A beardtongue pre-disturbance survey for a proposed oil and gas project effort was conducted by the WRFO in 2018. The survey area comprised approximately 13.2 acres of suitable *P. scariosus* var. *albifluvis* habitat and contained approximately five *P. scariosus* var. *albifluvis* plants along an existing BLM road 12.2 meters east of the proposed disturbance. Additional surveys for both species are expected in 2019.

5.3 State of Utah

No surveys for *P. grahamii* or *P. scariosus* var. *albifluvis* were performed by the Utah Department of Natural Resources or Utah State University in 2018.

5.4 SITLA/Manzanita Botanical Consulting

In June 2018, Manzanita Botanical Consulting conducted a pre-disturbance survey in an Interim A conservation area for a lessee in the SITLA Holliday Block. The survey area comprised an approximately 1-acre project area plus a 300-foot buffer. The survey area buffer contained approximately four acres of high-quality shale barrens habitat, but no beardtongue plants were found within the buffer. Twenty-eight (28) Graham's beardtongue individuals were found approximately 300-350 feet from the proposed project location and are new occurrences for this portion of the Holliday Block. Because these plants were not inside the 300-foot buffer, and

because the proposed surface disturbance is minimal and will not occur in potential shale habitat, no further action was required under the Conservation Agreement.

6 2018 SEED COLLECTIONS

Seed collections were performed in 2018 as part of implementation of the 2017 Seed Management Plan (PCT 2017b).

6.1 BLM Vernal Field Office (Utah)

The BLM Vernal Field Office collected seed from three locations in 2018 (Table 2). Fruit set for *Penstemon grahamii* was poor due to the dry spring, with mature, seed-bearing fruits found on only five plants (seeds collected from 1 plant). Fruit set for *P. scariosus* var. *albifluvis* was higher, with seed collected from two sites. Seeds were sent to Red Butte Garden for long term storage.

Table 2. 2018 BLM Vernal Field Office Beardtongue Seed Collections

| Nearest Demographic Monitoring Plot | Date | UTM Easting | UTM Northing | Number of Plants | Seeds Collected | Location Name |
|---|-----------|-------------|--------------|------------------|-----------------|---------------|
| <i>Penstemon scariosus</i> var. <i>albifluvis</i> | | | | | | |
| 3508 (1072) | 6/26/2018 | 666269.6 | 4430544.4 | 2 | 4 | White River |
| 1070 | 6/28/2018 | 666341 | 4426184 | 65 | 8 | White River |
| <i>Penstemon grahamii</i> | | | | | | |
| 1020 | 6/26/2018 | 665458 | 4427673 | 1 | 5 | White River |

Seed collections are expected to continue in 2019.

7 ONGOING RESEARCH

Multiple research and monitoring activities have been implemented as part of the Agreement and are summarized by partner agency below.

7.1 BLM Vernal Field Office

The BLM Vernal Field Office monitored 33 demographic and habitat monitoring plots in 2018. The study plots comprise a 1-meter square quadrat centered around a randomly-selected beardtongue individual surrounded by a 100 square meter circular plot. Demographic, habitat, and disturbance data are collected within the 1-meter quadrat, with census counts of beardtongue plants within the 100-meter circular plot. Due to the timing of the monitoring (fruiting stage for both flowers), and an overall poor flowering season for both species, pollinator observation were

not completed in 2018; pollinator observation will be completed in conjunction with the 2019 demographic monitoring, if feasible.

A total of 50 demographic monitoring plots (25 for each species) were initially established in 2016 as part of this study. During the 2018 monitoring season, several of the original plots were dropped from the study due to issues with access and loss of plots from erosion and trampling. Additional plots were established to account for some of these issues, and more plots will be established in 2019 to supplement the remaining lost plots. Demographic monitoring plots will also be established in 2019 in the Book Cliffs, and within any other significant populations of the two species on BLM-administered lands in Utah that are not encompassed by the current study. Climate monitoring equipment (iButton temperature loggers) were deployed at five *P. grahamii* and four *P. scariosus* var. *albifluvis* monitoring locations in 2018. Additional iButtons will be deployed in 2019, and 2018 and 2019 iButton climate data will be compiled and reported in 2019. A report of the 2018 demographic monitoring results will be submitted to the Team in 2019. Monitoring is expected to continue in 2019. Overall trend data will be analyzed once several years of data have been collected.

7.1.1 Demographic Monitoring Results

7.1.1.1 WHITE RIVER BEARDTONGUE

Approximately 46 percent of the White River beardtongue plants in the demographic monitoring plots flowered, and approximately 31 percent of flowering plants produced seed in 2018. There was an average of 12 seeds per fruit in 2018. Browsing, grazing, or other herbivory was noted on approximately 34 percent of the White River beardtongue plants in the demographic plots; many of the flowering stalks were browsed (removed) from the plants prior to fruiting. The most common type of disturbance noted in the monitoring plots was dung or droppings, primarily attributed to native ungulates (deer and elk) and lagomorphs at an average distance of 14.9 cm from White River beardtongue plants. Animal tracks (non-livestock) were noted in approximately 6 percent of the plots, at an average distance of 11 cm from White River beardtongue plants. No damage was attributed to livestock grazing. Vehicle tracks were noted in 1 plot.

7.1.1.2 GRAHAM'S BEARDTONGUE

Approximately 27 percent of the Graham's beardtongue plants in the demographic monitoring plots flowered, and approximately 15 percent of flowering plants produced seed in 2018. There was an average of 9 seeds per fruit in 2018. Approximately 31% of Graham's beardtongue plants in the demographic plots were damaged, with 9% of damage from browsing or grazing; several of the flowering stalks were browsed (removed) from the plants prior to fruiting. Approximately 15 percent of the stems were desiccated (dried out), and may be dead; however, monitoring of these plots will continue in 2019. In addition, insect herbivory, rock movement, disease, or unknown cause of damage were noted for approximately 21 percent of the plants. The most common type of disturbance noted in the monitoring plots was dung or droppings, primarily attributed to native ungulates (deer and elk) and lagomorphs; this type of disturbance was noted in approximately 18 percent of the plots, generally within 5 cm of Graham's beardtongue plants. Animal tracks (non-livestock) were noted in approximately 9 percent of the plots, at an average

distance of 9 cm from Graham's beardtongue plants. No damage was attributed to livestock grazing.

7.1.2 Habitat Condition Monitoring Results

7.1.2.1 WHITE RIVER BEARDTONGUE

White River beardtongue plants composed approximately 2.8% of the total cover within the monitoring plots. The average shrub or tree cover was 0.5% (trace), grass cover was 0.2% (trace), total forb cover was 3.1%, and biological soil crust cover was 1.9%. Bare soil composed approximately 8.9% of the total cover. Average total rock cover (including shale, channery, building stone) in the plots was 80.8%. Litter composed approximately 1.8% of the average cover. Invasive plant species composed approximately 0.1% (trace) of the total cover. Disturbance composed approximately 1.8% of the total cover.

7.1.2.2 GRAHAM'S BEARDTONGUE

Graham's beardtongue plants composed approximately 0.6% (trace) of the total cover within the monitoring plots. The average shrub / tree cover was 7.4%, grass cover was 1%, total forb cover was 1.5%, and biological soil crust cover was 4%. Bare soil composed approximately 18.5% of the total cover. Average total rock cover (including shale, channery, building stone) in the plots was 65.2%. Litter composed approximately 8% of the average cover. Invasive plant species composed approximately 0.1% (trace) of the total cover. Disturbance composed approximately 0.4 % (trace) of the total cover.

7.1.3 Census Monitoring Results

7.1.3.1 WHITE RIVER BEARDTONGUE

Within the 100 m² census monitoring plots, a total of 856 plants were counted (average 48 plants per plot) comprising 320 reproductive and 536 non-reproductive plants. Overall, 37% of the total plants in the census plots were reproductive. There was an average of 18 reproductive plants and 30 non-reproductive plants per 100 m² plot.

7.1.3.2 GRAHAM'S BEARDTONGUE

Within the 100 m² census monitoring plots, a total of 140 plants were counted (average 9 plants per plot), comprising 16 reproductive and 124 non-reproductive plants. Overall, 11.4 % of the total plants in the census plots were reproductive. There was an average of 1 reproductive plant and 8 non-reproductive plants per 100 m² plot.

7.2 BLM White River Field Office

The second year of monitoring of the White River beardtongue (*P. scariosus* var. *albifluvis*) Raven South study site in the Raven Ridge ACEC was completed in May of 2018. Colorado BLM observed a stable to increasing trend nearing statistical significance (paired t-test; $t(11) =$

2.13, $p = 0.06$) at the site between 2017 and 2018. In order to discern important demographic and life history traits a sample of 147 individuals was permanently tagged at the site in 2018.

In an ongoing effort to expand monitoring of the species in Colorado; two additional study sites were established at distinct populations in 2018. The Sheep Trail study site is located in the southern portion of the Raven Ridge ACEC, separated from the Raven South population by over a mile. The Weaver Canyon study site is located in the White River Conservation Unit south of the river.

Insect herbivory of varying intensity was documented at the two Raven Ridge ACEC study sites. The Sheep Trail study site had the highest instance of insect herbivory with 67% of individuals affected.

