United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Colorado River Valley Field Office
2300 River Frontage Road
Silt, Colorado 81652
www.co.blm.gov

ENVIRONMENTAL ASSESSMENT

1. Introduction

NUMBER: **DOI-BLM-CO-040-2012-0091 EA**

CASEFILE NUMBER:

PROJECT NAME: Roan Plateau Exclosure Fences and Water Development

LOCATION: Roan Plateau, about 13 miles NW of Rifle, CO

LEGAL DESCRIPTIONS: T5S R95W several sections

APPLICANT: BLM

BACKGROUND:

This project is part of a National Fish and Wildlife Foundation grant that involves several projects on the Roan Plateau including the construction of grazing exclosures in riparian areas, weed treatments, improvement of stream crossings, and elimination of non-native trout within cutthroat trout habitat. The grant was developed in partnership with Trout Unlimited and Colorado Parks and Wildlife. The proponents support the conservation of the Colorado River cutthroat trout in the East Fork Parachute Creek watershed in western Colorado by addressing threats of reduced water quality and compromised habitat. Project locations are shown in Appendix A- Map 1 and include livestock exclosure fences on selected tributaries of East Fork Parachute Creek within the Area of Critical Environmental Concern (ACEC) and an upland water development. The strategically-placed exclosures and water development will work in conjunction with allotment management plans to alleviate distribution problems contributing to reduced water quality and riparian habitat within the East Fork Parachute Creek ACEC. Exclosure areas will also serve as "Controls" where biotic factors can be measured, recorded, and evaluated. Data can be compared with plots in adjacent areas in which livestock have access.

JQS Gulch forms the headwaters of East Fork Parachute Creek and contains both brook trout (*Salvelinus fontinalis*) and native Colorado River Cutthroat trout (*Oncorhynchus clarki pleuriticus*). Colorado River Cutthroat trout (CRCT) are native to this watershed. East Fork Parachute Creek below the confluence of JQS and Golden Castle Gulches contains both brook

trout and CRCT. Existing habitat in East Fork Parachute Creek is suitable for survival, growth, and reproduction of CRCT. Habitat in the upper and lower segment of JQS Gulch is suitable but could be improved to provide for better production of CRCT.

The upper end of JQS Gulch has been a historic trouble spot for the grazing permittees. Two fence lines come together here which tend to funnel cattle to the riparian area. The existing fence lines are the boundary between two very large pastures on the north and south sides of the fence and one small pasture used for gathering on the east side. In the fall, cattle typically move to this area anticipating coming off the allotment. This area is very sensitive especially on the south side where there are no other significant sources of water nearby. Since the road runs along the upper end of JQS Gulch cattle moving on the road congregate here. There have been several attempts to keep cattle off this area by adjusting grazing management, but none have been very successful. No matter which pasture the cattle are in they concentrate here, usually in the fall, prior to coming off the allotment.

PURPOSE AND NEED FOR ACTION:

BLM identified a need to construct riparian exclosures in JQS Gulch, Second Water Gulch, Third Water Gulch, Camp Gulch, and Grassy Gulch through studies of the riparian areas that showed impaired conditions. An upland water development is also proposed to provide an additional watering site for livestock and wildlife out of the riparian areas. Protection of these riparian areas is particularly important as they support CRCT. Current livestock grazing management plans involve keeping cattle distributed across the allotments on the Roan and avoiding extended grazing in any area, including riparian areas. These techniques have not succeeded in sufficiently reducing use in the riparian areas. Therefore, riparian exclosures and water developments are additional management tools that can be used to benefit riparian areas by forcing or drawing livestock onto less sensitive areas and redistributing animals across the allotment.

Decision to be made: Whether or not to construct the riparian exclosures and pond.

SCOPING AND PUBLIC INVOLVEMENT AND ISSUES:

This action was scoped internally with the NEPA Interdisciplinary Team and posted online on 7/9/2012. Issues raised during the internal scoping are itemized in Table 3-1 and analyzed in Section 3 Affected Environment and Environmental Consequences. This action was scoped with Wilderness Workshop and Native Ecosystems from 8/31/12 until 9/30/2012 for comments on Wild and Scenic Rivers and Wilderness. One comment from Wilderness Workshop and Native Ecosystem was received and it determined that the proposed fence would not undermine the area's wilderness character, as it will be substantially unnoticeable, protect various values, and will not impact opportunities for unconfined recreation. Permittees were notified of the project during annual meetings.

2. Proposed Action and Alternatives

DESCRIPTION OF PROPOSED ACTION:

BLM is proposing to construct exclosure fences in JQS Gulch, Second Water Gulch, Third Water Gulch, Camp Gulch, and Grassy Gulch and one upland land water development to support the conservation of the Colorado River cutthroat trout in the East Fork Parachute Creek Tier 1 watershed. The proposed actions are all located within the East Fork Parachute Creek ACEC which is reflected in Appendix A- Map 1.

Map 2 in Appendix A reflects several proposed fence lines to be constructed in connection with existing fence lines and roads to create four exclosures around the upper end of JQS Gulch to prevent livestock from accessing the riparian area and three identified springs. The fence will be a 4-strand barbed wire fence built to BLM standards (See Appendix B). A skid steer with an auger may be used for boring postholes during fence construction and would utilize established roads. Approximate dimensions are shown on Map 2 located in Appendix A. The proposed exclosure reclaims closed route 8009D as part of the riparian area and appropriate signage will be applied denoting this closure. The proposed action also includes constructing a stock pond on the south side of the exclosure to provide an alternate water source. The location and specifications for the stock pond are reflected in Appendix B. The maximum total area of disturbance for the pond is estimated at 100ft by 100ft. Equipment to construct the pond would utilize an existing administrative route. It is anticipated that the pond would retain approximately 0.1 acre feet of water from spring snowmelt and summer rain storms. A cooperative agreement would be issued to the grazing permittees to construct and maintain these projects (JQS Gulch exclosure and pond) in good and functioning condition. The following special terms and conditions would be included on the agreement.

- Maintenance activities shall be restricted to the footprint (previously disturbed area) of the project as it existed when it was initially constructed.
- The Bureau of Land Management shall be given 48 hours advance notice of any maintenance work that will involve heavy equipment.
- Disturbed areas will be reseeded with a certified weed-free seed mixture of native species adapted to the site.
- The permittees and all persons associated with grazing operations must be informed that any person who injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law. If in connection with allotment operations under this authorization any of the above resources are encountered, the proponent shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until further notified in writing to proceed by the authorized officer.

Second Water Gulch exclosure proposed location and size (400ft by 80ft) is reflected on Map 4 of Appendix A. The buck and rail design is preferred for this exclosure because it will reduce the amount of disturbance by avoiding the use of a skid steer and auger. Buck and rail design typically reduces the cost of maintenance throughout the lifetime of the exclosure. Shown in

Appendix B are specifications and a picture of an example buck and rail fence located on the Roan Plateau. Established routes 8009E or 8010B may be utilized to access the exclosure location with fence materials for construction.

Third Water Gulch exclosure proposed location and size (360ft by 60/80ft) is reflected on Map 5 of Appendix A. The buck and rail design with a combination of barbed wire sections may be a more appropriate design on this exclosure due to space along the route 8010 and the riparian corridor. The established route 8010 will provide access for exclosure construction.

The proposed location for the Camp Gulch exclosure is shown on Map 6 in Appendix A and it has an approximate size of 400ft by 100ft. Buck and rail is the recommended design and materials can be hauled to the site via route 8011A.

The proposed exclosure in Grassy Gulch is reflected on Map 7 of Appendix A and is approximately 240ft by 60/75ft. Buck and rail design is desired and materials for construction can be hauled to the site via route 80011 C.

DESCRIPTION OF NO ACTION ALTERNATIVE:
Do not construct any exclosures or pond. Range improvements would remain unchanged.

