

U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-110-2013-0036-EA

CASEFILE/PROJECT NUMBER:

PROJECT NAME: Threatened plant species reseeding research

LEGAL DESCRIPTION: Sixth Principal Meridian, Colorado

T. 1 N., R. 97 W.,
sec. 22, SW $\frac{1}{4}$ SW $\frac{1}{4}$.

T. 1 S., R. 97 W.,
sec. 16, SW $\frac{1}{4}$ NW $\frac{1}{4}$;
sec. 29, lots 10 and 13.

T. 2 S., R. 97 W.,
sec. 19, NW $\frac{1}{4}$ SE $\frac{1}{4}$;
sec. 29, NW $\frac{1}{4}$ SW $\frac{1}{4}$.

T. 1 N., R. 98 W.,
sec. 24, SE $\frac{1}{4}$ NE $\frac{1}{4}$;
sec. 25, SW $\frac{1}{4}$ SE $\frac{1}{4}$.

T. 1 S., R. 98 W.,
sec. 7, lot 5;
sec. 10, SW $\frac{1}{4}$ SW $\frac{1}{4}$.

APPLICANT: Colorado State University and the BLM White River Field Office

PURPOSE & NEED FOR THE ACTION: The purpose of the Proposed Action is to research methods and techniques that may be utilized to further preserve and protect the two federally threatened plant species, Dudley Bluffs twinpod (*Physaria obcordata*) and Dudley Bluffs bladderpod (*Physaria congesta*), in the Piceance Basin. A research-based approach at increasing the population size of both species is being used by Colorado State University in conjunction with the White River Field Office (WRFO). The immediate goal of this project is to identify habitat limits, create new opportunities for mitigation, to reduce impacts of development on the population and ultimately result in an increased likelihood that these species may be delisted.

The need for this action is established in the Endangered Species Act (ESA) which directs that it is “the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance” of that purpose (16 USC. § 1531 (c2)). BLM Manual 6840 concerning Special Status Species Management specifies that the BLM will work to “conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species”.

Decision to be Made: The BLM will determine whether or not to allow the proposed threatened plant species reseeding research to proceed in the Piceance Basin, and if so, under what terms and conditions.

SCOPING, PUBLIC INVOLVEMENT, AND ISSUES:

Scoping & Public Involvement: Scoping was the primary mechanism used by the BLM to identify issues. Internal scoping was initiated when the project was presented to the White River Field Office (WRFO) interdisciplinary team on 02/12/2013. External scoping was conducted by posting this project on the WRFO’s on-line National Environmental Policy Act (NEPA) register on 03/12/2013. Additionally, this research project and a potential programmatic biological assessment for these two threatened plants were discussed at the Western Slope Colorado Oil and Gas Association Rio Blanco County Task Force meeting March 20th, 2013 in Meeker, Colorado. Letters were sent to stakeholders including oil and gas lease holders, rights-of-way holders, range allotment permittees, special recreation permittees, and Rio Blanco County. A 15 day public comment period was held from 7/23/2013 to 8/6/2013. On 9/11/2013 the BLM WRFO met with the U.S. Fish & Wildlife Service’s Grand Junction Regional Office, Colorado State University, Rio Blanco County, West Slope Colorado Oil and Gas Association (COGA), and several third-party contractors to discuss issues and concerns regarding the proposed research project.

Issues: Issues raised by the oil and gas industry focused on why the research populations are not being considered as “experimental, non-essential” populations under the ESA and the potential ramifications of that decision regarding additional restrictions. The BLM’s responses to public comments can be found in Attachment A.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: *Plant Habitat and Characteristics:* Dudley Bluffs bladderpod (*Physaria congesta*) and Dudley Bluffs twinpod (*Physaria obcordata*) are federally threatened plant species that are endemic to the Piceance Basin of Northwestern Colorado. These two wild mustards are found exclusively in Rio Blanco County, Colorado and lie in the heart of an ongoing natural gas field expansion. They are badland or rock outcrop soil associates, and are considered “oil shale endemics” or edaphic (soil-related) endemic species. The bladderpod grows on barren white shale outcrops on tongues of the Green River Formation where it has been exposed along down-cut drainages or windswept ridges. It often grows on level surfaces at the points of ridges or in pinyon-juniper savannah areas where outcrops of the white shale geology has been exposed. The twinpod also grows on barren white shale outcrops on tongues of the Green River Formation where it is exposed along down-cut drainages, sometimes occurring below, or interspersed with the bladderpod habitats. Because their habitats occur only in a very

restricted range on specific and highly fragmented substrates, these species are limited in their ability to expand their range or withstand stochastic events. Both species have not shown an ability to occupy or re-occupy habitats in disturbed or reclaimed suitable habitats, with the exception of one population at the edge of the Piceance Basin on Calamity Ridge, where substrate characteristics display important differences from populations found in the central portion of the Basin.

Implications of Research: Efforts to preserve these species to date have focused on protecting occupied habitat. The purpose of the proposed research project is to explore possible approaches for establishing or reestablishing populations of these species in suitable areas in order to increase their overall abundance in the region. This research project is primarily focused on determining the best approach for establishing populations of bladderpod and twinpod. In order to do so, soil moisture, soil nutrients, biological feedbacks and pollinator importance will be critically assessed. If it is found that these species are able to successfully be established via transplants and/or seeding, land managers may be able to use these techniques to mitigate concerns regarding threats to these species.

Legal Status of Research Populations: All sites will be considered research populations and both the seeds and transplants will be protected under the Endangered Species Act as threatened species. There are two levels of Section 7 consultation. Formal consultation is required for actions that are “likely to adversely affect” the species and the process may take up to 165 days for the BLM and FWS to reach concurrence on the consultation and associated conservation measures. Informal consultation is required for actions that are “not likely to adversely affect” the species and the process should only take 30 days for the BLM and FWS to reach concurrence.

During the first ten years while populations are establishing, the typical Section 7 consultation buffers will be less restrictive (Table 1). For most actions that fall within 100 meters of occupied or suitable habitat, the FWS requires formal consultation since the actions are considered “likely to adversely affect” the plants. During the first ten years of this project, the consultation buffer would be reduced and only activities within 30 meters of the research populations would be considered “likely to adversely affect” the plants and require formal consultation. For most actions that fall within 300 meters of occupied and suitable habitat, the FWS requires informal consultation since the actions are considered “not likely to adversely affect” the plant. During the first ten years of this project, the informal consultation buffer would be reduced to 50 meters. If research populations are viable beyond 10 years they will be considered fully established and will not be treated differently than any other natural population.

Table 1. Consultation Requirements within the Initial 10 Year Period

	Formal	Informal Consultation
Natural Population	≤100 m	≤300 m
Research Population	≤30 m	≤50 m
Effect Determination	Likely to Adversely Affect	Not Likely to Adversely Affect
Time Frame	135 days	30 days

In addition to the FWS requirements regarding Section 7 consultation, the 1997 White River RMP/ROD provides direction on management of threatened plant species on page 2-17:

- A no surface occupancy stipulation will be placed on known and potential habitat of federally-listed and candidate T/E plants;
- New T/E plant habitat mapped as a result of future surveys will also be protected by a NSO stipulation (although the Field Manager may grant an exception per criteria delineated in the RMP);
- Known and potential T/E habitat will be closed to mineral material disposal actions; and
- All known and potential T/E habitat, including ACECs, will be exclusion areas for new rights-of-way authorizations.

Research populations would be managed as known or occupied habitat. While the Field Manager may grant an exception to the NSO stipulation per criteria delineated in the RMP, land use authorizations will be denied in exclusion areas, with the exception of short-term land use permits involving no development, and projects that are consistent with management objectives for the area.

Proposed Action: *Restoring Threatened Physaria Populations in the Piceance Basin, Rio Blanco County, CO:* In cooperation with the BLM and FWS, replicated test plots would be established in the Piceance Basin in order to identify soil moisture and nutrient limitation in the establishment of twinpod and bladderpod. Plots are located across all known element occurrences (EO) for bladderpod and twinpod in order to find plots far enough from current populations to avoid negatively influencing genetic flow. Suitable habitat has been identified by surface geology and the presence of associated species as previously identified by Hayden-Wing’s 2009 survey results. There would be six, 5 x 5 meter study areas for each species to equal a total of 300 square meters used in the research project for the 12 separate study areas. During the spring and summer of 2013 locations of study areas were determined using GIS and subsequently finalized following ground-truthing. The best access routes have been selected by choosing those that minimize cross-country travel and steep slopes to lessen impacts on the white shale habitat, especially at any sites near existing *Physaria* populations. Each of the 12 study sites have been located on areas that are deemed suitable habitat for each species (Figure 1). These test plots are located no more than 0.5 miles away from an established roadway. Sites would be accessed and equipment would be carried in by foot; all vehicle and ATV use would be limited to existing roads and two-tracks.

Each of the 12 study areas would contain 12 replicated 0.5 x 0.5 meter plots for a total of 144 plots (Figure 6). Within each plot, half of the area would be seeded with either twinpod or bladderpod, while the other half would be planted with transplants of the same species from a prior greenhouse study. By using both seeds and transplants the BLM would be able to test the efficacy of establishing new populations from seed versus using transplants. During the fall of 2013 plots would be seeded by hand broadcasting and light raking to incorporate the seeds and during the spring of 2014 transplants would be planted. Sites chosen have little or no existing vegetation to eliminate any uprooting of current vegetation. If weedy species should establish throughout the project, they would be removed by clipping at the base of the plants. Three study areas for each species are located within the immediate vicinity of existing populations and three are located at least 600 m from any established population.

Plots would be treated with factorial combinations of soil nutrient and moisture additions. Nutrient treatments would consist of adding 10-10-10 (NPK) fertilizer plus micronutrients at a rate of 25 kg ha⁻¹ or 0 kg ha⁻¹ (control). Nutrients would be added by hand broadcasting a slow-release, solid fertilizer on the soil surface when the plots are seeded or planted with additional annual application after initial establishment. Soil moisture treatments would consist of adding supplemental water to plots each month March through July, and up to October if needed, to reflect twice the historical local monthly amount (to simulate a wet year) or no supplemental water (control). For example, if the 13 year average for June is 0.83 inches of precipitation, by the end of June if natural precipitation levels have not reached 1.66 inches of water, additional moisture will be added to reach this amount. Water would be added using four, 24- x -0.75 inch watering stakes buried to a depth of 20 inches per plot in order to simulate deep watering and minimize runoff. The factorial arrangement would result in four treatment combinations (two nutrient levels x two moisture levels) at each site. Each treatment combination would be replicated three times resulting in 12 plots at each of the 12 study areas (six twinpod and six bladderpod) resulting in a total of 144 plots.

Soil nutrient and moisture treatments would be made for two years. Data collection would begin during June 2014, when each *Physaria* individual would be mapped in each subplot and assigned a unique identifying code. Those seedlings that are transplanted from the greenhouse studies would already have a unique identifying code that was assigned to them during the initial experiments that would continue to be used. During the first and each subsequent June, small field crews would record cover by species of all plants using Daubenmire squares in each plot, as well as record the height and basal stem diameter of each *Physaria* plant using calipers. If there is any recruitment of *Physaria* plants during the year, new individuals would be given a unique identifying code. Each year survivorship, growth, and recruitment would be recorded at the individual plant level within each experimental plot. Plot photos would also be taken throughout the field experiments to record plant locations and to document change in cover over time.

A Section 10 permit granted by the FWS was obtained by BLM staff for all seed collection activities in the Piceance Basin. BLM staff has, and would continue to follow Center for Plant Conservation (CPC) seed collecting guidelines in these efforts. During the summer of 2013, seeds were collected that would be used during field experiments. For the study areas that are located within 600 meters of established *Physaria* populations, seeds were collected from within

those populations to be used as both seed and transplant stock. Seeds would be cleaned and stored in paper envelopes at 3° C in the Restoration Ecology Lab at Colorado State University until needed. Source populations and collection locations would be carefully documented and tracked throughout all experiments due to considerations of genetic diversity and genetic distribution. A small subset of each seed population would be sent to the Colorado Seed Testing Lab at Colorado State University for viability testing.

Once the populations are established and successful, CSU would plant species within five meters of established populations to support and attract pollinators known to visit the *Physaria* species. This aspect of the study would research the success in attracting pollinators to *Physaria* populations to increase reproductive success. Similar to the establishment study, water would be applied using 24- x -0.75 inch watering stakes buried to a depth of 20 inches per plot to simulate deep watering and minimize runoff. Additional NEPA review would be conducted prior to approving the planting of pollinator species.