The tenth year of monitoring over a fourteen-year period (2005-2018) at the Mormon Gap Graham's beardtongue (*P. grahamii*) study site in the Raven Ridge ACEC was completed in June of 2018. This is the only Graham's beardtongue monitoring site in Colorado. The site trend was stable between 2017 and 2018 with an estimated population size of 44 plants and a density of 0.08 plants per square meter. The number of total rosettes was higher in 2018 than in any of the previous four years and the percentage of reproductive individuals (14%) was slightly lower.

Overall, Colorado BLM has documented a statistically significant decrease (paired t-test; $t(14) = 2.84$, $p < 0.01$) at the site since the current monitoring study was established in 2005. The decrease is likely largely attributable to a livestock trailing event that occurred in 2013. In the five years following the livestock trailing event the population has averaged approximately half the size that it was in the five monitoring years prior.

7.3 Red Butte Garden/Utah Nature Conservancy/DNR

Researchers at the Red Butte Garden Conservation Program implemented a reproductive success study on White River beardtongue in early 2018. The project aim is to investigate links between pollinator visitation, seed set, and surface disturbance are using Rana digital camera technology time (Barlow et al. 2017; Barlow and Pavlik 2017) to quantify pollinator visitation to beardtongue flowers. These data will be used to model relationships between pollinator activity, habitat, and disturbance factors needed for effective conservation planning and implementation. The 2018 activities focused on White River beardtongue at five study sites in conservation areas in Uintah County, Utah. Individual plants were selected for pollinator monitoring and seed collection at each site. Plant community composition and floral density were also documented for each site. A total of 53 individuals were monitored over two to five days each from late May to early June, and fruits were collected for seed counts in late June, with approximately 100,000 White River beardtongue seeds curated at Red Butte Garden. Total (Rana) pollinator monitoring data across all sites comprised approximately 1,500-2,000 hours of video. Pollinator visitation rates were very high, and preliminary results indicate that the principal pollinators are *Penstemon* pollen specialists, the pollen wasp (*Pseudomasaris vespoides*) and *Osmia* bee species (awaiting ID at the USU bee lab). An interim report produced in October 2018 (Barlow and Pavlik 2018) is available on request.

In 2019, Red Butte Garden researchers will focus on Graham's beardtongue in conservation areas using the same methods.

7.4 SITLA/Manzanita Botanical Consulting

Transplant experiments for Graham's and White River beardtongue were carried out in 2014 and 2015 and monitoring annually through 2017 as part of ESMF and partner funding FY2014-2017. The objective of ongoing monitoring is to assess 1) transplant longevity, 2) the ability of transplanted individuals to recruit offspring and potentially function as a natural population, and 3) suitable habitat conditions and potential treatments for enhancing the survival of restored populations. Transplant success monitoring was not performed in 2018 but will be continued in May and June 2019 as part of support by the Utah Endangered Species Recovery program Endangered Species Mitigation Fund.

8 FUTURE SUBCOMMITTEE WORK

The Penstemon Conservation Team has developed six management plans to date. Ongoing and expected future activities associated with these plans are summarized below.

8.1 Demographic Monitoring Plan

Demographic monitoring will continue in 2019, and additional study plots will be established in the Book Cliffs. Additional iButton climate loggers will be deployed in 2019.

8.2 Livestock Grazing Management Plan

Habitat monitoring, as part of the demographic monitoring program, will be continued to inform current and future habitat conditions in beardtongue habitats. The habitat condition monitoring results to date should be evaluated to ensure that changes in livestock-related surface disturbance, weeds, and other habitat conditions can be detected with sufficient rigor to support the objectives of the Livestock Grazing Management, Demographic Monitoring, and Weed Management Plans.

8.3 Restoration Plan

The Restoration Plan Subcommittee drafted an outline restoration plan in 2017. There was no additional work on this plan in 2018 due to other team priorities. However, a draft plan is expected in 2019 for finalization in 2020.

8.4 Other Future Activities

Ongoing conservation-related research and activities are being conducted by the Agreement partner agencies. Expected 2019 activities include the following:

8.4.1 Pollination & Reproductive Success Study

Red Butte Garden researchers will examine pollination and reproductive success of Graham's beardtongue in 2019. Analysis of the 2018 White River beardtongue pollinator activity video data is ongoing.

8.4.2 Climate Monitoring

Implementation of range-wide climate monitoring was initiated in 2018, with the installation of iButtons near the monitoring plots established by BLM VFO for demographic and census monitoring of both beardtongue species. Data logged by the iButtons will be collected from the monitoring plots during the 2019 monitoring season and additional iButtons will be deployed throughout the study area in 2019.

8.4.3 Seed Collections

Seed collections will continue in 2019 as climate-linked flowering and fruiting permits.

9 LITERATURE CITED

- Barlow, S. E., G.A. Wright, C. Ma, M. Barberis, I.W. Farrell, E.C. Marr, and P.C. Stevenson. 2017. Distasteful nectar deters floral robbery. *Current Biology* 27(16):2552–2558.
- Barlow, S., and B. Pavlik. 2017. Estimating the spatial dimensions of *Astragalus holmgreniorum* mutualisms. Pollinator visitation and behaviors along a seed set gradient. Report to the State of Utah Department of Natural Resources Endangered Species Recovery Program and The Nature Conservancy, Utah Field Office, Salt Lake City. 26 pp.
- Barlow, S., and B. Pavlik. 2018. Effects of distance to disturbance and population density on pollinator visitation and reproductive output of White River penstemon (*Penstemon scariosus* var. *albifluvis*) and Graham's penstemon (*P. grahamii*). Interim report prepared October 2018 for The Nature Conservancy. 12 pp.
- Penstemon Conservation Team. 2014. *Conservation Agreement and Strategy for Graham's Beardtongue (Penstemon grahamii) and White River Beardtongue (P. scariosus* var. *albifluvis*). Prepared for the State of Utah School and Institutional Trust Lands Administration; Uintah County, Utah; Utah Public Lands Coordination Office; Utah Division of Wildlife Resources; Rio Blanco County, Colorado; Bureau of Land Management; and U.S. Fish and Wildlife Service. Prepared by SWCA Environmental Consultants, Salt Lake City, Utah. July 22, 2014.
- . 2015a. *Conservation Agreement and Strategy for Graham's Beardtongue (Penstemon grahamii) and White River Beardtongue (P. scariosus* var. *albifluvis*): Mitigation Plan. Prepared by the Penstemon Conservation Team. July 22, 2015.
- . 2015b. *Conservation Agreement and Strategy for Graham's Beardtongue (Penstemon grahamii) and White River Beardtongue (P. scariosus* var. *albifluvis*): Weed Management Plan. Prepared by the Penstemon Conservation Team. July 22, 2015.

- . 2015c. *Conservation Agreement and Strategy for Graham's Beardtongue (Penstemon grahamii) and White River Beardtongue (P. scariosus var. albifluvis): Livestock Grazing Management Plan*. Prepared by the Penstemon Conservation Team. July 23, 2015.
- . 2015d. *Conservation Agreement and Strategy for Graham's Beardtongue (Penstemon grahamii) and White River Beardtongue (P. scariosus var. albifluvis): Criteria for the Calculation of Baseline and New Surface Disturbance*. Prepared by the Penstemon Conservation Team. July 22, 2015.
- . 2017a. *Conservation Agreement and Strategy for Graham's Beardtongue (Penstemon grahamii) and White River Beardtongue (P. scariosus var. albifluvis): Demographic Monitoring Plan*. Prepared by the Penstemon Conservation Team. March 31, 2017.
- . 2017b. *Conservation Agreement and Strategy for Graham's Beardtongue (Penstemon grahamii) and White River Beardtongue (P. scariosus var. albifluvis): Seed Management Strategy*. Prepared by the Penstemon Conservation Team. May 30, 2017.
- Rodriguez-Pena, R.A., R.L. Johnson, L.A. Johnson, C.D. Anderson, N.J. Ricks, K.M. Farley, M.D. Robbins, A.D. Wolfe, and M.R. Stevens. 2018. Investigating the genetic diversity and differentiation patterns in the *Penstemon scariosus* species complex under different sample sizes using AFLPs and SSRs. *Conservation Genetics* 19:1335–1348.

This page intentionally blank

Appendix A

Conservation Agreement Addendum and Maps

This page intentionally blank

Addendum To The 2014

**Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)**

and

White River Beardtongue (*Penstemon scariosus* var. *albifluvis*)

November 20, 2018

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:

Penstemon Conservation Team

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham’s Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**

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

Ann Timberman, Field Supervisor Date
U.S. Fish and Wildlife Service, Colorado Field Office

Gary Torres, 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

David Ure, Director Date
Utah School and Institutional Trust Lands Administration

William C. Stringer, Chair Date
Uintah County Commission

Kathleen Clarke, Director Date
Public Lands Policy Coordination Office

Mike Fowlks, Director Date
Utah Division of Wildlife Resources

Lannie Massey, Chair Date
Board of County Commissioners, Rio Blanco County

1. BACKGROUND

Initially formalized in 2014 (Penstemon Conservation Team 2014), the Conservation Agreement and Strategy for Graham’s beardtongue (*Penstemon grahamii*) and White River beardtongue (*Penstemon scariosus* var. *albifluvis*) (hereafter, “Agreement”) is a partnership for the development and implementation of conservation measures to protect the two species and their habitat. The partnership is led by a Team comprised of the undersigned parties (hereafter, “Signatories”). The purpose of the partnership is to support the long-term persistence of Graham’s beardtongue and White River beardtongue (collectively the “beardtongues”) within their historic range and provide a framework for future conservation efforts.

