

U.S. Department of the Interior
Bureau of Land Management

Dry Creek Restoration Project

Environmental Assessment

DOI-BLM-NV-E030-2018-0005-EA



Environmental Assessment

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Dry Creek Restoration Project

Prepared by

**U.S. Department of the Interior
Bureau of Land Management
Elko District, Wells Field Office
3900 E. Idaho St.
Elko, NV 89801
(775)753-0200**

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1. Introduction

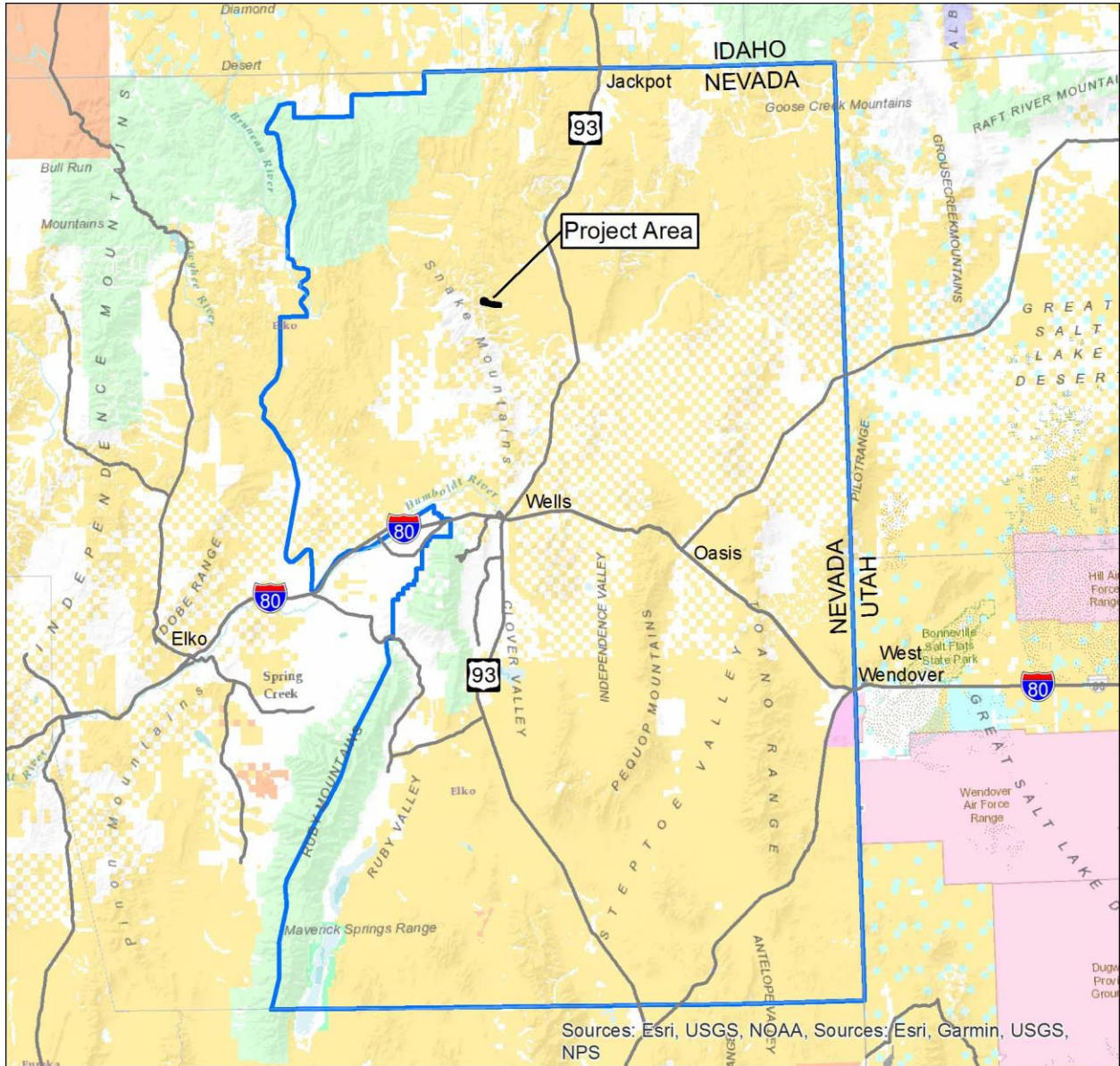
The Bureau of Land Management (BLM) Wells Field Office (WFO) is working with Trout Unlimited, the Nevada Department of Wildlife (NDOW), and private landowners on a stream habitat restoration project for approximately 1,400 feet of Dry Creek, which is a tributary to Salmon Falls Creek in northern Nevada. This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental effects of the stream habitat restoration project for Dry Creek. This EA will assist the BLM WFO in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any significant effects could result from the analyzed actions. Following the requirements of NEPA (40 Code of Federal Register [CFR] 1508.9 [a]), this EA describes the potential impacts of four alternatives for the proposed Dry Creek Restoration Project and the no action alternative. If the BLM determines that the selected alternative for the Dry Creek Restoration Project is not expected to have significant effects, a Finding of No Significant Impact (FONSI) will be issued and a Decision Record will be prepared. If significant effects are anticipated, the BLM will prepare an Environmental Impact Statement.

1.1 Background

Dry Creek is located within the Salmon Falls Creek Watershed in the Snake River Basin. The headwaters of the Snake River Basin are an important spawning habitat for redband trout (*Oncorhynchus mykiss* spp.), and their densities in the Salmon Falls Creek Watershed have decreased since the mid-2000s (Fesenmyer and Dauwalter, 2015). Dry Creek has historically supported spawning habitat for redband trout until barite mining activity and road building in the 1960s and 1970s impaired the channel conditions and impeded fish passage to spawning habitat. Surface mining activities generated an abundance of overburden or waste rock. The waste rock was pushed downslope from the mining sites and filled portions of Dry Creek, forcing streamflow below the surface. Mining waste rock from the old Consolation Pit, which is no longer in use, has filled over 800 linear feet of the stream channel, preventing fish passage to upstream spawning habitat. The waste rock was tested and found to be non-acid generating with a heavy metal content that does not exceed State of Nevada water quality standards (WETLab, 2016). In another downstream section of channel, an undersized culvert at the Big Ledge Mine Haul Road has created a 4-foot high fish passage barrier. Trout Unlimited, NDOW, and private landowners have requested the restoration of two separate areas (referred to as the Upper and Lower Reaches) along Dry Creek in the Salmon Falls Creek Watershed to restore fish passage to intact redband trout spawning habitat.

1.2 Location of Project Area

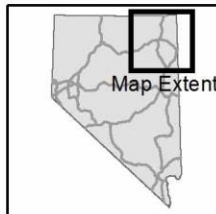
This project is located along Dry Creek, a small tributary to Salmon Falls Creek in northeastern Elko County, Nevada within Township 42 North, Range 62 East, Sections 7, 8, 16, 17, and 18, Mount Diablo Meridian and Baseline (Figure 1-1 and Figure 1-2). The proposed restoration activities would be completed in two specific reaches along Dry Creek and includes up to four creek crossings, located a few miles apart from each other.



Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

Legend

- Project Area
- Wells Field Office Boundary
- Bureau of Indian Affairs
- Bureau of Land Management
- Department of Defense
- Fish and Wildlife Service
- Forest Service
- State Land
- Private
- Water

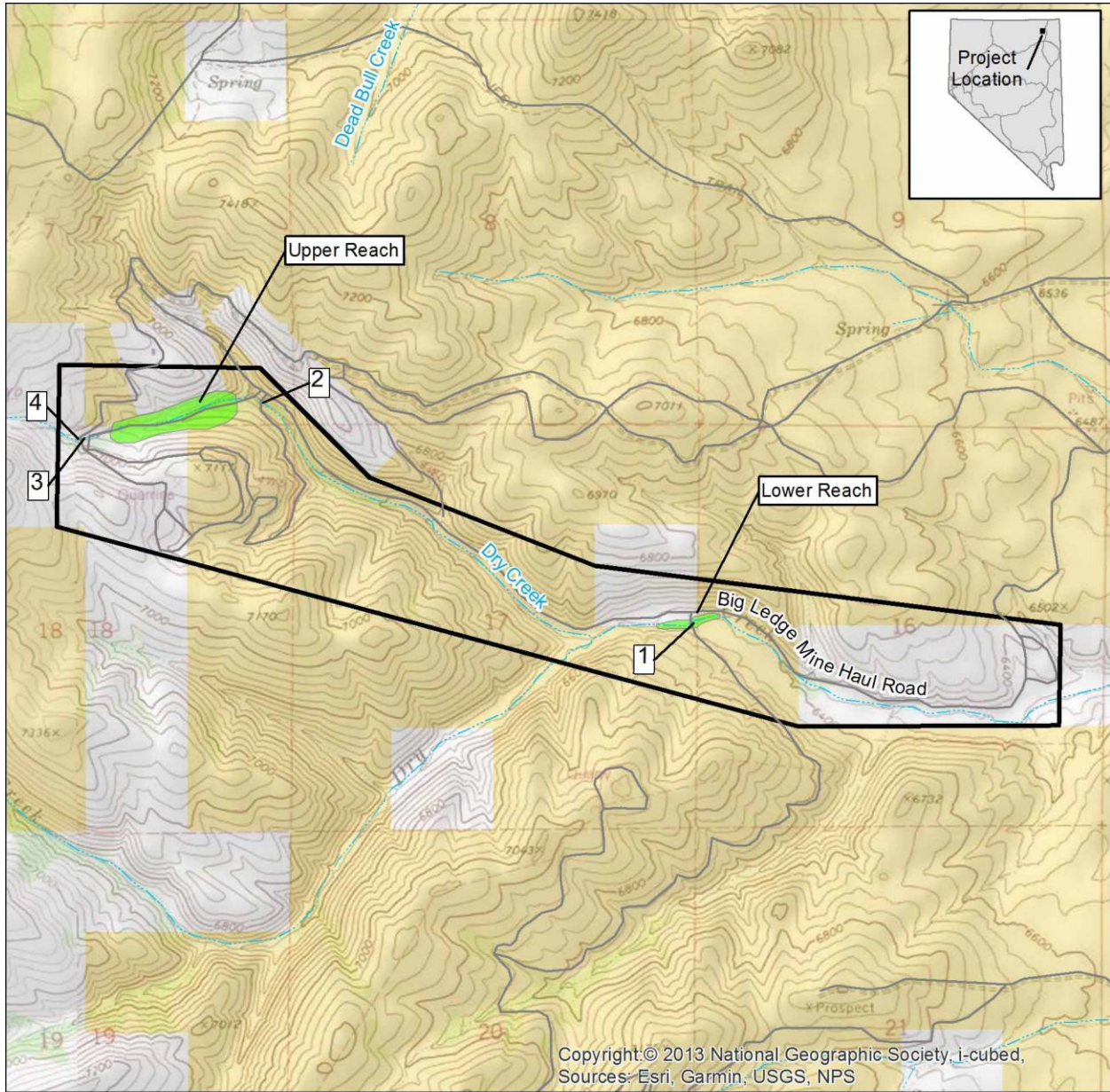


Project Vicinity
 Dry Creek Restoration Project
 Wells Field Office
 May 2, 2018



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

Figure 1-1. Project Vicinity



Legend

- Project Area
- Restoration Area
- Bureau of Land Management
- Private
- # Dry Creek Crossing

Project Location
 Dry Creek Restoration Project
 Wells Field Office
 May 2, 2018



Miles
 0 0.2 0.4 0.6 0.8
 No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

Figure 1-2. Project Area

1.3 Purpose and Need for Action

The purpose of the project is to restore the natural channel fish passage to upstream spawning habitat in Dry Creek for redband trout. The need for the proposed action is to remove the blocked fish passage within Dry Creek and allow for natural/historic levels of trout spawning and reproduction.

1.4 Decision to be Made

Based on the analysis in this EA, the Authorized Officer would decide to approve, approve with modifications, or deny the request from Trout Unlimited to restore portions of Dry Creek where mining waste rock have obstructed the upstream spawning habitat for the redband trout and determine whether to add terms and conditions (stipulations) to the preferred alternative. The WFO Field Manager is the Authorized Officer.

1.5 Land Use Plan Conformance

The proposed alternatives conform to the following decisions and objectives of the WFO Resource Management Plan (RMP) Record of Decision, as signed in July 1985, in addition to the Nevada and Northeastern California Greater Sage-Grouse (GRSG) Approved RMP Amendment (ARMPA), approved in September 2015. The following objectives and management actions outlined in the WFO RMP and ARMPA apply specifically to the proposed Dry Creek Restoration Project:

1.5.1 WFO RMP Record of Decision (BLM 1985)

Wildlife Habitat (WFO RMP Record of Decision, page 19)

- Eliminate all of the high and medium priority terrestrial riparian habitat conflicts in coordination with other resource uses.

Riparian/Stream Habitat (WFO RMP Record of Decision, page 22)

- Improve stream habitat for fish, resulting in benefits not only to the fisheries, but to other resources such as watershed, wildlife, livestock, erosion, flood control, water quality, and recreation.
- To improve high and medium priority riparian/stream habitat to at least a good condition and prevent undue degradation of all riparian/stream habitat due to other uses.
- Closely manage new road construction and mining activities within riparian zones to minimize or eliminate impacts.
- As a part of wetland-riparian management, consider all measures to minimize damage and to preserve and restore the area in accordance with the BLM Manual 6740, and in adherence with Executive Orders No. 11990 and No. 11988.

1.5.2 Nevada and Northeastern California GRSG ARMPA (BLM 2015)

The 2015 Nevada and Northeastern California GRSG ARMPA presents the goals, objectives, land use allocations, and management actions established for protecting and preserving GRSG and its habitat on BLM-administered lands in Nevada and northeastern California. The project area lies within a Priority Habitat Management Area (PHMA) for GRSG. Priority Habitat Management Areas are areas that have

been identified as having the highest value for maintaining sustainable GRSG populations; PHMAs include breeding, late brood-rearing, winter concentration areas, and migration or connectivity corridors. Riparian habitat management must be in conformance with applicable management decisions.

Riparian and Wetlands Habitat Objectives (ARMPA, pages 2-17 and 2-18)

- Objective VEG 8: Manage riparian areas in PHMAs and GHMAs [General Habitat Management Areas] for vegetation composition and structure, consistent with ecological site potential and to achieve GRSG habitat objectives.
- Objective VEG 9: Manage upland habitat associated with riparian areas to promote cover relative to site potential to facilitate brood-rearing habitat.
- Objective VEG 10: Where riparian function has been compromised or lost, manage to restore riparian function and meet GRSG habitat objectives.
- Objective VEG 11: In riparian and wet meadow areas, inventory, monitor, and control invasive species in PHMAs and GHMAs.
- MD VEG 23: Design and implement vegetation treatments in PHMAs and GHMAs to restore, enhance, and maintain riparian areas.

1.6 Relationship to Other Laws, Policies and Plans

The Federal Land Policy and Management Act of 1976 (FLPMA) and its implementing regulations provide the legal framework within which the BLM manages public lands and assesses the effects of its management actions. Review and possible authorization of the Dry Creek Restoration Project is also subject to requirements for consistency and conformance with a number of other applicable Federal laws, regulations, and policies. Other major Federal laws, regulations, and policies¹ relevant to the proposed stream restoration project include:

- American Indian Religious Freedom Act of 1978 (42 United States Code [USC] 1996)
- Antiquities Act of 1906 (16 USC 431–433)
- Archaeological Resources Protection Act of 1979 (16 USC 470aa to 470ee)
- Bald and Golden Eagle Protection Act of 1940 (16 USC 668–668d)
- Clean Air Act (42 USC 7401 et seq., as amended)
- Clean Water Act (33 USC 1251 et seq.)/ Section 404(b)(1) Guidelines (40 CFR 230)
- Endangered Species Act of 1973 (16 USC 1513 et seq.)
- Executive Order 11593, Protection and Enhancement of the Cultural Environment (May 6, 1971)
- Executive Order 11988, Floodplain Management (May 24, 1977, as amended)
- Executive Order 11990, Protection of Wetlands (May 24, 1977)
- Executive Order 13007, Indian Sacred Sites (May 24, 1996)
- Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (November 9, 2000)
- Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (January 10, 2001)
- Federal Noxious Weed Act of 1974, as amended
- Executive Order 13112, Invasive Species (February 3, 1999)

¹ Additional Federal, State, and/or local laws, regulations, and policies may apply.

- Hazardous Materials Transportation Guides (43 CFR 171–177 and 350–399)
- Migratory Bird Treaty Act of 1918 (16 USC 703–711)
- National Historic Preservation Act of 1966 (16 USC 470 et seq.)
- Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001–3002)
- Public Rangelands Improvement Act of 1978 (43 USC 1901–1908)
- Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.)
- Safe Drinking Water Act Amendments of 1996 (42 USC 300f)

1.7 Issues Identified Through Scoping

The BLM conducted both internal and external scoping for this EA. External scoping efforts began on December 1, 2017 when the BLM issued a scoping letter, indicating the BLM’s intent to consider the stream restoration project. The scoping letter was mailed to 82 individuals, organizations, and agencies as well as posted on BLM’s ePlanning project website. This letter asked the interested public and agencies to submit any comments, data, or information to be considered in restoring stream habitat on the 1,400-foot-long reach of Dry Creek by December 18, 2017.

The BLM received four responses to the scoping letter: two from State agencies and two from private citizens. From the scoping input, substantive comments regarding potential effects to surface waters, vegetation, wetlands, riparian areas, and livestock grazing were identified. The potential effects to these resources are analyzed in detail in Chapter 3 and were considered during development of the measures to minimize effects listed in Chapter 2.