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

Name of Plan: Glenwood Springs Resource Management Plan.
Date Approved: Jan. 1984, revised 1988, amended in November 1991 - Oil and Gas Leasing and Development - Final Supplemental Environmental Impact Statement; amended Nov. 1996 - Colorado Standards and Guidelines; amended in August 1997 - Castle Peak Travel Management Plan; amended in March 1999 - Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement; amended in November 1999 - Red Hill Plan Amendment; amended in September 2002 – Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance; amended in June 2007 – Record of Decision for the Approval of Portions of the Roan Plateau Resource Management Plan Amendment; and amended in March 2009 - Record of Decision for the Designation of Areas of Critical Environmental Concern for the Roan Plateau Resource Management Plan.
Decision Number/Page: The action is in conformance with Administrative Actions (pg. 5) and Livestock Grazing Management (pg. 20).
Decision Language: Construct facilities such as, springs, reservoirs, fences, corrals, and livestock trails where necessary to control and distribute livestock.

RELATIONSHIP TO STATUTES, REGULATIONS, OTHER PLANS:

This project efforts would contribute to the goals of the Conservation Agreement for Colorado River Cutthroat Trout (*Oncohynchus clarkia pleuriticus*) in the state of Colorado, Utah, and Wyoming (Conservation Agreement) – an interagency agreement among the three states, the U.S Fish and Wildlife Service, the Bureau of Land Management, the U.S Forest Service, the National Park Service, and the Ute Indian Tribe. The placement of riparian exclosures along select stream

reaches contribute to the restoration effort through two key objectives from the Conservation Agreement: "Objective 1: Secure and enhance conservation populations" and "Objective 4: Secure and enhance watershed conditions."

STANDARDS FOR PUBLIC LAND HEALTH:

In January 1997, Colorado BLM approved the Standards for Public Land Health. The five standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands.

A formal Land Health Assessment was conducted in the Roan Plateau landscape in 1999. A sampling of streams was assessed at that time which included the riparian areas of Camp Gulch, JQS Gulch, and Third Water Gulch. A Proper Functioning Condition (PFC) assessment was conducted on Grassy Gulch in 1994. At the time of the assessments, Camp Gulch was rated as Functioning-at-risk with an Upward trend; Grassy Gulch and Third Water Gulch were rated as Properly Functioning. JQS Gulch (in the JQS allotment) was Functioning-at-risk with No Apparent trend.

The JQS allotment was not meeting Standard 2 in JQS Gulch due to bank damage and lack of riparian vegetation. This stream segment was identified as a favorite livestock loafing area. Since the 1999 assessment, concerns have arisen with livestock concentrating in the upper reaches of JQS Gulch and the other drainages in this analysis, resulting in trampling of stream banks and a declining riparian condition.

Standards 3 and 4 for aquatic wildlife were not met in JQS Gulch and East Fork Parachute Creek due to declining populations of Colorado River cutthroat trout in these streams. Non-native brook trout stocked in the stream years ago are outcompeting native cutthroat trout. Standard 4 was also not met for a population of Parachute penstemon in the allotment due to the continued decline in population numbers. The cause of the decline was not evident; however, livestock grazing was not considered a contributing factor.

The environmental analysis must address whether the proposed action or alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions relative to these five standards.

3. Affected Environment & Environmental Consequences

DIRECT AND INDIRECT EFFECTS, MITIGATION MEASURES

This section provides a description of the human and natural environmental resources that could be affected by the proposed action and alternatives. In addition, the section presents comparative analyses of the direct and indirect consequences on the affected environment stemming from the implementation of the various actions.

A variety of laws, regulations, and policy directives mandate the evaluation of the effects of a proposed action and alternative(s) on certain environmental elements. Not all programs, resources or uses are present in the area, or if they are present, may not be affected by the

proposed action and alternatives (Table 3-1). Only those elements that are present and potentially affected are described and brought forth for detailed analysis.

Table 3-1. Programs, Resources, and Uses (Including Supplemental Authorities)	***Potentially Affected?***	
	Yes	**No**
Access and Transportation	**X**	
Air Quality		**X**
Areas of Critical Environmental Concern	**X**	
Cadastral Survey		**X**
Cultural Resources	**X**	
Native American Religious Concerns	**X**	
Environmental Justice		**X**
Farmlands, Prime or Unique		**X**
Fire/Fuels Management		**X**
Floodplains		**X**
Forests		**X**
Geology and Minerals		**X**
Law Enforcement		**X**
Livestock Grazing Management	**X**	
Noise		**X**
Paleontology		**X**
Plants: Invasive, Non-native Species (Noxious Weeds)	**X**	
Plants: Sensitive, Threatened, or Endangered		**X**
Plants: Vegetation	**X**	
Livestock Grazing Management	**X**	
Realty Authorizations		**X**
Recreation		**X**
Social and/or Economics		**X**
Soils	**X**	
Visual Resources		**X**
Wastes, Hazardous or Solid		**X**
Water Quality, Surface and Ground	**X**	
Water Rights		**X**
Wetlands and Riparian Zones	**X**	
Wild and Scenic Rivers	**X**	
Wilderness/WSAs/Wilderness Characteristics	**X**	
Wildlife: Aquatic / Fisheries	**X**	
Wildlife: Migratory Birds	**X**	
Wildlife: Sensitive, Threatened, and Endangered Species	**X**	
Wildlife: Terrestrial	**X**	

Access and Transportation

Affected Environment

A site specific network of motorized and non-motorized routes was designated in the Roan Plateau Resource Management Plan Amendment. The routes allow for public and administrative access throughout the Roan Plateau area.

Environmental Effects

Proposed Action

The fencing from the proposed action could limit public access if placed across a designated route.

No Action Alternative

Public access would continue because no new fences would be installed.

Mitigation

If any of the fences cross a designated route, a gate or cattle guard must be installed to allow for continued public access.

Areas of Critical Environmental Concern

Affected Environment

All of the proposed exclosures and the stock pond are located within the East Fork Parachute Creek ACEC. The relevant and important values that this ACEC was designated to protect include a scenic 200-foot high waterfall and box canyon, Colorado River cutthroat trout habitat, a BLM sensitive plant species, and three significant plant communities.

The watershed is regionally and nationally important as it contains year-round habitat for a genetically pure population of native Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*). This fish is classified as a BLM sensitive species and a special status species by the state of Colorado. East Fork Parachute Creek and JQS Gulch support two core conservation populations of the species as identified in the Conservation Agreement and Strategy for Colorado River Cutthroat Trout, in the States of Colorado, Utah, and Wyoming. The BLM considers the entire watershed in which these fish reside to be important to the long-term functionality of vital ecosystem processes which maintain upland and stream habitats important to these fishes.

Below the East Fork Parachute Creek waterfall is an occurrence of the BLM sensitive plant, Roan Cliffs blazing star (*Mentzelia rhizomata*). This plant is found only on talus slopes of the Green River Formation shale.

A unique wetland feature found in East Fork Parachute Creek and its tributaries is the hanging garden seeps which support the rare hanging garden sullivantia (*Sullivantia hapemanii var. purpusii*). Hanging garden seeps are limited to the walls of waterfalls or cliffs with seeps. The hanging garden sullivantia, a Colorado endemic plant, is narrowly restricted to calcareous seeps,

but is found in abundance in these hanging garden communities. The Roan Plateau occurrences comprise nearly 62% of the total known occurrences of the species.

In the mainstem of East Fork Parachute Creek, just above and below the waterfall are two other significant plant communities: Colorado blue spruce/red osier dogwood *(Picea pungens/Cornus sericea*), boxelder/narrowleaf cottonwood/red osier dogwood (*Acer negundo/Populus angustifolia/Cornus sericea*). Both of these communities are rare within the State and the occurrences in East Fork Parachute Creek are in good to excellent condition.