Design Features:

- 1) The CSU project lead would be responsible for informing all persons who are associated with the project that they would be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts. If archaeological materials are discovered as a result of operations under this authorization, the applicant must immediately contact the appropriate BLM representative.
 - 2) If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery would cease, and the BLM WRFO Archaeologist would be notified immediately. Work may not resume at that location until approved by the Authorized Officer (AO). The applicant would make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM would evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The applicant, under guidance of the BLM, would implement the mitigation in a timely manner.
- The process would be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.
- 3) Pursuant to 43 CFR 10.4(g), the applicant must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), the applicant must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.
 - 4) Maintenance of facilities that were existing prior to full establishment of the populations would be permitted if it would not preclude the survival and recovery of the species, as agreed upon by the BLM and FWS.
 - 5) All vehicle spills would be contained immediately in a manner consistent with applicable laws. Solid wastes would be disposed of properly.

6) Individuals authorized to conduct activities for this research project are Mark W. Paschke, Brett Wolk, Jayne Jonas-Bratten, and Sasha Victor. If these individuals are not present to accompany a field crew to collect data, prior approval from the BLM is required.

7) All *Special Terms and Conditions* (items E – T) specified in the Section 10 permit TE-76718A would be followed and also apply to this Section 7 consultation for the entire research project where applicable.

8) Prior to conducting any fieldwork, CSU would contact the BLM and FWS.

9) Locations were permitted within 600m of existing populations if seeds were collected from those existing nearby EOs.

- a. Results from the Denver Botanical Garden's genetic study would be used to ensure that there will be no outcrossing.
- a. The nearest research site is within 35 m from occupied habitat. In order to mitigate the possible impact from this distance the following measures would be closely followed:
 - i. All vehicles would remain on existing, established roads/routes to limit the spread of non-native species into habitat.
 - ii. Boots and field gear would be checked for weeds prior to leaving the vehicle and entering research sites.
 - iii. Within the research sites, which would measure 5- x -5 meter, disturbance would be minimized by disturbing the least amount of area within the site to accomplish research goals, as well as establishing travel routes to and around site.
 - iv. As stated above, due to the proximity to occupied habitat, only seeds from that population, or those determined to be genetically similar, would be used.

10) Naturally occupied habitats (those not included within a research plot) would not be entered during site set-up or data collection. Exceptions may be granted in the future by the BLM (in consultation with the FWS) under special circumstances (e.g., soil or seed collections).

No Action Alternative: The BLM would not authorize implementation of the proposed seeding and transplanting of bladderpod or twinpod.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: None.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (White River ROD/RMP).

Date Approved: July 1, 1997

Decision Language: “Promote the recovery of Federally listed and proposed threatened or endangered plant species.” (page 2-17)

“BLM will cooperate with the Colorado Natural Areas Program, the Colorado Natural Heritage Program, and the FWS to evaluate species status and distribution and to monitor the effectiveness of protection and conservation measures for T/E and special status plant species.” (page 2-18)

AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

Standards for Public Land Health: In January 1997, the Colorado BLM approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, special status species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis (EA). These findings are located in specific elements listed below.

Cumulative Effects Analysis Assumptions: Cumulative effects are defined in the Council on Environmental Quality (CEQ) regulations (40 CFR 1508.7) as “...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” Table 2 lists the past, present, and reasonably foreseeable future actions within the area that might be affected by the Proposed Action; for this project the area considered was the Natural Resources Conservation Service (NRCS) 5th Level Watershed. However, the geographic scope used for analysis may vary for each cumulative effects issue and is described in the Affected Environment section for each resource.

Table 2. Past, Present, and Reasonably Foreseeable Actions

Action Description	STATUS		
	Past	Present	Future
Livestock Grazing	X	X	X
Wild Horse Gathers	X	X	X
Recreation	X	X	X
Invasive Weed Inventory and Treatments		X	X
Range Improvement Projects : Water Developments Fences & Cattleguards	X	X	X
Wildfire and Emergency Stabilization and Rehabilitation	X	X	X
Wind Energy Met Towers			X
Oil and Gas Development: Well Pads	X	X	X

Action Description	STATUS		
	Past	Present	Future
Access Roads Pipelines Gas Plants Facilities			
Power Lines	X	X	X
Oil Shale	X	X	X
Seismic	X	X	X
Vegetation Treatments	X	X	X

Affected Resources:

The CEQ Regulations state that NEPA documents “must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail” (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an environmental assessment (EA). Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Table 3 lists the resources considered and the determination as to whether they require additional analysis.

Table 3. Resources and Determination of Need for Further Analysis

Determination ¹	Resource	Rationale for Determination
Physical Resources		
NI	Air Quality	Travel of researchers to and from the site and reductions of plant cover during the establishment of plots may result in fugitive dust, but would be minor, of short duration and be localized. Therefore, no emissions of air pollutants above what could be expected for casual use would occur and no air quality impacts are expected.
PI	Geology and Minerals	See discussion below.
PI	Soil Resources*	See discussion below.
NI	Surface and Ground Water Quality*	No impacts to surface or groundwater are expected. The small amount of soil amendments that will be used would not result in measurable pollutants in ground or surface waters and therefore would be inconsequential.
Biological Resources		
NP	Wetlands and Riparian Zones*	There is no wetland or riparian area within the vicinity of any of the plots associated with the Proposed Action. Due to the small scale and minimal disturbance associated with the Proposed Action, there is no wetland or riparian area that would be directly or indirectly affected by the Proposed Action.
NI	Vegetation*	Due to the small scale and limited activity associated with the study plots there would be no effect on associated plant communities resulting from the proposed study plots. If the populations are viable beyond 10 years then they and the associated pollinator species would contribute to the overall diversity of the plant communities in the general vicinity of the study plots. There would be no negative effect on the health of the public land associated with these sites.

Determination¹	Resource	Rationale for Determination
NI	Invasive, Non-native Species	Due to the small scale, limited activity and limited disturbance associated with the study plots there would be no increased risk in terms of noxious or invasive species establishment beyond what is addressed by the control measures described in the Proposed Action.
NP	Special Status Animal Species*	There are no special status animal species that are known to inhabit or derive important use from the project area. Further, vehicles would be limited to existing roads, all sites would be accessed by foot and total disturbance is less than 0.5 acres in size (divided across the 12 plots).
PI	Special Status Plant Species*	See discussion below.
NI	Migratory Birds	Due to the habitat requirements of these plants (exposed and bare white shale), there will be no disturbance to potential nesting cover. Ground disturbance activities associated with the Proposed Action will take place in October, outside the migratory bird nesting season. Subsequent year monitoring would begin in April and last through July. However, access is limited to existing roads and two tracks and therefore disturbances to nests and birds would be minimal.
NP	Aquatic Wildlife*	The Proposed Action would have no effect on aquatic species as there are no habitats that support aquatic wildlife in the vicinity of the project area.
NI	Terrestrial Wildlife*	Sites are accessed by foot and vehicle use and would be limited to existing roads and two tracks; therefore there would be virtually no disturbance to habitats utilized by terrestrial species. The Proposed Action lies within CPW big game severe winter range. However, the majority of activities associated with the Proposed Action would take place outside the December 1 st through April 30 th timing period. Any potential visits to sites located within big game severe winter range during April would consist of monitoring activities which are short term, extremely localized, and considered casual use. The habitat surrounding the project sites and access is largely unsuitable for accipiter nesting and it is unlikely that raptors would nest in the vicinity of the Proposed Action. Further, initial activities associated with the Proposed Action are slated to take place outside the raptor nesting period of February 1 through August 15. The distribution and abundance of small mammal populations are poorly documented within the project area; however, those species likely to occur in this area display broad ecological tolerance and are widely distributed throughout the Resource Area and it is unlikely the Proposed Action would have any effect on the population.
PI	Wild Horses	See discussion below.
Heritage Resources and the Human Environment		
PI	Cultural Resources	See discussion below.
NI	Paleontological Resources	Although the Proposed Action occurs in a PFYC 5 formation there would be no impacts to fossil resources as there would be no soil disturbance or excavation into the underlying sedimentary rock formation.
NP	Native American Religious Concerns	No Native American Religious Concerns are known in the area, and none have been noted by tribal authorities. Should recommended inventories or future consultations with Tribal authorities reveal the

Determination ¹	Resource	Rationale for Determination
		existence of such sensitive properties, appropriate mitigation and/or protection measures may be undertaken.
NI	Visual Resources	Due to the relatively small size and dispersed nature of the proposed plots and associated remote locations, the Proposed Action would not attract attention from the casual observer from any observation point and would not impact visual resources. All plots are located in areas with Visual Resource Management class III objectives.
NI	Hazardous or Solid Wastes	No listed or extremely hazardous materials are proposed for use in this project. Vehicles would be used on existing roads in order to reach plot locations. Minor spills may occur from a vehicle in minimal quantities which would be contained immediately in a manner consistent with applicable laws. Solid wastes would be disposed of properly.
NI	Fire Management	There would not be any impact at this time to the Fire Management Plan.
NI	Social and Economic Conditions	There would not be any substantial changes to local social or economic conditions.
NP	Environmental Justice	According to recent Census Bureau statistics (2000), there are no minority or low income populations within the WRFO.
NI	Lands with Wilderness Characteristics	One proposed research plot is located within lands with wilderness characteristics unit 11. The Proposed Action would not affect any of the requisite wilderness characteristics.
Resource Uses		
NI	Forest Management	Some of the chosen study sites occur within pinyon/juniper woodlands. However, no trees should be removed or damaged when study plots are built and planted.
NI	Rangeland Management	Due to the small scale and limited activity associated with the study plots, there would be no effect on the annual early summer livestock grazing that occurs in the allotments (Lower Yellow Creek, Alkali, and Horse Draw pastures of the Square S Allotment, Pasture two and three of the Yellow Creek Allotment, North Black Sulphur pasture of the Black Sulphur Allotment, Dry Gulches pasture of the Fawn Creek Allotment) where the study plots are proposed. If the populations are viable beyond 10 years then they would be considered fully established which could impact livestock operations in these areas, potentially resulting in the need for additional mitigation measures to prevent negative impacts to the populations. Potential effects of livestock on the study plots will be addressed in the Special Status Plant Species section.
NI	Floodplains, Hydrology, and Water Rights	None of the study plot sites are located in floodplains. The small size and limited disturbance proposed are unlikely to impact local hydrology and the small amount of water use expected would not impact existing or future water rights.
PI	Realty Authorizations	See discussion below.
NI	Recreation	Recreational activities, experiences, settings, and opportunities would not be restricted, modified, or impacted by the Proposed Action.
PI	Access and Transportation	See discussion below.
NP	Prime and Unique Farmlands	There are no Prime and Unique Farmlands within the project area.

Determination ¹	Resource	Rationale for Determination
Special Designations		
PI	Areas of Critical Environmental Concern	See discussion below.
NP	Wilderness	There are no designated wilderness areas or wilderness study areas within five miles of any proposed plot location.
NP	Wild and Scenic Rivers	There are no Wild and Scenic Rivers in the WRFO.
NP	Scenic Byways	There are no Scenic Byways within the project area.

¹ NP = Not present in the area impacted by the Proposed Action or Alternatives. NI = Present, but not affected to a degree that detailed analysis is required. PI = Present with potential for impact analyzed in detail in the EA.

* Public Land Health Standard

GEOLOGY AND MINERALS

Affected Environment: All of the proposed test plot sites are located within the Piceance Creek basin. The basin is bordered on the north by the White River, on the east by the Grand Hog Back, on the South by the West Elk Mountains, on the southwest by the Uncompahgre Plateau and on the west by the Douglas Creek Arch. It is an asymmetrical basin, roughly 90 miles by 135 miles with an area of approximately of 12,500 square miles. General surficial geology of the project area is the Uinta Formation, inter-tongued units of the Uinta and Green River Formations, and alluvium contained to the valley bottoms. Oil and gas, sodium, and oil shale are mineral resources that are currently being developed within the project area. Approximately 90 percent of the federal oil and gas mineral estate within the project area is currently leased as compared to approximately five percent of the federal mineral estate leased for sodium and less than 0.5 percent leased for oil shale research development and demonstration (RD&D).

Eleven sites are encumbered by existing oil and gas leases of which nine sites are within Federal Oil and Gas Exploratory Units, one site is within an existing sodium lease and three sites are within the area identified in the White River ROD/RMP as available for oil shale leasing (none are located on existing oil shale RD&D leases). Three of the test plot sites (T14, T31, and T39) have operating oil and gas wells within 0.5 miles. Table 4 contains the mineral encumbrances and surficial geology of each test plot site.