2. Proposed Action and Alternatives

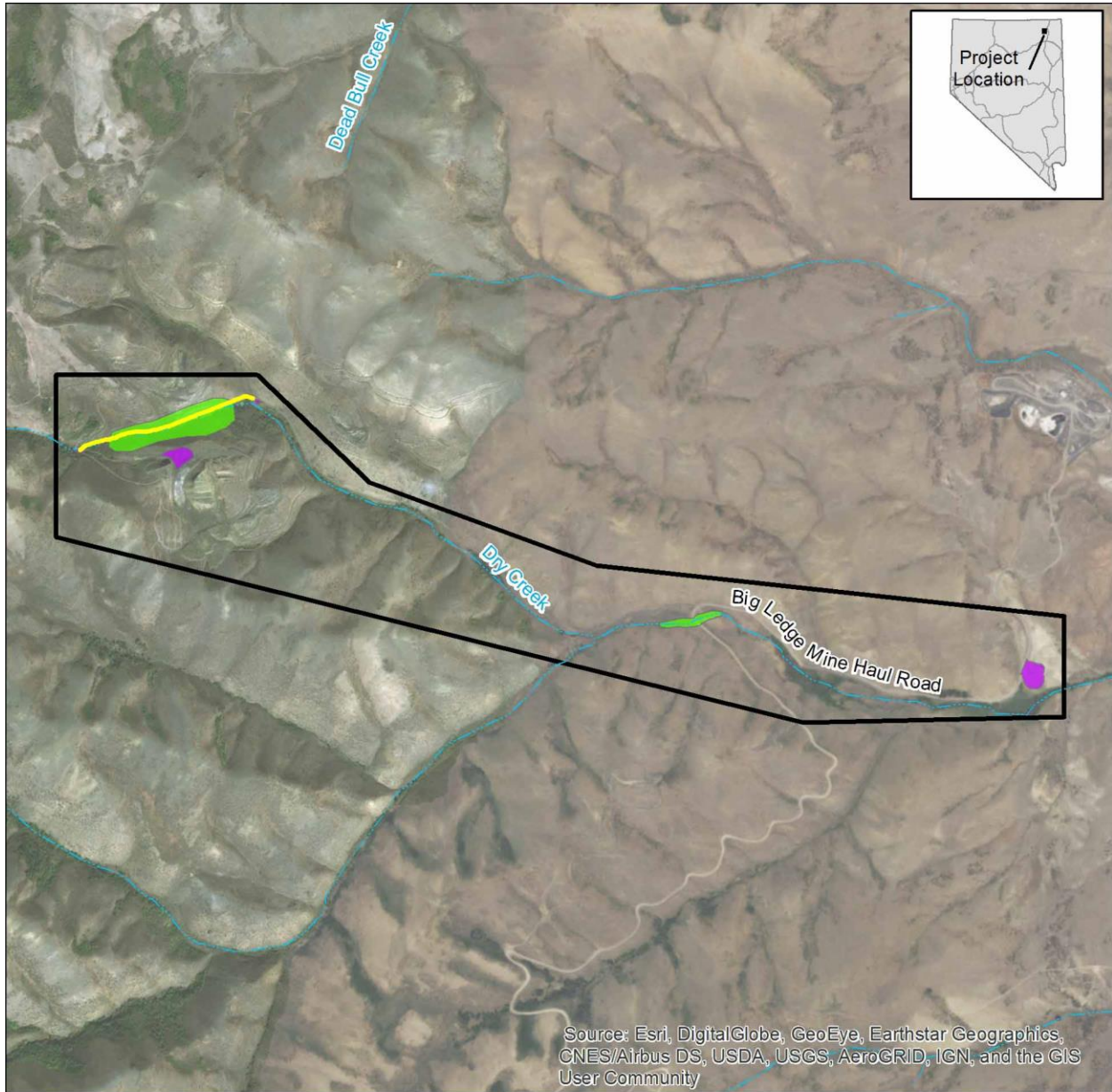
Trout Unlimited has studied the historical aerial photographs, identified pre-disturbance conditions, and evaluated channel changes over time within the project area. Based on these studies and existing conditions, all of the alternatives discussed in this section propose restoration activities at two separate reaches along Dry Creek where fish barriers exist—the Lower Reach and the Upper Reach—in addition to roadway improvements to an existing primitive road (referenced in this document as Dry Creek Road). In the discussion of the alternatives, four crossings of Dry Creek may be referenced; the crossings have been labeled Crossing 1 through Crossing 4 for easier identification (Figure 1-2). Additionally, a quick reference table has been included after the description of the alternatives for easier alternative comparison. All of the information in the quick reference table is also within the text.

2.1 Alternative A: Trout Unlimited Alternative (Proposed Action)

Trout Unlimited proposes restoration activities at both the Lower Reach and the Upper Reach, in addition to reconstructing the existing Dry Creek Road in its current location adjacent to the creek (Figure 2-1).

2.1.1 Upper Reach

The proposed design for the Upper Reach would include approximately 800 linear feet of channel restoration and re-naturalization of step-pools and chutes. Restoring 800 linear feet would include the removal of approximately 4,290 cubic yards of mining waste rock from the stream channel. According to preliminary testing, the existing natural channel is between 4.8 and 7.0 feet below the surface of the waste rock. The restored channel would be approximately 6 feet wide along most of the reach to minimize profile adjustments, and narrowed to approximately 4 feet wide at pools to promote pool persistence and location stability. During construction, the creek would be temporarily channeled and redirected to the north side of Dry Creek Road to allow construction activities within the stream channel. Currently the existing road varies in width and narrows in some locations to 5 to 6 feet wide. The Proposed Action would reconstruct the primitive road on its current alignment to 12 feet in width. The reconstructed road would be managed for use by four-wheel-drive or high-clearance vehicles and maintained for serving firewood permits, environmental study areas, hunter access, and off-road vehicle areas. Armoring the slope adjacent to the roadway and ford crossing at the western end of the project area would also be included to protect Dry Creek Road from future erosion. Approximately 0.55 mile of road would be reconstructed, which would cause 0.65 acre of permanent roadway (assuming a 12-foot-wide road) and 0.44 acre of temporary disturbance associated with the road construction, totaling approximately 1.09 acres of disturbance. Additionally, two culverts (at crossings 3 and 4) at the western end of the project area would be removed and replaced with larger culverts to accommodate the restored stream channel and its flow. The replacement of the two culverts would require approximately 0.10 acre of additional temporary disturbance during construction.

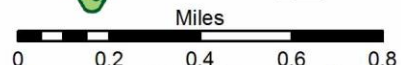


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

-  Project Area
-  Dry Creek Restoration Area
-  Staging Area
-  Restore Existing Road

Alternative A
 Dry Creek Restoration Project
 Wells Field Office
 May 2, 2018



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

Figure 2-1. Alternative A: Proposed Action

The existing Dry Creek channel slopes between 5 and 15 percent, which would require the creation of step-pools suitable for redband trout passage. Based on evaluations of redband trout swimming capabilities, the pools have been designed to have an appropriate vertical distance between each pool (approximately 0.5 to 1.0 foot) so that the fish can maneuver across pools and to be long enough to allow a fish to build up enough speed to jump to the next pool (approximately 5.0 to 10.0 feet in length).

Due to the distance the redband trout would travel and the slope of the channel, approximately 19 grade-control features are anticipated to be needed to provide fish passage to upstream habitat. An estimated 20-40 percent of the waste and rock removed from the channel would be reused for the creation of step-pools and grade-control features. In addition, boulders removed from the buried channel would also be used for slope protection. Once the construction is complete, the temporary rechanneling features of the Dry Creek would be removed and the creek flows would be brought back to its approximate current alignment along the south side of Dry Creek Road. Excess material would be placed at the location of the old Consolation Pit, located on private land at the western end of the project area. Excess material would also be used for pit safety measures, such as the construction of berms or the placement of large boulders along the top edge of the pit highwall.

2.1.2 Lower Reach

The Lower Reach design would include approximately 600 linear feet of channel reconstruction and the removal and replacement of the culvert under Big Ledge Mine Haul Road (Crossing 1). At this location, approximately 930 cubic yards of earthen material would be removed and approximately 210 cubic yards of material would be replaced to re-contour the channel, eliminating the approximate 4.5-foot elevation difference on either side of Big Ledge Mine Haul Road. Due to the channel slope in this location, approximately six pool features and seven grade-control features are anticipated. The existing ditch along Big Ledge Mine Haul Road would be modified to better manage road runoff and sediment to the channel. During construction, Big Ledge Mine Haul Road would be closed to through traffic for brief periods of time as the culvert is replaced and the channel is graded and re-contoured.

2.1.3 Construction Activities

Four staging and contractor use areas would be used during the reconstruction of both reaches of Dry Creek, totaling approximately 3.76 acres. These sites have been chosen based on their location along the project area, existing disturbance, and minimal vegetation currently onsite. No site clearing or vegetation removal would be required at the staging and contractor use areas. The use of rubber tire vehicles would allow for existing vegetation to remain at the four sites.

Construction activities would require excavation to approximately 10 feet below ground level with a standard (7-44 ton) to large (45-80 ton) excavator. The excavator would remove material and also be used to remove and replace the culverts (excavator with a 4-foot-wide or larger bucket). An estimated 3,840 cubic yards of waste material would be hauled off and disposed of at the old Consolation Pit using large dump trucks and excavators, as appropriate and as the overall construction phasing allows. Finer grading activities and construction of the riffles would require smaller equipment such as skid steers or small excavators that can work in, and maneuver through, the Dry Creek channel.

Construction duration is estimated to be approximately nine weeks. Activities associated with the Lower Reach would require approximately three weeks: one week for the site preparation, installation of erosion control devices, mobilization of equipment, and materials; one week for the installation of culvert and grade control structures; and one week for rehabilitation, riparian plantings, and demobilization of equipment. Construction activities associated with the Upper Reach would require approximately six weeks: one week for the preparation of the site, installation of erosion control devices, mobilization of equipment and materials; three weeks for grade control, rock structure placement, removal, and haul of materials; and two weeks for the rehabilitation, riparian plantings, and demobilization of equipment. No construction work would begin until agreements are obtained from the two private landowners along the approximately 6,060 feet of Dry Creek Road at the western end of the project area. Once construction and the creek channel restoration is complete, redband trout from the adjacent drainages would be moved into Dry Creek to reestablish the population.

2.1.4 Alternative A Design Features/Best Management Practices

The following design features and best management practices would be followed when performing construction activities. The design features are based on information and practices of the BLM WFO.

Project Planning:

- Before ground-disturbing activities begin, an inventory of weed infestations and prioritize areas for treatment in project operating areas and along access routes would occur.
- Road construction cannot be implemented until agreements with the private land owners are in place.
- Road construction and use would be coordinated with Big Ledge Mine to minimize disturbance to the extent possible prior to construction work that would impact the Big Ledge Mine Road.
- Disturbances associated with operations would be clustered as closely as possible.
- The BLM would review and approved the contractor prepared accidental spill prevention and response plan prior to construction activities in order to ensure any such spill is limited to the smallest area possible.

Project Development:

- Culverts would be aligned with the natural stream channel.
- Culverts would be covered with sufficient fill to avoid or minimize damage by traffic.
- Soil disturbance would be minimized to the extent practical, consistent with project objectives.
- Soil conditions would be avoided that create and promote weed germination and establishment.

Water Resources:

- An application to the US Army Corps of Engineers for a Clean Water Act Section 404 permit would prepared and submitted for the project.
- No work would occur within jurisdictional Waters of the United States until the appropriate Clean Water Act Section 401 and 404 permits are obtained and project specific requirements included.

- The contractor would comply with all terms and conditions of the Section 404 Nationwide Permit 27 with Preconstruction Notification and associated verification letter and impact sheet as established by the US Army Corps of Engineers.
- The contractor would comply with all terms and conditions of the Conditional Section 401 Water Quality Certification certified by the Nevada Division of Environmental Protection.
- Suitable measures would be used to avoid or minimize scour and erosion of the channel, crossing structure, and foundation to maintain the stability of the channel and banks.
- The BLM Engineer would review and approve the contractor's Stormwater Pollution Prevention Plan, Notice of Intent, and Notice of Termination prior to the contractor's submission to the Nevada Division of Environmental Protection.

Revegetation:

- To prevent conditions favoring weed establishment, vegetation would be re-established on bare ground caused by project disturbance as soon as possible using either natural recovery or artificial techniques.
- Seed and straw mulch to be used for site rehabilitation (for wattles, straw bales, dams, etc.) would be inspected and certified that they are free of weed seed and propagules.
- All limited term ground-disturbing operations in noxious weed infested areas would be inspected and documented for at least three growing seasons following completion of the project.
- Native material would be used where appropriate and feasible.
- Certified weed-free or weed-seed-free hay or straw would be used where certified materials are required and/or are reasonably available.
- Briefings to work crews would be conducted to identify operational practices to reduce weed spread prior to construction.

Wildlife:

- Nesting season clearance surveys would be conducted when a proposed activity would occur during the migratory bird nesting season (April 1 - July 31) or the extended raptor seasons in Table 2-1, as appropriate, and potential impacts to nesting migratory birds are not mitigated by applying seasonal restrictions. Clearance surveys would occur in the project area including a 300-foot buffer around the project area unless the BLM or US Fish and Wildlife Service (USFWS) recommends a different distance. Surveys must be conducted a maximum of 2 weeks prior to disturbance and are then adequate for a maximum of 2 weeks. Surveys would need to be repeated after 2 weeks have elapsed if proposed activities have not been initiated. If breeding behavior or nests are observed, proposed activities should not occur until after young have fledged or nests are abandoned unless a species-specific spatial buffer can be provided around nests.
- The following table provides nesting seasons and buffer distances for raptors, which are technically a subset of migratory birds but have extended breeding seasons and buffer distances:

Table 2-1. Nesting seasons and buffer distances for raptors

Species	Seasonal Buffer ¹	Spatial Buffer ¹ (miles)
Turkey Vulture	3/1 ² – 8/15	0.5
Osprey	4/1-8/31	0.5
Northern Harrier	4/1 – 8/15	0.5
Golden Eagle	1/1 – 8/31	0.5
Bald Eagle	1/1 – 8/31	1.0
Northern Goshawk	3/1 – 8/15	0.5
Cooper’s Hawk	3/15 – 8/31	0.5
Sharp-shinned Hawk	3/15 – 8/31	0.5
Red-tailed Hawk	3/15 – 8/15	0.5
Swainson’s Hawk	3/1 – 8/31	0.5
Ferruginous Hawk	3/1 – 8/1	0.5
American Kestrel	4/1 – 8/15	0.125 ³
Merlin	4/1-8/31	0.5
Prairie Falcon	4/1 – 8/31	0.25
Peregrine Falcon	2/1 – 8/31	1.0
Barn Owl	2/1 – 9/15	0.125 ³
Long-eared Owl	2/1 – 8/15	0.25
Short-eared Owl	3/1 – 8/1	0.25
Flammulated Owl	4/1 – 9/30	0.25
Western Screech-owl	3/1 – 8/15	0.25
Great Horned Owl	12/1 – 9/30	0.25
Northern Pygmy Owl	4/1 – 8/1	0.25
Burrowing Owl	3/1 – 8/31	0.25
Northern Saw-whet Owl	3/1 – 8/31	0.25

¹ USFWS 2002

² NDOW 1985

³ USFWS did not recommend a specific spatial buffer due to apparent high population densities and ability to adapt to human activity. However, Elko BLM recommends a spatial buffer because of the remote nature of many raptor nest sites in Nevada and the likelihood that they would not be conditioned to human activities.

- Constructing of roads within riparian areas and ephemeral drainages would be avoided. Low-water crossings would be constructed at right angles to ephemeral drainages and stream crossings.
- During project construction and operation, lower speed limits in GRSG habitat would be established and posted to reduce vehicle/wildlife collisions. Roads would be designed to be driven at slower speeds.
- Standard operating procedures within the Nevada and Northern California Greater Sage-Grouse Approved Resource Management Plan Amendment would be followed (pages 2-8, 2-9).

Noxious and Invasive Species:

- Before construction equipment moves into a relatively weed-free area, all seed-bearing noxious weed plants (prior to seed set/seed formation) on the travelway of existing access roads would be mowed, graded, or otherwise treated and all treatment locations would be reseeded.
- For all construction, reconstruction, and maintenance activities, all disturbed soil after work completion at each site – unless ongoing disturbance at the site will prevent weed establishment would be seeded. In that case, seeding would be done after final disturbance. A seed mix that includes fast, early-growing species to provide quick, dense vegetation would be used.

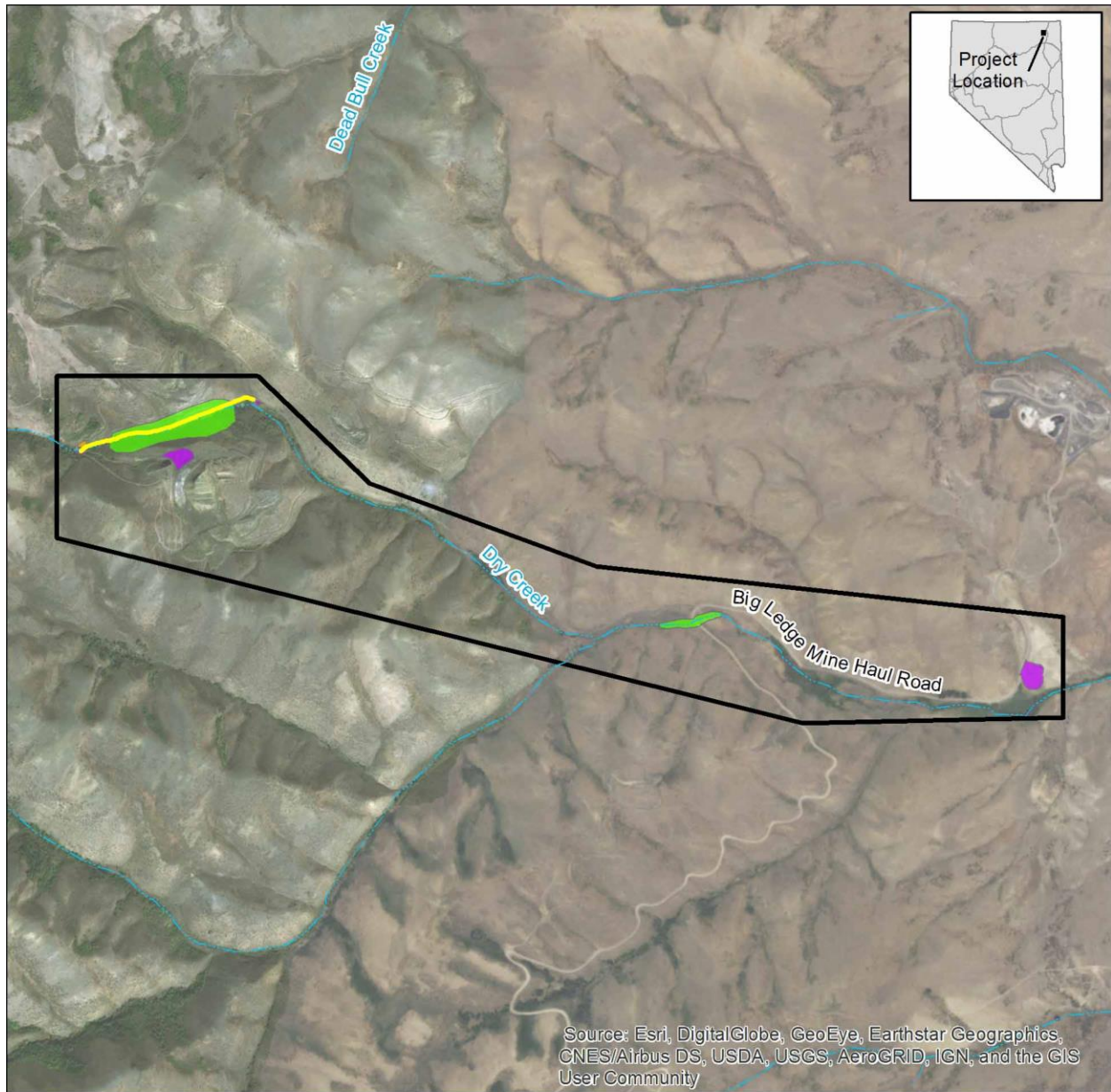
- Off-road equipment would be cleaned of all mud, dirt and plant parts before moving into relatively weed-free areas. (This is not meant to apply to service vehicles that would stay on the roadway traveling frequently in and out of the project area.)
- To prevent weed germination and establishment, native vegetation in and around project activity areas would be maintained and soil disturbance would be kept to a minimum, consistent with project objectives.
- All types of travel through weed-infested areas would be avoided or minimized, or travel would be restricted to periods when the spread of seeds or propagules is least likely.
- Weed establishment at access roads, clearing sites, and all disturbed areas would be inspected and documented; infestations would be controlled to prevent spread within the project area.
- Sites where equipment can be cleaned would be identified. Equipment would be cleaned before entering public lands and before leaving the project site if operating in areas infested with weeds. Cleaning may include power-washing all vehicles and equipment to minimize the introduction of undesirable and/or invasive plant species. Weeds would be inspected and treated that establish at equipment cleaning sites.
- Sources of weed seed and propagules would be removed from vehicles and equipment to prevent the spread of existing weeds and new weed infestations.
- Weed seed and plant parts found on workers' clothing and equipment would be inspected, removed, and properly disposed of; proper disposal entails bagging the seeds and plant parts and incinerating them.