Environmental Effects

Proposed Action
The proposed action will have short-term impacts to soils and vegetation, particularly during construction of the stock pond and to a lesser extent where postholes will be dug for the barbed wire fencing. The buck and rail fences should result in very little surface disturbance or loss of vegetation. There may be some short-term sediment transport from the construction sites into occupied cutthroat trout habitat, temporarily reducing habitat quality for trout.

Once the exclosure fences are constructed, the riparian and upland zones that are within the fenced areas would begin to recover rapidly, resulting in increased vegetative cover and diversity in riparian vegetation and the adjoining uplands and less streambank damage. The projects will improve cutthroat trout habitat by reducing soil loss and sediment transport downstream into occupied cutthroat trout habitat. If the proposed livestock pond functions properly, it should also draw livestock away from sensitive riparian zones and result in additional riparian improvements outside of the exclosures.

Neither the exclosure fences nor the stock pond is proposed within occupied or potential habitat for the Roan Cliffs blazing star or the identified significant plant communities. There would be no effect to this species or these communities.

No Action Alternative
Under the No Action alternative, existing livestock grazing practices, including cattle trampling and heavy grazing within the riparian corridor, would continue to occur. If cattle continue to congregate within these riparian corridors and the adjacent uplands, vegetative cover and diversity would be lost and the stream channel would become wider and shallower. Loss of riparian vegetative cover and a shallower stream create higher water temperatures which would be detrimental to cutthroat trout survival and reproduction. Loss of riparian and upland vegetation would allow more sediment to be transported into the stream during high stream flows and storm events. Sediment may cover spawning beds and reduce reproductive success, thereby impacting the ACEC values.

Cultural Resources

Affected Environment
A records search of the general project area, and a Class III inventory of the Area of Potential Effect (APE), as defined in the National Historic Preservation Act (NHPA), was completed by a Colorado BLM permitted cultural resource contracting firm and BLM archaeologist (CRVFO

CRIR # 8396-1A&B and 1012-36). Conditions of the existing cultural environment are incorporated by this reference but the following briefly summarizes cultural resources in the APE. During project work the locations of each fence exclosure was investigated to ensure it has been previously inventoried for cultural resources. All proposed fence exclosures have been previously inventoried. One area for the proposed retention pond was not previously surveyed, so a Class III cultural resource inventory was conducted for this area. No cultural resources were located within the proposed retention pond or within seven of the eight fence exclosures. Within the JQS exclosure there is one potentially eligible site (5GF36) which is currently being impacted by livestock hoof-action and wallowing. The project has a determination of no historic properties affected. The project inventory and evaluation is in compliance with the NHPA, the Colorado State Protocol Agreement, and other federal law, regulation, policy, and guidelines regarding cultural resources.

Environmental Effects

Proposed Action:

Within the JQS exclosure there is one potentially eligible site (5GF36) which is currently being impacted by livestock hoof-action and wallowing. By expanding the initial exclosure, the proposed exclosure will encompass the site, which mitigates current impacts to the cultural resources. One eligible cultural resource (5GF32) is located near Exclosure 2 but the fence was designed to avoid the site by more than 100 meters. Additionally, one potentially eligible cultural resource (5GF29) was located near Exclosure 3 but will also be avoided by the fence construction by more than 100 meters. Since the majority of the fencing will be buck-and-rail fencing, this will have minimal surface disturbing impacts to any potentially unknown cultural resources. The project has a determination of no historic properties affected.

No Action Alternative:

Under this alternative, no fences or the retaining pond would be built. This would potentially lead to further deterioration and impacts to site 5GF36 because the site would not be fenced from current conditions. Potential impacts to unknown cultural resources from fence construction would also not occur under this alternative.

Mitigation:

Cultural Resource Standard Stipulations

If subsurface cultural values are uncovered during operations, all work in the vicinity of the resource will cease and the authorized officer with the BLM notified immediately. The operator shall take any additional measures requested by the BLM to protect discoveries until they can be adequately evaluated by the permitted archaeologist. Within 48 hours of the discovery, the State Historic Preservation Officer (SHPO) and consulting parties will be notified of the discovery and consultation will begin to determine an appropriate mitigation measure. BLM in cooperation with the operator will ensure that the discovery is protected from further disturbance until mitigation is completed. Operations may resume at the discovery site upon receipt of written instructions and authorization by the authorized officer.

Pursuant to 43 CFR 10.4(g), the holder must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony on federal land. Further, pursuant to 43 CFR 10.4 (c) and (d), the holder must stop activities in the vicinity of the discovery that could adversely affect the discovery. The holder shall make a reasonable effort to protect the human remains, funerary

items, sacred objects, or objects of cultural patrimony for a period of thirty days after written notice is provided to the authorized officer, or until the authorized officer has issued a written notice to proceed, whichever occurs first.

Native American Religious Concern

Affected Environment:

American Indian religious concerns are legislatively considered under several acts and Executive Orders, namely the American Indian Religious Freedom Act of 1978 (PL 95-341), the Native American Graves Environmental Assessment Protection and Repatriation Act of 1990 (PL 101-601), and Executive Order 13007 (1996; Indian Sacred Sites). In summary, these require, in concert with other provisions such as those found in the NHPA and ARPA, that the federal government carefully and proactively take into consideration traditional and religious Native American culture and life and ensure, to the degree possible, that access to sacred sites, the treatment of human remains, the possession of sacred items, the conduct of traditional religious practices, and the preservation of important cultural properties are considered and not unduly infringed upon. In some cases, these concerns are directly related to "historic properties" and "archaeological resources". In some cases elements of the landscape without archaeological or other human material remains may be involved. Identification of these concerns is normally completed during the land use planning efforts, reference to existing studies, or via direct consultation. The Ute have a generalized concept of spiritual significance that is not easily transferred to Euro-American models or definitions. As such the BLM recognizes that they have identified sites that are of concern because of their association with Ute occupation of the area as part of their traditional lands.

Environmental Effects:

Proposed Action
No traditional cultural properties, natural resources, or properties of a type previously identified as being of interest to local tribes, were found during the cultural resources inventory of the project area or identified by consultation. There is no other known evidence that suggests that the project area holds special significance for Native Americans. Therefore, tribal consultation was not conducted for this project.

No Action Alternative
Under this alternative, there will be no direct or indirect impacts to cultural resources from project implementation because no related surface disturbing activities will occur. Therefore, areas of concern to Native American tribes would not be affected.

Mitigation:
None. No additional Native American consultation was conducted for the proposed project.

Livestock Grazing Management

Affected Environment

The proposed action affects the JQS and East Fork Common allotments. The project has six exclosures and a water retention pit located in the JQS Common Allotment and two exclosures in the East Fork Common allotment.

The JQS Common allotment, consisting of 10,458 acres, boarders the eastern and southern rims of the Roan Plateau and ranges in elevation from 8,000 to 9,200 feet. The East Fork Common allotment, consisting of 8,461 acres, is located on the Roan Plateau north of the East Fork of Parachute Creek and south of Northwater Creek. Both allotments consist of a mixture of topology driven vegetation types and a significant number of improvements including pasture fences and water developments. North facing slopes are usually forested while south facing slopes are drier and brush dominated. The allotments consist of two major drainages, Northwater Creek and East Fork of Parachute Creek including several smaller tributaries. Riparian areas are favorite loafing areas for cattle.

Environmental Effects

Proposed Action

The proposed action would result in approximately 8.6 acres of forage being excluded from livestock use on the JQS Common allotment and approximately 0.6 acres of forage being excluded from cattle use on the East Fork Common allotment. A total of approximately 3 AUMs of forage would be lost to livestock use. Water would still be available to livestock on both sides of the exclosures. Cattle would be encouraged to use the uplands and the riparian area would result in increased vegetative cover and diversity in riparian vegetation and less streambank damage. The projects will improve cutthroat trout habitat by reducing soil loss and sediment transport downstream into occupied cutthroat trout habitat. The proposed water retention pit near JQS Gulch will provide an alternate water source outside of the JQS Gulch exclosure. This will draw livestock away from sensitive riparian zones and result in additional riparian improvements.