The Signatories to the Agreement have agreed to work together on the creation and management of conservation areas, the development of range-wide monitoring, and the funding of conservation research for Graham’s beardtongue and White River beardtongue in Uintah County, Utah and Rio Blanco County, Colorado. Accomplishments under the Agreement include development and implementation of a mitigation plan, disturbance mapping, disturbance management plan, livestock management plan, demographic monitoring plan, and weed management plan, which are summarized in annual reports (Penstemon Conservation Team 2015; 2016; and 2017). Over the past four years the Team has also held regular meetings, reviewed projects with potential impacts to the beardtongues, recommended appropriate conservation measures, coordinated annual seed collection, conducted annual surveys, initiated range-wide demographic monitoring, and identified research needs.

2. PURPOSE

The Signatories desire to modify the Agreement with this addendum by including a new commitment for the Conservation Team to complete a comprehensive achievement report (section 4.1, below), and a new commitment for the U.S. Fish and Wildlife Service (Service) to complete a species status assessment (section 4.2, below). This addendum also includes five-year extension of the Agreement, until 2034, for the following signatories: The School and Institutional Trust Lands Administration (SITLA), the Bureau of Land Management (BLM), the Service, Utah Public Lands Policy Coordination Office (PLPCO), Utah Division of Wildlife Management (UDW), and Rio Blanco County (section 4.3). The details of each modification are described below.

3. AUTHORITY

This amendment is subject to all of the Authorities specified in section 2.4 of the Agreement. Modifications made in this amendment do not preclude commitments made by Signatories in the original Agreement and all measures in the original Agreement remain in effect.

4. AGREEMENT MODIFICATIONS

4.1 Conservation Agreement Reports

On or around December 31st, 2019 and every five years thereafter, Signatories hereby agree to complete a summary report of conservation accomplishments since the inception of the Agreement (for the avoidance of doubt, reports are to be completed in 2019, 2024, 2029). The summary reports may replace the annual report for that year. The final summary report shall be completed prior to the end of the Agreement on July 25th, 2034. Summary reports will provide a comprehensive review of conservation efforts and research performed under the Agreement, as well as the status of the beardtongues and habitat conditions within conservation areas. The summary report is intended to inform the Service's species status assessment for the beardtongues. The report will also inform the Penstemon Conservation Team of any conservation actions that would be beneficial to the species and could be implemented prior to the ending of the Conservation Agreement.

4.2 Species Status Assessment

On or around December 31, 2028, the Service hereby agrees to complete a species status assessment or similar assessment document for the beardtongues. The purpose of this assessment is to characterize the beardtongues' biological condition and viability within their respective ranges. The assessment will likely include a projection of the beardtongues' future condition based on a range of plausible scenarios and will characterize the uncertainty of stressors and scenarios.

4.3 Extension of the Agreement

All Parties hereby agree to extend the Agreement for an additional 5-year period, which will begin immediately at the end of the original time period and will end on July 25, 2034. All Parties also agree that the private parties in Utah will be released from the Conservation Agreement on July 25, 2029 when the terms original Agreement ends and the Uinta County Ordinance (No. 7-16-2018 01) expires. After July 25, 2029 private parties may voluntarily submit land to be incorporated as a conservation area under the Agreement.

5. DURATION OF AGREEMENT AND ADDENDUM

This addendum to the Agreement, as explained above, shall be effective as of the date of the last signature and shall remain in force for the period of time identified in section 4.3 of this addendum. This addendum and the Agreement is the entire understanding between the Signatories related to the subject matter contained herein. This document may be executed in multiple identical original counterparts, all of which shall constitute one document. 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. In the event of a conflict between this addendum and the Agreement, the terms of this addendum shall control.

6. LITERATURE CITED

Penstemon Conservation Team. 2014. Conservation Agreement and Strategy for Graham's Beardtongue (*Penstemon grahamii*) and White River Beardtongue (*P. scariosus* var. *albifluvis*). Prepared for the State of Utah School and Institutional Trust Lands Administration; Uintah County, Utah; Utah Public Lands Coordination Office; Utah Division of Wildlife Resources; Rio Blanco County, Colorado; Bureau of Land Management; and U.S. Fish and Wildlife Service. Prepared by SWCA Environmental Consultants, Salt Lake City, Utah. July 22, 2014. Found at: <https://trustlands.utah.gov/in-your-community/conservation/penstemon-conservation-project/>

Penstemon Conservation Team. 2016. Conservation Agreement and Strategy for Graham's Beardtongue (*Penstemon grahamii*) and White River Beardtongue (*P. scariosus* var. *albifluvis*) 2015 Annual Report. Found at: <https://trustlands.utah.gov/in-your-community/conservation/penstemon-conservation-project/> .

Penstemon Conservation Team. 2017. Conservation Agreement and Strategy for Graham's Beardtongue (*Penstemon grahamii*) and White River Beardtongue (*P. scariosus* var. *albifluvis*) 2016 Annual Report. Found at: <https://trustlands.utah.gov/in-your-community/conservation/penstemon-conservation-project/> .

Penstemon Conservation Team. 2018. Conservation Agreement and Strategy for Graham's Beardtongue (*Penstemon grahamii*) and White River Beardtongue (*P. scariosus* var. *albifluvis*) 2017 Annual Report. Found at: <https://trustlands.utah.gov/in-your-community/conservation/penstemon-conservation-project/> .

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**



11/28/2018

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

Date

Ann Timberman, Field Supervisor
U.S. Fish and Wildlife Service, Colorado Field Office

Date

Gary Torres, Green River District Manager
U.S. Bureau of Land Management, Vernal (Utah) Field Office

Date

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

Date

David Ure, Director
Utah School and Institutional Trust Lands Administration

Date

William C. Stringer, Chair
Uintah County Commission

Date

Kathleen Clarke, Director
Public Lands Policy Coordination Office

Date

Mike Fowlks, Director
Utah Division of Wildlife Resources

Date

Lannie Massey, Chair
Board of County Commissioners, Rio Blanco County

Date

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**

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

Ann Timberman *11/21/18*

Ann Timberman, Field Supervisor Date
U.S. Fish and Wildlife Service, Colorado Field Office

Gary Torres, 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

David Ure, Director Date
Utah School and Institutional Trust Lands Administration

William C. Stringer, Chair Date
Uintah County Commission

Kathleen Clarke, Director Date
Public Lands Policy Coordination Office


Mike Fowlks, Director Date
Utah Division of Wildlife Resources

Lannie Massey, Chair Date
Board of County Commissioners, Rio Blanco County

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**

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

Ann Timberman, Field Supervisor Date
U.S. Fish and Wildlife Service, Colorado Field Office

 *Nov 28, 2018*
Roger L. Bankert, Field Office 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

David Ure, Director Date
Utah School and Institutional Trust Lands Administration

William C. Stringer, Chair Date
Uintah County Commission

Kathleen Clarke, Director Date
Public Lands Policy Coordination Office

Mike Fowlks, Director Date
Utah Division of Wildlife Resources



Lannie Massey, Chair Date
Board of County Commissioners, Rio Blanco County

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**

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

Ann Timberman, Field Supervisor Date
U.S. Fish and Wildlife Service, Colorado Field Office

Gary Torres, 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

David Ure, Director Date
Utah School and Institutional Trust Lands Administration

William C. Stringer, Chair Date
Uintah County Commission

Kathleen Clarke, Director Date
Public Lands Policy Coordination Office

Mike Fowlks, Director Date
Utah Division of Wildlife Resources

Lannie Massey, Chair Date
Board of County Commissioners, Rio Blanco County

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**

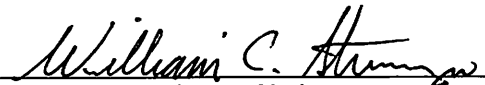
Larry Crist, Field Supervisor Date
U.S. Fish and Wildlife Service, Utah Ecological Services Field Office

Ann Timberman, Field Supervisor Date
U.S. Fish and Wildlife Service, Colorado Field Office

Gary Torres, 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

David Ure, Director Date
Utah School and Institutional Trust Lands Administration

 11/28/18
William C. Stringer, Chair Date
Uintah County Commission

Kathleen Clarke, Director Date
Public Lands Policy Coordination Office

Mike Fowlks, Director Date
Utah Division of Wildlife Resources

Lannie Massey, Chair Date
Board of County Commissioners, Rio Blanco County

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**

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

Date

Ann Timberman, Field Supervisor
U.S. Fish and Wildlife Service, Colorado Field Office

Date

Gary Torres, Green River District Manager
U.S. Bureau of Land Management, Vernal (Utah) Field Office