Table 4. Mineral Encumbrances and Surficial Geology of Test Sites

Test Site	Oil & Gas Unit	Oil & Gas Lease	Sodium Lease	Oil Shale Leasing Area	Green River Formation Tongue
T1	XTO North Piceance COC71142X (23,952.25 ac)	XOM ¹ COC71586 (1,680 ac)	None	No	Yellow Creek
T1(2)	North Piceance COC71142X (23,952.25 ac)	XOM COC71586 (1,680 ac)	None	No	Yellow Creek

T14	None	None	None	Yes	Black Sulphur
T19	None	XOM COC70223 (776.95 ac)	None	No	Thirteenmile Creek
T31	XTO Freedom COC79547 (20,435.02 ac)	XOM COC60724 (1,440 ac)	None	Yes	Black Sulphur
T39	Freedom COC79547 (20,435.02 ac)	XOM COC60724 (1,440 ac)	None	Yes	Black Sulphur
T180	North Piceance COC71142X (23,952.25 ac)	XOM COC61714 (2,080 ac)	American Soda LLP COC0118328	No	Thirteenmile Creek
T181	None	XOM WPX COC70221 (2,582.81 ac)	None	No	Thirteenmile Creek
T437	XTO Freedom COC79547 (20,435.02 ac)	XOM COC66585 (61924 ac)	None	No	Thirteenmile Creek
T443	XTO Freedom COC79547 (20,435.02 ac)	XOM COC66585 (61924 ac)	None	No	Thirteenmile Creek
T1035	WPX Barcus Creek COC70700X (20,945.34 ac)	XOM WPX COC60830 (974.96 ac)	None	No	Yellow Creek
T1036	BOPCO Yellow Creek COC70700X (12,868.69 ac)	BOPCO COC59697 1624.27 ac)	None	No	Yellow Creek

¹XOM = ExxonMobil Oil Corp

Five of the sites (T19, T180, T181, T437, and T443) are located in an area as identified in the White River RMP/ROD as No Surface Occupancy (NSO) for ACECs or potential habitat for special status plants, three sites (T1, T1(2) and T1035) are in an area identified as Controlled Surface Use (CSU) for fragile soils, two sites (T14 and T39) are on slopes greater than 25 percent and the remaining four (T1, T1(2) T31, and T1036) are slopes greater than 12 percent. Sites can be seen in Figures 1 – 5.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: As mentioned above 11 of the 12 sites are encumbered by oil and gas leases and could require relocation of future proposed surface facilities associated with oil and gas activities outside the buffered areas. The recovery of the underlying oil and gas resources could still occur due to utilization of directional drilling currently in use and the relatively small size and wide distribution of the sites. Proposed sites T1, T31 and T1036 are the

most likely sites that could affect future mineral development since these sites are not associated with existing NSOs, CSUs, or slopes greater than 25 percent.

Site T180 located in sodium lease COC0118328 is within the 25-30 well field layout identified in American Soda LLP's approved Yankee Gulch Sodium Minerals Project Commercial Mine Plan. As mentioned above it is also within an existing NSO that is applicable to sodium operations. American Soda ceased solution mining operations in 2004 and has not expressed an interest in resuming commercial operations in the near future. It is reasonable to assume test site T180 would have little to no effect on American Soda's sodium solution mining operations in the foreseeable future.

The two tracts of available oil shale area that would be impacted by sites T14, T31, and T39 are noncontiguous and approximately 160 acres and 120 acres. The small narrow configuration, steep topography, and amount of current oil and gas infrastructure of these oil shale tracts would effectively eliminate these tracts as desirable for future oil shale leasing.

Cumulative Effects: The Proposed Action would add an additional 15 acres of land restrictions for mineral development within the Project Area during the initial 10 years and, if successful, after the 10 year period the area would increase to 450 acres. This would be an increase of approximately 0.5 percent of the existing acreage currently encumbered by NSOs and CSUs within the project area.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: If the Proposed Action is denied there would be no additional land restrictions to the federal mineral estate and existing mineral leases within the project area at this time. The potential to make a determination of the viability of offsite mitigation for the special status plants considered in the Proposed Action would not occur.

Cumulative Effects: The loss of the ability to mitigate impacts to the special status plants in the Proposed Action and potentially delist the plants could lead to stricter requirements for the development of the mineral resources located nearby existing plant populations and suitable plant habitat.

Mitigation: None.

SOIL RESOURCES

Affected Environment: The classification of soils within 10 meters of the plots is shown in Table 5. The plots are mostly on channery loam soils with steep slopes, only one of the plots has a portion on fragile soils. Since plots were chosen for the natural habitat attributes favored by the threatened plants the soils should be conducive to the establishment of threatened plants. The majority of the soils have a channery loam surface texture. The erosion potential is slight to very severe with the majority of the soils in the severe category in the plots themselves.

Table 5. Soil Classifications within 10 meters of Study Plots (NRCS, 2008).

Robert Kay Allotment			
Soil Unit	Erosion Hazard	Surface Texture	BLM Acres
Torriorthents-Rock outcrop complex, 15 to 90 percent slopes	Severe	channery loam	1.34
Rentsac channery loam, 5 to 50 percent slopes	Moderate	channery loam	0.76
Barcus channery loamy sand, 2 to 8 percent slopes	Slight	channery loamy sand	0.43
Hagga loam	Slight	loam	0.21
Glendive fine sandy loam	Slight	fine sandy loam	0.19
Total			2.94

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would remove vegetation cover that reduces rain splash erosion and lessens the intensity of surface runoff on relatively small areas on sparsely vegetated hillsides. If off-road travel is allowed to access the sites for work or to apply water or nutrient treatments, erosion is likely and could have direct impacts on soils. Restricting vehicular use to existing roads and trails would mitigate this potential impact. Therefore, with the limited disturbance of vegetation planned and limiting vehicular access, no indirect impacts of the plots is expected.

Cumulative Effects: Within the Outlet Piceance Creek 5th level hydrologic unit code (HUC), the total area of study plots is small (less than 0.5 acres) compared to the 18,868 acres for this area. It is likely that the surface disturbance associated with oil and gas development (estimated at two to three pads per section in this area) with the associated access roads and pipelines, vehicular travel for recreation, and livestock grazing would all have more impacts on soils than the Proposed Action. In fact, the vegetation disturbance would be inconsequential compared with impacts to soils associated with these other activities.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: The plots would not be established and no vegetation disturbance would occur.

Cumulative Effects: Impacts would be similar to the cumulative impacts described for the Proposed Action.

Mitigation: None.

SPECIAL STATUS PLANT SPECIES

Affected Environment: The proposed plots are all located within suitable and potential special status plant species (SSPS) habitat, in particular, the federally listed Dudley Bluffs bladderpod (*Physaria congesta*) and Dudley Bluffs twinpod (*Physaria obcordata*) which are endemic to the Piceance Basin of Northwestern Colorado. The two threatened species are

badland or rock outcrop soil associates, and are considered “oil shale endemics” or edaphic (soil-related) endemic species. The bladderpod grows on barren white shale outcrops on tongues of the Green River Formation where it has been exposed along down-cut drainages or windswept ridges. It often grows on level surfaces at the points of ridges or in pinyon-juniper savannah areas where outcrops of the white shale geology has been exposed. The twinpod also grows on barren white shale outcrops on tongues of the Green River Formation where it is exposed along down-cut drainages, sometimes occurring below, or interspersed with the bladderpod habitats. All projects are found either on a portion of the Green River Formation or on a portion of the Uintah Formation where the Green River Formation is known to occur just below the surface layer.

The project area was surveyed June 2013 by Colorado State University and 1.8 acres of new occupied habitat was designated during these surveys (Victor, Sasha 2013). This occupied habitat will be avoided during plot establishment.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The barren shale habitats of both Dudley Bluffs species are highly vulnerable to disturbance and displacement by foot traffic. Effects include an increased potential for wind and water erosion in areas where surface shale mulches have been displaced. The potential for pedestrian trampling of individual plants is also increased; however, the botanists involved in the project have been fully trained in twinpod and bladderpod identification and awareness. This involves flagging, digital mapping of populations, and new population identification. Slight soil compaction of habitat perimeter boundaries due to increased foot traffic may negatively impact the species. Increased pedestrian traffic increases the possibility for non-native species to establish in suitable and occupied habitat. Non-native species have a tendency to outcompete many native species and alter habitat in a way that reduces the probability for future native colonization. However, mitigation would require individuals to remove any weed seed from clothing before entering SSPS habitat as well as clipping any weedy species that are found within the study plots.

Some special status plants may have the potential for reduced vigor due to the seed collection required for direct seeding efforts in combination with seeds required for transplanting species. Seed collection will potentially reduce the next years’ population size as well as have the potential to create unnecessary stress towards the specific plants being collected from. Unnatural seed collection can incidentally cause stem breaking and bruising which may reduce plant vigor.

The possibility of genetic outcrossing exists whenever introducing a species outside of its natural range. Outcrossing may negatively impact the purity of either Dudley Bluffs species by creating hybridizations. The goal of expanding the range is to protect both species and the genetic traits currently exhibited. However, part of the Proposed Action requires that “source populations and collection locations would be carefully documented and tracked throughout all experiments due to considerations of genetic diversity and genetic distribution”. With that said, some outcrossing may be beneficial to both species. Increasing the genetic diversity may help protect the integrity of the species from potential selective pests and pathogens.

Since study plots would not be fenced, there is an increased potential for damage incurred by livestock, wildlife, and casual use. If it is determined by the BLM and the FWS that the study plots within the initial 10 years or established populations after 10 years are being severely impacted by livestock, wildlife or casual use; site specific mitigation may be necessary. Mitigation techniques may include but are not limited to: fencing, natural barriers, sign placement, salt/mineral block or water placement, and changing the time of allowable use.

The second phase of the research project includes planting other native plant species that are known to support and attract pollinator species known to visit *Physaria* species. The addition of these species would attract a greater number of pollinator species to create a greater chance that existing *Physaria* would be fertilized thus reproducing and expanding occupied habitat. Both Dudley Bluffs species would directly and indirectly benefit from the potential expansion of habitat range. The implications of this research project include steps toward increasing the species to a population size considered viable for delisting.

The results of this research would aid the species by increasing the knowledge base for both *Physaria* species. Results from this work may also provide a better understanding of the species' growth requirements and germination requirements and difficulties encountered. The research would add to the available knowledge about suitable habitat characteristics as well as provide the BLM information to mitigate concerns regarding threats to these species. Mitigation techniques that may come out of this study include increased knowledge about which native forb species to use near occupied populations to benefit pollinator species, possible methods for seeding both *Physaria* species, soil manipulation techniques for seeding and ex-situ forms of mitigation may become more feasible based on the results of this research. Although the Proposed Action may increase the possibility for creating new populations of special status plants to allow for vital operations within special status plant habitat, it is a much higher priority to protect naturally occurring populations where ESA protections already exist.

Cumulative Effects: The Proposed Action has the potential to cumulatively alter *Physaria* genetic purity. This has positive and negative implications. As discussed in the 'Direct and Indirect Effects' section, altering genetics of certain populations may create hybrids of the species listed under the ESA. However, genetic diversity may also increase plant vigor by potentially protecting against selective pests and pathogens.

Through seeding and transplanting, both *Physaria* species would have the means for expanding occupied habitat which would increase the likelihood that the species would continue to expand towards a self-sustaining population potentially leading towards delisting.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: If the Proposed Action were not to occur, there would be no direct impacts to special status plant species. Indirectly, no further information would be provided for either *Physaria* species that may assist in the expansion of occupied or suitable habitat.

Cumulative Effects: Both *Physaria* species would lose the potential for increasing population sizes through seeding and transplanting as well as any research implications that may lead to delisting either species.

Mitigation: None.

WILD HORSES

Affected Environment: Sites near the Duck Creek ACEC are within the Piceance-East Douglas Herd Management Area. However, wild horses are located near several of the road ways that would be utilized for the proposed research plots (Rio Blanco County Roads 5, 20, 24X, and 122). Other BLM roads may also be used which could include locations of wild horses during varying times and in varying numbers.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Minimal direct impacts to the wild horses are expected as a result of the Proposed Action. Impacts would only occur while researchers are at the test plot locations. With the proposed project's limited amount of traffic and activities within those areas, it is expected that only temporary, short term disturbances to any wild horses located in the area may take place. These disturbances would not be considered an increase overall in regards to disturbance of wild horses by visitors and/or vehicles to the area. All vehicle use would occur on existing routes and off road travel to the sites would be by foot only which further reduces the potential for disturbance of the wild horses on those locations associated with the test plots.

Cumulative Effects: None identified as a result of the proposed project based on the small scale and scattered locations of the project.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Because the Proposed Action would not occur, there would be no impacts to the wild horses in those areas identified for test plots.

Cumulative Effects: On-going oil and gas development, grazing, and recreational hunting will continue to have potential effects to wild horses.

Mitigation: None.

CULTURAL RESOURCES

Affected Environment: A literature review for known cultural resources in the project area was made through the BLM-White River Field Office and the Colorado Archaeology and History Compass database. This revealed that no known cultural properties exist within the 5 x 5 meter proposed study plots. Historic properties, ones evaluated as eligible or potentially eligible to the National Register of Historic Places (NRHP), that have been documented in the general area, consists primarily of prehistoric standing structures and temporary camps with features.