Vegetation:

- Vegetation would be re-established on all bare ground to minimize weed spread.
- For all construction, reconstruction and maintenance activities, all disturbed soil would be seeded after work completion at each site – unless ongoing disturbance at the site would prevent weed establishment. In that case, seeding would be done after final disturbance. A seed mix would be used that includes fast, early-growing species to provide quick, dense vegetation.
- Vigorous, desirable vegetation would be established and maintained to discourage weed spread.
- All seed sites would be monitored. Spot reseed would be performed as necessary.
- Desirable roadside vegetation would be retained to discourage weeds.
- All disturbed soil would be revegetated as soon as possible to discourage weeds.
- For revegetation efforts, a seed mix would be used that is certified weed-free.



2.2 Alternative B: TU Alternative with Crossing Avoidance

Similar to the Proposed Action, Alternative B would include restoration activities at the same two reaches along Dry Creek where fish barriers exist: the Lower Reach and the Upper Reach. Alternative B would also reconstruct majority of Dry Creek Road in its current alignment although this alternative would include a slight alteration to the alignment at the western end of the project area and remove the existing two crossings (crossings 3 and 4) (Figure 2-2).

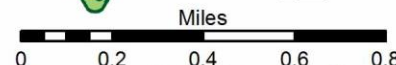


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

-  Project Area
-  Dry Creek Restoration Area
-  Staging Area
-  Crossing Avoidance
-  Restore Existing Road

Alternative B
 Dry Creek Restoration Project
 Wells Field Office
 May 2, 2018



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

Figure 2-2. Alternative B: TU Alternative with Crossing Avoidance

2.2.1 Upper Reach

The proposed design for the Upper Reach would include the same channel restoration, material removal, development of step-pools, and components for reconstructing Dry Creek Road in its existing location as the Proposed Action. All of the quantities for material removal and reuse would be the same as the Proposed Action. The difference between the Proposed Action and Alternative B would be the tie-in of Dry Creek Road at the western end of the project area. Rather than the road turning south and crossing Dry Creek in its current location, Dry Creek Road would be realigned to the north (Figure 2-3). Approximately 85 feet of new roadway would be constructed with Alternative B to make the new connection. This new segment of road would include an additional 0.04 acre of disturbance (additional 0.02 acre of permanent disturbance from the 12-foot roadway and additional 0.02 acre of temporary disturbance associated with roadway construction activities).

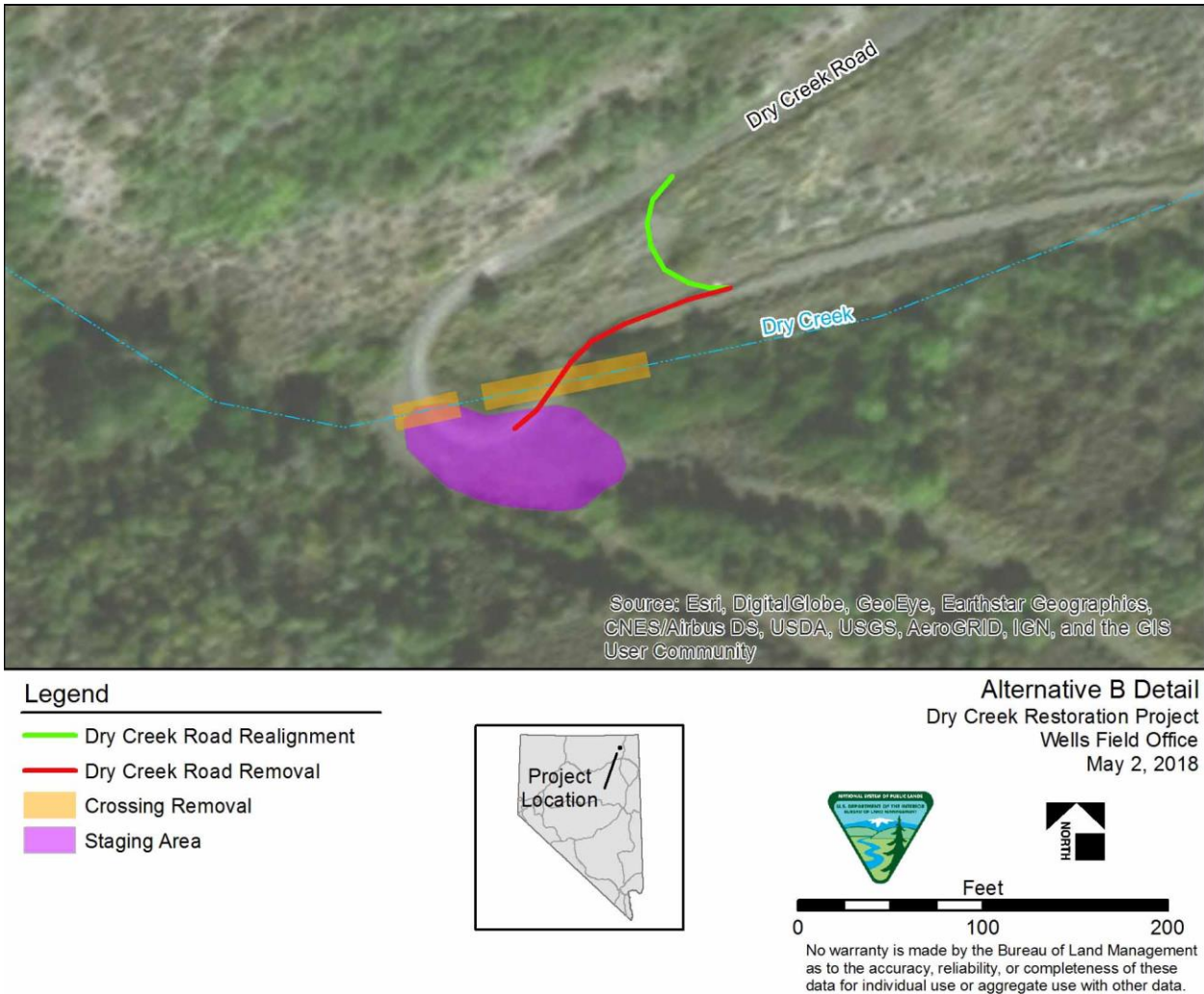


Figure 2-3. Alternative B Upper Reach

With a new connection and slight realignment of Dry Creek Road in this location, approximately 392 feet of roadway and two culvert crossing of Dry Creek would be removed. This would restore approximately 0.06 acre of the original channel and remove the creek crossings 3 and 4. With the removal of the crossings in the Upper Reach, the road to the old Consolation Pit, which is on private land, would be inaccessible.

2.2.2 Lower Reach

Restoration activities associated with the Lower Reach would be exactly the same as the Proposed Action and therefore not reiterated here.

2.2.3 Construction Activities

Under Alternative B, construction equipment and duration would be the same as the Proposed Action. Alternative B would also require the same staging and contractor use areas identified under the Proposed Action. The only difference would be in phasing; because Alternative B would remove access to the old Consolation Pit on private land, removal of one of the crossings would be the last component in order to use the pit for disposal of the waste material. Additionally, boulders or berms would be placed on the segments of roadway remnants adjacent to the culvert and crossing removal to deter motorists or ATVs from attempting to cross Dry Creek in these locations.

2.2.4 Alternative B Design Features/Best Management Practices

In addition to the design features and best management practices outlined under the Proposed Action, the following would be followed when performing construction activities:

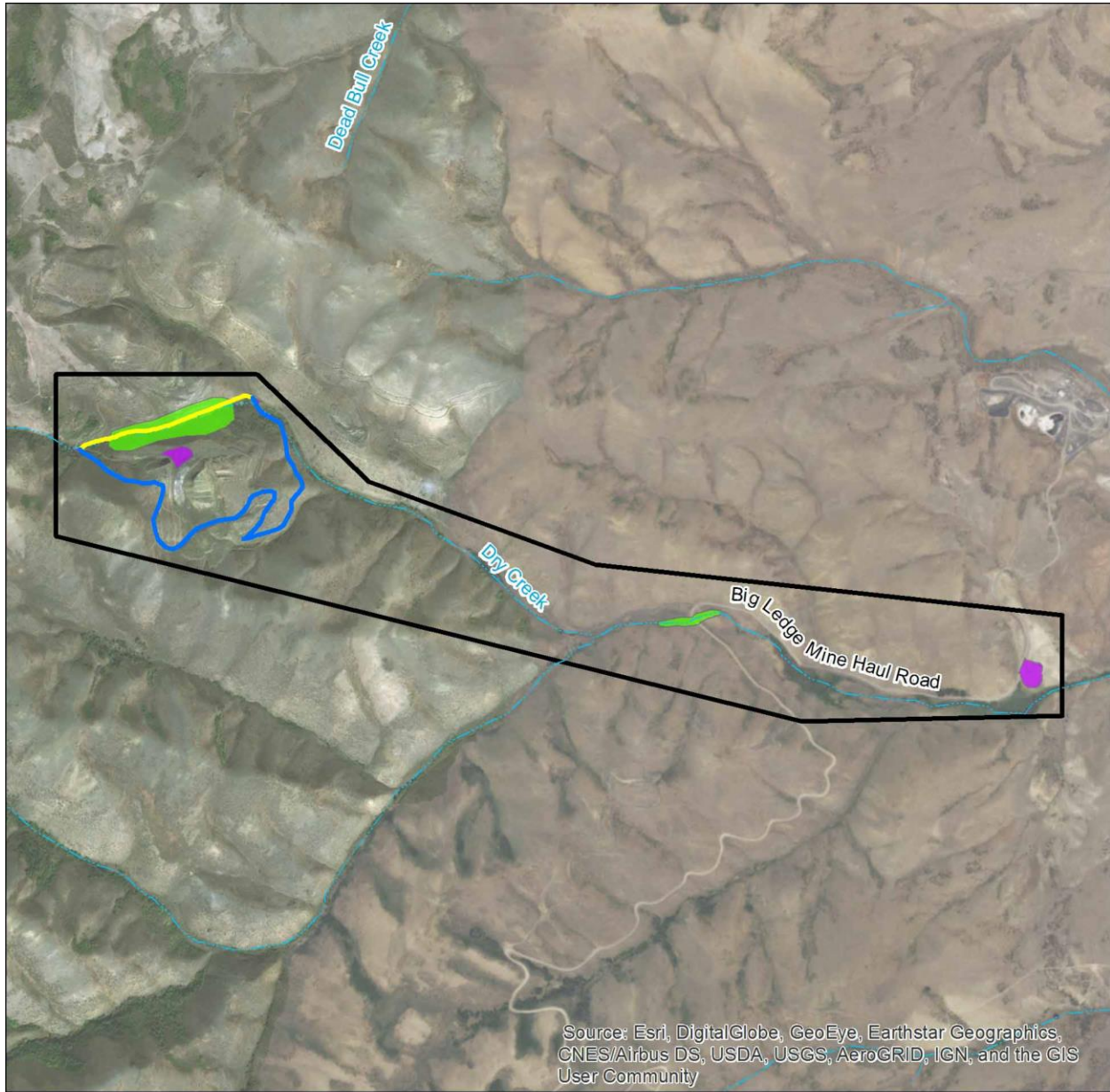
- When reclaiming and reseeding the road where upper culvert may be removed, appropriate seed mix would be used and the use of transplanted sagebrush would be considered. The use of native plant species would be emphasized, recognizing that non-native species may be necessary depending on prevailing site conditions.

2.3 Alternative C: Reroute Alternative

As described in the previous alternatives, restoration activities are proposed at two separate reaches along Dry Creek where fish barriers exist: the Lower Reach and the Upper Reach. Alternative C would also remove an existing segment of Dry Creek Road directly adjacent to the channel and reroute the road south on an old haul road route (Figure 2-4).

2.3.1 Upper Reach

Alternative C would include the same channel restoration components, removal of the mining waste rock within Dry Creek, and the development of step-pools along the Upper Reach channel as in the Proposed Action and Alternative B. However, instead of reconstructing Dry Creek Road in its existing location, Alternative C would remove approximately 0.45 mile of the existing Dry Creek Road along the channel, returning the channel geometry and morphology to the pre-road and pre-mining conditions (Figure 2-4). No roadway armoring along the channel would be necessary.



Legend

-  Project Area
-  Staging Area
-  Dry Creek Restoration Area
-  Dry Creek Road Reroute
-  Dry Creek Road Removed

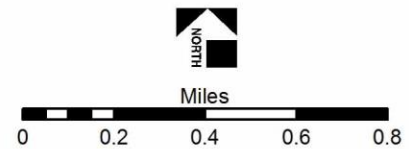


Figure 2-4. Alternative C: Reroute Alternative

For Alternative C, one culvert would require removal, upgrade, and replacement (Crossing 4), one culvert would be removed permanently and the channel restored (Crossing 3), and one new low-water crossing would be necessary where the old haul road crosses Dry Creek (Crossing 2). Removal of this road would restore approximately 0.55 acre of adjacent land back to the Dry Creek channel, based on an average existing roadway width of 10 feet. Additionally, with Alternative C, the creek would not need to be temporarily rerouted and would be restored to original location south of the road bed.

The new reroute would improve/rebuild approximately 1.36 miles of the old haul road to maintain access, assuming the rebuild would include a 12-foot-wide roadway. Where the old haul road crosses Dry Creek, the installation of a new low-water crossing would be required, temporarily disturbing approximately 0.09 acre. Construction of the roadway would disturb approximately 3.25 acres (1.95 acres for the permanent roadway and 1.30 acres for the temporary construction). Alternative C would realign the road at the western end of the project area and remove a portion of the existing Dry Creek Road, therefore requiring only one culvert replacement at this location (Figure 2-5). Removing one crossing of Dry Creek would restore approximately 0.06 acre of the original channel and reduce the number of channel crossings from two to one. Temporary disturbance associated with the one culvert replacement at the western end would be approximately 0.03 acre.

2.3.2 Lower Reach

Restoration activities associated with the Lower Reach would be exactly the same as the Proposed Action and Alternative B; therefore, they are not reiterated here.

2.3.3 Construction Activities

Under Alternative C, construction equipment used would be the same as used in the Proposed Action and Alternative B. Alternative C would also use the same staging and contractor use areas and waste area identified under the Proposed Action and Alternative B.

Construction is estimated to require approximately eleven weeks. Activities associated with the Lower Reach would be the same as under the Proposed Action and Alternative B—approximately three weeks: one week for the site preparation, installation of erosion control devices, mobilization of equipment, and materials; one week for the installation of culvert and grade control structures; and one week for rehabilitation, riparian plantings, and demobilization of equipment. Construction activities associated with the Upper Reach would take approximately eight weeks: one week for the preparation of the site, installation of erosion control devices, and mobilization of equipment and materials; three weeks for grade control, rock structure placement, removal, and haul of materials; two weeks for the rehabilitation, riparian plantings, and demobilization of equipment; and two weeks to rehabilitate and reopen the old haul road.