Date

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

Date

David Ure, Director
Utah School and Institutional Trust Lands Administration

Date

William C. Stringer, Chair
Uintah County Commission

Date

Kathleen Clarke, Director
Public Lands Policy Coordination Office

Date


 ACTING DIRECTOR

Mike Fowlks, Director
Utah Division of Wildlife Resources

11/28/18
Date

Lannie Massey, Chair
Board of County Commissioners, Rio Blanco County

Date

 11/28/2018

Financial Mgr. Date

Division of Wildlife Resources

3

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**

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

Date

Ann Timberman, Field Supervisor
U.S. Fish and Wildlife Service, Colorado Field Office

Date

Gary Torres, Green River District Manager
U.S. Bureau of Land Management, Vernal (Utah) Field Office

Date

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

Date

David Ure, Director
Utah School and Institutional Trust Lands Administration

Date

William C. Stringer, Chair
Uintah County Commission


Date

Kathleen Clarke, Director
Public Lands Policy Coordination Office

Date

Mike Fowlks, Director
Utah Division of Wildlife Resources

Date


Lannie Massey, Chair

12/13/2018
Date

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**

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

Ann Timberman, Field Supervisor Date
U.S. Fish and Wildlife Service, Colorado Field Office

Gary Torres, 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

David Ure, Director Date
Utah School and Institutional Trust Lands Administration

William C. Stringer, Chair Date
Uintah County Commission


Kathleen Clarke, Director Date
Public Lands Policy Coordination Office

Mike Fowlks, Director Date
Utah Division of Wildlife Resources

Lannie Massey, Chair Date

**Addendum To The 2014
Conservation Agreement and Strategy for
Graham's Beardtongue (*Penstemon grahamii*)
and
White River Beardtongue (*Penstemon scariosus* var.
albifluvis)**

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

Date

Ann Timberman, Field Supervisor
U.S. Fish and Wildlife Service, Colorado Field Office

Date

Gary Torres, Green River District Manager
U.S. Bureau of Land Management, Vernal (Utah) Field Office

Date

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

Date

David Ure
David Ure, Director
Utah School and Institutional Trust Lands Administration

11/30/18
Date

William C. Stringer, Chair
Uintah County Commission

Date

Kathleen Clarke, Director
Public Lands Policy Coordination Office

Date

Mike Fowlks, Director
Utah Division of Wildlife Resources

Date

Lannie Massey, Chair

Date

Appendix B
Conservation Agreement Addendum
Maps

This page intentionally blank

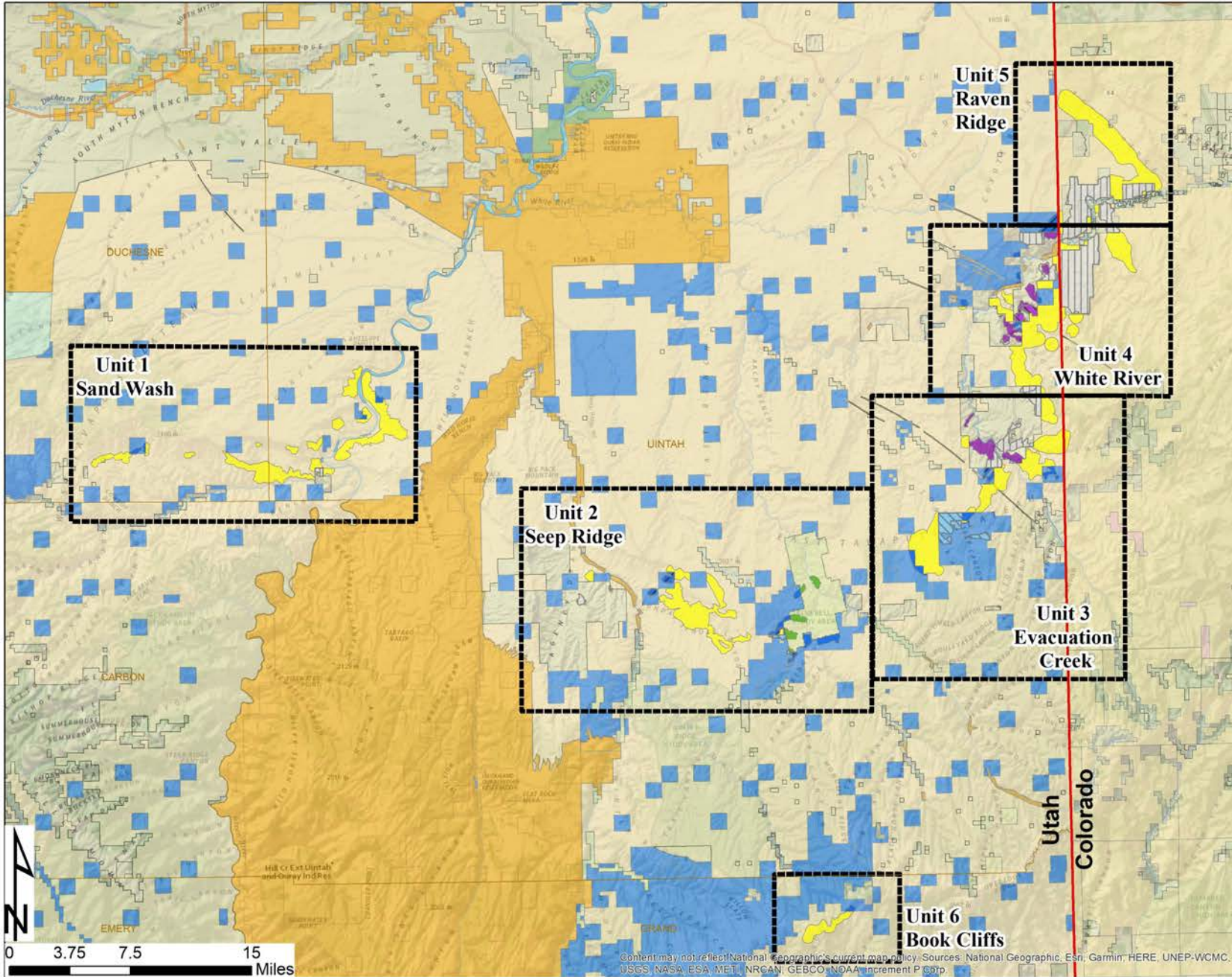
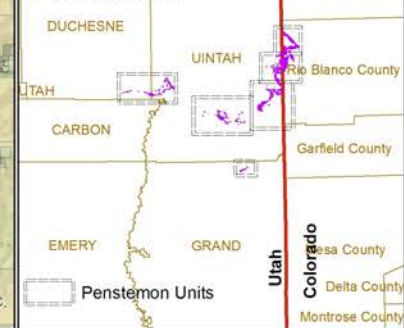
Penstemon Conservation Agreement Areas- 2019

- BLM Conservation Area
- DWR Surface Conservation Area
- Private Conservation Area
- Private Interim Area
- Private Non-Conservation Area
- SITLA Conservation Area
- SITLA Interim Area – Class A
- SITLA Interim Area – Class B