No Action Alternative

The no action alternative would involve continuing current management strategies. These strategies would involve focusing riding efforts in riparian areas, placing salt far away from water, changing rotation patterns, and trying to avoid the riparian areas altogether. These strategies have been mostly unsuccessful and would likely produce similar results. Land health standards and ACEC values may be difficult to achieve.

Plants: Invasive Non-Native Species (Noxious Weeds)

Affected Environment

To date, limited weed mapping has occurred on the Roan Plateau. Observations by various BLM specialists have provided most of the information on weed distribution. Information on weeds gathered over the next year would be used to determine appropriate treatments in relation to the proposed action.

Houndstongue (*Cynoglossum officinale*) is the most prevalent weed on the Roan Plateau. It occurs in most drainages and is scattered in the uplands. Biennial thistles including bull thistle (*Cirsium vulgare*), musk thistle (*Carduus nutans*), and plumeless thistle (*Carduus acanthoides*), are frequently found in the uplands and drainages. Canada thistle (*Breea arvense*) occurs along almost every riparian reach, sometimes in dense populations, and both Canada thistle and houndstongue occur along most roads on top of the plateau. JQS Gulch at the project site contains large amounts of houndstongue and Canada thistle along the creek and in the uplands adjacent to the creek.

Environmental Effects

Proposed Action

It is likely that noxious and invasive weeds would initially increase as a result of the disturbance associated with the project. Surface-disturbing activities such as in the proposed action provide a niche for the establishment and expansion of invasive non-native species, particularly when these species are already present in the surrounding area. Additionally, vehicles and equipment could introduce and spread noxious and invasive weed seeds.

Mitigation:

To help minimize the potential for spread of invasive non-native species during or after the treatments, the project inspector would ensure that equipment involved in surface disturbing actions is clean of noxious weed seeds or propagative parts prior to entry onsite. Post-construction weed monitoring and treatments would be conducted for three years following construction. Any Colorado-listed noxious weeds would be promptly treated and controlled according to the appropriate timing for each particular weed species. Staging of vehicles and equipment would not occur in weed-infested areas.

No Action Alternative

Under this alternative, none of the ground disturbance associated with the proposed action would occur. Noxious and invasive plant species would be expected to continue at current levels.

Plants: Vegetation

Affected Environment

Dominant riparian vegetation within the proposed exclosures includes Baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), redtop (*Agrostis stolonifera*), and tufted hairgrass (*Deschampsia cespitosa*). Dominant vegetation in the adjacent uplands that would be incorporated into the exclosures includes Kentucky bluegrass (*Poa pratensis*), houndstongue (*Cynoglossum officinale*), coneflower (*Rudbeckia occidentalis var. montana*), green rabbitbrush (*Chrysothamnus viscidiflorus*), rubber rabbitbrush (*Chrysothamnus nauseosus*), mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), and Letterman's needlegrass (*Achnatherum lettermanii*).

Environmental Effects

Proposed Action

The construction of the proposed pond will result in the permanent loss of approximately 0.1 acre of vegetation and a reduction in vegetative density and cover immediately adjacent to the pond where livestock would congregate. The proposed action will also result in a short-term loss

of vegetation where postholes will be dug for the barbed wire fencing. The buck and rail fences should result in very little surface disturbance or loss of vegetation.

Once the exclosure fences are constructed, the riparian and upland vegetation within the fenced areas would begin to recover rapidly, resulting in increased cover and diversity in riparian and upland vegetation. Noxious weeds present in the project area may also flourish with the exclusion of grazing and would likely suppress native species trying to get established. Weed treatments would be needed to reduce competition with native species.

Eliminating livestock grazing within the fenced exclosures will enhance vegetation in those locations, but livestock will likely be redistributed elsewhere along the creeks. The construction of the livestock pond is anticipated to help distribute livestock throughout the allotment, relieving some pressure on the riparian areas. Over the long term, constructing exclosure fences along portions of the streams that have been highly impacted will allow those areas to recover to properly functioning condition and help maintain healthy plant communities.

Mitigation
If native species do not become established within the exclosures at a density and cover sufficient to inhibit noxious weeds becoming re-established, the area will be seeded with native grasses adapted to the site. In addition, plugs of willows and other riparian species may need to be planted within the exclosures to accelerate restoration of the riparian areas.

No Action Alternative
Under the No Action alternative, the proposed pond and exclosures would not be constructed. Cattle would continue to congregate along these stream segments and the adjacent uplands, resulting in reduced cover and diversity of native vegetation and an increase in noxious weed populations.

Land Health Standards
The Roan Cliffs landscape was assessed for land health in 1999. At the time of the assessment, upland plant communities were considered to be meeting Standard 3 (BLM 1999). The proposed action should maintain or improve the health of upland plant communities from the current condition.

Soils

Affected Environment
A review of the soil survey by the NRCS for the *Rifle Area, Colorado, Parts of Garfield and Mesa Counties* indicate 5 soil map units occur within the proposed allotments (NRCS 1985). The NRCS soil map unit descriptions (NRCS 2011) are provided below:

36 Irigul channery loam –This shallow, well drained, rolling to steep soil is found on upland ridges and mountainsides at elevations ranging from 7,800 to 8,700 feet and on slopes of 9 to 50 percent. It is derived from sandstone and marlstone. Surface runoff for this soil is medium and the erosion hazard is slight. Primary uses for this soil include wildlife habitat and grazing.

38 Irigul-Starman channery loams – This soil map unit is found on ridges and mountainsides at elevations ranging from 7,800 to 9,000 feet and on slopes of 5 to 50 percent. These soils are

derived from sandstone and marlstone parent rocks. Approximately 55 percent of this unit is composed of the Irigul soil and approximately 30 percent the Starman soil. Both of these soils are shallow, well drained, and have slight erosion hazards with medium surface runoff. These soils are used primarily for grazing and wildlife habitat.

53 Parachute-Rhone loams – These gently sloping to steep soils are found on ridges and mountainsides at elevations ranging from 7,600 to 8,600 feet and on slopes of 5 to 30 percent. The Parachute soil is derived from sandstone and or marlstone while the Rhone soil is derived from fine-grained sandstone. Approximately 55 percent of this unit consists of the Parachute soil while approximately 30 percent is the Rhone soil. The Parachute soil is moderately deep, well drained, and has a moderate erosion hazard with medium surface runoff. The Rhone soil is deep, well drained, and has a slight erosion hazard with slow surface runoff. Primary uses for these soils include grazing and wildlife habitat.

60 Rhone loam – This deep, well drained, gently sloping to steep soil is found on ridges and mountainsides at elevations ranging from 7,600 to 8,600 feet and on slopes of 5 to 30 percent. This soil is derived from sandstone and marlstone. Surface runoff for this soil is slow and the erosion hazard is slight. Primary uses for this soil include wildlife habitat and limited grazing.

62 Silas loam – This deep, moderately well drained soil is found at the bottom of mountain valleys at elevations ranging from 7,600 to 8,300 feet and on slopes of 3 to 12 percent. This soil is derived from sandstone and marlstone alluvium. Surface runoff for this soil is slow and the erosion hazard is slight. Primary uses for this soil include grazing, wildlife habitat, and irrigated hay.

Physical indicators of soil health and function were evaluated in 1999 during the Roan Cliffs Land Health Assessment. Upland soils were assessed at 25 locations. BLM staff concluded that soils were meeting land health standards, with only slight departures from expected conditions (BLM 1999). BLM has not formally re-evaluated soil health since 1999; however, as part of the field work for the proposed action, soils adjacent to the stream channels were evaluated. It was noted that stream banks and areas adjacent to the streams were heavily trampled and in some cattle loafing areas, there was significant ground cover loss and soil churning. Potential for sediment transport is high in these areas and subject to continued soil loss due to lack of riparian and upland vegetation.