Isolated Finds (by definition not eligible to the NRHP) in the general surrounding area, consist mainly of single pieces of flaked debitage, single lithic tools, or historic cans or trash.

Each of the study plots (measuring 5 x 5 meters), would be located on areas that are deemed suitable habitat for each species. The majority of the study plots are located on barren shale outcrops, on moderate to steep slopes (12-50 percent), where the expected occurrence of eligible historic properties is very, very low. The majority of the study plots have not been included in previous Class III inventories. Based on the results of the literature review and the low probability of eligible sites being present within the area of potential effect, it was decided that no new Class III inventory be performed for this project.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The nature of the Proposed Action is such that no impact can be expected on cultural resources. Cultural site probability within the study plots is minimal and if sites were present it would be very improbable for such sites to be evaluated as eligible or potentially eligible to the NRHP. Sites would be accessed and all equipment would be carried in by foot. During the fall of 2013 plots would be seeded by hand broadcasting and light raking to incorporate the seeds and during the spring of 2014 transplants would be planted. Ground disturbance would be limited to possibly the insertion of four, 24 x 0.75 inch watering stakes buried to a depth of 20 inches per plot in order to simulate deep watering and minimize runoff.

Cumulative Effects: The cumulative effects to cultural properties from the ongoing monitoring of the study plots would be negligible. If the replanting of native species is successful there could be a net benefit to any potential historic properties as the ground cover would help lessen surface sheet wash erosion, which has a detrimental effect to the integrity of historic properties.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no study plots and natural processes would continue to operate on potential historic properties.

Cumulative Effects: On-going oil and gas development, grazing, and recreational hunting will continue to have potential effects to cultural properties.

REALTY AUTHORIZATIONS

Affected Environment: There are existing rights-of-way (ROWs) and Rio Blanco county roads within 300 m of the proposed test plots. Table 6 describes the ROWs and county roads that could be affected by the test plots if the plant populations are successful. Sites can be seen in Figures 1 – 5.

Table 6. Potentially Affected ROWs and County Roads

Test Site	Test Site Legal Description	Case File	ROW Holder	Authorized Use
T1	T1N, R97W, sec. 22, SWSW	COC70980	Bopco LP	Natural gas pipeline
T1(2)	T1N, R97W, sec. 22, SWSW	COC67021	XTO Energy Inc	Natural gas pipeline
T14	T2S, R97W, sec. 19, NWSE	RBC Road 26		Existing county road crossing private
T31 and T39	T2S, R97W, sec. 29, NWSW	COC73903	Bargath LLC	Natural gas pipelines and compressor station
T31 and T39	T2S, R97W, sec. 29, NWSW	COC73904	WPX Energy Rocky Mountain LLC	Water pipelines
T31 and T39	T2S, R97W, sec. 29, NWSW	COC74979	Bargath LLC	Natural gas pipelines
T31 and T39	T2S, R97W, sec. 29, NWSW	COC74980	WPX Energy Rocky Mountain LLC	Water pipelines
T31 and T39	T2S, R97W, sec. 29, NWSW	COC75171	WPX Energy Rocky Mountain LLC	Water pipelines
T31 and T39	T2S, R97W, sec. 29, NWSW	RBC Road 29		Existing county road
T181	T1S, R98W, sec. 10, SWSW	RBC Road 91		Existing county road
T1053, T1036, and T19	T1N, R98W, sec. 24, SENE	RBC Road 20		Existing county road
T1036	T1N, R98W, sec. 25, SWSE	COC74745 <i>Pending</i>	Bopco LP	Pipelines associated with water treatment facility
T1036	T1N, R98W, sec. 25, SWSE	COC75955 <i>Pending</i>	White River Electric Association Inc.	Power line associated with water treatment facility

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: New ROW applications during the first 10 years would require consultation with FWS for projects within 50 meters of any established populations. “Known habitat for listed/candidate plants” is considered exclusion areas for new ROWs as stated in the 1997 White River Resource Management Plan which includes the study plots for this research project but not the associated protection buffers. If the populations are viable beyond 10 years then they would receive increased buffer sizes, which could impact the operation and any maintenance activities associated with existing ROWs. Maintenance of facilities that were existing prior to full establishment of the populations would be permitted if it would not preclude the survival and recovery of the species, as agreed upon by the BLM and FWS.

Cumulative Effects: As the number of ROW holders in the project area increases so would competition for suitable locations for facilities. Increased ROW densities would also lead to a higher probability of conflict between ROW users.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Failure to authorize the proposed project would not result in any increased impacts to realty authorizations in the area.

Cumulative Effects: There would not be any cumulative effects from not authorizing the proposed project.

Mitigation: None.

ACCESS AND TRANSPORTATION

Affected Environment: There are a variety of Rio Blanco County (RBC) roads that would be used throughout the proposed project to access the research plots. These roads include RBC Roads 5, 20, 24, 26, 29, and 122. Other nearby RBC roads and BLM roads may receive a small amount of vehicle use as a result of this project as well. Traffic as a result of this project is expected to be minimal with a few light vehicle trips per year to access and monitor sites. All vehicle use will occur on existing routes. Travel off-route to the exact sites will be by foot only and is approximately 0.5 miles off existing routes to each research plot.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The BLM does not expect direct impacts to public access or transportation routes as a result of the Proposed Action during the first 10 years. Within the 10 year period, consultation with FWS would be required for any activities occurring up to 50 meters for projects considered 'not likely to adversely affect' and up to 30 meters for projects considered 'likely to adversely affect' twinpod or bladderpod. Consultation could result in the requirement of additional mitigation by the proponent, however likely would not require re-routing developments from the existing access and transportation routes. If populations are viable beyond 10 years, buffers would be expanded to those of naturally occurring populations. Buffers set for naturally occurring populations are 300 meters for projects considered 'not likely to adversely affect' and up to 100 meters for projects considered 'likely to adversely affect'. Therefore, requiring project consultation and identification of mitigation measures may result in indirect impacts to transportation and access but would likely not require route re-location for proposals that are within 100 to 300 meters of the plant populations.

Cumulative Effects: None identified as a result of the proposed project.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Because the Proposed Action would not occur, there would be no impacts to transportation routes or public access.

Cumulative Effects: None identified as a result of no action.

Mitigation: None.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment: There are two study plots (T19 and T181) located within the Duck Creek ACEC and one plot (T443) located within the Ryan Gulch ACEC. There is also one plot (T437) within 100 meters of the Ryan Gulch ACEC.

The 3,430 acres of the Duck Creek ACEC were designated as an Area of Critical Environmental Concern in 1997 with the establishment of WRFO's Resource Management Plan. Duck Creek is tributary to Yellow Creek, which flows into the Yampa river on the north edge of the Piceance Basin. This area is adjacent to the Duck Creek State Wildlife Area west of Meeker and south of Rio Blanco Lake and includes the confluence of Duck Creek with Yellow Creek. This area is distinguished by an outstanding population of Dudley Bluffs bladderpod, a species federally listed as threatened. The large size of the population is due to the fact that the dip of the rock layers is the same as the grade of the stream, resulting in exposures of the Thirteen Mile Tongue of the Green River Formation that extend for miles along either side of the valley. The valley also includes an example of big sage, Great Basin wild rye bottomland community in good condition. The occurrences at Duck Creek of big sagebrush and juniper woodland in the northwest lowlands habitat type would help fill gaps in protected area coverage for these communities. In addition, the area encompasses potentially suitable habitat for up to 30 animal species identified as imperiled by Colorado Natural Areas Program's (CNAP) Natural Areas System Review (Decker, Karin 2001).

The 1,440 acres of the Ryan Gulch ACEC were designated as an Area of Critical Environmental Concern in 1997 with the establishment of WRFO's Resource Management Plan. Ryan Gulch is tributary to the Piceance Creek south of Rio Blanco Lake and the Piceance Wildlife Area. The area is just to the northwest of the Dudley Bluffs Natural Area. Ryan Gulch is important because it contains populations of two federally listed threatened plant species of the wild mustard family. The Dudley bluffs bladderpod is found on the flat ridgetops and gentle slopes, whereas the Dudley Bluffs twinpod occupies steep slopes throughout the site. The predominant geologic landscape of Ryan Gulch consists of Wasatch Formation sandstones and shales. Outcrops of the Thirteenmile Tongue of the Green River Formation support the rare plants mentioned above. The vegetation is a mixture of open pinyon-juniper woodland and sagebrush shrubland, and the occurrence of both of these types in the northwest lowlands habitat type has been identified as a gap in protected area coverage through CNAP's Natural Areas System Review. In addition, the area encompasses potentially suitable habitat for up to 27 animal species identified as imperiled by CNAP's Natural Areas System Review (Decker, Karin 2001).

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: An increase in pedestrian traffic on undisturbed land due to the Proposed Action would increase the likelihood that non-native species will be introduced to either Ryan Gulch or Duck Creek ACEC which may degrade the integrity of either ACEC. However, any non-native species introduced into any test plots would be clipped at the base of the plant in order to remove it. Any effects on wildlife, cultural resources or SSPS within the ACECs are discussed in those sections respectively.

Cumulative Effects: The expansion of Dudley Bluffs twinpod and bladderpod to either ACEC may create ROW exclusion areas within the ACECs thus increasing conservation possibilities for native vegetative communities, wildlife, cultural resources and special status plants within Ryan Gulch and Duck Creek ACECs.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect effects to ACECs under the No Action Alternative.

Cumulative Effects: All ACECs would remain avoidance areas for new ROWs rather than increasing some areas as exclusion areas.

Mitigation: None.

REFERENCES CITED:

Decker, Karin

2001 Duck Creek Site Evaluation Form. Colorado Natural Areas Program, Department of Natural Resources.

Decker, Karin

2001 Ryan Gulch Site Evaluation Form. Colorado Natural Areas Program, Department of Natural Resources.

Hayden-Wing and Associates, LLC,

2010. Soil characteristics of occupied and unoccupied habitats of Dudley Bluffs twinpod (*Physaria obcordata*) and Dudley Bluffs bladderpod (*Physaria congesta*) in the northern Piceance Creek Basin in northwestern Colorado. December 2010.

Natural Resource Conservation Service (NRCS).

2008 Soil Survey of Rio Blanco County, Colorado.

Victor, Sasha

2013 CSU *Physaria* Research, Special Status Plant Species Survey, Bureau of Land Management, White River Field Office. Colorado State University, Restoring threatened *Physaria* populations in Piceance Basin, CO. May 2013

TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED:

The United State Fish and Wildlife Service was consulted on September 21st, 2012 by the White River Field Office and Colorado State University in the form of a Biological Assessment. The WRFO received a Biological Opinion on October 4th, 2012 from the FWS concurring that the project would be largely beneficial for both Dudley Bluffs species. In accordance with 43 CFR 3101.1-2, the affected federal oil and gas and sodium lease holders were consulted to seek

agreement with the Proposed Action prior to the implementation of the project on their respective leases.

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility	Date Signed
Bob Lange	Hydrologist	Air Quality; Surface and Ground Water Quality; Floodplains, Hydrology, and Water Rights; Soils	07/10/2013
Baili Foster	Ecologist	Areas of Critical Environmental Concern; Special Status Plant Species	07/08/2013
Heather Woodruff	Rangeland Management Specialist	Forest Management	06/18/2013
Michael Wolfe	Archaeologist	Cultural Resources; Native American Religious Concerns	06/10/2013
Michael Selle	Archaeologist	Paleontological Resources	06/17/2013
Mary Taylor	Rangeland Management Specialist	Invasive, Non-Native Species; Vegetation; Rangeland Management	07/02/2013
Laura Dixon	Wildlife Biologist	Migratory Birds; Special Status Animal Species; Terrestrial and Aquatic Wildlife; Wetlands and Riparian Zones	07/11/2013
Ryan Snyder	Natural Resource Specialist	Hazardous or Solid Wastes	07/09/2013
Aaron Grimes	Outdoor Recreation Planner	Wilderness; Visual Resources; Access and Transportation; Recreation,	07/01/2013
Kyle Frary	Fuels Specialist	Fire Management	06/27/2013
Paul Daggett	Mining Engineer	Geology and Minerals	07/03/2013
Stacey Burke	Realty Specialist	Realty	07/10/2013
Melissa J. Kindall	Range Technician	Wild Horse Management	07/2/2013
Baili Foster	Ecologist	Project Lead – Document Preparer	07/16/2013
Heather Sauls	Planning & Environmental Coordinator	NEPA Compliance	07/18/2013
Erin Jones	NW District NEPA Coordinator	NEPA Compliance	09/20/2013

ATTACHMENTS:

Figure 1: Overview map of the project with 300 meter buffers

Figure 2: Map of plots with 300 meter buffers – T1, T1(2), T1053, T1036 and T180

Figure 3: Map of plots with 300 meter buffers – T19, T181 and T1036

Figure 4: Map of plots with 300 meter buffers – T14, T31 and T39

Figure 5: Map of plots with 300 meter buffers – T180, T443 and T437

Figure 6: Sample Experimental Plot Design

Appendix A: Response to Public Comments

Appendix B: Possible Conditions of Approval (COA) and Best Management Practices (BMP) for Special Status Plant Species