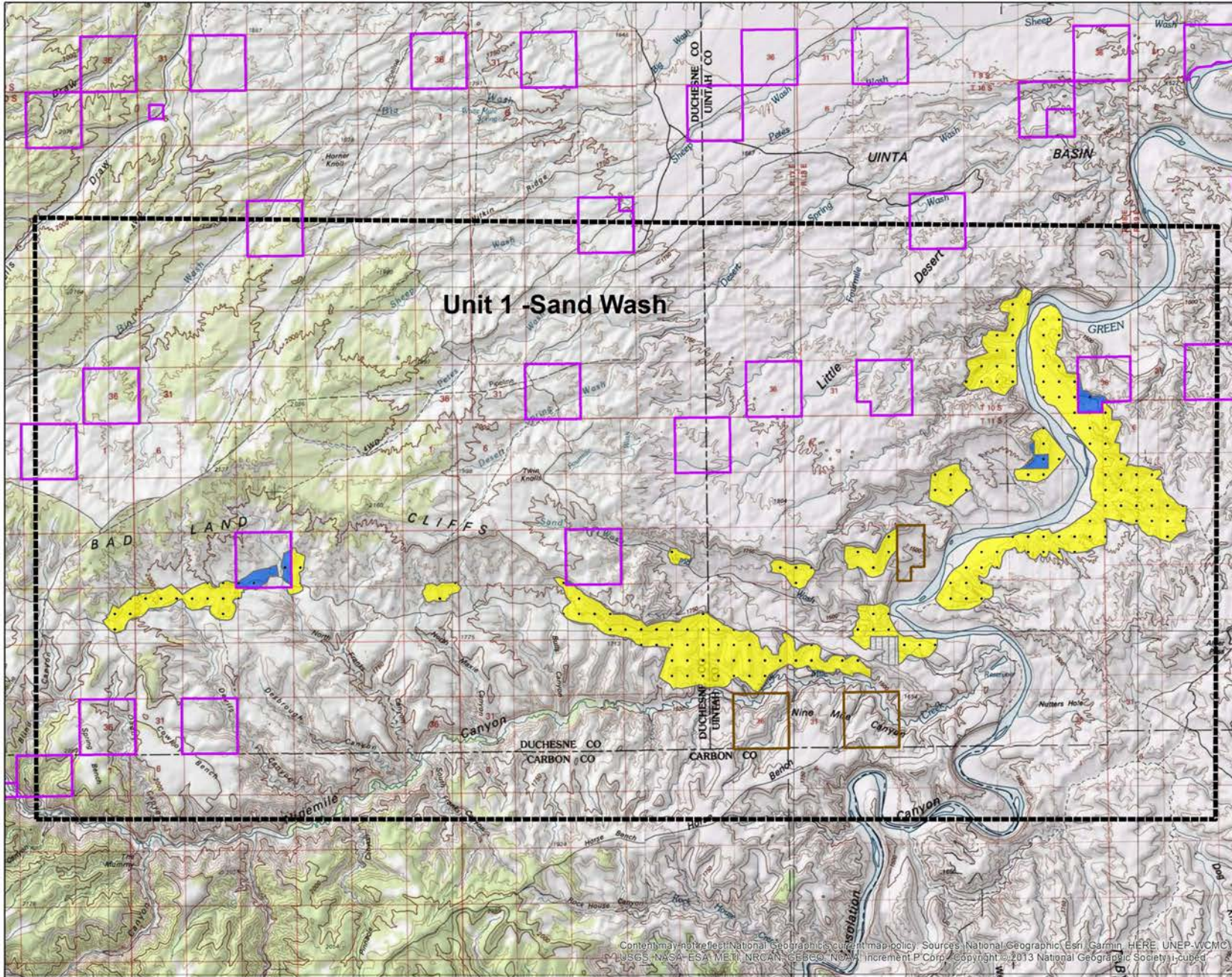
Land Ownership

- BLM
- National Wildlife Refuge
- Private
- State Sovereign Land
- State Trust Lands
- State Wildlife Reserve Management Area
- Tribal Lands

Area Inset



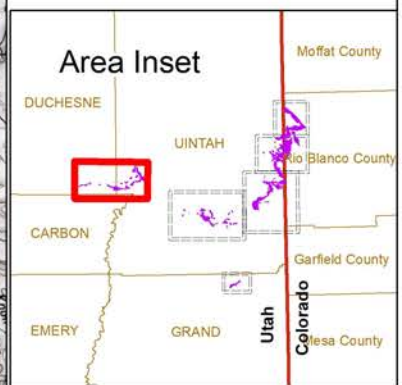
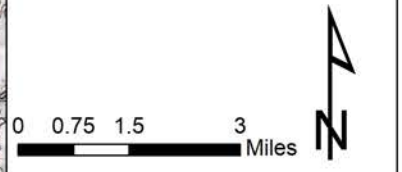
Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.



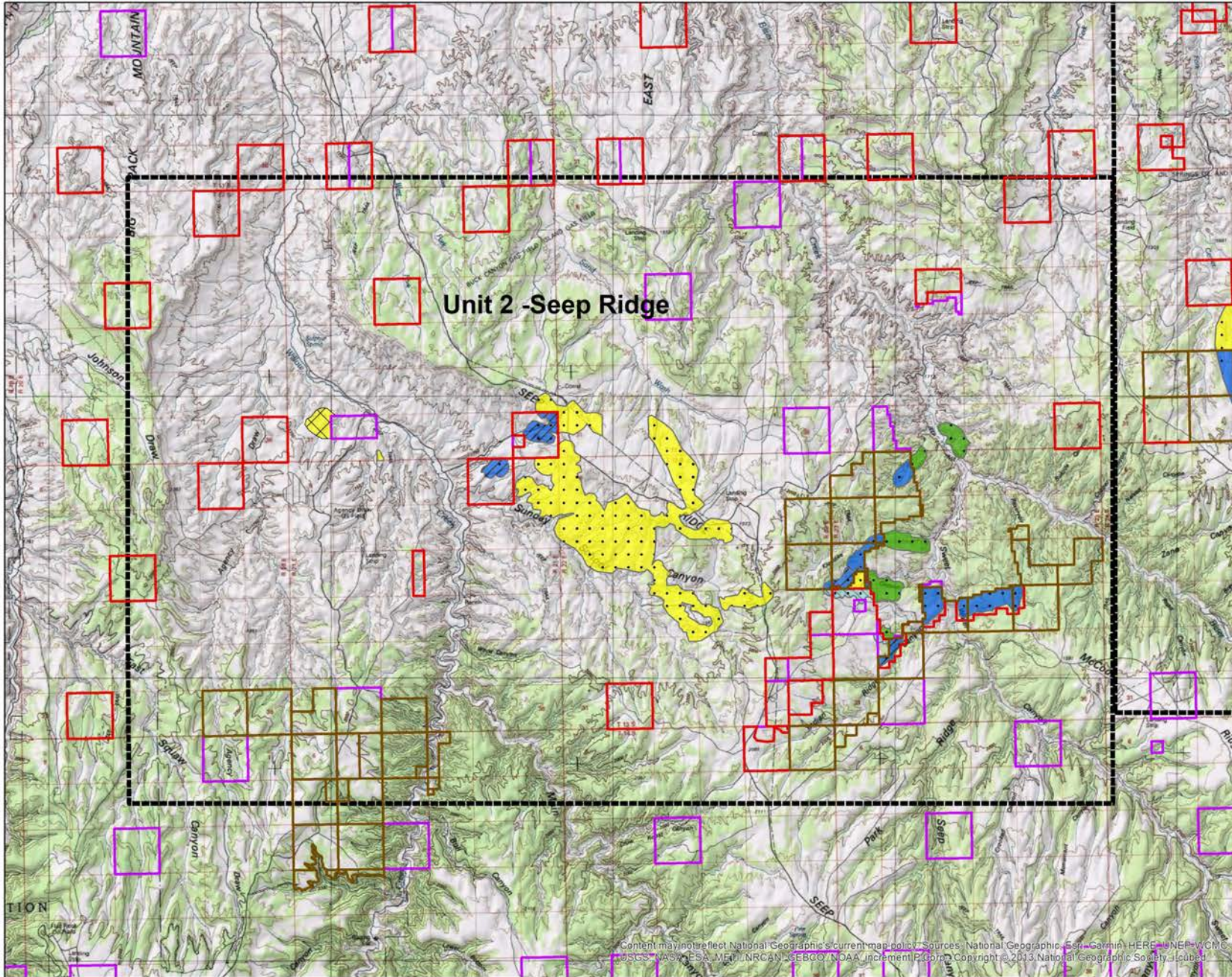
Penstemon Conservation Agreement Areas- 2019

- BLM Conservation Area
- DWR Surface Conservation Area
- Private Conservation Area
- Private Interim Area
- Private Non-Conservation Area
- SITLA Conservation Area
- SITLA Interim Area – Class A
- SITLA Interim Area – Class B
- Additional 2.5% Disturbance Cap
- Additional 5% Disturbance Cap

- #### Land Management
- SITLA Recreation Exchange Lands
 - SITLA Active Oil Shale Leases
 - SITLA Active Oil and Gas Leases



Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp. Copyright © 2013 National Geographic Society. I-cubed



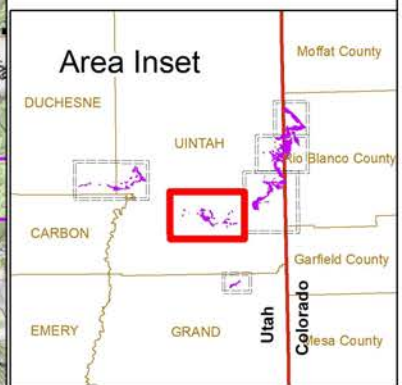
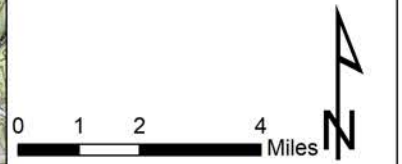
Unit 2 - Seep Ridge