Environmental Effects

Proposed Action

The proposed action will have short term impacts to soils, particularly during excavation and compaction of the stock pond and to a lesser extent where postholes will be dug for the fencing. The construction and use of the livestock pond is anticipated to cause soil compaction adjacent to the pond, but will help to distribute livestock throughout the allotment, relieving some pressure on the stream banks and riparian areas. Over the long term, constructing exclosure fences along portions of the streams that have been highly impacted will allow those areas to recover rapidly and reduce soil loss and sediment transport downstream into cutthroat trout habitat.

No Action Alternative

Under the no action alternative, soil loss and sediment transport would continue at its current rate. Stream banks would continue to be trampled throughout the proposed action area, and impacts to cutthroat trout from sedimentation may become more apparent and quantifiable.

Land Health Standards for Soils

Based on the Roan Cliffs Land Health Assessment, BLM staff concluded that upland soils are meeting Standard 1 (BLM 1999). Implementation of the proposed action is not anticipated to degrade soil health from current conditions.

Water Quality

Affected Environment

The Roan Plateau contains a series of narrow ridges dissected by steep to nearly vertical canyons which flow westerly into Parachute Creek. Annual precipitation averages about 20 inches with approximately half falling as winter snows and half as summer rain showers. The major perennial streams within the landscape are Trapper Creek, Northwater Creek, Middle Fork Parachute Creek, and East Fork Parachute Creek. Numerous smaller perennial and intermittent streams flow into these major drainages. The Roan Plateau has numerous springs where fractures in the Green River Shale intersect with the surface. Over the years many of the springs have been developed for livestock watering sources, as well as stock ponds to capture snowmelt runoff.

The State of Colorado has developed *Stream Classifications and Water Quality Standards* that identify beneficial uses of water and numeric standards used to determine allowable concentrations of water quality parameters. The use classifications for streams in the proposed action area are Aquatic Life Cold Water 1 and 2, Recreation N, and Agriculture (CDPHE 2010a). A comprehensive list of standards for physical, biological, inorganic and metals parameters have been established to protect these uses. Aquatic Life Cold Water 1 streams have physical characteristics to support a wide variety of cold water biota, usually including trout in Colorado. Recreation N refers to stream segments with surface waters that are not suitable or intended to become suitable for primary contact recreation uses. Agricultural waters are classified for livestock watering or crop irrigation. The State of Colorado has developed a *303(d) List of Water Quality Limited Segments Requiring TMDLS* and *Monitoring and Evaluation List* (CDPHE 2010b) that identifies stream segments that are not currently meeting water quality standards with technology based controls alone. No streams in the proposed action area are on this list suggesting water quality standards are currently being met.

During the 1999 Roan Cliffs land health assessment, water quality was tested at each site where a PFC assessment was conducted. Water quality parameters were flow, temperature, conductivity, salinity, and pH. Temperatures varied from 12.5^{o} C on Golden Castle Gulch and JQS Gulch to 24.5 ^{o}C on Second Anvil Creek. At many of the sites, stream temperatures were considerably high for cold water trout streams. Conductivity ranged from 169 micromhos per centimeter (umhos/cm) on Bull Gulch to 567 umhos/cm on Second Anvil Creek. Salinity levels were measured from 0% (parts per thousand) to 0.25%. Water in the assessment area was slightly basic on all samples monitored with samples varying from a 7.95 pH on JQS Gulch to 9.0 pH on the East Fork of Parachute Creek. The water quality parameters measured on the Roan Cliffs were admittedly limited; however, none of the values measured showed a violation of the water quality standards at the time (BLM 1999c).

No formal re-evaluation has been done on the Roan Cliffs landscape, but based on concerns about water quality impairments in more recent years, water quality monitoring sites were established on several streams in 2008 and 2009, including JQS Gulch and East Fork Parachute Creek. Data results indicated that fecal coliform levels spiked significantly post-grazing activities in the riparian areas of concern:

Stream Name	JQS Gulch - upper site		JQS Gulch – lower site			EF Parachute Cr		
Date	6/10/08	10/23/08	6/15/09	8/17/09	10/22/09	6/15/09	8/17/09	10/22/09
pH	8.6	8.12	8.4	8	7.5	8.4	8.2	8
Conductivity (umhos/cm)	363	376	390	530	570	430	530	550
Sodium (mg/l)	18	21.3	14	14.7	16.7	16.5	15.7	19.5
Calcium (mg/l)	48	40	55	70	67	54	61	61
Magnesium (mg/l)	15	20	17	22	25	20	23	27
Potassium (mg/l)	0.6	0.9	0.2	0.5	0.4	0.4	0.4	0.4
Chloride (mg/l)	4	4	4	8	4	5	8	6
Sulfate (mg/l)	9	14	7	6	17	12	7	20
Phenol Alk (mg/l)	16	0	20	24	0	24	32	0
Total Alk (mg/l)	193	193	241	270	270	243	270	265
Bicarbonate (mg/l)	195	234	243	269	327	236	249	321
Carbonate (mg/l)	19	0	24	29	0	29	38	0
Dissolved Solids (mg/l)	220	224	246	308	326	284	310	344
Hardess (mg/l)	181	182	207	265	270	217	246	263
Fluoride (mg/l)	0.07	0.01	0.22	0.13	0.15	0.17	0.2	0.28
Total Suspended Solids (mg/l)	0	25	7	25	15	8	0	0
Fecal Coliform (col/100ml)	2	276	2	53	43	4	18	3

During the field work for the proposed action, it was noted that stream banks were significantly trampled and riparian vegetation was deficient in diversity and abundance. Future water quality and riparian monitoring would be beneficial to determine if water quality standards are being maintained.

Environmental Effects

Proposed Action

The proposed action will benefit water quality significantly within the areas fenced off to livestock. Riparian areas are expected to recover rapidly within the fenced areas, thereby reducing soil loss and sediment transport downstream into cutthroat trout habitat. Excluding livestock along the stream bottom (approximately 300ft linearly) will reduce fecal coliform loading at that particular location, but livestock will likely be redistributed elsewhere along the creeks. The construction of the livestock pond is anticipated to help distribute livestock throughout the allotment, relieving some pressure on the stream banks and riparian areas. Over the long term, constructing exclosure fences along portions of the streams that have been highly impacted will allow those areas to recover to properly functioning condition and help maintain water quality standards.

No Action Alternative

Under the no action alternative, soil loss and sediment transport would continue at its current rate. Stream banks would continue to be trampled throughout the proposed action area, and

impacts to water quality and cutthroat trout from sedimentation and fecal coliform bacteria may become more apparent and quantifiable.

Land Health Standards for Water Resources
Based on the Roan Cliffs Land Health Assessment, BLM staff concluded that water quality is meeting Standard 5 (BLM 1999). Implementation of the proposed action is not anticipated to degrade water quality from current conditions.

Wetlands and Riparian Zones

Affected Environment:
Camp, Golden Castle, Grassy, JQS, Second Water and Third Water gulches (creeks) all flow into the East Fork Parachute Creek which flows off the JQS Common Allotment and through the East Fork Common Allotment to the west. Proper Functioning Condition (PFC) assessments were conducted in 1994 and again in 1999 with the results displayed in the following table.