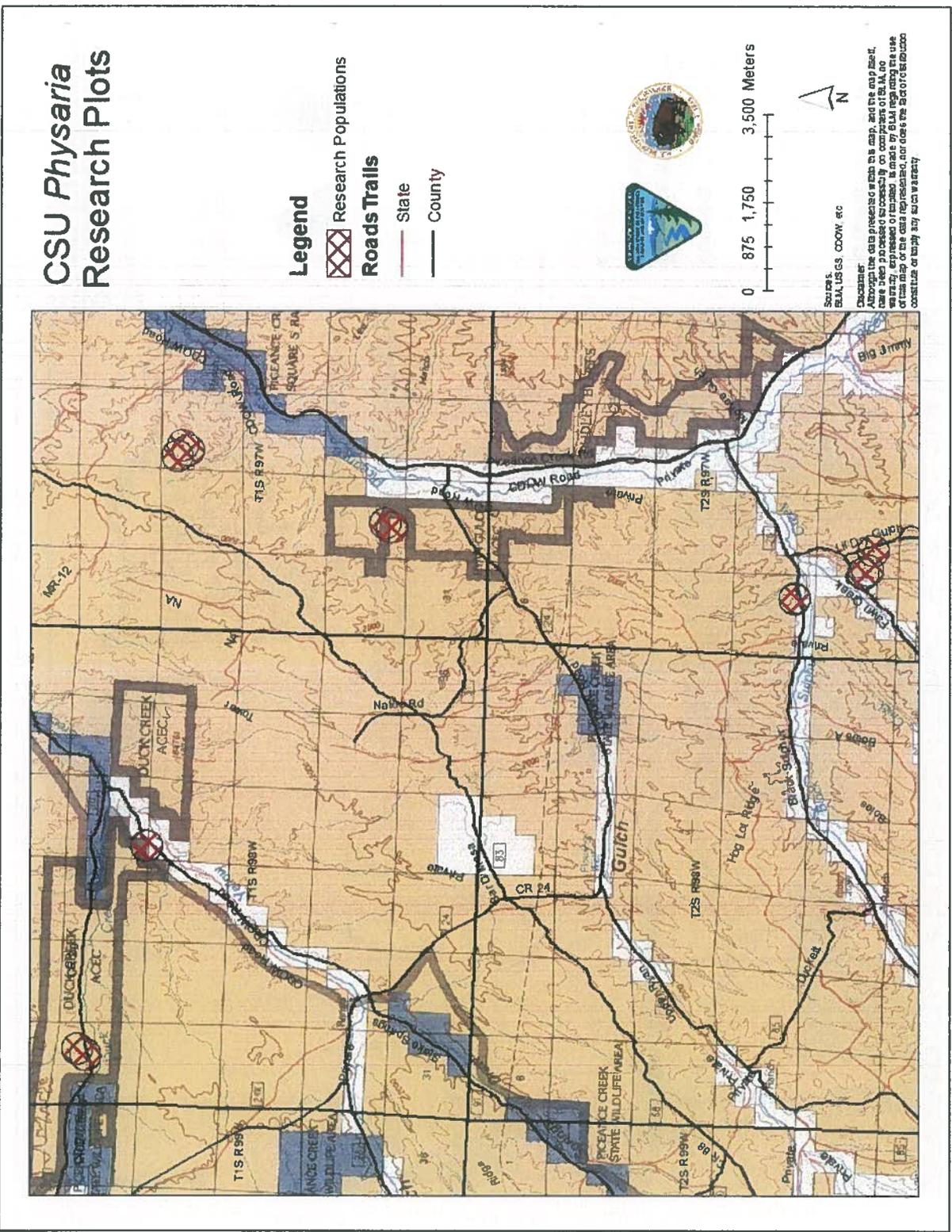


Figure 1: Overview map of the project with 300 meter buffers

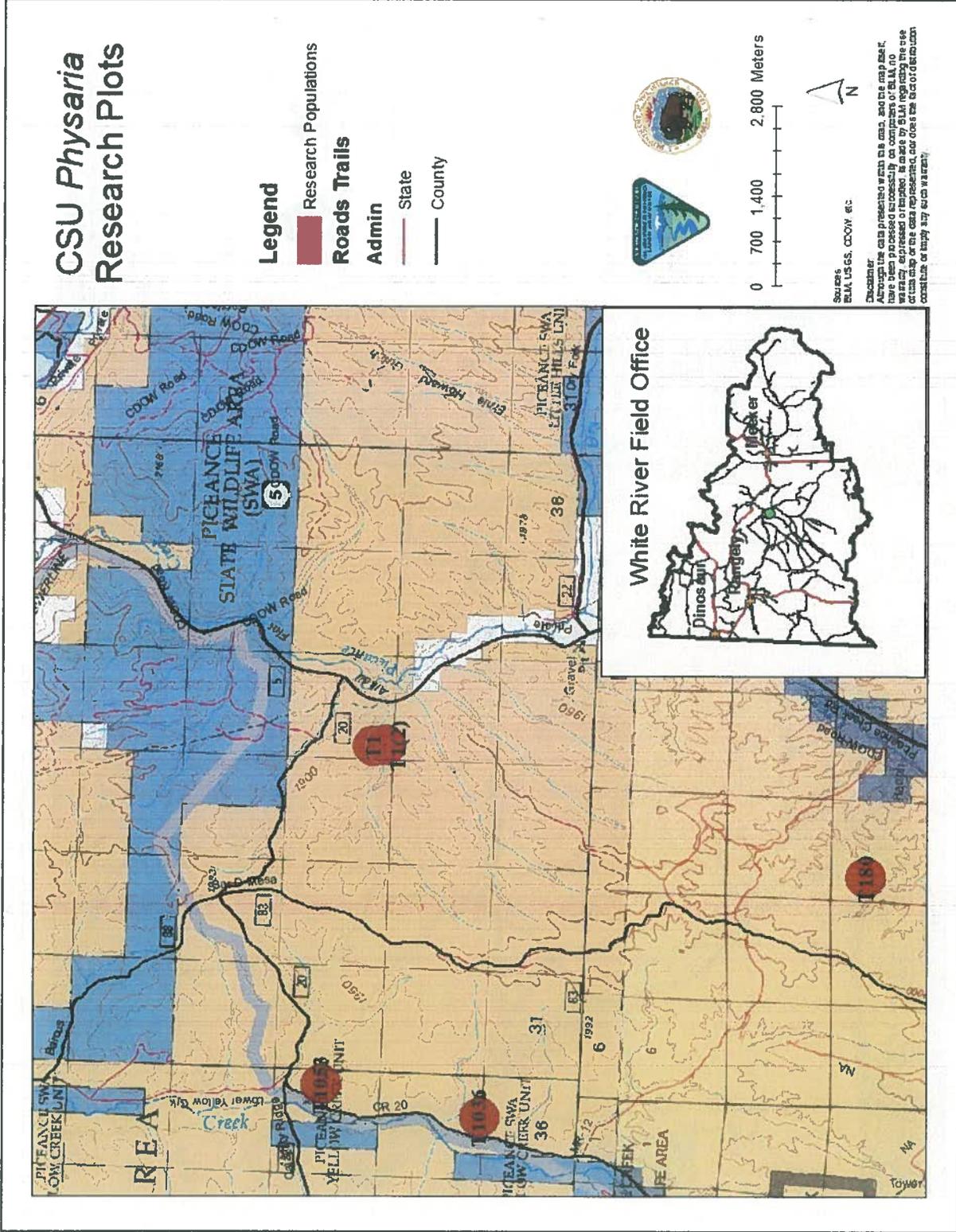


Figure 2: Map of plots with 300 meter buffers – T1, T1(2), T1053, T1036 and T180

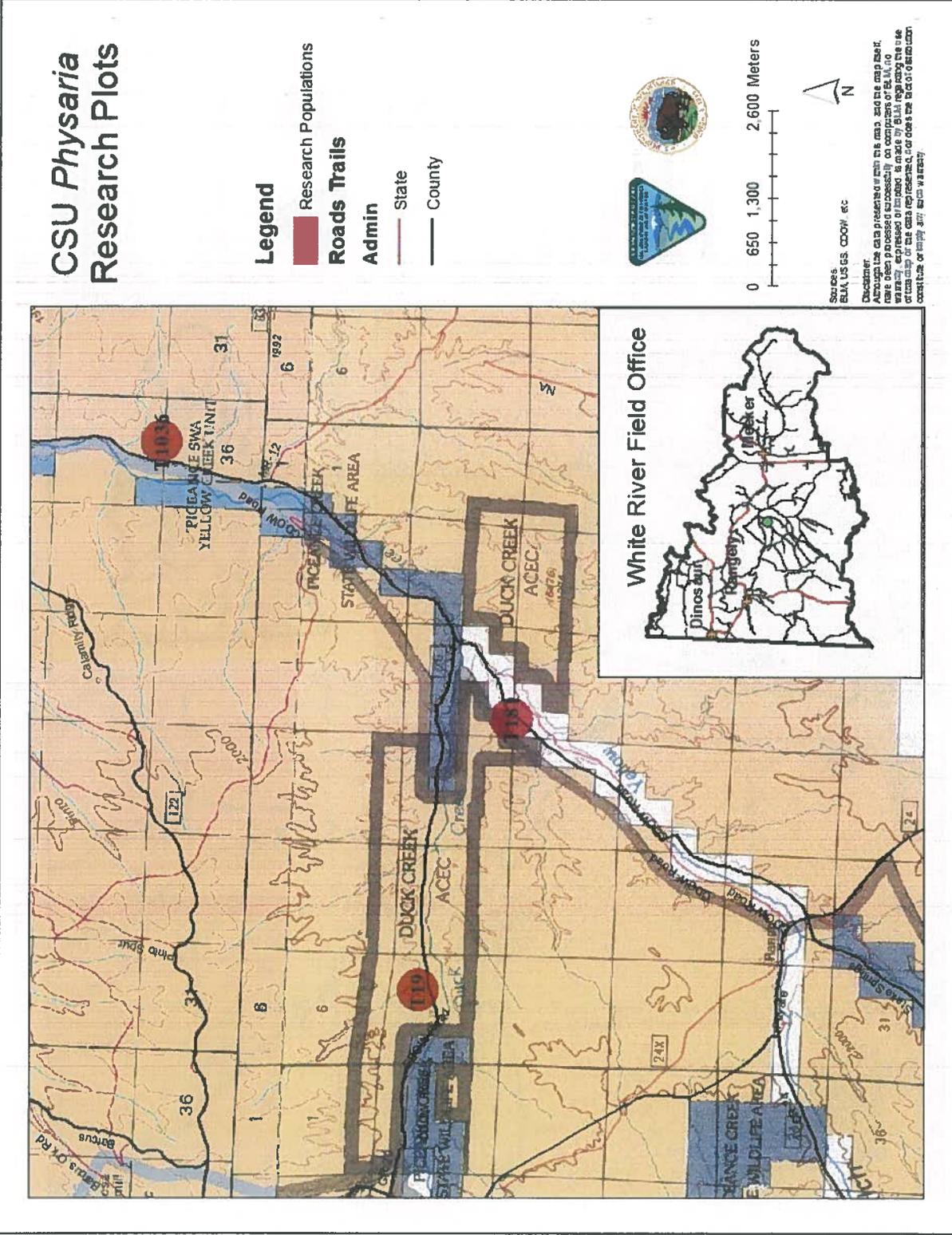


Figure 3: Map of plots with 300 meter buffers – T19, T181 and T1036

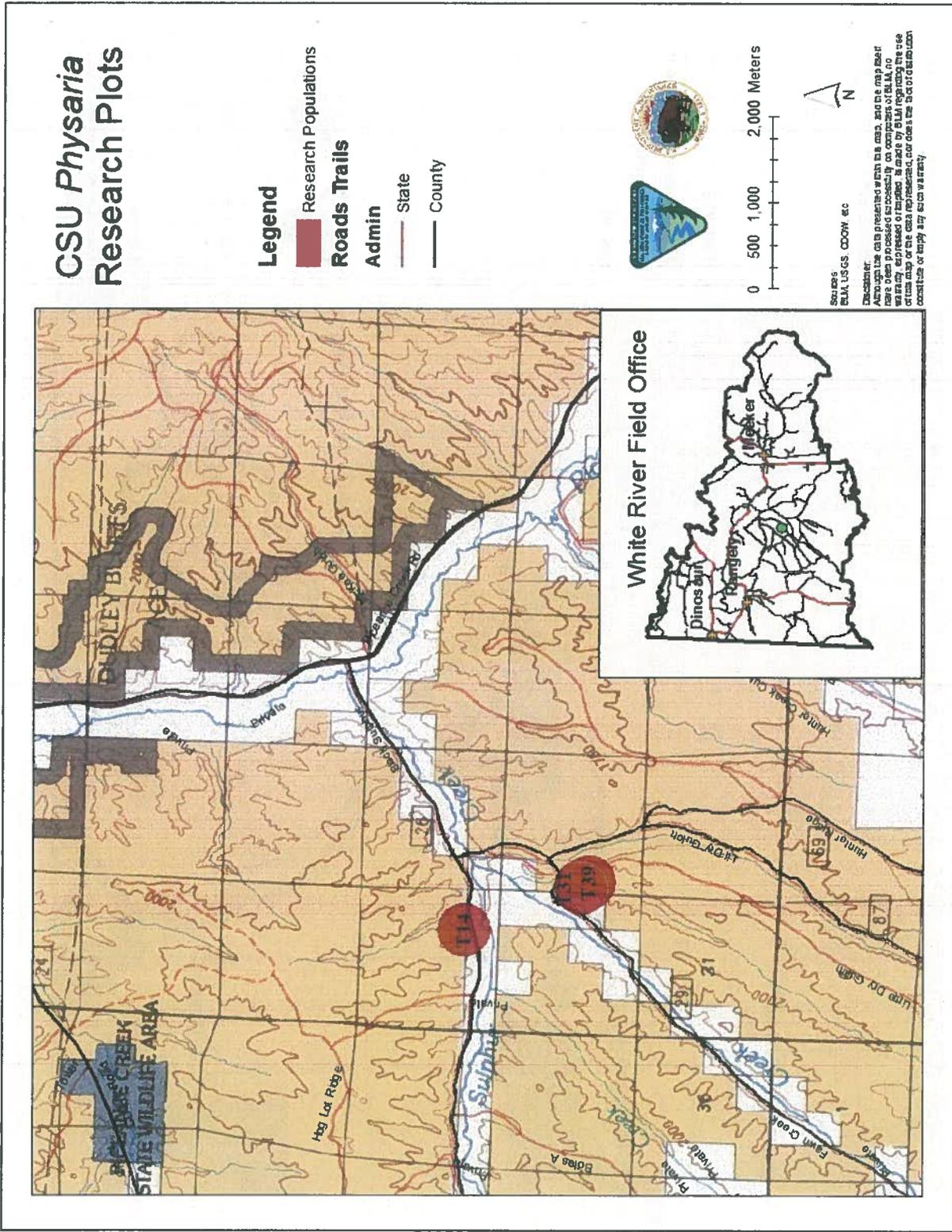
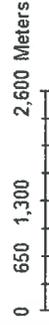


Figure 4: Map of plots with 300 meter buffers – T14, T31 and T39

CSU Physaria Research Plots

- Legend**
- Research Populations
 - Roads Trails**
 - Admin**
 - State
 - County



Sources: BLM, USGS, COOW, etc.

Disclaimer:
Although the data presented within this map, and the map itself, have been processed successfully on computers of BLM, no