Penstemon Conservation Agreement Areas- 2019

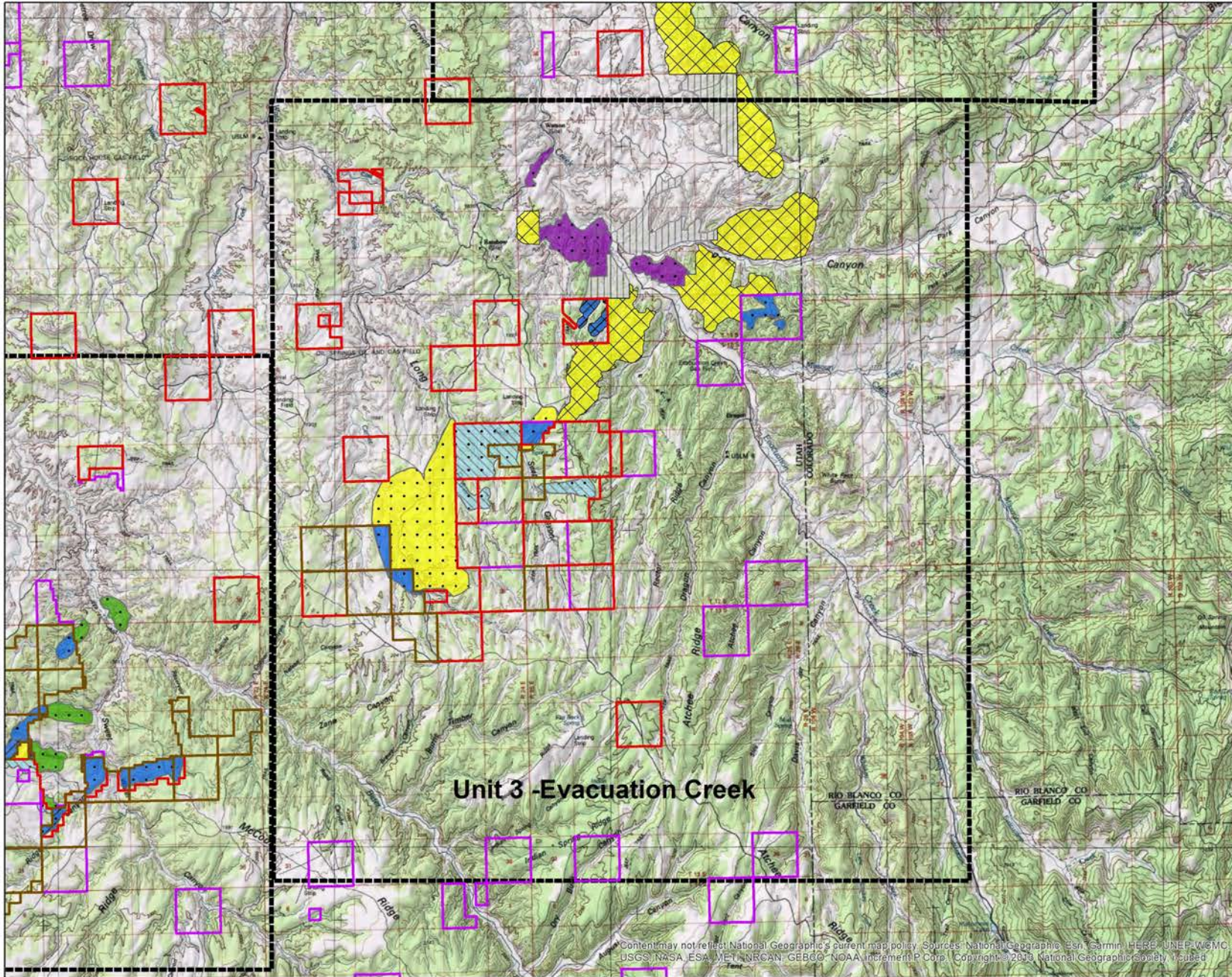
- BLM Conservation Area
- DWR Surface Conservation Area
- Private Conservation Area
- Private Interim Area
- Private Non-Conservation Area
- SITLA Conservation Area
- SITLA Interim Area – Class A
- SITLA Interim Area – Class B
- Additional 2.5% Disturbance Cap
- Additional 5% Disturbance Cap

Land Management

- SITLA Recreation Exchange Lands
- SITLA Active Oil Shale Leases
- SITLA Active Oil and Gas Leases



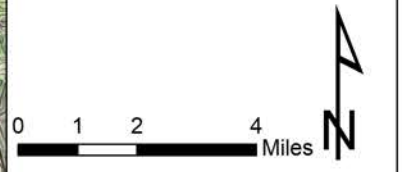
Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, Increment P Corp. Copyright © 2013 National Geographic Society. All rights reserved.



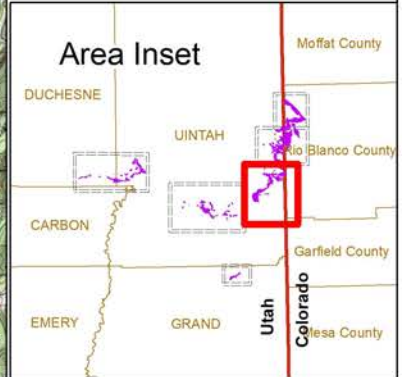
Penstemon Conservation Agreement Areas- 2019

- BLM Conservation Area
- DWR Surface Conservation Area
- Private Conservation Area
- Private Interim Area
- Private Non-Conservation Area
- SITLA Conservation Area
- SITLA Interim Area – Class A
- SITLA Interim Area – Class B
- Additional 2.5% Disturbance Cap
- Additional 5% Disturbance Cap

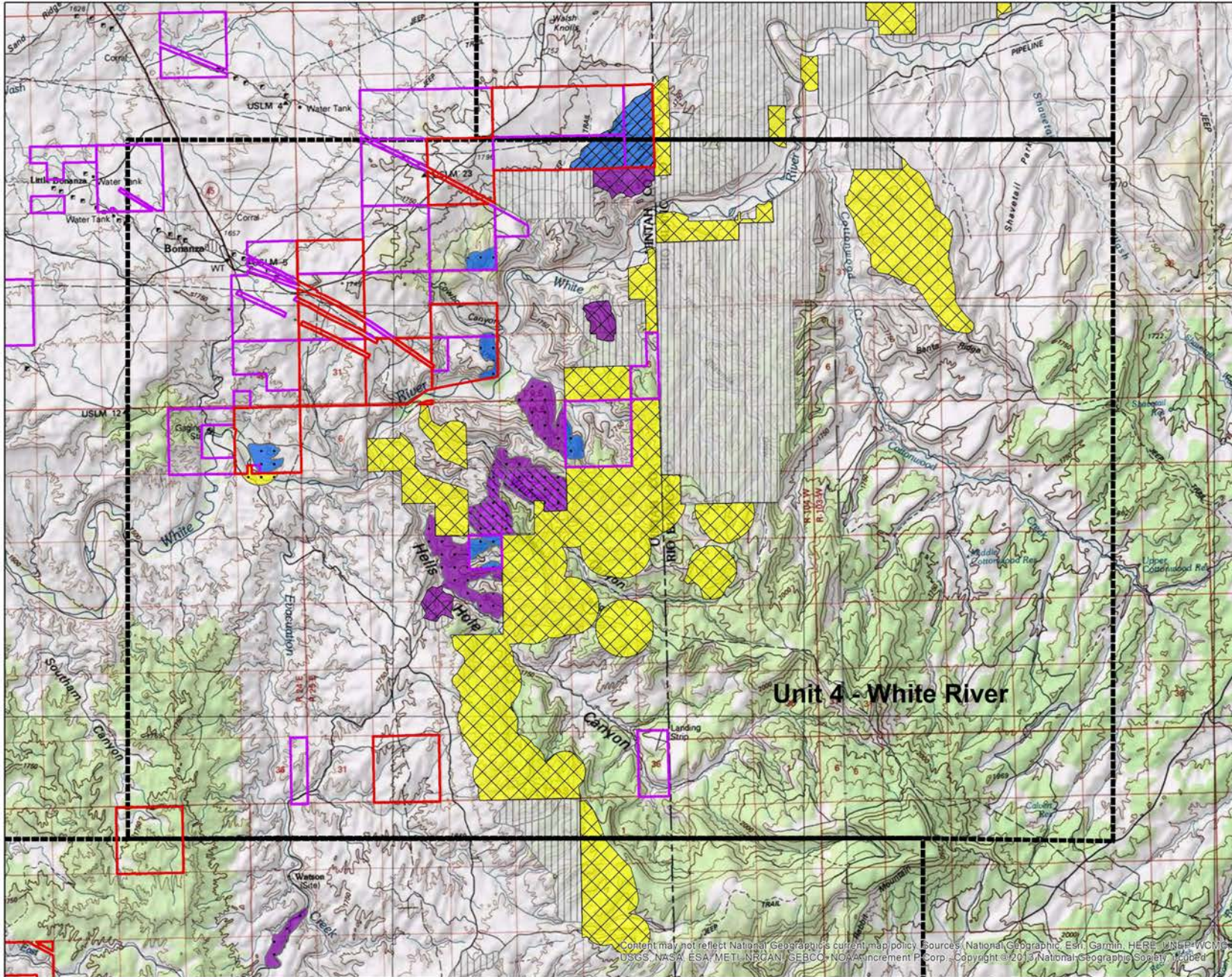
- #### Land Management
- SITLA Recreation Exchange Lands
 - SITLA Active Oil Shale Leases
 - SITLA Active Oil and Gas Leases



Unit 3 - Evacuation Creek



Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp. Copyright © 2019 National Geographic Society. 1/19/20