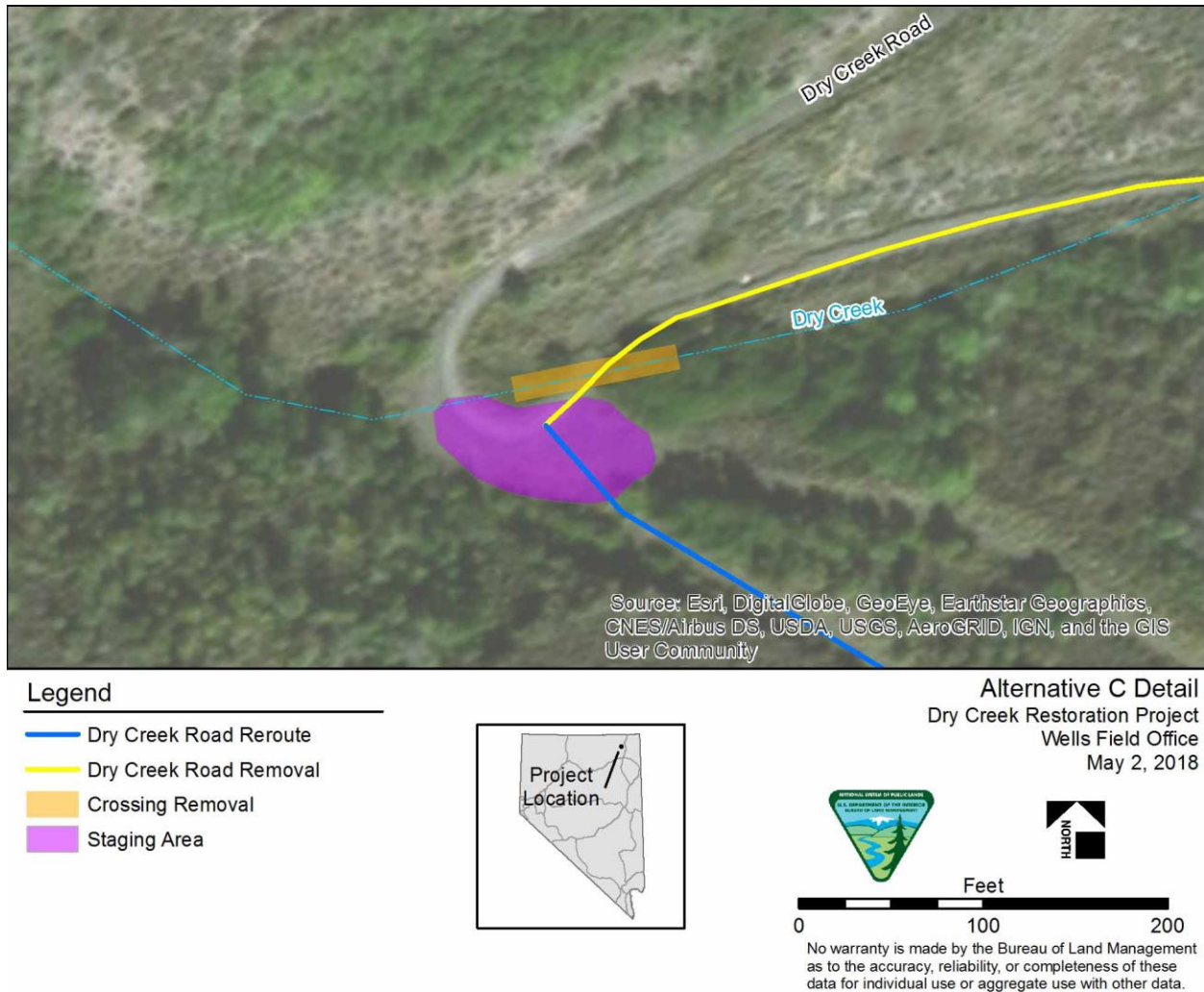


Figure 2-5. Alternative C Upper Reach

2.3.4 Alternative C Design Features/Best Management Practices

In addition to the design features and best management practices outlined under the Proposed Action and Alternative B, the following would be followed when performing construction and maintenance activities:

- When reclaiming and reseeding the area of road removal, appropriate seed mix would be used and the use of transplanted sagebrush would be considered. The use of native plant species, would be considered, recognizing that non-native species may be necessary depending on prevailing site conditions.
- The low-water crossing would be constructed to conform to the site, channel shape, and original streambed elevation and to minimize flow restriction, site disturbance, and channel blockage to the extent practicable.
- Suitable measures to stabilize or harden the streambed and approaches, including the entire bankfull width and sufficient freeboard, would be used where necessary to support the anticipated vehicle traffic.

- Vented fords would be used with a high vent area ratio to maintain stream function and aquatic organism passage.

2.4 Alternative D: No Action Alternative

Under the No Action Alternative, the BLM would not authorize the Proposed Action. As a result, Dry Creek would continue to be in a degraded state with existing fish barriers generated by roads and historic or past mining operations. The No Action Alternative would only allow for minor routine road maintenance. This alternative would not remove the mining waste rock within the Dry Creek channel; therefore, the creek would remain subsurface for approximately 800 feet. The culvert at the intersection of Dry Creek and Big Ledge Mine Haul Road would be left in place, maintaining the 4.5-foot elevation difference.

The degradation of the creek channel has created the fragmentation of habitat, which influences the status and distribution of redband trout. Implementation of the No Action Alternative would not meet the purpose and need for this project.

The No Action Alternative serves as a baseline for comparison of environmental effects (including cumulative effects) and demonstrates consequences of not meeting the need for the action.

2.4.1 Alternative D Design Features/Best Management Practices

None.

2.5 Alternatives Considered but Eliminated

None.

2.6 Comparison of Alternatives

Table 2-2 includes a comparison summary of the alternatives considered under this EA.

Table 2-2. Alternative Comparison Table

Project Feature	Alternative A: TU Alternative (Proposed Action)	Alternative B: TU Alternative with Crossing Avoidance	Alternative C: Reroute Alternative	Comments
Lower Reach channel reconstruction	600 linear feet	600 linear feet	600 linear feet	Same for all alternatives
Lower Reach drainage structure(s)	One culvert removed and replaced	One culvert removed and replaced	One culvert removed and replaced	Same for all alternatives
Upper Reach channel reconstruction	800 linear feet (0.11 acre) of channel restoration	800 linear feet (0.11 acre) of channel restoration	800 linear feet (0.11 acre) of channel restoration	Same for all alternatives

Dry Creek Restoration Project EA

Project Feature	Alternative A: TU Alternative (Proposed Action)	Alternative B: TU Alternative with Crossing Avoidance	Alternative C: Reroute Alternative	Comments
Upper Reach channel restored by culvert removal	NA	0.08 acre	0.04 acre	--
Upper Reach channel width	4-6 feet wide	4-6 feet wide	4-6 feet wide	Same for all alternatives
Dry Creek Road Location	Existing alignment	Existing alignment with modifications	Reroute road on abandoned haul road	--
Dry Creek Road distance	0.55 mile	0.49 mile	1.36 miles	--
New road/ Reroute of Dry Creek Road	NA	85 feet (new road)	1.36 miles (rerouted road)	--
Dry Creek Road removed	NA	392 feet	0.45 mile	--
Dry Creek Road width	12 feet	12 feet	12 feet	Same for all alternatives
Total disturbance from Dry Creek Road improvements	1.09 acres	1.13 acres	3.25 acres	--
Permanent disturbance	0.65 acre	0.67 acre	1.95 acres	--
Temporary disturbance	0.44 acre	0.46 acre	1.30 acres	--
Crossing(s) of Dry Creek	Two culverts removed and replaced	Two culverts removed and not replaced	One culvert removed and replaced; one culvert removed and not replaced; one new low-water crossing	--
Permanent access restrictions	None	Old Consolation Pit access eliminated	None	--
Temporary access restrictions	Big Ledge Mine Road closed during reconstruction of Lower Reach; Dry Creek Road closed during stream restoration	Big Ledge Mine Road closed during reconstruction of Lower Reach; Dry Creek Road closed during stream restoration	Big Ledge Mine Road closed during reconstruction of Lower Reach	--

NA = Not applicable

3. *Affected Environment/Environmental Effects*

This chapter identifies and describes the current condition, elements, and resources in the human environment that may be affected by the alternatives under evaluation. The Affected Environment is the same for all alternatives. Measures to avoid or minimize impacts have also been identified and are listed at the end of each resource discussion in this EA. Direct and indirect impacts are described in this chapter and cumulative impacts addressed in Section 3.4. Potential impacts are described in terms of duration, intensity, type, and context. Definitions of impact terms are provided below.

In this document, the terms “effect” and “impact” are used synonymously. Impacts fall into two categories:

- **Direct:** caused by the action, same time and place.
- **Indirect:** caused by the action, but later in time or further in distance, but are still reasonably foreseeable.

For the purposes of this analysis, duration of the impact is defined as follows:

- **Short-term:** impacts that would be less than 1 year in duration.
- **Long-term:** impacts that would be 1 year or greater in duration.

For the purposes of this analysis, intensity or severity of the impact is defined as follows:

- **Negligible:** changes would not be detectable and/or measureable. The resource would be essentially unchanged or unaltered.
- **Minor:** changes would be detectable, localized, and/or measurable. The resource would be slightly changed or altered.
- **Moderate:** changes would be clearly detectable, measurable, and/or have an appreciable effect on the resource. The resource would be notably changed or altered.
- **Major:** changes would be readily detectable, and/or have a severe effect on the resource. The resource would be substantially changed or altered.

For the purposes of the type of impact is defined as follows:

- **Adverse:** impacts that would have a detrimental effect to a resource.
- **Beneficial:** impacts that would have a positive effect to a resource.

Context is the setting within which an impact is analyzed:

- **Local:** within and immediately adjacent to the project area.
- **Regional:** remaining area outside of the project area but within the BLM field office.

For any given resource, the definition of the magnitude of effect may be more specific to the resource and is noted in the appropriate section(s) of this chapter. Descriptions of potential impacts are provided in each resource by alternative.

3.1 Resources Considered for Detailed Analysis

The BLM’s NEPA Handbook (H-1790-1) identifies supplemental authorities that are subject to requirements specified by statute or executive order and must be considered in all BLM environmental

documents (BLM 2008a). Table 3-1 lists the supplemental authorities and their status in the Dry Creek Restoration project area, including those that are potentially affected by the alternatives and warrant additional detailed analysis.

Table 3-1. Supplemental Authorities with Resource Analysis Rationale

Resource	Present (Yes/No)	May be Affected (Yes/No)	Resource Analysis Rationale
Air Quality <i>(The Clean Air Act of 1955, as amended)</i>	Y	Y	The Dry Creek Restoration project area is treated as an area “in attainment” with ambient air quality standards under the National Ambient Air Quality Standards and Nevada State Ambient Air Quality Standards. The main source of fugitive dust in the vicinity of the project area includes vehicular traffic on unpaved roads and windblown dust. During the construction of any of the alternatives, there would be short-term, localized minor increases in vehicle emissions and particulates (fugitive dust). Once the construction activities are completed, there would be long-term negligible increases in emissions from vehicle traffic into and out of the project area. No additional detailed analysis in this EA is warranted.
Areas of Critical Environmental Concern <i>(FLPMA)</i>	N	N	There are no Areas of Critical Environmental Concern within or immediately adjacent to the project area. No detailed analysis in this EA is warranted.
Cultural Resources <i>(National Historic Preservation Act of 1966)</i>	N	N	The BLM Elko cultural resources specialist (CRS) completed a Cultural Resources Inventory Needs Assessment (CRINA) form on November 7, 2017, in compliance with the Nevada State Protocol Agreement. The CRINA established the direct and indirect effects area of potential effect (APE). The CRINA also identified four previously conducted cultural inventories and five archaeological sites within one mile of the project area. The BLM Elko CRS inspected the proposed project area and found no cultural material and noted that majority of the project APE is located in areas of previous ground disturbance. Therefore, the probability of finding intact cultural resources is negligible. The proposed undertaking is exempt from further cultural resources inventory under Section V.3.a of the Nevada State Protocol Agreement. The CRINA concluded that no further cultural inventory is required, and no detailed analysis in this EA is warranted.

Resource	Present (Yes/No)	May be Affected (Yes/No)	Resource Analysis Rationale
Environmental Justice <i>(Executive Order 12898)</i>	N	N	The project area is within two U.S. Census Bureau block groups that contain both low income and minority populations (US EPA 2018; Headwaters Economics 2018). Because the project area is remote and no residences or people are located within or adjacent to the project area, it is not anticipated that there would be any disproportionate impacts on the existing environmental justice populations within the project area. No detailed analysis in this EA is warranted.
Farmlands (prime or unique) <i>(Surface Mining Control and Rec. Act of 1977)</i>	N	N	There are no U.S. Department of Agriculture-designated prime or unique farmlands within the project area (U.S. Department of Agriculture 2018). No detailed analysis in this EA is warranted.
Floodplains <i>(Executive Order 11988)</i>	Y	N	The project area is within Federal Emergency Management Agency, Floodplain Zone X (i.e., area of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as above the 500-year flood level) (FEMA 2018). No structures would be constructed within the floodplain. Therefore, there would be no impact to floodplains, and no detailed analysis in this EA is warranted.
Invasive Plant Species and Noxious Weeds <i>(Executive Order 11988)</i>	Y	Y	An inventory of project area for weed species in 2017 identified several invasive plants and one noxious weed (poison hemlock). Any invasive plant and noxious weed populations would be managed in compliance with BLM Elko Field Office 1998 <i>Programmatic EA of Integrated Weed Management on Bureau of Land Management Lands</i> (BLM 1998). Weed prevention measures have been included in the best management practices to reduce the potential for the establishment or spread of invasive plant species and noxious weeds. No additional detailed analysis in this EA is warranted.

Resource	Present (Yes/No)	May be Affected (Yes/No)	Resource Analysis Rationale
Migratory Birds (Executive Order 131186)	Y	Y	Based on the Southwest Regional GAP Analysis (Lowry et al., 2005), the predominant vegetation community classification within the project area is the Inter-Mountain Basins Montane Sagebrush Steppe. Typical migratory birds that may occur in this vegetation community type include: Ferruginous hawk, sage thrasher, and sagebrush sparrow. The amount of permanent surface disturbance from the construction would vary from 0.65 to 1.95 acres, depending on the alternative. Within the 544-acre project area, this would result in an approximately 0.12 percent to 0.36 percent reduction in habitat for migratory birds. As the Inter-Mountain Basins Montane Sagebrush Steppe community is common regionally, species would likely be displaced into other available habitat within or adjacent to the project area. The alternatives would result in a long-term, adverse, negligible impacts from the reduction of habitat for migratory birds and a long-term, beneficial, minor impacts from the restoration of Dry Creek and associated riparian habitat. No additional detailed analysis in this EA is warranted.
Native American Religious Concerns (Executive Order 13007)	N	N	The Elko District Native American Consultation Coordinator sent letters to the following Tribes/Bands on November 30, 2017: <ul style="list-style-type: none"> ▪ Te-Moak Tribe of Western Shoshone Indians of Nevada ▪ Battle Mountain Band of the Te-Moak Tribe ▪ Elko Band of the Te-Moak Tribe ▪ South Fork Band of the Te-Moak Tribe ▪ Wells Band of the Te-Moak Tribe ▪ Confederate Tribes of the Goshute Reservation ▪ Shoshone-Bannock Tribe of the Fort Hall Reservation ▪ Shoshone-Paiute Tribe of the Duck Valley Reservation The project was also presented to the Confederated Tribes of the Goshute Reservation and the constituent Bands of the Te-Moak Tribe Councils at their November open Council meetings. No comments were submitted to the BLM either in writing or at the Council meetings. No detailed analysis in this EA is warranted.

Resource	Present (Yes/No)	May be Affected (Yes/No)	Resource Analysis Rationale
Threatened or Endangered Species, (<i>Endangered Species Act of 1973, as amended</i>)	N	N	There is no federally listed or proposed threatened or endangered species present in the project area. Also, there are no proposed or designated critical habitat in the project area. No detailed analysis in this EA is warranted.
Wild and Scenic Rivers (<i>Wild and Scenic Rivers Act of 1968, as amended</i>)	N	N	There are no Congressionally-designated wild and scenic rivers within the project area. No detailed analysis in this EA is warranted.
Wilderness/Wilderness Study Areas (<i>Federal Land Policy and Management Act of 1976 and Wilderness Act of 1964</i>)	N	N	There are no wilderness areas or wilderness study areas present within the project area. No detailed analysis in this EA is warranted.
Wastes, Hazardous or Solid (<i>Resource Conservation and Recovery Act of 1976, and Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>)	N	Y	During construction, there is the potential for accidental spills from equipment or motorized vehicles. An accidental spill prevention and response plan would be prepared by the contractor and reviewed and approved by BLM prior to construction activities. The plan would be followed during construction activities in order to ensure any such spill is limited to the smallest area possible. No additional detailed analysis in this EA is warranted.

Resource	Present (Yes/No)	May be Affected (Yes/No)	Resource Analysis Rationale
Water Quality (Surface/Ground) <i>(Safe Drinking Water Act of 1974, as amended and Clean Water Act of 1977)</i>	Y	Y	Dry Creek is a perennial surface water feature within the project area. Based on water quality samples taken in 2017, no coliform and Escherichia coli were detected. Therefore, the water meets the microbiological requirements of the U.S. EPA Safe Drinking Water Act. Additionally, since Dry Creek is under the jurisdiction of the U.S. Army Corps of Engineers (USACE), a Section 404 Nationwide Permit No. 27 would be obtained from the USACE prior to any work in the creek. The project would comply with the terms and conditions of the associated conditional Section 401 Water Quality Certification. During construction, best management practices would be followed in order to ensure that any surface water is not adversely impacted. Anticipated impacts from any potential sediment created during construction would be negligible and not expected to persist beyond the first winter and spring following project completion. Because the alternatives would include drop structures, overall reductions in sediment would be expected as the structures capture sediment and retain substrate in the active stream channel. No project activity is anticipated to impact groundwater. No additional detailed analysis in this EA is warranted.
Wetlands/Riparian <i>(Executive Order 11990)</i>	Y	Y	This resource has been carried forward for analysis in this EA; refer to Chapter 3.2 Wetland/Riparian.

BLM specialists have evaluated the potential impact of the alternatives on resources or uses other than those required by supplemental authorities; their findings are documented in Table 3-2. Table 3-2 also notes if these other resources or uses may be potentially affected by the alternatives and warrant additional analysis.

Table 3-2. Resources or Uses Other Than Supplemental Authorities Analysis Rationale

Resource or Issue	Present (Yes/No)	May be Affected (Yes/No)	Rationale For No Additional Analysis
BLM Sensitive Species	Y	Y	This resource has been carried forward for analysis in this EA; refer to Chapter 3.3 BLM Sensitive Species
Fire Management	N	N	There would be no impact to fire suppression activities within the project area. No detailed analysis in this EA is warranted.