warranty, expressed or implied, is made by BLM regarding the use of the map or the data represented on or does the BLM distribution constitute or imply any form of warranty.

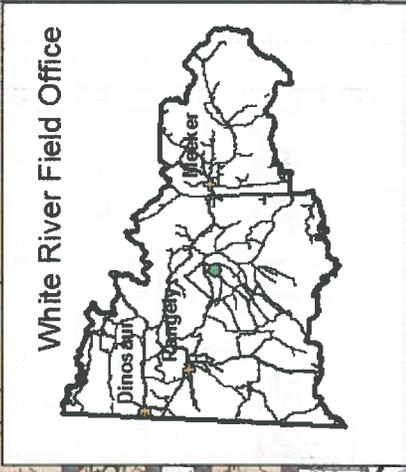
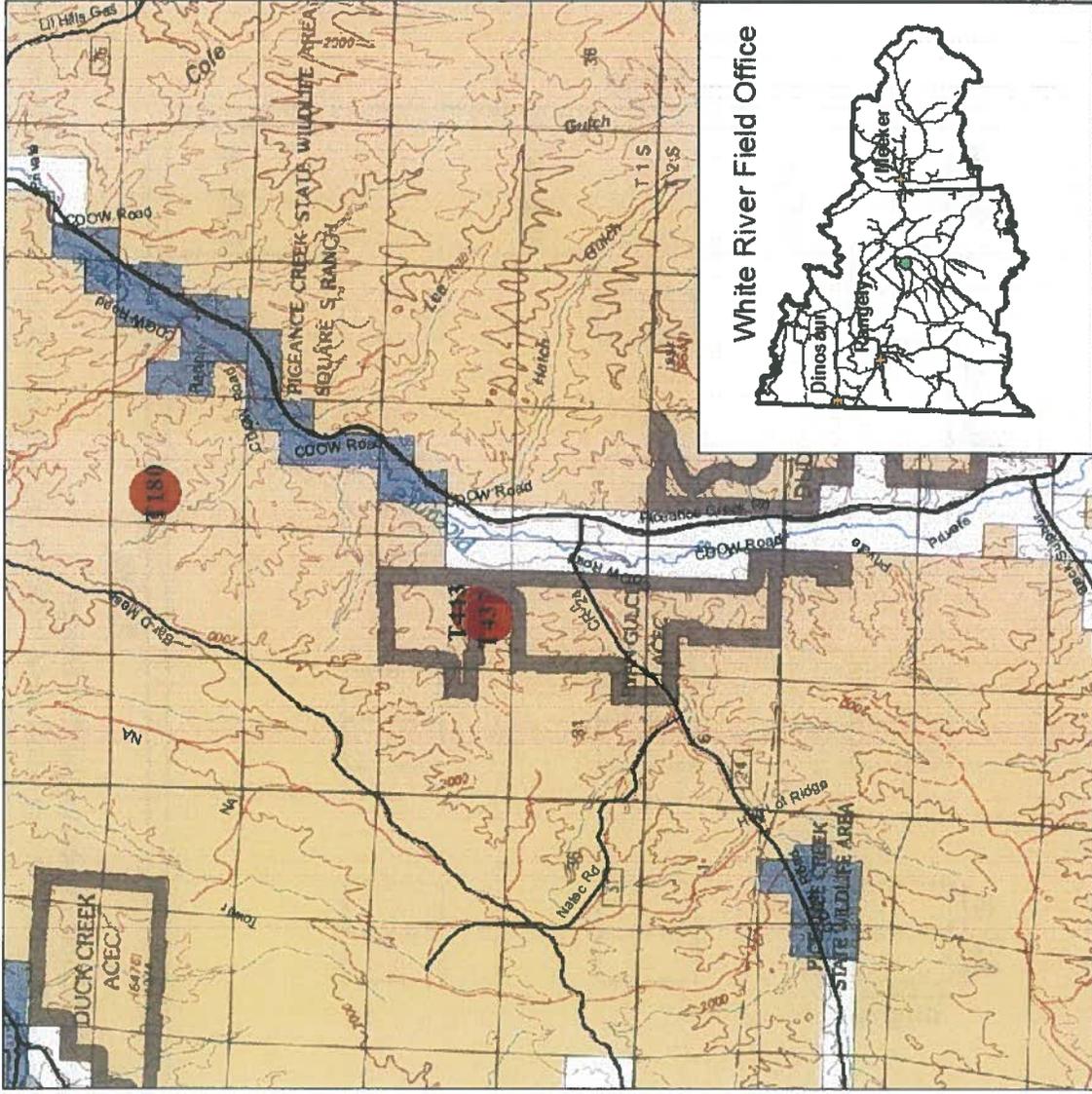


Figure 5: Map of plots with 300 meter buffers – T180, T443 and T437

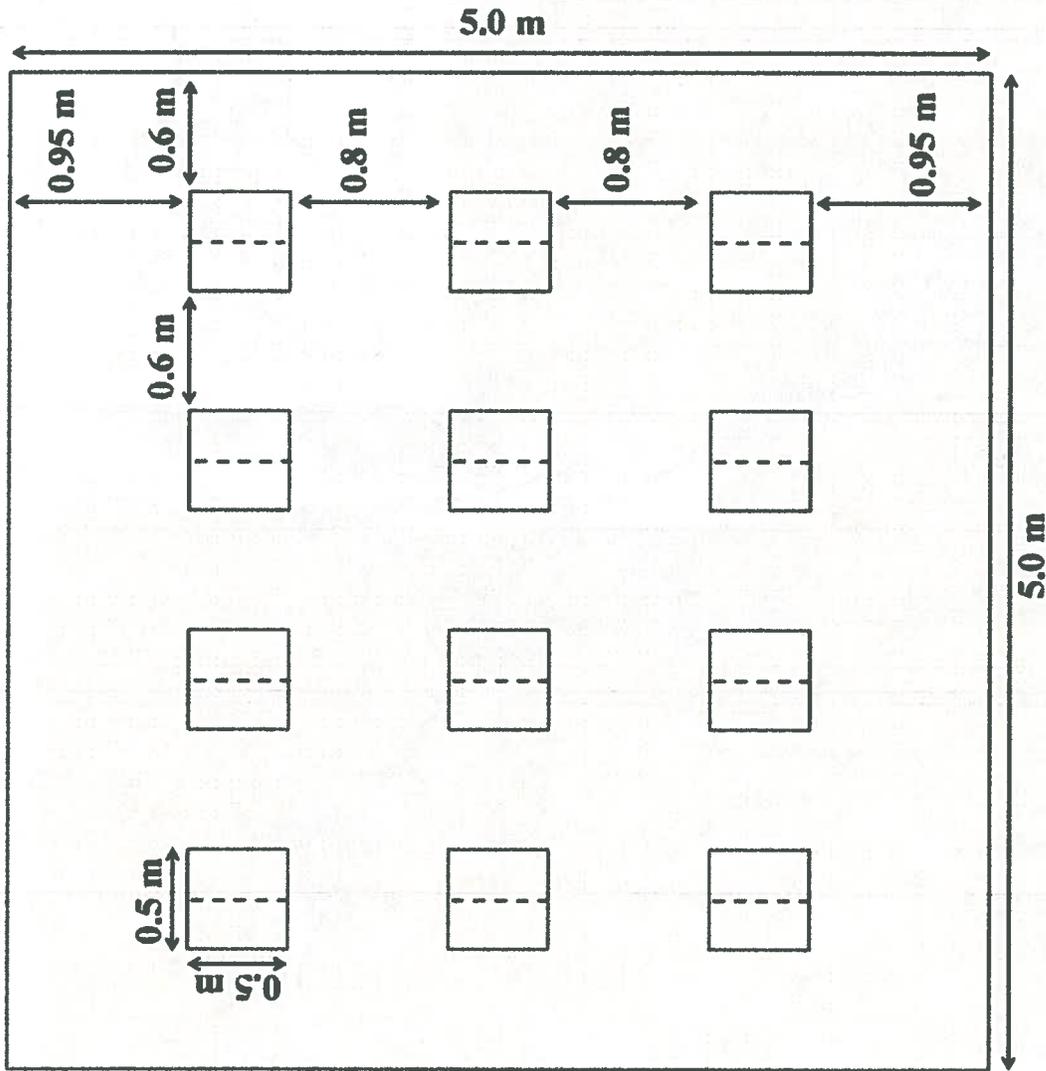


Figure 6. Sample Experimental Plot Design
 At each of the 12, 5- x 5-m study areas (blocks), six twinpod and six bladderpod, there would be 12 0.5-x 0.5-m plots. One half of each plot would be seeded in fall 2013 and the other half would be transplanted in spring 2014. Using a completely randomized design, each plot would be treated with one of four factorial combinations of soil nutrient and water additions.