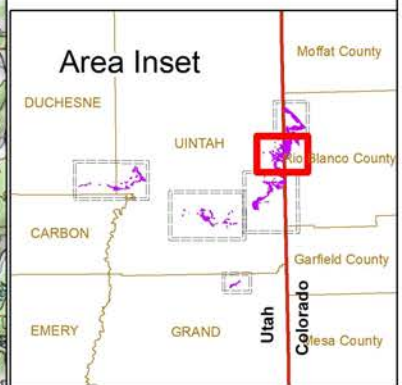


Penstemon Conservation Agreement Areas- 2019

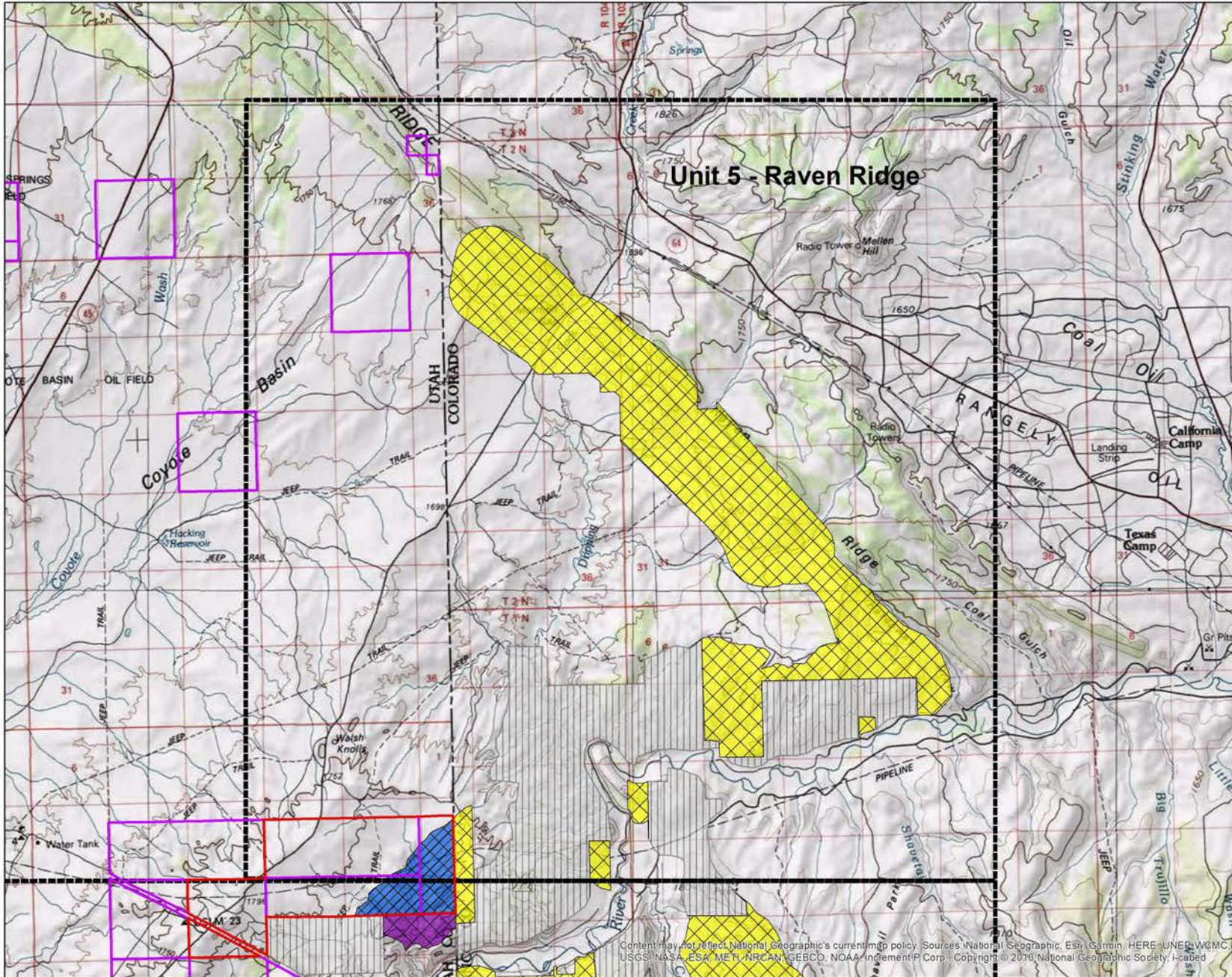
- BLM Conservation Area
- DWR Surface Conservation Area
- Private Conservation Area
- Private Interim Area
- Private Non-Conservation Area
- SITLA Conservation Area
- SITLA Interim Area – Class A
- SITLA Interim Area – Class B
- Additional 2.5% Disturbance Cap
- Additional 5% Disturbance Cap

Land Management

- SITLA Recreation Exchange Lands
- SITLA Active Oil Shale Leases
- SITLA Active Oil and Gas Leases



Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp. Copyright © 2013 National Geographic Society. All rights reserved.



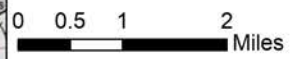
Unit 5 - Raven Ridge

Penstemon Conservation Agreement Areas- 2019

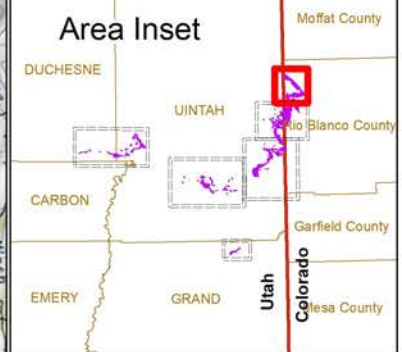
- BLM Conservation Area
- DWR Surface Conservation Area
- Private Conservation Area
- Private Interim Area
- Private Non-Conservation Area
- SITLA Conservation Area
- SITLA Interim Area – Class A
- SITLA Interim Area – Class B
- Additional 2.5% Disturbance Cap
- Additional 5% Disturbance Cap

Land Management

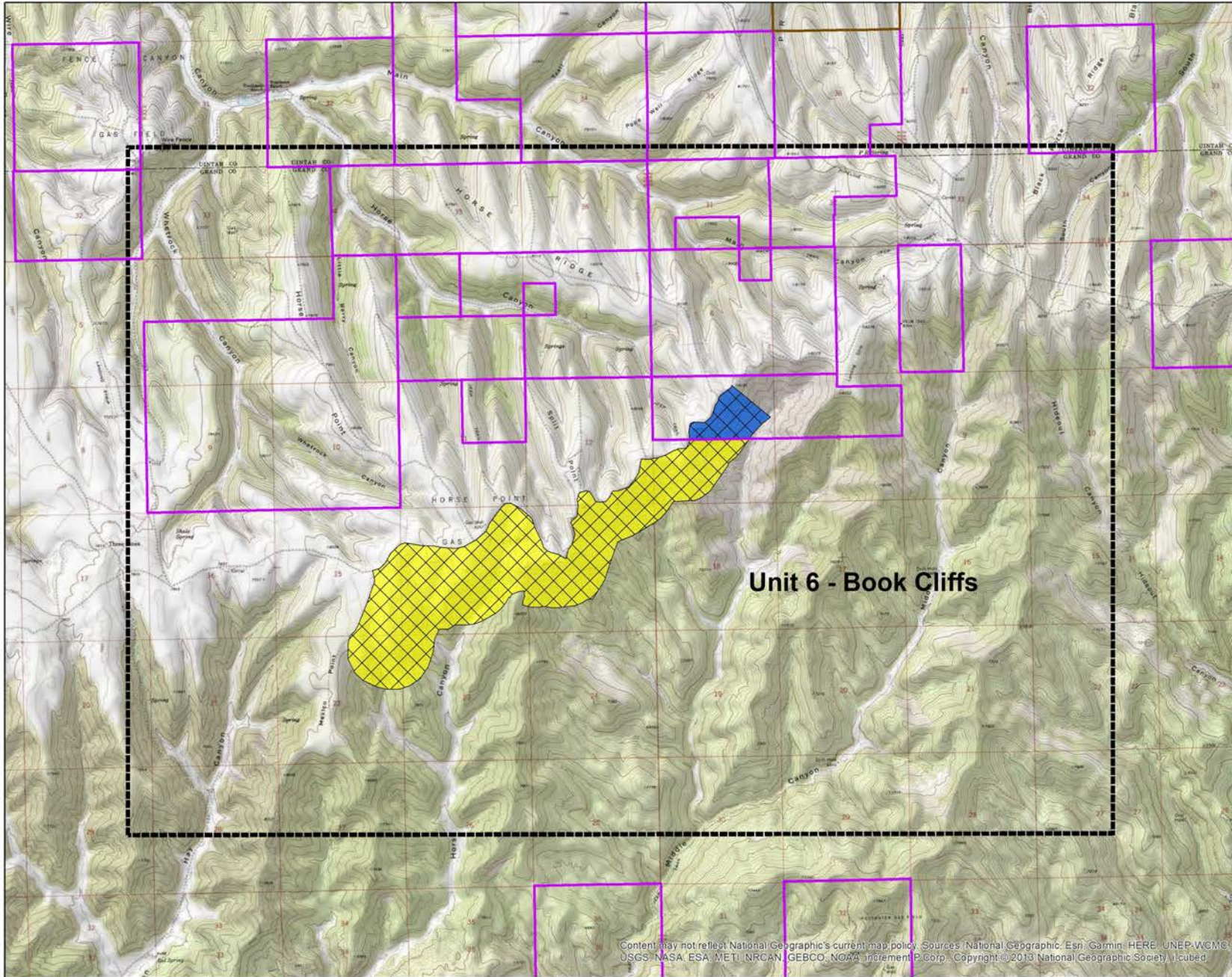
- SITLA Recreation Exchange Lands
- SITLA Active Oil Shale Leases
- SITLA Active Oil and Gas Leases













Area Inset



Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WGMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, Inframark P Corp. Copyright © 2019 National Geographic Society. I-Caded