Allotment	Riparian Area Name	Year	Condition Rating
East Fork Common	Camp Gulch	1994	PFC
		1999	Functional – At Risk, trending upward
	Grassy Gulch	1994	PFC
	East Fork Parachute Creek (below Third Water Gulch)	1994	Functional – At Risk, trending upward
JQS Common	East Fork Parachute Creek (Above Timber Gulch)	1994	Functional – at Risk, not apparent
		1999	PFC
	Golden Castle Gulch	1994	Functional – at Risk, trending downward
		1999	PFC
	JQS Gulch (Anvil Pasture)	1994	Functional – at Risk, trending downward
		1999	PFC
	JQS Gulch (JQS Pasture)	1994	Functional – at Risk, trending downward
		1999	Functional – at Risk, trend not apparent
	Second Anvil Creek (Upper)	1994	Functional – at Risk, trend static
		1999	Functional – at Risk, trending upward
	Second Anvil Creek (Lower)	1994	Functional – at Risk, trending downward
		1999	PFC
	Third Water Gulch	1994	Functional – at Risk, trending downward
		1999	PFC

Camp Gulch
The ID team rationale for the functioning at risk (FAR) rating in 1999 was wildlife related and not livestock. From the assessment notes, livestock were not seen in this area in 1999 and the heavy use on riparian vegetation was attributed to elk. The PFC assessment site is just downstream from the proposed exclosure location.

Golden Castle Gulch
Rated in 1994 as FAR with a downward trend, causal factors were beaver overharvesting woody plant material. A natural perturbation that is not livestock related. More specifically, beaver in this area were clearing the riparian areas of most woody plants. It was suggested that the beaver be trapped and moved out of this area as a possible solution.

PFC was redone on this stream in 1999 on a slightly different reach of this stream above the areas assessed in 1994. There was no mention of beaver or their impacts to this stream. The ID team noted that the vegetation was less than desirable but added that the aspens and other woody riparian plant species were present on the steeper more armored areas. Although there is no plan for an exclosure on this riparian area, it is within the area of influence by livestock for the general area.

Grassy Gulch
This stream reach was rated as being PFC. The area is not easily accessed from the riparian bottom of East Fork of the Parachute Creek by livestock because of the topography which is reflected in the conditions as noted in 1994. No assessment was done in 1999.

JQS Gulch
The casual factor for the FAR rating with a downward trend was heavy livestock grazing in 1994. The presence of the few willows and limited riparian vegetation kept the rating from being non-functional. Flat areas along this stream were void of riparian plant species and here is where the stream was cutting and eroding vertically and horizontally. This reach was assessed again in 1999 and was rated as being PFC marking an improvement from the earlier assessment.

An ocular assessment by the team on the reach of this stream in the JQS pasture, north of Anvil Pasture, suggested that area would have been rated as FAR if that had that stream reach above the fence was actually assessed. The trend was not apparent.

Second Anvil Creek
There are two reaches on Second Anvil Creek, an upper and lower, both are within the Anvil pasture of the JQS Common Allotment. The ID team rated both of these reaches in 1994 as functional at risk with a "downward trend" on the lower reach and "no trend" for the upper. Rationale for the ratings was that both reaches had received "very heavy grazing" as exemplified by the livestock trailing and utilization levels adjacent to stream bottoms and point bars. The creek bottom was laterally unstable. Certain areas had sufficient woody vegetation cover that when combined with a steep and narrow canyon bottoms, has lessened livestock impacts in these local spots that has led to improved stream functionality do to limit livestock access.

Revisited in 1999, the upper reach had improved significantly from 1994 because of the installation and use of an electric fence that allowed for riparian vegetation recovery from 1996 to 1998. Rated as being functional at risk, there was concern that the nick points along the stream bottom could become exposed in a high water event leading to head cuts opening up and moving upstream. The lower reach in 1999 was rated at PFC. Again the nick points seen in the upper reach were seen in this lower reach and added to the concern of the ID Team.

Third Water Gulch
In 1994 the assessment noted that the fence was down leading to heavy livestock use on this riparian area which was rated as FAR with a downward trend. In open areas without woody plants, the stream banks were eroding. The 1999 assessment yielded a rating of PFC because the stream side vegetation was increasing in plant cover on the sloughed banks. Observed point bars were also showing signs of increased plant cover. The assessment also noted an increase of sedges, rushes along with an influx of noxious weeds.

East Fork Parachute Creek (Middle)
The assessment for this riparian area began in the JQS Allotment and then ran westward into East Fork Common. Rationale for the assessment of FAR with an upward trend was that there was a more than normal amount of sediment in the streambed. The streambed was also noted as moving horizontally because it lacked riparian vegetation.

East Fork Parachute Creek (Above Timber Gulch)
The 1994 assessment rationale stated that the reason or the FAR with a not apparent trend was the fact that the wide floodplain and stream banks lack sufficient woody and other riparian plant species. The flood plain in this area was dominated by Kentucky bluegrass, a plant species that when found on steam banks. The combination of the lack of woody plants and the presence of bluegrass, indicates the banks are unstable leading to the inability to withstand high water flows.

The last assessment of Parachute Creek was conducted in 1999. Since the FAR rating in 1994, this riparian area has improved substantially. An example of this positive improvement was apparent when young willows were observed demonstrating woody plant recruitment. Beaver dams appeared well vegetated with willows, riparian grasses, sedges and rushes which were becoming established. Hounds tongue was also found to be present in this area.

Overall, there was an improvement of riparian function from the 1994 assessments. A review of the JQS Allotment file and the photos therein shows livestock grazing impacts from much earlier time. Historic photos showed considerable damage to of both riparian and upland plant communities, a result of uncontrolled grazing. Since that time, changes to livestock management have taken place to curtail the impacts to the overall landscape. As reflected in the Land Health Assessments, some areas have improved significantly since those earlier days yet there remains room for improvement. Moreover, woody plant species typically associated with riparian areas were conspicuously absent in places.

Environmental Effects
Proposed Action
The exclosures are designed to remove livestock grazing pressure on the riparian and upland vegetation at various locations within the JQS and East Fork common allotments, but only within these exclosures. The expected result is a full floristic expression of vegetative potential inside each exclosure which will demonstrate site potential for management. The proposed action is not expected to produce significant impacts to the streams upon which the exclosures are proposed for construction. However some local minor impacts to riparian vegetation could occur during fence construction because of intense human activity in the form of foot traffic, hand construction and material transport. When completed, this activity will cease.

Following construction, livestock will continue to have access to all riparian areas outside of these exclosures. The riparian bottoms extending outside of the exclosures will continue to be impacted by livestock. It is expected that these unfenced locations would continue to degrade from their present state.

No Action Alternative
Without these exclosure fences, impacts to the riparian areas will continue and recovery from past livestock grazing may not occur.

Land Health Standards
Although the Land Health Standards were being met at certain locations, the riparian system inside the exclosures should make significant progress towards meeting the riparian standard. But that is inside the exclosures. Riparian areas outside would continue in their present state.

Mitigation: No mitigation required. Consider reusing/rebuilding the electric fence on Second Anvil Creek to reduce impacts in this drainage.

Wild and Scenic Rivers

Affected Environment:
The reference sites (outside of JQS Gulch) are outside of the 0.25 mile river corridor of the East Fork Parachute Creek, and therefore do not fall into concern for Wild and Scenic River analysis.

The Roan Plateau Eligibility Report for the National Wild and Scenic Rivers System, Glenwood Springs Field Office, September 2002, identified JQS Gulch as an eligible stream segment. JQS Gulch is defined as the eastern most portion of JQS Gulch, starting at the western end of the exclosure fences/corrals running westward downstream until it reaches the confluence and headwaters of East Fork of Parachute Creek. This segment has been tentatively classified as scenic. JQS Gulch is free of impoundments. The shorelines are undeveloped and mostly primitive in nature. However, there are no dwellings or other structures within the corridor. There is limited evidence of grazing in this drainage. The Creek is accessible intermittently by game and livestock trails. This segment is best described as scenic.