Resource or Issue	Present (Yes/No)	May be Affected (Yes/No)	Rationale For No Additional Analysis
Forest Resources	N	N	There are no forest resources present within the project area. No detailed analysis in this EA is warranted.
General Wildlife	Y	Y	<p>Sagebrush-steppe is the dominant habitat type within the WFO. Typical sagebrush-associated and upland species include GRSG, pronghorn antelope, mule deer, coyote, pygmy rabbit, black-tailed jackrabbit, Townsend’s ground squirrel, Brewer’s sparrow, western meadowlark, and horned lark. Common riparian species include various waterfowl, yellow warbler, red-winged blackbird, song sparrow, spotted towhee, and lazuli bunting. Big game species, such as elk and deer, occupy the surrounding habitat during different seasons throughout the year. The area is the summer range for the Snake Mountain Elk Herd.</p> <p>The amount of permanent surface disturbance from the construction would vary from 0.65 to 1.95 acres, depending on the alternative. Within the 544-acre project area, this would result in an approximately 0.12 percent to 0.36 percent reduction in habitat for wildlife. As the Inter-Mountain Basins Montane Sagebrush Steppe community is common in the project area and regionally, the project would cause short-term, adverse, negligible impacts on species because the wildlife is likely be displaced into other available habitat within or adjacent to the project area. The alternatives would result in a long-term, adverse, negligible impacts from the limited reduction of acres of habitat for wildlife. No additional analysis in this EA is warranted.</p>
Lands and Realty	Y	Y	<p>The alternatives would have an impact on lands and realty because there are private parcels that would be crossed under each of the alternatives. Portions of the lower reach culvert and the reroute of the existing primitive road adjacent to Dry Creek are on private lands, requiring agreements with the private landowners. No new easements would be required. The alternatives would result in a long-term, adverse, negligible impacts to private lands because public access would be provided across private lands. No additional analysis in this EA is warranted.</p>
Lands with Wilderness Characteristics	N	N	There are no lands with wilderness characteristics present in the project area. No detailed analysis in this EA is warranted.

Resource or Issue	Present (Yes/No)	May be Affected (Yes/No)	Rationale For No Additional Analysis
Livestock Grazing	Y	Y	There is one grazing allotment within the project area: the Hubbard Vineyard allotment. There are no existing range improvements within the project area. The existing livestock grazing in the project area would not change and the grazing lease authorization would remain the same as the current use. Forage availability and production would be reduced by 0.12 to 0.36 percent within the project area. The alternatives would result in short- and long-term, adverse, negligible impacts to livestock grazing because of the limited reduction in available forage. No additional analysis in this EA is warranted.
Minerals	N	N	There are existing mining claims but there are no new or pending mining actions or permit requests. The alternatives would have no effect on BLM mineral exploration and mining, leasing or mineral material sales within the project area or the Elko District. There would be no impact to minerals; no detailed analysis in this EA is warranted.
Paleontological	N	N	There are no known paleontological resources present within the project area. No detailed analysis in this EA is warranted.
Recreation	Y	Y	The BLM lands within the project area are open to motorized vehicle use. There are approximately 0.55 mile of primitive road (i.e., Dry Creek Road) within the project area. This road is used by private landowners to access private lands, by permittees to access livestock developments, and by the general public for recreation. Recreation activities in the project vicinity include, but are not limited to hunting, camping, and off-highway vehicle (OHV) use. Hiking, horseback riding, and mountain biking also occur in the vicinity. There are no designated recreation sites or trails within the project area.

Resource or Issue	Present (Yes/No)	May be Affected (Yes/No)	Rationale For No Additional Analysis
			<p>The existing Dry Creek Road would be closed to the public during construction. Any dispersed recreation use occurring adjacent to the project area during construction could experience elevated noise levels due to heavy equipment and greater volume of construction vehicles. These impacts are considered to be short-term, adverse, and minor in intensity. The alternatives should result in limited ground disturbance and, therefore, limited potential to impact recreation resources. Improved fish habitat with potential increases in fish populations would provide additional recreation opportunities for angling as a long-term, beneficial, minor impact on recreation. No additional analysis in this EA is warranted.</p>
Socioeconomics	Y	Y	<p>Economically, there would be short-term, beneficial, negligible impacts during construction from all alternatives. There would be a non-measurable increase to revenue for the commercial businesses from the purchase of materials, lodging, and food for the construction workers at locations such as the Interstate 80 and US 93 traffic interchange. Socially, the project area is located in a remote location that receives visitation most often from hunters. There would be short-term, beneficial, negligible impacts and no long-term impacts to socioeconomic resources. No additional analysis in this EA is warranted.</p>
Soils	Y	Y	<p>During construction, best management practices would be followed to address potential increases in soil erosion. Straw bales or other control measures to absorb rainfall and minimize potential for soil loss would be used. All temporary use areas and road shoulders would be seeded with a BLM approved certified weed-free-seed mix to minimize erosion potential and lessen the amount of permanent vegetation loss. No additional analysis in this EA is warranted.</p>

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Resource or Issue	Present (Yes/No)	May be Affected (Yes/No)	Rationale For No Additional Analysis
Travel Management	Y	Y	<p>The WFO is currently working on the development of their travel management plan to establish a network of roads for travel and transportation, including areas for both motorized and non-motorized uses. Currently, Dry Creek Road, an unpaved primitive road, provides access to and across public and private lands for a variety of uses including recreation, hunting, and grazing. In the long-term, Alternatives A and B would not affect the current transportation system since there would be no realignment or upgrading of the route category; there would be short-term, adverse, minor impacts during construction when the road is temporarily closed. For Alternative C, there would be long-term, adverse, negligible impacts because the reroute would be 0.81 mile longer than the existing primitive route along Dry Creek, which would require additional travel time. There would be no short-term impacts on the existing transportation system under Alternative C. No additional analysis in this EA is warranted.</p>
Vegetation	Y	N	<p>Approximately 63 percent of the project area consists of Inter-Mountain Basins Montane Sagebrush Steppe and 21 percent consists of Great Basin Xeric Mixed Sagebrush Shrubland (Lowry et al., 2005). These two vegetation communities are composed primarily of little and big sagebrush. Other common species include bitterbrush, rabbitbrush, saltbush, and various species of bunch grasses. Riparian vegetation is associated with Dry Creek, dominated by a variety of herbaceous wetland vegetation such as sedges, rushes, and some willows.</p> <p>The amount of permanent surface disturbance would vary from 0.65 to 1.95 acres, depending on the alternative. Within the 544-acre project area, this would result in an approximately 0.12 percent to 0.36 percent reduction in vegetation. The alternatives would result in a long-term, adverse and minor reduction in this vegetation type. Potential impacts to riparian vegetation are described in Chapter 3.1.2. No additional analysis for general vegetation in this EA is warranted.</p>

Resource or Issue	Present (Yes/No)	May be Affected (Yes/No)	Rationale For No Additional Analysis
Visual Resource	Y	Y	The characteristic landscape of the project area and immediate vicinity consists of a highly variable topography ranging from rolling foothills to higher-elevation mountains. Elevation differences provide panoramic views from the tops of mountains and hills as well as spatially enclosed views between these landforms. Vegetation is generally low in stature, gray-green in color, and scattered. Dry Creek and associated riparian vegetation provides visual variety in the landscape. Even with the cultural modification to the landscape with the unpaved roads and abandoned mining activities, the project area has a scenic quality B rating (landscapes with moderate scenic value) and a high to moderate level of visual sensitivity according to the Visual Resource Inventory completed by the WFO. The project area lies within a Visual Resource Management Class IV, which allows management activities to dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of activities through applicable design features and best management practices. Long-term, the alternatives that would construct drop structures and armoring of Dry Creek would create a weak level of contrast in form, line, color, or texture. The reroute alternative would not create any long-term level of contrast because no armoring of Dry Creek would be required. Therefore, all alternatives would meet the visual resource objectives. No additional analysis in this EA is warranted.
Wild Horses and Burros	N	N	There are no herd management areas within the project area. No analysis in this EA is warranted.

3.2 Wetlands and Riparian Areas

Wetlands are generally defined as areas inundated by water at a frequency and duration sufficient to support vegetation typically adapted for propagation and growth in saturated soil. Executive Order 11990, Protection of Wetlands (Executive Order No. 11990, 3 C.F.R. 1 1977) requires federal actions to conduct an evaluation of effects to wetlands and to minimize impacts to wetlands. Riparian areas are water-dependent ecosystems bordering streams, springs, and lakes. They form ecological links between the terrestrial and aquatic components of the landscape. Riparian and wetland areas have the potential for multiple vegetation layers with trees, shrubs, grasses, forbs, sedges and rushes. They also provide many important ecological functions such as natural fire barriers, recreation, fisheries, wildlife habitat, and contribute to ground water recharge.

3.2.1 Affected Environment

The National Wetlands Inventory Program (NWI) produced by the USFWS is a nationwide inventory of wetlands across the United States, which provides information on the distribution and types of wetlands to aid in conservation efforts. The NWI wetland data is derived from aerial photography that varies greatly in scale, resolution, and time of acquisition. Wetland mapping may differ in size and composition from actual ground conditions. According to the NWI, there are approximately 23.5 acres of wetlands consisting of freshwater emergent (10.05 acres), forested/shrub (3.43 acres), and riverine (10.03 acres) wetland types within the project area. The emergent wetland vegetation is characterized by grasses, sedges, and forbs; and the forested/shrub wetlands are typically dominated by woody vegetation less than 20 feet tall (Federal Geographic Data Committee 2013). Vegetation along Dry Creek includes willow, sage, and rabbitbrush. The wetlands/riparian vegetation within the project area make up approximately 4.3 percent of the total vegetation within the project area. Immediately downstream of the Upper Reach, there are beaver dams constructed by North American beaver that have created small ponds along the approximately 2.92 miles of Dry Creek within the project area.

As previously noted, Dry Creek is currently in a degraded state because of road construction, drainage structures, and past mining operations. According to a proper functioning condition assessment done in 2012 at one location on Dry Creek within the project area by WFO staff, the riparian/wetland area was considered functional but at risk. Functional-at risk riparian areas are considered to be in limited functioning condition; however, existing hydrologic, vegetative, or geomorphic attributes make them susceptible to impairment (BLM 2013). The Upper Reach is buried by mining waste rock, which filled over 800 linear feet of channel and forced perennial flow subsurface. The Lower Reach exhibits channel degradation. Roads have also modified drainage patterns, increased runoff and sediment directly to the creek. Road crossings were typically constructed with undersized culverts which have failed in previous floods (Balance Hydrologics, Inc. 2016).

Direct and Indirect Effects of Alternatives

Alternative A: Proposed Action

The Proposed Action is anticipated to have undetectable effects on freshwater emergent or forested/shrub wetlands within the project area because there would be no disturbance to these wetlands type. The emergent or forested/shrub wetlands are located downstream of the proposed restoration activities. During construction the creek would be temporarily channeled and redirected so that water would continue to flow in Dry Creek.

It is likely that there would be some immediate sedimentation downstream of the construction areas (direct impact) due to the disturbance at the Upper and Lower reaches; however, the design features/best management practices to control sediment would minimize these effects. During construction, an additional influx of sediment may occur following the first rain events. Some riparian vegetation would be removed and/or disturbed during construction, but the impacts would be limited to the active work sites and not along the entire length of Dry Creek within the project area. These effects are expected to have a negligible impact on stream shade, streambank stability, or water quality. Potential increases in sedimentation and stream temperature would be offset by increased sediment storage capacity and deeper pool areas within the treated stream channels.

The proposed restoration activities at both the Lower and Upper Reaches would affect approximately 1,400 linear feet of channel (riverine wetland type), replace three existing culverts within the channel, and reconstruct 0.55 miles of road adjacent to the creek. Restoration activities would include revegetation with riparian plant species along the creek. Approximately 1.19 acres of ground disturbance would occur with the construction of the Proposed Action, of which, 0.65 acres would be permanent and not include any riparian areas. Once construction has been completed, the temporary rechanneled portion of the creek would be removed and the creek would be brought back to its current location along the south side of Dry Creek Road. Restoring 800 feet of live stream with the removal of the mining waste rock would return, over time, the creek and associated riparian vegetation to its natural condition.

Therefore, the Proposed Action would have localized short-term, direct, negligible adverse impacts on wetlands and riparian resources because implementation of sediment control measures would limit any measurable effects to the resources. There would be no short-term indirect impacts on wetlands and riparian resources because of the localized context of the Proposed Action and short period of active construction. The Proposed Action would result in a long-term, direct and indirect, minor beneficial impacts to wetland and riparian areas by the restoration of 1,400 linear feet of stream channel.

Alternative B: TU Alternative with Crossing Avoidance

Similar to the Proposed Action, Alternative B would also reconstruct majority of Dry Creek Road in its current alignment although this alternative would include a slight alteration to the alignment at the western end of the project area and remove the existing two crossings. Approximately 85 feet of new roadway would be constructed with Alternative B to make the new connection and no existing riparian/wetland resources would be impacted at this location. With a new connection and slight realignment of Dry Creek Road in this location, approximately 392 feet of roadway and two culvert crossing of Dry Creek would be removed. This would restore approximately 0.06 acre of the original channel and remove two existing creek crossings. Boulders or berms would be placed on the segments of roadway remnants adjacent to the culvert and crossing removal to deter motorists or ATVs from attempting to cross Dry Creek in these locations. Restoration activities associated with the Lower Reach in Alternative B would be exactly the same as the Proposed Action.

Therefore, Alternative B would have localized short-term, direct, negligible adverse impacts on wetlands and riparian resources because implementation of sediment control measures would limit any measurable effects to the resources. There would be no short-term indirect impacts on wetlands and riparian resources because of the localized context of the Proposed Action and short period of active construction. Alternative B would result in a long-term, direct and indirect, minor beneficial impacts to wetland and riparian areas by the restoration of 1,400 linear feet of stream channel. Alternative B would also restore slightly more of the Dry Creek channel than the Proposed Action and also have the added benefit of the removal of two crossings.

Alternative C: Reroute Alternative

Alternative C would include the same channel restoration components as in the Proposed Action and Alternative B as well as removing approximately 0.45 mile of the existing Dry Creek Road along the channel, returning the channel geometry and morphology to the pre-road and pre-mining conditions. No roadway armoring along the channel would be necessary. For Alternative C, one culvert would be

replaced, one culvert would be removed permanently and the channel restored, and one new low-water crossing would be necessary where the old haul road crosses Dry Creek. Removal of this road would restore approximately 0.55 acre of adjacent land back to the Dry Creek channel. Additionally, with Alternative C, the creek would not need to be temporarily rerouted and would be restored to original location south of the road bed.

Where the old haul road crosses Dry Creek, the installation of a new low-water crossing would be required, temporarily disturbing approximately 0.09 acres of the stream channel. Alternative C would realigned the road at the western end of the project area and remove a portion of the existing Dry Creek Road, therefore requiring only one culvert replacement at this location. Removing one crossing of Dry Creek would restore approximately 0.06 acre of the original channel and reduce the number of channel crossings from two to one. Temporary disturbance associated with the one culvert replacement at the western end would be approximately 0.03 acre. Restoration activities associated with the Lower Reach would be exactly the same as the Proposed Action and Alternative B. After crossing the creek at the Lower Reach, the proposed reroute would not impact any additional riparian/wetland resources.

Therefore, Alternative C would have localized short-term, direct, negligible adverse impacts on wetlands and riparian resources because implementation of sediment control measures would limit any measureable effects to the resources during the removal of Dry Creek Road. There would be no short-term indirect impacts on wetlands and riparian resources because of the localized context of the Proposed Action and short period of active construction. Alternative C would result in a long-term, direct and indirect, moderate beneficial impacts to wetland and riparian areas by the restoration returning the channel geometry and morphology to the pre-road and pre-mining conditions of the 2.9 miles of Dry Creek.

3.3 BLM Sensitive Species

BLM special status species include: 1) species listed or proposed for listing under the Endangered Species Act (ESA) and 2) species designated as BLM-sensitive by the State Director(s) since they require special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA. There are no species listed or proposed for listing under the ESA in the Dry Creek Restoration project area. In compliance with existing laws, including the BLM multiple-use mission as specified in the FLPMA, the BLM designates sensitive species and implements measures to conserve these species and their habitat to promote their conservation and reduce the likelihood and need for such species to be federally listed pursuant to the ESA. Species designated as BLM sensitive species in Nevada meet the following criteria: species are native to Nevada; found on BLM-managed lands for which BLM has the capability to affect the conservation status of the species through management; and either: 1) there is information that a species is predicted to undergo a downward trend affecting viability of the species; or 2) the species depends on specialized or unique habitat on BLM-managed lands, and there is evidence that such areas are threatened with alteration to a point that the species viability is at risk (BLM 2018). All federal candidate species, proposed species, and delisted species in the five years following delisting will be conserved as BLM sensitive species.

BLM Manual 6840 (BLM 2008b) provides policies on the management of sensitive wildlife species on BLM-managed land. The BLM also manages other sensitive species, including fish and other aquatic

organisms, using the following BLM manuals for guidance: BLM Manual 6500 Wildlife and Fisheries Management; BLM Manual 6720 Aquatic Resources Management; and BLM Manual 6780 Habitat Conservation Management Planning. The purpose of these manuals is to provide guidance for the conservation of BLM special status species and the ecosystems upon which they depend.

3.3.1 Affected Environment

The BLM Sensitive Species Lists of wildlife and plants was developed following criteria identified in BLM Instruction Memorandum No. NV-2011-059 (BLM 2011). Of the 96 sensitive species on the BLM Nevada state list, 77 species have been identified with habitat that may be present in the project area, including 3 amphibians, 18 birds, 3 fish, 5 mollusks, 23 mammals, 5 reptiles, 3 invertebrates, and 17 plants (see Table 3-3 through Source: BLM 2018

Table 3-10). The following analyses address potential impacts to BLM sensitive species and their habitats that are known or with the potential to use the Dry Creek Restoration project area during some portion of their life cycle. The 19 species that do not occur within the Dry Creek Restoration project area have been excluded from the analysis.