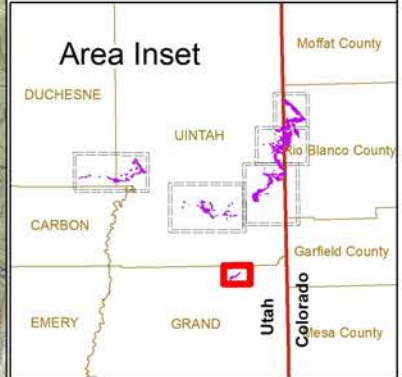
Penstemon Conservation Agreement Areas- 2019

-  BLM Conservation Area
-  DWR Surface Conservation Area
-  Private Conservation Area
-  Private Interim Area
-  Private Non-Conservation Area
-  SITLA Conservation Area
-  SITLA Interim Area – Class A
-  SITLA Interim Area – Class B
-  Additional 2.5% Disturbance Cap
-  Additional 5% Disturbance Cap

Land Management

-  SITLA Recreation Exchange Lands
-  SITLA Active Oil Shale Leases
-  SITLA Active Oil and Gas Leases

Unit 6 - Book Cliffs



Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, iNaturalist, P. Corp. Copyright © 2013 National Geographic Society, iCubed

Appendix C
Conservation Agreement Addendum
Conservation Area Locations

This page intentionally blank

Table C-1. Penstemon Conservation Area and Interim Conservation Area Locations by Conservation Unit

| Unit #/ CA Type | UTM Easting | UTM Northing |
|---------------------------|-------------|--------------|
| Unit 1: Sand Wash | | |
| Conservation Area | 598521.3987 | 4416882.749 |
| Conservation Area | 597019.5298 | 4415152.825 |
| Conservation Area | 583379.2339 | 4411586.899 |
| Conservation Area | 574319.5257 | 4411731.229 |
| Conservation Area | 575174.5807 | 4412046.989 |
| Conservation Area | 592672.9982 | 4410142.305 |
| Conservation Area | 579630.274 | 4411342.983 |
| Conservation Area | 587350.2888 | 4409732.43 |
| Conservation Area | 572004.7797 | 4411011.016 |
| Conservation Area | 589926.0701 | 4411888.254 |
| Conservation Area | 575438.945 | 4411908.34 |
| Conservation Area | 586530.859 | 4412367.556 |
| Conservation Area | 592205.2373 | 4412374.049 |
| Conservation Area | 594433.6413 | 4414432.748 |
| Conservation Area | 597168.9071 | 4415244.24 |
| Conservation Area | 598047.7634 | 4414516.008 |
| Conservation Area | 595943.3712 | 4418367.101 |
| Unit 2: Seep Ridge | | |
| Conservation Area | 642198.235 | 4393079.009 |
| Conservation Area | 640321.1134 | 4395065.844 |
| Conservation Area | 639562.3908 | 4393445.242 |
| Conservation Area | 638647.4264 | 4393692.494 |
| Conservation Area | 639657.8365 | 4391835.782 |
| Conservation Area | 643349.0149 | 4392986.776 |
| Conservation Area | 641205.5762 | 4392939.587 |
| Conservation Area | 638870.2006 | 4394716.516 |
| Conservation Area | 640237.4292 | 4397465.997 |
| Conservation Area | 640770.1882 | 4398034.304 |
| Conservation Area | 642063.0413 | 4398732.695 |
| Conservation Area | 634708.4135 | 4393057.633 |
| Conservation Area | 630463.0086 | 4395722.471 |
| Conservation Area | 621660.0856 | 4398116.085 |
| Conservation Area | 619572.1852 | 4399279.34 |
| Conservation Area | 628417.4711 | 4399539.855 |
| Interim Area | 638245.6734 | 4393729.874 |

Table C-1. Penstemon Conservation Area and Interim Conservation Area Locations by Conservation Unit

| Unit #/ CA Type | UTM Easting | UTM Northing |
|-----------------|-------------|--------------|
| Interim Area | 638481.0315 | 4393235.171 |
| Interim Area | 639780.6858 | 4391209.783 |
| Interim Area | 625788.3386 | 4397684.919 |
| Interim Area | 627447.7625 | 4399083.301 |
| Interim Area | 637841.2104 | 4393453.142 |
| Interim Area | 637574.2657 | 4393298.249 |
| Interim Area | 639426.8515 | 4391654.815 |

Unit 3: Evacuation Creek

| | | |
|-------------------|-------------|-------------|
| Conservation Area | 659736.2688 | 4408061.302 |
| Conservation Area | 666069.9935 | 4409139.365 |
| Conservation Area | 652062.478 | 4400607.087 |
| Conservation Area | 657276.5773 | 4414812.487 |
| Conservation Area | 653200.7989 | 4402054.981 |
| Conservation Area | 659539.1007 | 4412926.966 |
| Conservation Area | 665360.9137 | 4409631.671 |
| Conservation Area | 663837.612 | 4410405.015 |
| Conservation Area | 656962.6328 | 4412630.007 |
| Conservation Area | 665474.5261 | 4412457.074 |
| Conservation Area | 659571.89 | 4412672.413 |
| Conservation Area | 656853.8816 | 4404697.803 |
| Conservation Area | 657171.8901 | 4405260.367 |
| Conservation Area | 658797.4512 | 4412035.952 |
| Conservation Area | 661737.8071 | 4411105.006 |
| Conservation Area | 667042.3829 | 4412873.158 |
| Conservation Area | 665219.2555 | 4415759.444 |
| Conservation Area | 657581.9709 | 4405851.934 |
| Interim Area | 658564.526 | 4403234.966 |
| Interim Area | 657449.8733 | 4403241.84 |
| Interim Area | 659203.1166 | 4408500.704 |
| Interim Area | 656157.7704 | 4404443.813 |
| Interim Area | 655202.1088 | 4404369.877 |
| Interim Area | 659731.1787 | 4409994.997 |
| Interim Area | 659079.2614 | 4409642.313 |
| Interim Area | 659515.63 | 4409155.563 |

Unit 4: White River

| | | |
|-------------------|-------------|-------------|
| Conservation Area | 667684.3849 | 4423735.352 |
|-------------------|-------------|-------------|

Table C-1. Penstemon Conservation Area and Interim Conservation Area Locations by Conservation Unit

| Unit #/ CA Type | UTM Easting | UTM Northing |
|------------------------|--------------------|---------------------|
| Conservation Area | 661229.9334 | 4426979.993 |
| Conservation Area | 656834.6412 | 4426502.584 |
| Conservation Area | 662276.3736 | 4428999.23 |
| Conservation Area | 662100.8997 | 4431285.755 |
| Conservation Area | 662102.4603 | 4424189.53 |
| Conservation Area | 663607.2846 | 4427547.662 |
| Conservation Area | 664325.0542 | 4426825.758 |
| Conservation Area | 663900.8225 | 4422824.298 |
| Conservation Area | 660626.1755 | 4425836.291 |
| Conservation Area | 664912.0658 | 4428294.248 |
| Conservation Area | 667523.4547 | 4432104.129 |
| Conservation Area | 666705.0204 | 4425440.042 |
| Conservation Area | 668019.7498 | 4424971.082 |
| Conservation Area | 665001.6968 | 4429835.094 |
| Conservation Area | 662376.4065 | 4424504.124 |
| Conservation Area | 665548.8611 | 4433238.264 |
| Conservation Area | 672440.6794 | 4431865.428 |
| Conservation Area | 666079.7159 | 4430589.693 |
| Conservation Area | 656682.0882 | 4426011.9 |
| Conservation Area | 661763.9366 | 4424667.649 |
| Conservation Area | 665568.4031 | 4422348.4 |
| Conservation Area | 661019.8134 | 4422940.592 |
| Conservation Area | 664714.6514 | 4417631.099 |
| Conservation Area | 669071.3025 | 4434104.318 |
| Conservation Area | 669349.6574 | 4434138.101 |
| Conservation Area | 666485.9447 | 4433783.055 |
| Conservation Area | 662928.9246 | 4426413.98 |
| Conservation Area | 661642.5464 | 4423735.764 |
| Conservation Area | 662753.3171 | 4424619.549 |
| Conservation Area | 662486.888 | 4426372.41 |
| Interim Area | 665363.5516 | 4433851.676 |
| Interim Area | 663514.8316 | 4425783.09 |
| Interim Area | 662544.1391 | 4425819.524 |
| Interim Area | 662385.5778 | 4425015.518 |
| Interim Area | 662051.1488 | 4425378.966 |
| Interim Area | 661863.2627 | 4425082.05 |

Table C-1. Penstemon Conservation Area and Interim Conservation Area Locations by Conservation Unit

| Unit #/ CA Type | UTM Easting | UTM Northing |
|----------------------------|-------------|--------------|
| Unit 5: Raven Ridge | | |
| Conservation Area | 670071.4295 | 4435845.705 |
| Conservation Area | 669275.9426 | 4434627.094 |
| Conservation Area | 666461.9576 | 4434937.43 |
| Conservation Area | 674778.8221 | 4437430.752 |
| Conservation Area | 671288.7544 | 4439140.249 |
| Conservation Area | 671270.0088 | 4442399.038 |
| Interim Area | 665791.2152 | 4434667.426 |
| Unit 6: Book Cliffs | | |
| Conservation Area | 642862.9562 | 4364287.156 |
| Conservation Area | 645584.6738 | 4366141.712 |