JQS Gulch's Outstandingly Remarkable Values (ORV's) are Fish and Botanic. JQS Gulch is regionally and nationally important for genetically pure, and naturally reproducing Colorado River cutthroat trout. These populations are designated conservation populations and are important in the overall conservation of the species. Of particular significance is that this subspecies of cutthroat is a Sensitive Species and has been petitioned for Federal listing under the Endangered Species Act. In addition, these fish show unique adaptations in their ability to tolerate extreme summer water temperatures that exceed 80 degrees Fahrenheit. The Roan Plateau Colorado River cutthroat trout populations are nationally/regionally significant when contrasted with other populations within the geographic region of comparison. A high concentration of outstandingly remarkable rare plant and riparian communities exist within JQS Gulch. The Hanging garden sullivantia *(Sullivantia hapemanii*), a Colorado endemic plant, is narrowly restricted to calcareous seeps, but is found in abundance at these hanging gardens. JQS Gulch has a dramatic cliff/waterfall near its confluence with East Fork providing picturesque hanging garden habitat.

Environmental Effects

Proposed Action:
The proposed action would still keep the preliminary classification of scenic along JQS Gulch. A "scenic" classification does allow for a modest level of development within the stream corridor, provided that you can still meet the following BLM Manual 6400 description for the stream corridor after the development is completed. "… shorelines and or watersheds still largely primitive and shorelines largely undeveloped . . ." The manual also contains a reference for livestock grazing practices: "In comparison to "wild" river areas, a wider range of agricultural practices and livestock grazing uses is permitted to the extent of current practices…" The manual standards are being met because the proposed developments are not visually intrusive and won't become a dominant feature of the landscape. Since livestock grazing is already occurring within these watersheds, there already exists fencing and water developments in these watersheds, the proposed developments are consistent with current grazing practices. In addition, existing visual impacts from fencing and roads can be seen from both the proposed new fencing boundary as well as the new pond location.

The proposed developments are designed to maintain and enhance the current ORVs associated with the stream corridors by redistributing cattle away from the existing fence line pasture boundary within the riparian corridor. The proposed pond, in addition to the fencing, will aid in the redistribution of cattle by providing an alternative water source.

In addition, the proposed developments are consistent with ACEC management, which protects the values associated with the streams.

No Action Alternative:
The No Action Alternative will allow existing cattle practices to occur, which includes negative impacts to JQS Gulch from cattle trampling and using the riparian corridor. This use, if continued, may diminish the existing ORV's associated with JQS Gulch.

Mitigation:
Proceed with a barbed wire fence design, since that is less visually "intrusive" than a buck and rail design to protect the preliminary classification of JQS Gulch (except in locations where rock beds prohibit use of pounding a post in the ground). The fences should be placed as far as possible from the stream banks, since heavier cattle use will occur along the edge of the exclosures as the cattle drift along the fences. Ongoing monitoring of cattle impact on riparian areas should occur to provide data to prove that the developments are maintaining and/or enhancing riparian values.

Wilderness/WSAs/Wilderness Characteristics

Affected Environment:

The Proposed Plan/Final EIS for the Roan Plateau Planning Area, Colorado, August 2006, identified areas within the East Fork Parachute Creek Inventory Unit as having wilderness

character. This includes 7.5 miles of the East Fork Parachute Creek stream corridor and 22.5 miles along eleven small tributaries. Much of the East Fork drainage appears to have been affected primarily by the forces of nature, with little evidence of human activity such as roads and livestock developments. Steep topography and dense vegetation in the middle and lower portions of the drainage provide outstanding opportunities for solitude and for primitive and unconfined recreation such as hiking, horseback riding, photography, wildlife viewing, wildflower study, camping and sightseeing. The area is also used for hunting and fishing. Supplemental values include high scenic values, fossil resources, cultural resources, ranch structures, and biologically diverse values, including nine significant natural plant communities, four rare plant species, one rare butterfly species, one BLM sensitive fish species, five rare bird species, and one rare mammal species, and high concentrations of populations of hanging garden sullivantia.

The Record of Decision, Roan Plateau Approved Resource Management Plan Amendment, Glenwood Springs Field Office, 2007, made the decision that the BLM will not manage any areas specifically to maintain characteristics associated with wilderness. However, protections for various resources may have the effect of maintaining some characteristics associated with wilderness (e.g., roadlessness and naturalness) within NGD/NSO allocations.

Environmental Effects

Proposed Action:

The proposed project would temporarily decrease naturalness when construction of the fences and pond occurs. The use of motorized equipment on old routes/two-tracks would occur to get materials to the sites. But this use would be minimal and no maintenance on the routes would occur. Once the construction period was over, naturalness would have decreased where the developments were made, but would increase inside the exclosures where the riparian ecology would be protected. The impact to solitude and primitive and/or unconfined recreation would be minimal, as these exclosures are small in size and recreationalists can easily walk around the exclosures. The main impact would be during the construction phase, which would be temporary. The supplemental values would be protected as is described in the Visual Resources, Plants: Vegetation, Cultural Resources, Livestock Grazing Management, and Wildlife sections. All the sites for the fences and pond are considered to have high potential for fossils being within the Green River Formation. However, based on the field investigation, generally no outcropping of formations is evident and the project area is well vegetated. The only exception is the exposed shale bedrock in the JQS Gulch drainage itself, which will have very limited surface disturbance with the fencing alignment. The only surface disturbance of any scale would occur with the pond construction (100ft x 100ft). However, the location of the pond was specifically chosen because it is in a topographic basin with dense facultative wetland vegetation and deeper soils. No paleontology is anticipated to be impacted with the implementation of the proposed action. The proposed project will not undermine the area's wilderness characteristics, as the fences and pond development will be substantially unnoticeable, will protect various supplemental values, and won't really impact opportunities for solitude and primitive and/or unconfined recreation.

No Action Alternative:

The riparian segments would not be protected from cattle pressure, and the naturalness inside the exclosures would continue to diminish, especially with the predicted change in livestock habits through oil and gas use. However, the man-made structures of fencing and the pond development would not occur, and that would not decrease the naturalness of the area.

Mitigation: No mitigation required.

Wildlife: Aquatic / Fisheries

Affected Environment:
East Fork Parachute Creek supports two fish species, nonnative brook trout (*Salvelinus fontinalis*) and native Colorado River cutthroat trout (*Oncorhynchus clarkia pleuriticus*) that latter of which is addressed in detail in the Special Status Species section below. In addition, the stream contains an abundant population of aquatic insects including a diverse array for stoneflies, caddis flies, and mayflies.
Amphibian populations in Colorado as well as globally, are in decline. Amphibians are very sensitive to their terrestrial and aquatic environments, changes in either can affect their survival and propagation. Amphibian populations within the CRVFO are greatest in ponds, wetlands and in perennial streams. Tiger salamander (*Ambystoma tigrinum*), Western toad (*Bufo boreas*), Bullfrog (*Rana catesbeiana*) are some of the more common amphibians found in the CRVFO.

Environmental Effects
Proposed Action:
Prolonged and excessive utilization of streamside/riparian vegetation can impact aquatic species. The loss of streamside vegetation reduces water infiltration, accelerates bank erosion, increase siltation, and elevates stream temperatures; all of which negatively affect fish productivity.

Construction of the fence and development of an alternative water source (pond) would exclude grazing use along approximately 0.4 mile of the riparian area. This would eliminate the concentration of cattle and overgrazing of riparian vegetation by cattle. Over time the condition of riparian area and upland vegetation within the exclosure should improve (e.g., increased riparian vegetation cover/diversity, improved bank stability). The proposed action would have some short-term impacts from construction activities but offers long-term benefits in the form of an improved riparian environment.

No Action Alternative:
The exclosure fencing and pond construction would not occur. Cattle would continue to congregate along the creek resulting in streambank alteration and reduced cover and diversity of riparian and adjacent upland vegetation.

Mitigation:
No mitigation required.