Table 3-3. BLM Sensitive Species Habitat Association – Amphibians

Common Name <i>Scientific Name</i>	Habitat Association
Boreal toad <i>Anaxyrus boreas</i> ssp	grasslands
Columbia spotted frog <i>Rana luteiventris</i>	grasslands
Northern Leopard Frog <i>Rana pipiens</i>	wetlands

Source: BLM 2018

Table 3-4. BLM Sensitive Species Habitat Association – Fish

Common Name <i>Scientific Name</i>	Habitat Association
Redband trout, inland Columbian Basin <i>Oncorhynchus mykiss gairdneri</i>	aquatic
Mountain whitefish <i>Prosopium williamsoni</i>	aquatic
Northern leatherside chub <i>Lepidomeda copei</i>	aquatic

Source: BLM 2018

Table 3-5. BLM Sensitive Species Habitat Association – Mollusks

Common Name <i>Scientific Name</i>	Habitat Association
California floater <i>Anodonta californiensis</i>	clean, clear lakes, ponds and large rivers

Common Name <i>Scientific Name</i>	Habitat Association
Humboldt pyrg <i>Pyrgulopsis humboldtensis</i>	springs
Sada's pyrg <i>Pyrgulopsis sadai</i>	springs
Vinyards pyrg <i>Pyrgulopsis vinyardi</i>	springs
Western ridged mussel <i>Gonidea angulata</i>	cold creeks and streams

Source: BLM 2018

Table 3-6. BLM Sensitive Species Habitat Association – Reptiles

Common Name <i>Scientific Name</i>	Habitat Association
Desert horned lizard <i>Phrynosoma platyrhinos</i>	short-shrub plant communities with an open understory
Great Basin collared lizard <i>Crotaphytus bicinctores</i>	desert scrubland, specifically rocky hillsides and canyons
Greater short-horned lizard <i>Phrynosoma hernandesi</i>	variety of habitats ranging from forests to sagebrush habitat
Long-nosed leopard lizard <i>Gambelia wislizenii</i>	scattered shrub-land and low grass
Northern rubber boa <i>Charina bottae</i>	woodlands, forest clearings, patchy chaparral, meadows, and grassy savannas, generally not far from water; also riparian zones in arid canyons and sagebrush

Source: BLM 2018

Table 3-7. BLM Sensitive Species Habitat Association – Birds

Common Name <i>Scientific Name</i>	Habitat Association
Peregrine falcon <i>Falco peregrinus</i>	cliffs
Black rosy-finch <i>Leucosticte atrata</i>	sagebrush, montane shrubland, and pinyon-juniper
Brewer's sparrow <i>Spizella breweri</i>	valley floors and montane sagebrush
Bald eagle <i>Haliaeetus leucocephalus</i>	uplands, irrigated lands and riparian areas
Ferruginous Hawk <i>Buteo regalis</i>	grasslands
Golden eagle <i>Aquila chrysaetos</i>	cliffs, large undeveloped areas
Gray-crowned rosy-finch <i>Leucosticte tephrocotis</i>	cliffs
Great Basin willow flycatcher <i>Empidonax traillii adastus</i>	riparian
Greater sage-grouse <i>Centrocercus urophasianus</i>	sagebrush
Lewis's woodpecker <i>Melanerpes lewis</i>	montane riparian

Common Name <i>Scientific Name</i>	Habitat Association
Loggerhead shrike <i>Lanius ludovicianus</i>	desert scrub, sagebrush rangelands, grasslands and meadows
Long-billed curlew <i>Numenius americanus</i>	grassy meadows
Northern goshawk <i>Accipiter gentilis</i>	aspen stands
Sage thrasher <i>Oreoscoptes montanus</i>	sagebrush
Sandhill crane <i>Antigone canadensis</i>	grasslands, marshes, meadows, pastures
Short-eared owl <i>Asio flammeus</i>	wet meadows, grasslands, or crop fields
Swainson's hawk <i>Buteo swainsoni</i>	rolling sagebrush near pinyon-juniper interface
Western burrowing owl <i>Athene cunicularia hypugaea</i>	abandoned mammal burrows

Source: BLM 2018

Table 3-8. BLM Sensitive Species Habitat Association – Mammals

Common Name <i>Scientific Name</i>	Habitat Association
American water shrew <i>Sorex palustris</i>	cold streams with thick hanging riparian growth; around lakes, ponds, marshes, bogs, and other lentic habitats
Big brown bat <i>Eptesicus fuscus</i>	buildings and bridges
Brazilian free-tailed bat <i>Tadarida brasiliensis</i>	caves, mine workings, crevices, or buildings
California myotis <i>Myotis californicus</i>	Buildings, rock crevices, tree hollows and peeling bark
Canyon bat <i>Parastrellus hesperus</i>	rock crevices, occasionally in mines and caves
Dark kangaroo mouse <i>Microdipodops megacephalus</i>	stabilized dunes and other sandy soils
Fringed myotis <i>Myotis thysanodes</i>	caves, mines, and buildings
Hoary bat <i>Lasiurus cinereus</i>	deciduous and coniferous trees; foraging over water, above canopy, and in clearings
Inyo shrew <i>Sorex tenellus</i>	montane species found in coniferous forest along streams in canyon bottoms
Little brown bat <i>Myotis lucifugus</i>	foraging over open water and water near riparian vegetation; roosts can be found in buildings, trees, woodpiles, and occasionally caves
Long-eared myotis <i>Myotis evotis</i>	hollow trees, snags, under bark, in rock crevices, and buildings; foraging above water or adjacent to riparian habitat
Long-legged myotis <i>Myotis volans</i>	Caves and mines
Merriam's shrew <i>Sorex merriami</i>	grasslands

Common Name <i>Scientific Name</i>	Habitat Association
Northern river otter <i>Lontra canadensis</i>	riparian
Pallid bat <i>Antrozous pallidus</i>	caves, mines, rock crevices, hollow trees and buildings
Preble's shrew <i>Sorex preblei</i>	ephemeral and perennial streams dominated by shrubs
Pygmy rabbit <i>Brachylagus idahoensis</i>	sagebrush obligate species
silver-haired bat <i>Lasionycteris noctivagans</i>	hollow trees, snags, under bark, in rock crevices, and buildings
Western red bat <i>Lasiurus blossevillii</i>	riparian marshes, mesquite bosque, riparian woodland, and riparian shrubland
Western small-footed myotis <i>Myotis ciliolabrum</i>	roosts in rock crevices and rock faces on cliffs and in tallus fields; forages along cliffs
Yuma myotis <i>Myotis yumanensis</i>	roost in buildings, mines, and bridges; foraging on unmoving, open water
Spotted bat <i>Euderma maculatum</i>	caves, mines
Townsend's big-eared bat <i>Corynorhinus (=Plecotus)townsendii</i>	caves, mines

Source: BLM 2018

Table 3-9. BLM Sensitive Species Habitat Association – Invertebrates

Common Name <i>Scientific Name</i>	Habitat Association
Mattoni's blue <i>Euphilotes pallescens mattonii</i>	Host plant – slender buckwheat
Monarch butterfly <i>Danaus plexippus</i>	Host plants - milkweed or dogbane
Nevada viceroy <i>Limenitis archippus lahontani</i>	Riparian obligate; host plant - willows

Source: BLM 2018

Table 3-10. BLM Sensitive Species Habitat Association – Plants

Common Name <i>Scientific Name</i>	Habitat Association
Barren Valley collomia <i>Collomia renacta</i>	Lightly disturbed north-sloping rocky soil near drainage bottom,
Beatley buckwheat <i>Eriogonum beatleyae</i>	sagebrush, pinyon-juniper, mountain mahogany, and mountain sagebrush zones
Broad fleabane <i>Erigeron latus</i>	sagebrush steppe and juniper zones
Cottam cinquefoil <i>Potentilla cottamii</i>	upper subalpine conifer zone
Davis peppergrass <i>Lepidium davisii</i>	sagebrush zone

Common Name <i>Scientific Name</i>	Habitat Association
Deeth buckwheat <i>Eriogonum nutans</i> var. <i>glabratum</i>	saltbush and sagebrush communities
Elko rockcress <i>Boechera falcifructa</i>	Dry, densely vegetated, relatively undisturbed, light-colored silty soils with a high cover of moss and other soil crust components on moderate to steep north-facing slopes in the sagebrush zone
Grimes vetchling <i>Lathyrus grimesii</i>	dry, open, shallow, silty clay soils
Idaho beardtongue <i>Penstemon idahoensis</i>	alkaline, clay badlands and flats
Least phacelia <i>Phacelia minutissima</i>	aquatic or wetland-dependent
Lewis buckwheat <i>Eriogonum lewisii</i>	dry, exposed, shallow, relatively barren and undisturbed, rocky residual
Meadow pussytoes <i>Antennaria arcuata</i>	alkaline meadows, seeps, and springs, surrounded by sagebrush and grassland associations
Obscure buttercup <i>Ranunculus tritermatus</i>	meadow-steppe
One-leaflet Torrey milkvetch <i>Astragalus calycosus monophyllidus</i>	open gravelly hillsides, in scattered juniper and pinyon forest, on limestone
Owyhee prickly phlox <i>Leptodactylon glabrum</i>	crevices in steep to vertical, coarse-crumbling volcanic canyon walls
Rock violet <i>Viola lithion</i>	subalpine conifer zone
Tiehm blazingstar <i>Mentzelia tiehmii</i>	alkaline, clay badlands and flats

Source: BLM 2018

With the exception of a few well studied species, current occurrence, and population data for most special status animal species within the area are limited due to a deficiency of surveys and directed research. Therefore, only a few focal special status species would be discussed in detail individually. Other special status species will be included in a general discussion by taxonomic groupings.

3.3.2 Direct and Indirect Effects of Alternatives

Amphibians, Fish, and Mollusks

Alternative A: Proposed Action

Under Alternative A, approximately 800 linear feet of the Upper Reach of Dry Creek would be temporarily channeled and redirected to allow construction activities within the historic stream channel. This temporary channelization would not impact any BLM sensitive amphibian, fish, or mollusk species since this portion of Dry Creek was forced to flow subsurface from being buried by the mining waste rock. At the Lower Reach, there would be a temporary rechanneling of Dry Creek during the 600 linear feet of channel reconstruction and the removal and replacement of the culvert under Big Ledge Mine Haul Road. Construction activities may have impacts on some species, particularly less-mobile species (i.e., amphibians, mollusks) unable to move/relocate to the temporary channel.

Some riparian vegetation would be removed and/or disturbed during construction, but these effects are expected to have a negligible impact on long-term stream shade, streambank stability, or water quality. Potential increases in sedimentation and stream temperature that may occur prior to the vegetation reestablishing would be offset by increased sediment storage capacity and deeper pool areas within the restored stream channel.

The culvert replacements would create sediment in association with instream work, but this impact is anticipated to be short-term and localized in nature. Measures implemented to reduce sediment potential would include armoring the channel with non-erosive material, and revegetating exposed soil. The placement of instream features would help reduce stream energy and velocity, allowing for the deposition and storage of sediment and substrate. This would allow the channel to aggrade and provide habitat for fish and other aquatic organisms. Scour below and adjacent to structures would create deep water rearing habitat for juveniles and resting pools for adult fish migrating upstream. Deeper water rearing habitat would benefit juvenile fish by reducing water temperatures, providing overhead cover from predators, and providing resting areas during high flows.

There would be short-term increases in suspended sediment resulting from excavator work in and around the stream. Removal and replacement of fill material and construction of a temporary bypass channel in association with the replacement of the stream-crossing culverts would also result in localized and short-term effects from sediment. These effects would not be expected to persist beyond the first spring following construction, as seasonal rains would flush the stream system by the following year.

Over the long-term, the Proposed Action would reconstruct a natural channel to conform to upstream and downstream reaches adjacent to the project area and pre-existing morphology within the project area. The Proposed Action would, overtime, create functional riparian and aquatic habitat for amphibians, fish, or mollusks that have not been available since the 1980s. Specifically this alternative would restore fish passage to upstream spawning habitat for redband trout, which have been extirpated from the drainage (personal communication, Kevin Netcher, NDOW, December 2017).

Therefore, the Proposed Action would have localized short-term, direct, negligible adverse impacts on BLM sensitive amphibians, fish, and mollusks species and suitable habitat because of sediment control measures would limit any measureable sedimentation effects to the resources and the temporary rechanneling of the Lower Reach may impact less mobile species. There would be no short-term indirect impacts on BLM sensitive amphibians, fish, and mollusks species and suitable habitat because of the localized context of the Proposed Action and short period of active construction. The acres of habitat adversely affected in the short-term would be relatively small and would not contribute to an overall decline of suitable habitat for BLM sensitive amphibians, fish, and mollusks species. The Proposed Action would result in a long-term, direct and indirect, minor beneficial impacts to BLM sensitive amphibians, fish, and mollusks species by the restoration of 1,400 linear feet of stream channel, riparian vegetation, and fish passages to upstream spawning habitat in Dry Creek.

Alternative B: TU Alternative with Crossing Avoidance

In addition to the short-term, direct and indirect effects associated with the Proposed Action described above, Alternative B would also restore slightly more of the Dry Creek channel than the Proposed Action and also have the added benefit of the removal of two crossings.

Therefore, Alternative B would have localized short-term, direct, negligible adverse impacts on BLM sensitive amphibians, fish, and mollusks species because implementation of sediment control measures would limit any measureable effects to these aquatic species. There would be no short-term indirect impacts on amphibians, fish, and mollusks species. The acres of habitat adversely affected in the short-term would be relatively small and would not contribute to an overall decline of suitable habitat for BLM sensitive amphibians, fish, and mollusks species. Alternative B would result in a long-term, direct and indirect, minor beneficial impacts to BLM sensitive aquatic species by the restoration of 1,400 linear feet of stream channel and fish passages to upstream spawning habitat in Dry Creek.

Alternative C: Reroute Alternative

Alternative C would include the same channel restoration components to remove the mining waste rock as in the Proposed Action and Alternative B as well as removing Dry Creek Road along the channel. The rerouting of the road would return the channel geometry and morphology to the pre-road and pre-mining conditions, and no roadway armoring along the channel would be necessary. Removal of this road would restore approximately 0.55 acre of adjacent land back to the Dry Creek channel and allow the stream channel to function naturally within the project area. Any runoff from roads that contributed to erosion and sedimentation of the channel would be eliminated. Additionally, with Alternative C, the creek would not need to be temporarily rerouted in the Upper Reach and no bank armoring would be necessary along Dry Creek Road. Restoration activities associated with the Lower Reach would be exactly the same as the Proposed Action and Alternative B. After crossing the creek at the Lower Reach, the proposed reroute would not impact any additional aquatic species.

Therefore, Alternative C would have localized short-term, direct, negligible adverse impacts on BLM sensitive amphibian, fish, and mollusk species and suitable habitat because implementation of sediment control measures would limit any measureable effects to the resources during the removal of Dry Creek Road. There would be no short-term indirect impacts on these aquatic species or their habitat because of the localized context of the Proposed Action and short period of active construction. The acres of habitat adversely affected in the short-term would be relatively small and would not contribute to an overall decline of suitable habitat for BLM sensitive amphibians, fish, and mollusks species. Alternative C would result in a long-term, direct and indirect, moderate beneficial impacts to BLM sensitive amphibian, fish, and mollusk species and suitable habitat by the restoration returning the channel geometry and morphology to the pre-road and pre-mining conditions of the 2.9 miles of Dry Creek.

Birds and Invertebrates

Alternative A: Proposed Action

There are 18 BLM sensitive bird species and 3 invertebrate species (butterflies) with suitable habitat that may be present within the project area. Approximately 1.86 acres of vegetation would be removed initially for the channel restoration activities and road work with 0.84 acre of permanent disturbance. The riparian and wetland vegetation removed would be re-established adjacent to Dry Creek once construction activities are completed.

Clearance surveys would be conducted prior to construction activities in accordance with Proposed Action's design features to avoid disturbance to breeding behavior or where nesting is observed. Any

undetected nests, eggs, or nesting features (trees, substrate, etc.) could be crushed, destroyed, or modified by project activities, and young birds could be killed. Nest surveys for raptors, avoidance measures, and project design features would minimize impacts on these species. Direct contact with BLM sensitive bird and invertebrate species would be unlikely due to their ability of flight. Adult birds would most likely avoid areas during construction. Outside the bird breeding season, temporary impacts on individuals may occur by disrupting foraging, migrating, and wintering birds. Although, long-term impacts from the Proposed Action would lead to increased riparian function and riparian habitat, there would be the loss of riparian vegetation along the existing ditches causing short-term displacement or habitat loss for some bird and invertebrate species, such as the Nevada viceroy, until vegetation is re-established.

Sage-grouse is a sagebrush-obligate species, requiring sagebrush habitat for both food and/or cover during all life stages. On September 21, 2015, BLM finalized the Nevada and Northeastern California GRSG ARMPA (BLM 2015). The Record of Decision amended RMPs for BLM offices containing GRSG habitat in response to the 2010 USFWS finding that the GRSG was “warranted but precluded” from listing under the Endangered Species Act. It is intended to conserve, enhance and restore GRSG habitat by avoiding, minimizing, or compensating for unavoidable impacts on GRSG habitat in the context of the BLM’s multiple-use and sustained yield mission.

The Dry Creek Restoration project area falls within the PHMA, which is defined as BLM-administered lands identified as having the highest value to maintaining sustainable GRSG populations. These areas include breeding, late brood-rearing, and winter concentration areas and migration or connectivity corridors.

The BLM Elko District contains 3,582,761 acres of PHMA, of which 543.1 (0.015 percent) is within the Dry Creek Restoration project area. There are 192.5 acres of winter habitat in the Lower Reach portion of the project area, which would include GRSG habitat where the restoration activities and staging area would take place in the Proposed Action. The Lower Reach staging area would be in the nesting and early brood habitat (94.5 acres). All of the project area is within the GRSG summer habitat. The required design features as outlined in the ARMPA Appendix C would be followed to minimize potential direct and indirect impacts to the GRSG within the project area.

The 1.86 acres of habitat adversely affected in the short-term would be relatively small and would not contribute to an overall decline of suitable habitat for BLM sensitive bird and vertebrate species. Therefore, the Proposed Action would result in direct, short-term, negligible, adverse impacts to BLM sensitive bird and vertebrate species because the potential for direct contact with the species would be unlikely due to the effectiveness of the design features and best management practices. There would be no short-term indirect impacts on BLM sensitive bird or vertebrate species or their habitat because of the localized context of the Proposed Action and short period of active construction. With the Proposed Action, there would also be direct and indirect, long-term, minor beneficial impacts to these BLM bird sensitive and invertebrate species because of the restoration of 0.11 acre of riparian/wetland vegetation and the 800 linear feet of surface stream flow with the removal of the mining waste rock.

Alternative B: TU Alternative with Crossing Avoidance

In addition to the short-term, direct and indirect effects associated with the Proposed Action described above, Alternative B would also restore slightly more of the Dry Creek channel than the Proposed

Action and also have the added benefit of the removal of two crossings. This alternative would result in an additional 0.4 acres in temporary disturbance and 0.2 acres in permanent disturbance when compared to the Proposed Action for the new road tie-in at the western end to avoid crossing of the creek.

The 1.90 acres of habitat adversely affected in the short-term would be relatively small and would not contribute to an overall decline of suitable habitat for BLM sensitive bird and invertebrate species. Therefore, Alternative B would result in direct, short-term, negligible, adverse impacts to BLM sensitive bird and invertebrate species because the potential for direct contact with the species would be unlikely due to the effectiveness of the design features and best management practices. There would be no short-term indirect impacts on BLM sensitive bird or vertebrate species or their habitat because of the localized context of the Proposed Action and short period of active construction. With Alternative B, there would also be direct and indirect, long-term, minor beneficial impacts to these species because of the restoration of 0.11 acre of riparian/wetland vegetation with the 800 linear feet of surface stream flow from the removal of the mining waste rock and 0.08 acre of restored creek from the removal of two culverts (Crossings 3 and 4).