Appendix A: Response to Public Comments

No.	Commenter	Comment	BLM's Response
1	Encana, West Slope Colorado Oil and Gas Association (WSCOGA)	Why are the proposed introduced <i>Physaria</i> populations called 'research populations' rather than 'experimental populations'? Will the plant populations be designated as "Nonessential Experimental Populations"?	Under Section 10(j) of the Endangered Species Act, the Secretary of the Department of the Interior can designate reintroduced populations established outside the species' current range, but within its historical range, as "experimental." Due to the time required to officially register "experimental" populations (which can take up to three years), the BLM worked collaboratively with the FWS in order to expedite the planning process for the current graduate student assigned to the research project to quickly complete her research. The term 'research population' has been created to help distinguish between these plots and "experimental" populations. Since the populations involved with the research project are not considered experimental, they would not be designated as "nonessential experimental populations".
2	Williams (Bargath LLC), Rio Blanco County (RBC)	Potential indirect impacts to transportation as a result of the Proposed Action may include buffers around viable populations that result in trail, road, or route relocations for proposals that are within 100 to 300 meters of the plant populations. How would the test plots impact our existing ROW's? Would we have to have an informal or formal consultation if an existing ROW was found to be within the distance thresholds of an established population?	The BLM acknowledges that multiple use management can sometimes lead to conflicting management strategies between resources. ROWs would not be affected for day-to-day activities. The BLM may request that new trails, roads or routes be located outside of protection buffers in order to avoid or reduce impacts to the plants. The BLM would continue to coordinate with the FWS regarding maintenance of existing facilities. However, maintenance of facilities that were existing prior to full establishment of the populations would be permitted if it would not preclude the survival and recovery of the species, as agreed upon by the BLM and FWS. Please see Table 1 for further clarification regarding informal and formal consultation requirements.
3	Shell Exploration	The EA does not address implications on private	Unless a federal agency funds, authorizes or carries out a program or project on

	& Production	lands that fall within required USFWS consultation buffers for disturbance to plants. How will BLM address this?	private land that may affect a listed species, consultation would not be required. Split estate situations would be treated similarly to federal surface because split estates would still require federal authorization.
4	Rio Blanco County	How will the BLM address potential effects of livestock on the research populations and the resulting consultation requirements. We feel it is important for BLM to include and discuss potential mitigation measures at this time, rather than leave it open-ended for resolution later.	The BLM is in the process of formulating a programmatic biological assessment (PBA) for livestock related actions in regards to SSPS. The PBA will consider possible effects of livestock on SSPS and relevant mitigation strategies. Unfortunately in the meantime, the BLM would need to consider all actions individually as each site contains unique characteristics. Mitigation techniques may include but are not limited to: fencing, natural barriers, salt/mineral block or water placement, and changing the time of allowable use. The BLM supports collaboration with grazing permittees and adaptive management for any issues that may arise.
5	Rio Blanco County	BLM has indicated that having more populations of twinpod and bladderpod could enable more flexibility in resolving or mitigating conflicts that we have now. Our position is that the Environmental Assessment should have included more analysis and discussion on this point.	The BLM agrees with this statement. Please see Special Status Plant Species section for updated mitigation strategies.
6	Rio Blanco County	There needs to be a qualitative comparison between the currently existing conflicts with occupied habitat and the conflicts that would result from the new populations.	The BLM recognizes that land management conflicts have arisen due to the proximity of special status plants to various ROWs and facilities. The BLM, FWS and RBC have worked collaboratively on several projects where county roads are within 300 meters of special status plants. Seven of the twelve plots have been identified in Table 6 as being within 300 meters of a county road. Of these seven, T181, T1053, T1036, and

			T19 are located within 300 meters of existing occupied habitat and T31 and T39 are located within previously mapped suitable habitat. Due to the proximity of these plots to existing occupied and suitable habitat, there should not be any new conflicts arising between the management of these plots and management of existing ROWs and facilities. Only the location T14 could result in new potential conflicts. The BLM would continue to work collaboratively with the FWS and RBC to resolve any conflicts that may arise due to the location of this plot.
7	WESCOGA	WESCOGA encourages a consensus approach and strategy among industry / BLM / US Fish and Wildlife Service (USFWS) / Rio Blanco County that is memorialized in a Memorandum of Understanding so that we are supporting a defined outcome which rightfully leads down a technically sound path to delisting.	The BLM has and would continue to work to move towards a more programmatic means of addressing the current and future impacts to these species. However, this is outside of the scope to of this document but the BLM would continue to work towards a strategy with all stakeholders for the continued management of the species.
8	WESCOGA	WESCOGA recognizes that formal scoping is not mandatory for an EA; however, the methods employed at the March 20th meeting are inconsistent with the scoping procedures identified in CEQ Sec 1501.7, and therefore should not be classified as an external scoping meeting.	The CEQ Regulations regarding scoping (40 CFR 1501.7) are primarily directed at preparation of an EIS. For an EA, external scoping simply involves notification and opportunities for feedback regarding any potential issues or alternatives. Notification can include a variety of methods, including posting the project on an online NEPA register and having a public meeting, as was done for this project. We apologize if there was confusion at the meeting regarding the BLM's interest in receiving feedback on this proposal. The text of the scoping section has been edited.
9	WESCOGA	WESCOGA respectfully requests that a proper scoping meeting be	The BLM has already reached out to the public for comments on this project. This project was listed on the WRFO's on-line

		<p>scheduled in which the issues outlined herein can be discussed with the WRFO, with a 30 days period allowed thereafter for public comments.</p>	<p>National Environmental Policy Act (NEPA) register on 03/12/2013. Additionally, this research project and a potential programmatic biological assessment for these two threatened plants were discussed at the Western Slope Colorado Oil and Gas Association Rio Blanco County Task Force meeting March 20th, 2013 in Meeker, Colorado. Letters were sent to stakeholders including oil and gas lease holders, rights-of-way holders, range allotment permittees, special recreation permittees, and Rio Blanco County. A 15 day public comment period was held from 7/23/2013 to 8/6/2013. On 9/11/2013 the BLM WRFO met with the U.S. Fish & Wildlife Service's Grand Junction Regional Office, Colorado State University, Rio Blanco County, West Slope Colorado Oil and Gas Association (COGA), and several third-party contractors to discuss issues and concerns regarding the proposed research project.</p>
10	WSCOGA	<p>WSCOGA is rightfully concerned that the proposed site locations may result in new Conditions of Approval being attached to newly-issued APD's on existing leases.</p>	<p>WSCOGA is correct in their assumptions concerning new COAs for ground disturbing activities within 50 meters of the plots for the first 10 years and 300 meters for existing populations afterwards. COAs would be based upon the site and type of activity. Potential COAs and BMPs can be found in Appendix B.</p>
11	WSCOGA	<p>If reseeded and transplanting of plant populations is successful, WSCOGA members are concerned about their ability to pursue new or expand existing development on current leases and ROWs.</p>	<p>Please see comment 2 addressing ROWs and the Legal Status of Research Populations section of this EA. The 1997 White River Resource Management Plan states that a No Surface Occupancy (NSO) would be placed on known and potential habitat of federally listed and candidate T/E plants as well as new mapped habitat. (See also response to comments 14 and 15)</p>
12	WSCOGA	<p>The sites' close proximity to county roads, which serve as major haul routes for oil and gas operations as well as year-round recreational</p>	<p>It is important for research plots to be applied to real-world scenarios. Plots located near busy roadways can demonstrate possibilities for seeding and/or transplanting these species.</p>

		activities, may pose challenges to the long-term cultivation of the plant species due to the high activity on these roads.	
13	WESCOGA	Limiting access to county roads may create negative consequences for the general public.	The BLM fully agrees that limiting access to county roads would negatively impact the general public. The current proposal would not reduce access for the public along county or BLM administered roadways. The EA has been clarified to address this issue.
14	WESCOGA	The BLM's Land Use Planning Handbook specifically recognizes that existing rights must be honored. (BLM Land Use Planning Handbook H-1601-1, III.A.3, pg. 19 (Rel. 1-1693 3/11/05)).	Section 701(h) of the Federal Land Management and Policy Act (FLMPA) requires the BLM to recognize valid existing lease rights. The BLM has no intention of precluding development of, or access to, an existing lease. The BLM could apply mitigation measures to surface use activities associated with existing land use authorizations as a COA. The BLM has the discretion to modify surface operations to change or add specific mitigation measures when supported by scientific analysis. All mitigation/ conservation measures not already required as stipulations would be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into conditions of approval of the permit, plan of development, and/or other use authorizations. In discussing surface use rights, 43 CFR 3101.1-2 states that the lessee has the right "to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource" but lessees are still subject to lease stipulations, nondiscretionary statutes, and "such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed". Lessees are also required to conduct operations in a

			<p>manner that not only “results in maximum ultimate economic recovery of oil and gas with minimum waste” but also “protects other natural resources and environmental quality” (43 CFR 3162.1). While it would not be consistent with lease rights granted to preclude any development of the lease, the BLM may require relocation of proposed operations by more than 200 meters and may prohibit surface disturbing operations for more than 60 days when such action has been deemed necessary, through a site-specific NEPA analysis, to minimize adverse impacts to other resource values. (Yates Petroleum Corp., 176 IBLA 144, 154 (2008))</p>
15	WSCOGA	<p>BLM Instruction Memorandum 92-67 states that a lease constitutes a contract between the federal government and the lessee that cannot be unilaterally altered or modified by the BLM. Similarly, the BLM cannot impose COAs or other restrictions that interfere with existing lease rights.</p>	<p>In 1988 BLM promulgated regulations (43 CRF 3101.1-2) to clarify surface use rights of oil and gas lessees. In 1991 the BLM issued IM 92-67 to provide guidance in interpreting the regulations. IM 92-67 noted that the BLM had authority to require relocation of operations greater than 200 meters or delaying operations by more than 60 days when warranted by a site-specific analysis. In 2007, the BLM clarified in IM-2007-119 that FLPMA was not the sole source of BLM’s authority to impose protective measures. The BLM has multiple authorities to base decisions to mitigate impacts stemming from oil and gas operations, including the Endangered Species Act, which may result in the BLM placing restrictions on the type and conduct of leasehold operations. (See also response to comment 14.)</p>
16	WSCOGA	<p>Locating these populations adjacent to pre-existing oil and gas ROWs may create long-term conflicts because operators will require additional pipeline upgrades and maintenance in the future, which may trigger new requirements for operators to monitor plants</p>	<p>Please see comment 2 addressing ROWs. In the event of a true emergency, the operator may take immediate action without prior surface management agency approval to safeguard life or prevent significant environmental degradation. The BLM must receive notification of the emergency situation and the remedial action as soon as possible (Surface Operating Standards and Guidelines for</p>

		or perhaps re-locate existing pipelines and facilities, all of which would make accessibility for emergency repair more than an issue.	Oil and Gas Exploration and Development 2007). Section 7 consultation may be required if the situation or remediation falls within the designated protection buffers for listed plants.
17	WESCOGA	The preliminary EA on page 3 indicates the 1997 RMP/ROD provides direction on management of threatened plant species, that “Known and potential habitat for listed plant species, <i>including research populations</i> , would be managed as ROW exclusion areas” which is incorrect. The Record Of Decision for the 1997 RMP, in the section pertinent to Threatened and Endangered Plant Species (ROD pg. 2-17), does not include the phrase “research populations.” WESCOGA urges BLM to comport with the 1997 ROD and develop clear guidelines for how members are to develop their private lands and valid existing rights.	You are correct that the 1997 RMP does not include the phrase “research populations”; however we were not quoting directly from the RMP but rather trying to explain how these research populations would be managed in consideration of existing RMP decisions. We have edited this section to clarify this point.
18	WPX, WESCOGA, Williams (Bargath LLC)	WESCOGA requests the BLM to provide GIS shapefiles showing the exact location of the proposed test plots so that the association members can better evaluate any current or potential future conflicts.	The BLM will provide the requested shapefiles.
19	WESCOGA	What effects will test plot populations, if successful, have on possible future redefinition of suitable habitat and critical habitat designation associated with these species?	Due to the limited repetitions on similar soils and geologic layers, there would not be enough data to create redefined suitable or critical habitat models. Also, currently critical habitat does not exist for either research species.

Appendix B – Possible Conditions of Approval (COA) and Best Management Practices (BMP) for Special Status Plant Species

Prior to approving surface-disturbing or potentially impacting activities within known (occupied), suitable, or potential habitat for federal listed, proposed, candidate species, and BLM sensitive species a plant inventory conducted by a qualified botanist and an environmental analysis would be required for the Proposed Action. Based on the results of the plant survey, Section 7 consultation with FWS may be necessary, and appropriate conservation measures may be required to avoid or minimize impacts on federally listed species.

Field botanical surveys for special status plants should be completed within a distance specified by BLM around the project disturbance area. In some cases the topographic setting or land ownership patterns may impede covering the full recommended survey area. Field botanical surveys should be conducted at a time when the plant species of concern can be detected and accurately identified. In some cases multi-year surveys are necessary. For example, in dry years some ephemeral annuals may not germinate and produce plants, but they are still present at the site in the seed bank. Surveys should also include areas where direct or indirect effects may impact hydrology. Surveys should be floristic and provide complete GIS data and all data collected should correspond with the Colorado Natural Heritage Program field data forms. Negative survey data should also be reported. Botanical surveys are considered valid for three years (i.e., growing seasons).

Maintenance of existing and planned roads and/or rights-of-way within occupied and/or suitable habitat for federally listed, proposed and candidate species would be limited to the existing disturbance; maintenance would be performed in accordance with specifications provided by the BLM during site specific environmental analysis. Maintenance of county roads as a result of oil and gas development these same specified plant habitats will be performed in communication and coordination with the respective county's road and bridge department and the BLM.

Non-native or invasive species monitoring and control will follow the most current WRFO Integrated Weed Management Plan (IWMP) which has BMPs related to monitoring and controlling weeds near special status plant species habitat.