Alternative C: Reroute Alternative

Alternative C would have similar potential impacts associated with the removal the mining waste rock and the construction of the restoration activities associated with the Lower Reach as in the Proposed Action and Alternative B. Removal of Dry Creek Road would restore approximately 0.55 acre of adjacent land back to the Dry Creek channel and allow the stream channel to function naturally within the project area. The proposed rerouted road would be managed for use by four-wheel-drive or high-clearance vehicles, similar to the current Dry Creek Road, and would generally follow the existing terrain to minimize disturbance to the landform and vegetation. The proposed reroute would result in 3.25 acres of disturbance, 1.95 acres of which would be permanent. The majority of the vegetation that would be permanently disturbed by Alternative C would be Inter-mountain Basins Montane Sagebrush Steppe (1.80 acres), which is a grassland characterized by the dominance of sagebrush. Loss of the affected suitable habitat for BLM sensitive bird and vertebrate species are anticipated to be localized and these habitats would be slightly altered in the short-term. Direct contact with BLM sensitive bird and invertebrate species would be unlikely due to their ability of flight. Adult birds would most likely avoid areas during construction along Dry Creek and the proposed reroute alignment. Outside the bird breeding season, temporary impacts on individuals may occur by disrupting foraging, migrating, and wintering birds.

Therefore, Alternative C would result in direct, short-term, negligible, adverse impacts to BLM sensitive bird and invertebrate species because individuals may be temporarily disrupted however direct contact with these species would be unlikely. There would be no short-term indirect impacts on these BLM sensitive species or their habitat because of the localized context of the Proposed Action and short period of active construction. With Alternative C, there would also be direct and indirect, long-term, moderate beneficial impacts to BLM sensitive bird and invertebrate species and their habitat because of the restoration of 0.11 acre of riparian/wetland vegetation from the 800 linear feet of creek restoration, 0.04 acre from the culvert removal, in addition to the returning Dry Creek to the pre-road and pre-mining conditions. Alternative C would have direct and indirect, long-term negligible adverse impacts because

the permanent disturbance would not contribute to an overall decline of suitable habitat for BLM sensitive bird and vertebrate species.

Mammals and Reptiles

Alternative A: Proposed Action

There are 23 BLM sensitive mammal and 5 reptile species with suitable habitat that may be present within the project area. Under the Proposed Alternative, construction activities would take place during the day light hours so disturbance would be unlikely to mammals who are nocturnal and forage at night, like bats and some rodents. The presence of heavy equipment, vehicles, construction workers and associated construction noise would create localized impacts to other BLM sensitive mammals and reptiles causing them to flee the area. Heavy equipment and vehicles could drive over burrows within the project area, potentially crushing a burrow, which would then need to be rebuilt. Construction equipment, vehicles, and workers during construction may also crush invertebrates and vertebrates upon which certain species feed. Temporary impacts to localized populations could occur, but not to the extent of impacting survivability of the species as a whole.

The restoration of portions of Dry Creek would be a benefit to the BLM sensitive mammal and reptile species whose suitable habitat is associated with riparian and wetland vegetation and open water such as some of foraging areas for bats and shrews. For the majority of these listed BLM sensitive species whose habitat is predominately in the upland areas, the Proposed Action would have no impact on those species or their suitable habitat.

Therefore, the Proposed Action would have localized short-term, direct, negligible adverse impacts on BLM sensitive mammal and reptile species because the potential for direct contact with individuals would be unlikely and their habitat would not be measurably disturbed. There would be no short-term indirect impacts on these BLM sensitive species because of the localized context of the Proposed Action and short period of active construction. The 0.84 acres of vegetation removed would not contribute to an overall decline of suitable habitat for these BLM sensitive mammal and reptile species. The Proposed Action would result in a long-term, direct and indirect, negligible beneficial impacts to BLM sensitive mammals and reptiles because of the restoration of 0.11 acre of proper functioning riparian habitat and the 800 linear feet of surface stream flow with the removal of the mining waste rock.

Alternative B: TU Alternative with Crossing Avoidance

Alternative B would restore slightly more of the Dry Creek channel than the Proposed Action and also have the added benefit of the removal of two crossings in addition to the short-term, direct and indirect effects associated with the Proposed Action described above. The 1.90 acres of habitat adversely affected in the short-term would be relatively small and would not contribute to an overall decline of suitable habitat for BLM sensitive mammal and reptile species. Therefore, Alternative B would result in direct, short-term, negligible, adverse impacts to BLM sensitive mammal and reptile species because the potential for direct contact with the species would be unlikely. There would be no short-term indirect impacts on these BLM sensitive species or their habitat because of the localized context of the Alternative B and short period of active construction. With Alternative B, there would also be direct and indirect, long-term, negligible beneficial impacts to these species because of the restoration of 0.11 acre of

riparian/wetland vegetation and the 800 linear feet of surface stream flow with the removal of the mining waste rock.

Alternative C: Reroute Alternative

Alternative C would have similar potential impacts to BLM sensitive mammal and reptile species as the Proposed Action and Alternative B. Removal of Dry Creek Road would restore approximately 0.55 acre of adjacent land back to the Dry Creek channel and allow the stream channel to function naturally within the project area. The proposed reroute would result in 1.95 acres, primarily in sagebrush steppe vegetation (1.80 acres). The presence of heavy equipment, vehicles, construction workers and associated construction noise along Dry Creek and the proposed reroute would create localized impacts to BLM sensitive mammals and reptiles causing them to flee the area. Construction equipment, vehicles, and workers during construction may also crush burrows as well as invertebrates and vertebrates upon which certain species feed. Temporary impacts to localized populations could occur, but not to the extent of impacting survivability of the species as a whole.

Therefore, Alternative C would result in direct, short-term, minor, adverse impacts to BLM sensitive mammals and reptiles because individuals may be temporarily disrupted and habitats disturbed both along Dry Creek and the sagebrush steppe vegetation community. Direct contact with these species would be unlikely because of their mobility and likelihood to flee. There would be no short-term indirect impacts on BLM sensitive bird species or their habitat because of the localized context of the Proposed Action and short period of active construction. With Alternative C, there would also be direct and indirect, long-term, negligible beneficial impacts to these species and their habitat because of the restoration of 0.11 acre of riparian/wetland vegetation in addition to the returning Dry Creek to its historical riparian conditions. Alternative C would have direct and indirect, long-term negligible adverse impacts because of the permanent disturbance of 1.95 acres of sagebrush steppe habitat adversely affected that would be relatively small and would not contribute to an overall decline of suitable habitat for BLM sensitive mammal and reptile.

Plants

Alternative A: Proposed Action

There are a total of 17 BLM sensitive plants that may occur within the project area; two (least phacelia and meadow pussytoes) are associated with aquatic or wetland habitats and the majority of the remainder with upland (sagebrush) vegetation communities. In the Proposed Action, there may be populations of sensitive plants that are unknown to BLM that would go undetected. Potential direct effects include mortality of individuals, reduced vigor from trampling, and reduced seed production during construction. Because the construction of the restoration activities would occur in a relatively small, localized area, the Proposed Action would not be expected to impact a population of the two BLM plant species that may occur in aquatic habitats.

There would be no impact to the upland plant species with the Proposed Action since any vegetation that would be affected would be in association with the riparian/wetland vegetation. While the Proposed Action may impact two of the individual BLM sensitive plants, it is not expected to jeopardize populations at the local or landscape levels. Therefore, the Proposed Action is expected to result in short-term, direct, negligible adverse impacts. The Proposed Action would therefore also result in long-term,

direct and indirect, negligible, beneficial impacts because of the restoration of riparian habitat in the Upper Reach.

Alternative B: TU Alternative with Crossing Avoidance

In addition to the short-term, direct and indirect effects associated with the Proposed Action described above, Alternative B would also restore slightly more of the Dry Creek channel than the Proposed Action. There would be no impact to the upland plant species with Alternative B since any vegetation that would be affected would be in association with the riparian/wetland vegetation. The 1.90 acres of riparian habitat adversely affected in the short-term would be relatively small and would not contribute to an overall decline of suitable habitat for BLM sensitive plants species found in riparian areas.

Therefore, Alternative B would result in direct, short-term, negligible, adverse impacts to BLM sensitive plant species with habitat associated with riparian areas. With Alternative B, there would also be direct and indirect, long-term, negligible beneficial impacts to these species because of the restoration of 0.11 acre of riparian/wetland vegetation and the 800 linear feet of surface stream flow with the removal of the mining waste rock. There would be no short-term direct or indirect impacts on BLM sensitive upland plant species or their habitat. With Alternative B, there would also be direct and indirect, long-term, negligible beneficial impacts to these species because of the restoration of 0.11 acre of riparian/wetland vegetation and the 800 linear feet of surface stream flow with the removal of the mining waste rock.

Alternative C: Reroute Alternative

Alternative C would allow the spring-fed perennial stream to function naturally within the project area, which would improve the habitat for BLM sensitive plant species associated with riparian areas. There may however be populations of sensitive plants that are unknown to BLM that would go undetected during construction of the reroute (which is in steppe sagebrush) as well as with the reconstruction of the stream channel. Potential direct effects include mortality of individuals, reduced vigor from trampling, and reduced seed production during construction. Because the construction of the restoration activities would occur in a relatively small, localized area, Alternative C would not be expected to impact a population of the BLM sensitive plant species that may occur within the project area. Temporary impacts to localized populations could occur, but not to the extent of impacting survivability of the species as a whole.

Therefore, Alternative C would result in direct, short-term, minor, adverse impacts to BLM sensitive plant species because these species may be temporarily disturbed both along Dry Creek and the sagebrush steppe vegetation association along the reroute alignment. With Alternative C, there would also be direct and indirect, long-term, negligible beneficial impacts to these species and their habitat because of the restoration of 0.11 acre of riparian/wetland vegetation in addition to the returning Dry Creek to its historical riparian conditions, prior to the road construction. Alternative C would have direct and indirect, long-term negligible adverse impacts because of the permanent disturbance of 1.95 acres of sagebrush steppe habitat adversely affected that would be relatively small and would not contribute to an overall decline of suitable habitat for BLM sensitive plant species.

3.4 Cumulative Impacts

A cumulative effect is defined under NEPA as “the change in the environment which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other action”. “Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR Part 1508.7). Past, present, and reasonably foreseeable future actions that incrementally add to the potential adverse or beneficial cumulative impacts of the Proposed Action and alternatives are considered in this EA.

3.4.1 Geographic and Temporal Scope of Analysis

The BLM NEPA Handbook H-1790-1 (BLM 2008a) recommends that geographic (spatial) and time (temporal) boundaries be established for cumulative effects analysis. There is one cumulative effects study area (CESA) for the Proposed Action and alternatives. Due to the relative small scale of the proposed restoration activities, the Proposed Action and alternatives’ “footprints,” or the CESA boundary, for individual resources has been identified as the HUC-12 (Upper Dry Creek Sub-Watershed HUC 170402130304) and across all land jurisdictions.

Timeframe of Effects, Past and Present Actions, and Reasonably Foreseeable Future Actions

Short- and long-term cumulative effects would occur during the same time period as direct and indirect impacts. Short-term is less than a year and long-term is greater than one year.

Past actions are defined as actions that are closed. Present actions are defined by authorized and expired actions, and reasonably foreseeable is defined as pending actions. Reasonably foreseeable future actions are actions that have existing decisions, funding, or formal proposals or that are highly probable. At this time, the eventual Big Ledge Mine closure, noxious weeds and invasive species treatments, and the O’Neil Project Planning Area EA are known reasonably foreseeable future actions within the HUC-12 sub-watershed. Table 3-11 is compiled from LR2000 reports that did occur or are occurring within the Upper Dry Creek Sub-Watershed, roughly 21,908 acres. There are 23 authorized Lands and Realty actions within the CESA. Authorized actions consist of 7 land disposals/transfers and 16 rights-of-way actions. None of these actions, individually or in sum, substantially impact the CESA. There are 28 authorized minerals actions. Of the authorized projects, 6 are mineral exploration notices, 19 are oil and gas leases, and 1 are mineral materials permits.

3.4.2 Cumulative Impacts on Resources

For this analysis, cumulative resource impacts for the CESA are the combined direct and indirect impacts of the past, present, and reasonably foreseeable future actions, plus the direct and indirect impacts of the Proposed Action and Alternatives B and C. The levels of cumulative impacts are categorized as major, moderate, or minor based on the same thresholds defined previously in Section 3. Affected Environment/Environmental Effects.

The Proposed Action and alternatives would both result in long-term, direct and indirect, adverse and beneficial impacts to resources within the project area. All of the alternatives would employ design features and best management practices to reduce adverse impacts to the extent possible.

Table 3-11. Past and Present Land and Mineral Actions

Action Type	Number of Past Actions	Acres of Past Actions	Number of Present Actions	Acres of Present Actions
Rights-of-ways	6	7,671	10	3,855
Leases/permits	0	0	0	0
Disposals/Transfers	4	41,825	3	45,675
Oil and Gas Leases	19	66,029	0	0
Locatables - Plan of Operations	1	140	1	193
Locatables - Notices	6	25	0	0
Solid Leaseables	0	0	0	0
Geothermal	0	0	0	0
Mineral Materials	1	60	0	0

In addition, if the direct or indirect impacts were considered to be none or negligible as a result of the alternative, there would be no contribution to the resources’ cumulative impacts. Negligible impacts or changes would not be measurable and the resource would remain essentially unaltered. Therefore, there would be no incremental contribution to the resources respective cumulative impacts. As an example, the Proposed Action and Alternatives B and C would have short-term, direct, negligible adverse impacts on wetlands and riparian areas and would not incrementally contribute to the resource respective cumulative impacts.

Wetlands and Riparian Areas

The specifics of the past and present actions, such as the footprint, design, alignment, surface disturbance, are not known at this time. The proximity of disturbance to riparian areas of any present actions or potential reasonably foreseeable future actions are also not known. Ongoing efforts to protect wetlands and riparian areas have reduced the level of impact of natural and human factors that degrade these habitats. With effective implementation of design features and mitigation and conservation measures associated with these types of activities, cumulative adverse effects on wetlands and riparian areas are anticipated to be minor. In addition to the activities mentioned in Table 3-11, other general activities that would contribute to cumulative impacts to wetlands and riparian areas in the CESA include dispersed recreation, hunting, wildland fire, and livestock grazing.

Cumulatively, the effects of the Proposed Action or Alternatives B and C, when combined with past, present, and reasonably foreseeable future actions, would result in a minor beneficial cumulative impacts on wetlands and riparian areas within the CESA. When added to the impacts of current and expected increases in management actions such as lands and realty actions and activities such as mining and

recreation within the CESA, none of the alternatives would be expected to result in additional substantive cumulative impacts.

BLM Sensitive Species

Past, present, and anticipated future impacts to BLM sensitive wildlife and plant species would include the loss, modification, and fragmentation of habitat, which would increase the likelihood of local extirpations of wildlife and plant populations and loss of species diversity. Actions to protect sensitive species and their habitats, restore compatible plant communities and disturbance regimes, control the spread of invasive species and noxious weeds, and reduce the risk of catastrophic wildfire are all expected to help offset some of the adverse impacts to wildlife and their habitats. Aquatic wildlife species may be impacted cumulatively by activities, such as groundwater pumping, water diversions, livestock operations, and OHV use, which could degrade aquatic habitat. These activities can cause erosion, removal of substrates that serve as habitat for fish and their prey, and cause habitat vegetation loss. Introduction of non-native species can adversely impact aquatic species and their prey base. Terrestrial wildlife species may be impacted cumulatively by habitat loss, fragmentation, and degradation due to energy and mining development and agricultural operations; illegal hunting; illegal collection; road mortality; barrier development; wildfire; habitat degradation from livestock grazing; and human encroachment. Many of the same human activities that have altered native plant communities in the past would continue to do so in the future. Populations of invasive species and noxious weeds would continue to spread. Treatments by the BLM, Forest Service, and other land managing entities to control invasive species and noxious weeds would help offset these adverse effects.

Cumulatively, the effects of the Proposed Action or Alternatives B and C, when combined with past, present, and reasonably foreseeable future actions, would result in a minor beneficial cumulative impacts on BLM sensitive wildlife and plant species within the CESA. When added to the impacts of current and expected increases in management actions such as lands and realty, mining, and recreation within the CESA, none of the alternatives would be expected to result in additional substantive cumulative impacts.

4. Consultation and Coordination

4.1 Native American Consultation

Table 4-1 includes a summary of tribal consultation for this EA.

Table 4-1. List of Tribes Contacted

Tribe Contacted	Type of Contact	Date
Te-Moak Tribe of Western Shoshone Indians of Nevada	Tribal Consultation Letter	November 30, 2017
Battle Mountain Band of the Te-Moak Tribe	Tribal Consultation Letter	November 30, 2017
Elko Band of the Te-Moak Tribe	Tribal Consultation Letter	November 30, 2017
South Fork Band of the Te-Moak Tribe	Tribal Consultation Letter	November 30, 2017
Wells Band of the Te-Moak Tribe	Tribal Consultation Letter	November 30, 2017
Confederate Tribes of the Goshute Reservation	Tribal Consultation Letter	November 30, 2017
Shoshone-Bannock Tribe of the Fort Hall Reservation	Tribal Consultation Letter	November 30, 2017
Shoshone-Paiute Tribe of the Duck Valley Reservation	Tribal Consultation Letter	November 30, 2017

Additionally, the project was also presented to the Confederated Tribes of the Goshute Reservation and the constituent Bands of the Te-Moak Tribe Tribal Councils at their November open Council meetings. No comments were submitted to the BLM either in writing from the consultation letters distributed or at the Council meetings.

4.2 Individuals, Organizations and Agencies Consulted

A news release was issued December 1, 2017, along with public and agency scoping letters to 82 individuals. Table 4-2 includes a summary of the responses received from the scoping and coordination efforts. The news release and response letters are included in Appendix A.

Table 4-2. Scoping and Coordination Responses

Name	Organization	Date	Comments
Ginger Poulson, AA IV, Supervisor	Nevada Division of Environmental Protection, Bureau of Water Pollution Control	December 7, 2017	The project may be subject to Bureau of Water Pollution Control permitting. Permits are required for discharges to surface waters and groundwaters of the State (Nevada Administrative Code NAC 445A.228).

Name	Organization	Date	Comments
Sue Gilbert	Nevada Division of Water Resources	December 13, 2017	Supports the project. Ensure that water used on a project be provided by an established utility or under permit or temporary change application or waiver issued by the State Engineer's Office with a manner of use acceptable for suggested project water needs.
Private Landowner	NA	December 17, 2017	See Appendix A.
Private Landowner	NA	No Date Provided	See Appendix A.

1 NA = not applicable

2 In addition, a stakeholder meeting was held on January 25, 2017. Table 4-3 includes a list of the attendees
3 from the stakeholder meeting.

4 **Table 4-3. Stakeholder Meeting Attendees**

Name	Organization
Brian Hastings	Balance Hydrologics
Gary Daane, Minerals Manager	National Oilwell Varco
Kevin Netcher, Fisheries Biologist	Nevada Department of Wildlife
Mandy Olson	Natural Resources Conservation Service
Nicole Sullivan, Owyhee Basin Project Manager	Trout Unlimited
Peter Kulchawik	Balance Hydrologics
Rainy Lawson	Stewardship Alliance of Northeast Elko
Steve Boies	Private landowner
Susan Abele	USFWS

5 **4.3 List of Preparers**

6 Table 4-4 includes a list of the individuals involved in the preparation and/or review of this EA.

7 **Table 4-4. List of Preparers and Reviewers**

Name	Agency	Title	Project Expertise
Aili Gordon	BLM Wells Field Office	Geologist	Geology/Mineral Resources/Energy Production
Bruce Thompson	BLM Wells Field Office	Wild Horse and Burro Specialist	Wild Horse and Burros
Cam Collins	BLM Wells Field Office	Biologist	BLM Sensitive Species
Harley Gordon	BLM Wells Field Office	Geologist	Public Health and Safety

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Name	Agency	Title	Project Expertise
Jason Dobis	BLM Wells Field Office	Natural Resource Specialist (Fuels)	Fire and Fuels Management/Woodland/Forestry
Jearred Foruria	BLM Wells Field Office	Assistant Field Manager for Nonrenewable	Assistant Field Office Management
Jeff Moore	BLM Wells Field Office	Rangeland Management Specialist	Vegetation/Livestock and Grazing
Jessica Montcalm	BLM Wells Field Office	Tribal Liaison	Tribal Coordination
Julie A Suhr Pierce, PhD	BLM Wells Field Office	Great Basin Socioeconomic Specialist	Environmental Justice/Socioeconomics
Katie Maikis	BLM Wells Field Office	Biologist	BLM Sensitive Species
Kayla Cox	BLM Wells Field Office	Realty Specialist	Lands and Access
Kristine Dedolph	BLM Wells Field Office	Outdoor Recreation Planner	Recreational Resources/Wild and Scenic Rivers/Wilderness/Visual Resources
Marc Jackson	BLM Wells Field Office	Field Manager	Field Office Management
Robert Hegemann	BLM Wells Field Office	Hydrologist	Project Manager/Water Resources/Soils/Farmland/Climate Change/Greenhouse Gas Emissions
Sam Cisney	BLM Wells Field Office	Weed Management Specialist	Noxious and Invasive Weeds
Stephanie Jeffries	BLM Wells Field Office	Archaeologist	Cultural Resources
Terri Dobis	BLM Wells Field Office	Planning and Environmental Coordinator	NEPA compliance
Greg Deimel	Elko District Office	Public Affairs Specialist	Community Liaison
John Callan	Nevada State Office	COR/Abandoned Mine Lead	Contract Administration
Nicole Sullivan	Trout Unlimited	Owyhee Basin Project Manager	Stream Restoration
Diane Simpson-Colebank	Logan Simpson	Principal/Project Lead	NEPA Compliance
Patricia R. McCabe	Logan Simpson	Senior Environmental Planner	NEPA Compliance
Victoria Casteel	Logan Simpson	Technical Editor	Section 508 Compliance

5. References

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Appendix A. Consultation and Coordination Material



News Release

ELKO DISTRICT OFFICE NO. 2018-06

FOR RELEASE: For immediate release.

CONTACT: Greg Deimel at 775-753-0386 or gdeimel@blm.gov

BLM Seeks Comments for Dry Creek Restoration Project

ELKO, Nev. – The Bureau of Land Management, Wells Field Office working with Trout Unlimited, the Nevada Department of Wildlife, and private landowners is proposing a stream habitat restoration project for approximately 1,400 feet of Dry Creek, a tributary to Salmon Falls Creek in northeastern Elko County, Nevada.

This project is site specific, rather than programmatic in scope, with no anticipated significant environmental impacts and will be analyzed in an environmental assessment as required by the National Environmental Policy Act and BLM policy. Upon completion, the EA for this project will be posted to the project website for review.

At this time the WFO is initiating a 15-day public scoping period and welcomes the submission of any comments, data or information related potential issues, impacts, and alternatives that should be addressed in the EA. **The deadline for comments related to this proposed action is December 18, 2017.**

Dry Creek historically supported spawning habitat for redband trout (*Oncorhynchus mykiss* spp.) until barite mining activity and road building in the 1960s and 1970s impaired the channel conditions and impeded fish passage to spawning habitat.

More information can be found on the project website: <https://go.usa.gov/xn9Dy>.

Comments and input should be submitted to the BLM as described below by **December 18, 2017**. Written comments on the Dry Creek Restoration Project should be mailed to the BLM Wells Office, Attn: Aili Gordon, 3900 East Idaho Street, Elko, NV 89801, emailed to WellsFO_NEPA@blm.gov; or faxed to (775) 753-0347.

Before including your address, phone number or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

If you have questions, please contact Aili Gordon at agordon@blm.gov or call (775) 753- 0356.

-BLM-

The BLM manages more than 245 million acres of public land, the most of any federal agency. This land is primarily located in 12 Western states, including Alaska. The BLM also administers 700 million acres of sub-surface mineral estate throughout the nation. The BLM's mission is to manage and conserve the public lands for the use and enjoyment of present and future generations under our mandate of multiple-use and sustained yield.

DATE: 12/07/2017
TO: Nevada State Clearinghouse, DCNR
FROM: Nevada Division of Environmental Protection, Bureau of Water Pollution Control
SUBJECT: State Clearinghouse Comments for E2018-092 (Scoping – Dry Creek Restoration Project – Elko County)

Disclaimer: The Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control (BWPC) does not have authority for projects occurring on Tribal Lands.

The NDEP, BWPC has received the aforementioned State Clearinghouse item and offers the following comments:

The project may be subject to BWPC permitting. Permits are required for discharges to surface waters and groundwaters of the State (Nevada Administrative Code NAC 445A.228). BWPC permits include, but are not limited to, the following:

- Stormwater Industrial General Permit
- De Minimis Discharge General Permit
- Pesticide General Permit
- Drainage Well General Permit
- Temporary Permit for Discharges to Groundwater's of the State
- Working in Waters Permit
- Wastewater Discharge Permits
- Underground Injection Control Permits
- Onsite Sewage Disposal System Permits
- Holding Tank Permits

Please note that discharge permits must be issued from this Division before construction of any treatment works (Nevada Revised Statute 445A.585).

For more information on BWPC Permitting, please visit our website at:
<https://ndep.nv.gov/water/water-pollution-control/permitting> .

Additionally, the applicant is responsible for all other permits that may be required, which may include, but may not be limited to:

- | | |
|-----------------------------------|---|
| • Dam Safety Permits | - Division of Water Resources |
| • Well Permits | - NDEP |
| • 401 Water Quality Certification | - U.S. Army Corps of Engineers |
| • 404 Permits | - Local Health or State Health Division |
| • Air Permits | - Local Government |
| • Health Permits | |
| • Local Permits | |

Thank you for the information and the opportunity to comment.



Ginger Poulson, AA IV, Supervisor
Bureau of Water Pollution Control
Nevada Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, NV 89701
p: 775-687-9437 f: 775-684-4684
e: gpoulson@ndep.nv.gov

E2018-092 (Scoping - Dry Creek Restoration Project - Elko County)

DATE: December 13, 2017

Division of Water Resources – Sue Gilbert

Nevada SAI # E2018-092

Project: Scoping - Dry Creek Restoration Project - Elko County

_____ No comment on this project Proposal supported as written

AGENCY COMMENTS:

General:

Ensure that any water used on a project for any use shall be provided by an established utility or under permit or temporary change application or waiver issued by the State Engineer's Office with a manner of use acceptable for suggested projects water needs.

WellsFO_NEPA@blm.gov

Comments on Dry Creek Restoration Project

By Karen Klitz
17 December 2017

Thank you for the opportunity to comment on the Dry Creek Restoration Project. I am very pleased that your office is giving attention to restoration of this native trout. My comments are listed by topic headings.

LOCATION

Why was Dry Creek was selected for this project? As you know, redband trout used to inhabit most of these streams that flow to the Snake River, and now Dry Creek and others in the area currently have no redband trout, according to the NDOW redband survey of 2016.

PURPOSE

Is this project mitigation for another project? If the purpose is to restore the fish species, will the stated goal be to see redband trout in Dry Creek as soon as possible, along with the steps for achievement?

TIMETABLE

When will the project be done, and what will be the estimated time window in which to expect suitable habitat for redband trout?

TRANSPLANTING

Will redband trout be able to migrate to the restored Dry Creek or will they be transplanted, and if so from where? Will the genetics of the transplants be matched to the nearest redband trout from NDOW's recent survey data?

EQUIPMENT IMPACTS

What equipment will be used and what will be the impacts from them? How will these impacts be managed to confine them to the least area, and create the smallest amount of disturbance and compaction? How will these equipment areas be rehabilitated?

MONITORING

What will be monitored? By whom and by what schedule will monitoring take place after completion of the project?

ROADS

I support the closing of the track adjacent to the creek, as well as limited access to roads in the watershed above the project area.

METHODS

Can you refer me to similar projects which guide the methods of this project?

REVEGETATION

What plant species will be used to replant and seed the bare dirt and rock slopes created by it? Will logs, rocks or other items be placed to provide cover, capture sediment and impede erosion?

LIVESTOCK

Since the restoration of a stream will be compromised by the presence of cattle, will livestock be excluded from the Dry Creek riparian corridor?

I note the following recommendations from the NDOW 2016 survey, Redband Trout, Eastern Region:

1. "The distribution of redband trout is currently restricted by grazing practices limiting available habitat. " This was for WF Deer Cr and BLM was notified of the problem. Was grazing management changed on this allotment?
2. "Redband trout that were previously found in the North Fork of Salmon Falls Creek in small numbers are now absent, likely a result of the recent prolonged drought and land management practices." [Yet Lahontan cutthroat trout were in an ungrazed tributary of Marys River during the drought when the main river channel was dry.]
3. Shell Creek: "Habitat conditions were extremely poor at both locations due to cattle grazing and natural factors."

TO INCLUDE IN THE EA

The current conditions of stream and riparian area: water quality including temperature, sedimentation, discharge; bank condition, stream shade, cover, vegetation, erosion, small mammal, bird, insect and aquatic invertebrates communities.

Presence, number, locations, occupation of beaver ponds. The presence of beaver activity is a big bonus to wetland habitat restoration. Beaver ponds can help native trout by providing overwintering habitat, safe habitat for juveniles, and dry season refugia. Call (1970), studying the effects of beavers on headwater streams in Wyoming, noted that beavers created trout habitat, where previously none existed, by damming very small streams and seeps.

Presence and amount of removal of water in Dry Creek for human, mining or agricultural use.

The impacts from livestock grazing activities including roads, fencing, water quality, soil conditions, soil erosion and compaction, impacts to native plants and native plant communities, impacts to native wildlife and wildlife habitat.

Actual human use in upper portion of Dry Creek between 6400-7000 ft. A serious effort at habitat protection for redband trout would remove all possible anthropogenic influences.

Given that Dry Creek watershed has many roads *above* the project area, the EA should determine if these will be potential sources of continuing siltation.

How will current and future mining activity likely affect Dry Creek?

What is the content of old mine tailings – toxic substances such as arsenic? What measures will be taken to prevent poisoning stream during and after this disturbance from the project?

The locations of refugia for redband trout in Dry Creek during droughts should be identified.

OTHER QUESTIONS

What conditions for use will be applied to Dry Creek to protect the investment and to promote recovery?

What consequences will exist for noncompliance of conditional use, use of closed roads, etc.?

There is a lot of private land and surface-use land along and around Dry Creek headwaters. In order to provide connectivity, how will those portions now be managed? The greater the length of inhabited stream the greater the buffer from climate events and other unforeseeable processes.

I would request a Mineral Withdrawal in order to eliminate the possibility of future contamination and siltation from mining activities.

Respectfully submitted by

Karen Klitz

REFERENCE

Call, M.W. 1970. Beaver pond ecology and beaver-trout relationships in southeastern Wyoming. Doctoral dissertation. University of Wyoming, Laramie.

The act of coal mining has a history of problems associated with the destruction of land and devastation of local wildlife. When surface mining operations open up layers of the earth that were never intended to see the light of day, toxic metals can leech into the surrounding rivers and streams causing environmental devastation within these local biota's. Rehabilitation to the Dry Creek region should be pushed forward in order to adequately restore the land to a sustainable ecosystem that can allow for environmental growth and prosperity. The amount countless examples throughout the lifespan of coal mining operations show evidence of poor reclamation and river pollution that encounter endless environmental problems. The ability to have longevity within reclaimed land that allows for wildlife stability and growth to be completely missed and initial reclamation efforts can't be relied upon as the primary source for solutions. Coal mining operations have caused environmental destruction and utilizing resources to restore river bodies and land masses back to pre mining status should be at the forefront this discussion.

Wildlife play important roles within any ecosystem and many times these creatures go unnoticed while mining companies perform this unnecessary extraction of coal. When large machinery carves through these mountaintops, the topography changes drastically and causes the creation of new peaks and valleys to encompass these regions. When it rains, these exposed mountaintops allow the water to move toxic metals like selenium and cobalt into local river bodies and streams infecting these areas with unwanted pollution. Selenium when mixed with water, it creates a thick coating that makes it difficult for fish to swim in. A study conducted by Lisa Freidrich performed a study to examine what effects selenium have on bull trout, cutthroat trout and many other fish that reside within rivers and streams. These fish can't live in these conditions causing them to relocate and lay their eggs in other locations. The effects of these toxic earth metals have dramatic effects surrounding the population sizes within these ecosystems (Freidrich, 2011). It is very likely that traces of Selenium can be found within Dry Creek and the rehabilitation of this river body would bring back wildlife and prosperity to the region.

In situations where reclamation has been performed as designed, there are a plethora of issues associated with approved reclamation within the surrounding areas of a mining site. Materials used by contractors have been known to have long term effects on sustaining wildlife. When these large machines carve new contours into the landscape, the material used to attempt to level out the landscape was a very cohesive clay. Clay has the characteristics of impermeability which prevents water from passing through. This impermeable surface is horrendous for trees and plant life because these plants cannot absorb water resulting in inhabitable conditions (Tokgoz, 2009). The Surface Mining Control and Reclamation Act of 1977 (SMCRA) required all mining operations to obtain a permit detailing how they will reclaim this land once operations have ended. Because Dry Creek's mining activity occurred prior to this policy, many of these poor reclamation standards are commonly present in pre SMCRA mining sites. A thorough investigation should be conducted to determine the state of this location and enable an action plan to have a prosperous wildlife biota.

The point I would like to emphasize is that this reclamation or rehabilitation of Dry Creek should be done right with long term outlook. After SMCRA was enacted for enforcement, short term reclamation efforts were apparently better than what was found prior to SMCRA. However long term longevity has been a large concern to many states and local agencies that need to maintain these locations. Invasive species and non-native trees can utilize all natural resources and stake their claim to this territory causing native species to be pushed out (Zipper, 2011). The importance of doing things right the first time and researching what elements should be implemented into this area is of the utmost importance to the future longevity of Dry Creek.

Coal Mining has caused many environmental problems across the United States and any efforts we can put forth to better our environment should be taken seriously. Understanding what toxic metals are present and what resources need to be set in place to better the overall outlook of this area should

be incorporated into the proposition presented by the BLM. Looking at a sustainable ecosystem at Dry Creek will allow for cheaper costs over a long-term period and enhance the grow of wild fish populations. We only have one planet and should take any steps necessary to create a cleaner earth to reside on.

Friedrich, Lisa A., Patricia L. Orr, Norman M. Halden, Panseok Yang, and Vince P. Palace. "Exposure Histories Derived from Selenium in Otoliths of Three Cold-water Fish Species Captured Downstream from Coal Mining Activity." August 4, 2011. Accessed February 15, 2016. [http://yv4zn7rr3m.search.serialssolutions.com/directLink?&atitle=Exposure histories derived from selenium in otoliths of three cold-water fish species captured downstream from coal mining activity&author=Friedrich, Lisa A;Orr, Patricia L;Halden, Norman M;Yang, Panseok;Palace, Vince P&issn=0166445X&title=Aquatic Toxicology&volume=105&issue=3-4&date=2011-10-01&spage=492&id=doi:10.1016/j.aquatox.2011.07.021&sid=ProQ_ss&genre=article](http://yv4zn7rr3m.search.serialssolutions.com/directLink?&atitle=Exposure%20histories%20derived%20from%20selenium%20in%20otoliths%20of%20three%20cold-water%20fish%20species%20captured%20downstream%20from%20coal%20mining%20activity&author=Friedrich,%20Lisa%20A.;Orr,%20Patricia%20L.;Halden,%20Norman%20M.;Yang,%20Panseok;Palace,%20Vince%20P.&issn=0166445X&title=Aquatic%20Toxicology&volume=105&issue=3-4&date=2011-10-01&spage=492&id=doi:10.1016/j.aquatox.2011.07.021&sid=ProQ_ss&genre=article).

Tokgoz, Nuray. "Case Study of the Agacli Landslide-gully Complex during Post-coal-mining Reclamation and Afforestation." SpringerLink. March 20, 2009. Accessed May 06, 2016. Case study of the Agacli landslide-gully complex during post-coal-mining reclamation and afforestation.

Zipper, C. E., et al. "Forest Restoration Potentials of Coal-Mined Lands in the Eastern United States." *Journal of Environment Quality*, vol. 40, no. 5, 2011, pp. 1567-77. *Agricultural & Environmental Science*, doi:10.2134/jeq2011.0040

<https://www.blm.gov/press-release/blm-seeks-comments-dry-creek-restoration-project>