Intensive control of fugitive dust within 330 feet from edge of occupied, suitable, and/or potential special status plant species (federally listed species, proposed species and candidate species) habitat would be achieved using BLM approved dust suppression methods to be determined on a case by case basis. The goal of this measure would be to reduce and control the dust plumes created construction and production stage of a project.

Prevent plumes of dust and particulate matter from impacting plants of concern. While new roads should not be built within 660 feet of the plants of concern, preexisting roads with an expected increase in traffic should be graveled in these areas. The operator is encouraged to apply water for dust abatement to such areas during the flowering period. If possible, dust abatement applications should be comprised of water only, with minimal use of magnesium chloride.

Where avoidance is not feasible and development is allowed within 660 feet of plant populations, impacts to the plants of concern can be reduced by placing temporary fencing or other barriers around the footprint of the project so that vehicles don't go any further than needed and the sensitive habitat is avoided as much as possible. To avoid working in rare plant habitat and drawing attention to the plants, the edge of disturbance should be fenced, not the nearby plant population. Communication of the

importance of rare plant habitat protection with those working on the project is vital to the success of fencing or barriers.

Ex-situ techniques such as transplanting are not recommended however, an operator could support research to investigate the long-term feasibility of transplanting. If transplanting efforts are undertaken they need to: 1) consider the genetic effects of moving the species around on the landscape (genetic research may be needed), 2) research and identify the best germination and transplanting techniques, 3) ensure enough individuals are established to ensure long-term success, and 4) include long-term monitoring (at least 20 years). These efforts are minimally needed to develop new populations.

Construction should take place down slope of plants of concern where feasible. Down slope ground disturbing activities should be conducted in such a way as to avoid as much as is reasonably possible undercutting and sloughing of the slopes where rare plant habitat occurs. If well pads and roads must be sited upslope, buffers of 660 feet minimum between surface disturbances and plants of concern should be incorporated.

Perform frequent and timely inspections of development sites and plants of concern occurrences to ensure that BMPs are being followed, and to identify areas of potential conflict. Inspections of plant occurrences should be performed by a botanist or other qualified personnel.

Reclamation of suitable habitat of special status plant species, would include replicating the existing soil horizons and subsoil dynamics (i.e., replace soil and sub-soil to their pre-disturbance order) to allow for increased potential in possible occupation of these sites by special status plant species as well as achievement of late seral vegetation conditions. Restrict motorized travel to designated roads and trails. Routes should be designated and marked prior to implementation.

The operator will appoint a qualified, Independent Third-Party Contractor (Contractor) to provide general project oversight, assure compliance with the terms and conditions of the approval, and perform monitoring. The Contractor will be present during all surface disturbing operations that occur until reclamation is completed. Prior to the initiation of construction, pre-work meetings will be held between the BLM, the operator, and the Contractor to discuss required procedures associated with the conditions of approval.

All vegetation within a specified proximity of ROW corridors shall be brush-hogged and left in place. The maximum allowable roadside disturbance in ACECs is brush hogging the ROW.

In the event that the operator elects to employ a padding machine to lay pipe within that portion of ROW corridor that is also within proximity of special status plant habitat, said padding machine will include the use of necessary apparatus to prevent the generation of fugitive dust.

Any contractor or agent hauling earthen material, in association with a project near special status plant species, will cover all of their loads.

**U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641**

**Finding of No Significant Impact (FONSI)
DOI-BLM-CO-110-2013-0036-EA**

BACKGROUND

The BLM analyzed twelve 5 x 5 meter plots distributed throughout the White River Field Office to be utilized for the seeding and transplanting of two federally threatened plant species, Dudley Bluffs twinpod and Dudley Bluffs bladderpod, in DOI-BLM-CO-110-2013-0036-EA.

Each of the twelve study areas would contain twelve replicated 0.5 x 0.5 meter plots for a total of 144 plots. Within each plot, half of the area would be seeded with either twinpod or bladderpod, while the other half would be planted with transplants of the same species from a prior greenhouse study. Plots would be treated with factorial combinations of soil nutrient and moisture additions. Nutrients would be added by hand broadcasting a slow-release, solid fertilizer on the soil surface. Soil moisture treatments would consist of adding supplemental water to plots each month March through July, and up to October if needed. Water would be added using four, 24 x 0.75 inch watering stakes buried to a depth of 20 inches per plot in order to simulate deep watering and minimize runoff. Soil nutrient and moisture treatments would be made for two years.

This research project would explore possible approaches for establishing new populations of these species in suitable areas in order to increase their overall abundance in the region and further protect the species from extinction. If it is found that these species are able to successfully be established via transplants and/or seeding, land managers may be able to use these techniques to mitigate concerns regarding threats to these species. The ultimate goal of this work would be to provide a means for delisting these threatened species.

FINDING OF NO SIGNIFICANT IMPACT

Based upon a review of the EA and the supporting documents, I have determined that the Proposed Action would not have a significant effect on the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity, as defined at 40 CFR 1508.27 and do not exceed those effects as described in the White River Resource Area Proposed Resource Management Plan and Final Environmental Impact Statement (1996). Therefore, an environmental impact statement is not required. This finding is based on the context and intensity of the project as described below.

Context

The project is a site-specific action directly involving BLM administered public lands that do not in and of itself have international, national, regional, or state-wide importance.

Intensity

The following discussion is organized around the 10 Significance Criteria described at 40 CFR 1508.27. The following have been considered in evaluating intensity for this Proposed Action:

- 1. Impacts that may be both beneficial and adverse.** Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. For example, there may be potentially adverse impacts associated with associated buffers limiting future ROWs and oil and gas leasing. Conversely the project is anticipated to increase the knowledge base and potentially expand special status plant habitat as well as helping to lessen sheet wash erosion during phase two of the project. Analysis indicated no substantial impacts to physical, biological, or archaeological/paleontological resources.
- 2. The degree to which the Proposed Action affects public health or safety.** Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.
- 3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.** The project area does not contain prime or unique farmlands, wetlands, floodplains, or wild and scenic rivers. There were no cultural resources identified within the project area. There are two study plots located within the Duck Creek ACEC and one plot located within the Ryan Gulch ACEC. There is also one plot within 100 meters of the Ryan Gulch ACEC.
- 4. Degree to which the possible effects on the quality of the human environment are likely to be highly controversial.** The Proposed Action may be controversial at the local level due to No Surface Occupancy requirements and ROW exclusion areas associated with federally protected plant species. Specifically oil and gas, ROWs, special recreation permit holders and grazing permittees may be affected by the Proposed Action. However, all of the potential effects have been adequately analyzed in the EA.
- 5. Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risk.**
No highly uncertain or unknown risks to the human environment were identified during analysis of the Proposed Action.
- 6. Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.**
The Proposed Action has the potential to establish a precedent for future action if research concludes that the federally threatened Dudley Bluffs bladderpod or Dudley Bluffs twinpod have the potential to be transplanted or seeded onto previously uninhabited habitat. If this occurs,

mitigation standards may be altered that work towards expanding occupied habitat and eventually the delisting of either (or both) species.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources. No cultural or historical concerns were identified or anticipated. There are no known American Indian religious concerns.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973.

The U.S. Fish and Wildlife Service was consulted due to the project's potential to impact on the Dudley Bluffs bladderpod and Dudley Bluffs twinpod, both federally threatened plant species. Due to design features incorporated into the project proposal and the basis of the project, the FWS concurred with the BLM finding that the Proposed Action may affect, but is not likely to adversely affect the Dudley Bluffs bladderpod or twinpod.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Neither the Proposed Action nor impacts associated with it violate any laws or requirements imposed for the protection of the environment.

SIGNATURE OF AUTHORIZED OFFICIAL:



Field Manager

DATE SIGNED:

09/23/2013

**U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641**

DECISION RECORD

PROJECT NAME: Threatened plant species reseeding research

ENVIRONMENTAL ASSESSMENT NUMBER: DOI-BLM-CO-110-2013-0036-EA

DECISION

It is my decision to implement the Proposed Action, as described in DOI-BLM-CO-110-2013-0036-EA, authorizing Colorado State University's Dudley Bluffs twinpod and Dudley Bluff bladderpod research plots.

Design Features of the Proposed Action

- 1) The CSU project lead is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts. If archaeological materials are discovered as a result of operations under this authorization, the applicant must immediately contact the appropriate BLM representative.
- 2) If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the Authorized Officer (AO). The applicant will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. The applicant, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.
- 3) Pursuant to 43 CFR 10.4(g), the applicant must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), the applicant must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.
- 4) Maintenance of facilities that were existing prior to full establishment of the populations would be permitted if it would not preclude the survival and recovery of the species, as agreed upon by the BLM and FWS.

5) All vehicle spills will be contained immediately in a manner consistent with applicable laws. Solid wastes will be disposed of properly.

6) Individuals authorized to conduct activities for this research project are Mark W. Paschke, Brett Wolk, Jayne Jonas-Bratten, and Sasha Victor. If these individuals are not present to accompany a field crew to collect data, prior approval from the BLM is required.

7) All *Special Terms and Conditions* (items E – T) specified in the Section 10 permit TE-76718A will be followed and also apply to this Section 7 consultation for the entire research project where applicable.

8) Prior to conducting any fieldwork, CSU will contact BLM and FWS.

9) Locations were permitted within 600m of existing populations if seeds were collected from those existing nearby EOs.

- a. Results from the Denver Botanical Garden's genetic study will be used to ensure that there will be no outcrossing.
- b. The nearest research site is within 35 m from occupied habitat. In order to mitigate the possible impact from this distance the following measures will be closely followed:
 - i. All vehicles will remain on existing, established roads/routes to limit the spread of non-native species into habitat.
 - ii. Boots and field gear will be checked for weeds prior to leaving the vehicle and entering research sites.
 - iii. Within the research sites, which will measure 5 x 5 meter, disturbance will be minimized by disturbing the least amount of area within the site to accomplish research goals, as well as establishing travel routes to and around site.
 - iv. As stated above, due to the proximity to occupied habitat, only seeds from that population, or those determined to be genetically similar, will be used.

10) Naturally occupied habitats (those not included within a research plot) will not be entered during site set-up or data collection. Exceptions may be granted in the future by the BLM (in consultation with the FWS) under special circumstances (e.g., soil or seed collections).

COMPLIANCE WITH LAWS & CONFORMANCE WITH THE LAND USE PLAN

This decision is in compliance with the Endangered Species Act and the National Historic Preservation Act. It is also in conformance with the 1997 White River Record of Decision/Approved Resource Management Plan.

ENVIRONMENTAL ANALYSIS AND FINDING OF NO SIGNIFICANT IMPACT

The Proposed Action was analyzed in DOI-BLM-CO-110-2013-0036-EA and it was found to have no significant impacts, thus an EIS is not required.

PUBLIC INVOLVEMENT

This project was listed on the WRFO's on-line National Environmental Policy Act (NEPA) register on 03/12/2013. Additionally, this research project and a potential programmatic biological assessment for these two threatened plants were discussed at the Western Slope Colorado Oil and Gas Association Rio Blanco County Task Force meeting March 20th, 2013 in Meeker, Colorado. Letters were sent to stakeholders including oil and gas lease holders, rights-of-way holders, range allotment permittees, special recreation permittees, and Rio Blanco County. A 15 day public comment period was held from 7/23/2013 to 8/6/2013. On 9/11/2013 the BLM WRFO met with the U.S. Fish & Wildlife Service's Grand Junction Regional Office, Colorado State University, Rio Blanco County, West Slope Colorado Oil and Gas Association (COGA), and several third-party contractors to discuss issues and concerns regarding the proposed research project.

RATIONALE

Analysis of the Proposed Action has concluded that there are no significant negative impacts and that it meets Colorado Standards for Public Land Health. This research project will explore possible approaches for establishing new populations of these species in suitable areas in order to increase their overall abundance in the region and further protect the species from extinction. If it is found that these species are able to successfully be established via transplants and/or seeding, land managers may be able to use these techniques to mitigate concerns regarding threats to these species. The ultimate goal of this work would be to provide a means for delisting these threatened species.

ADMINISTRATIVE REMEDIES

Any appeal of this decision must follow the procedures set forth in 43 CFR Part 4. Within 30 days of the decision, a Notice of Appeal must be filed in the office of the Authorized Officer at White River Field Office, 220 East Market St., Meeker, CO 81641 with copies sent to the Regional Solicitor, Rocky Mountain Region, 755 Parfet St., Suite 151, Lakewood, CO 80215, and to the Department of the Interior, Board of Land Appeals, 801 North Quincy St., MS300-QC, Arlington, VA, 22203. If a statement of reasons for the appeal is not included with the notice, it must be filed with the Interior Board of Land Appeals at the above address within 30 days after the Notice of Appeal is filed with the Authorized Officer.

SIGNATURE OF AUTHORIZED OFFICIAL:



Field Manager

DATE SIGNED:

09/23/2013