Land Health Standards:
Analysis on the Public Land Health Standard 4 for Special Status Aquatic Wildlife Species: (partial, see also Special Status Plants and Terrestrial Wildlife): This landscape was assessed back in 1999. At that time the area was largely meeting or moving toward meeting the land

health standards. (Upper JQS Gulch was not meeting). The proposed action, as opposed to the no action alternative, would improve land health standard 3 for aquatic wildlife species.

Wildlife: Migratory Birds

Affected Environment

The Migratory Bird Treaty Act (MBTA) provides protections to native birds, with the exception of certain upland fowl managed by state wildlife agencies for hunting. Within the context of the MBTA, "migratory" birds include non-migratory "resident" species as well as true migrants. For most migrant and resident species, breeding habitat is of special importance because it is critical for supporting reproduction in terms of both nest sites and food. In addition, because birds are generally territorial during the nesting season, their ability to access and utilize sufficient food is limited by the quality of the territory occupied. During non-breeding seasons, birds are generally non-territorial and able to feed across larger areas and wider ranges of habitat.

A variety of migratory bird species occupy, or have the potential to occupy, the geographic area. Migratory bird species that are federally listed under the Endangered Species Act of 1973, as amended, or classified by the BLM as sensitive species, are addressed under the section on Special Status Wildlife and Fish Species. The current section addresses migratory birds that may inhabit the proposed project area. Emphasizing the need to conserve declining species, the U.S. Fish and Wildlife Service (USFWS) has published a list of Birds of Conservation Concern (BCC) that warrant conservation attention to stabilize or increase populations or secure threatened habitats. This section also addresses species that are listed as BCC species (USFWS 2008). This analysis focuses on BCC species, on non-BCC species that are neotropical (long-distance) migrants, and raptors—three groups highly vulnerable to habitat loss or modification on their breeding grounds.

Species on the BCC list that are potentially present based on habitat preferences and known geographic ranges, include the flammulated owl (*Otus flammeolus*), Lewis's woodpecker (*Melanerpes lewis*), pinyon jay (*Gymnorhinus cyanocephalus*), Brewer's sparrow (*Spizella breweri*), and Cassin's finch (*Carpodacus cassinii*). The flammulated owl and Brewer's sparrow are also listed as BLM sensitive species and addressed in the section on Special Status Wildlife. The potential for occurrence of Lewis's woodpecker is low due to its close association with riparian cottonwood woodlands and to pinyon-juniper habitats with a component of ponderosa pine—neither of which is a major habitat type within the project vicinity.

Cassin's finch nests at higher elevations in montane and subalpine coniferous forests but often disperses to lower elevations following the breeding season and may remain there until the following spring. Mixed mountain shrub habitats containing large, tree-like oak brush are among the vegetation types sometimes supporting winter use by Cassin's finch.

Non-BCC species likely to occur in the project area or vicinity include several neotropical migrants associated with mixed mountain shrub habitats. These include the common nighthawk (*Chordeiles minor*)(not a raptor), common poorwill (*Phalaenoptilus nuttallii*), broad-tailed hummingbird (*Selasphorus platycercus*), dusky flycatcher (*Empidonax oberholseri*), western scrub-jay (Aphelocoma californica), Virginia's warbler (*Oreothlypis virginiae*), orange-crowned warbler (*O. celata*), MacGillivray's warbler (*Oporornis tolmiei*), lazuli bunting (*Passerina*

amoena), lesser goldfinch (*Spinus psaltria*), black-headed grosbeak (*Pheucticus melanocephalus*), and spotted towhee (*Pipilo maculata*).

Neotropical migrants such as the black-chinned hummingbird (*Archilochus alexandri*), mountain bluebird (*Sialis currucoides*), western bluebird (*S. mexicana*), plumbeous vireo (*V. plumbeus*), black-throated gray warbler (*Dendroica nigrescens*), and chipping sparrow (*Spizella passerina*). Two other Neotropical migrants, the ash-throated flycatcher (*Myiarchus cinerascens*) and gray flycatcher (*Empidonax wrightii*) are potentially present.

Raptors use the area for nesting and hunting. Species most likely to nest within or near the project area include the American kestrel *(Falco sparverius)*, sharp-shinned hawk *(Accipiter striata)*, Cooper's hawk *(A. cooperi)*, red-tailed hawk *(Buteo jamaicensis)*, great horned owl *(Bubo virginiana)*, long-eared owl *(Asio otus)*, and northern pygmy-owl *(Glaucidium gnoma)*.

Environmental Effects:

Proposed Action

Direct impacts of the proposed action on migratory birds would include direct loss or fragmentation of foraging/hunting and nesting habitat by the fence. Removal of vegetation would result in a loss of existing and potential nesting sites. If construction occur during the nesting season; activity, equipment use and noise near active nests could cause birds to avoid otherwise suitable areas. Construction activities during the nesting season could also result in the physical destruction of active nests, eggs, and young. The pond could indirectly provide insects for forage and a new water source for migratory birds. While the proposed action may affect individual birds, it is not expected to adversely impact a species as a whole.

No Action Alternative

The No Action Alternative would deny the construction of the exclosures and pond. Therefore, no new impacts or cumulative impacts to migratory birds would result from this project.

Mitigation

To minimize impacts on breeding migratory birds, it is recommended that no surface disturbing activities occur from May 15 through July 15. This timeframe encompasses the core breeding period for the majority of migratory birds in the project area. Exceptions or variances to this restriction will be considered and evaluated according to policies and deemed appropriate by local staff/wildlife biologist.

Wildlife: Sensitive, Threatened, and Endangered

Affected Environment

Federally Listed, Proposed, or Candidate Fish and Wildlife Species

Nine Federally listed, proposed, or candidate threatened or endangered aquatic and terrestrial vertebrate species are potentially present in or affected by actions occurring in Garfield County. These species, their status, and their distributions and habitat associations in the region are summarized below.

Colorado River Fishes. Federally listed as Endangered. Four species of Federally listed big-river fishes occur within the Colorado River drainage basin south of the Roan Plateau, downstream from the project area. These endangered species are the razorback sucker (*Xyrauchen texanus*), Colorado pike minnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and bonytail [chub] (*G. elegans*). Designated Critical Habitat for the razorback sucker and Colorado pike minnow includes the Colorado River and its 100-year floodplain west (downstream) from the town of Rifle. This portion of the Colorado River lies a few miles north of the project area, and project streams are tributary to the Colorado River via Parachute Creek. The nearest known habitat for the humpback chub and bonytail is within the Colorado River approximately 70 miles downstream from the project area. Only one population of humpback chub, at Black Rocks west of Grand Junction, is known to exist in Colorado. Because drainages within the project area do not support these species, they are not considered further.

Greenback Cutthroat Trout (*Oncorhynchus clarki stomias*). Federally listed as Threatened. Recent surveys have identified a population in Cache Creek, located several drainages southeast of the project area. The greenback is the subspecies of cutthroat trout native to the Platte River drainage on the Eastern Slope of Colorado, while the Colorado River cutthroat trout (*O. c. pleuriticus*) is the subspecies native to Garfield County and throughout the Western Slope of Colorado. Although the occurrence of greenbacks in Cache Creek and potentially elsewhere in the CRVFO areas is apparently the result of human intervention, its status as threatened applies to Western Slope populations. Because drainages within the project area do not support this species, it is not considered further.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*). Candidate for Federal listing. This subspecies occurs in mature riparian forests of cottonwoods and other large deciduous trees with a well-developed understory of tall riparian shrubs. Riparian areas in the project area do not provide suitable habitat for this species. Habitat along Parachute Creek downstream for the project area and the Colorado River to which it is tributary provide habitat that is potentially suitable, but occurrence of the species in the associated riparian habitats is considered unlikely due to the patchy nature of the stands and the general lack of a tall-shrub understory. For these reasons, this species is not considered further in this document.

Mexican Spotted Owl (*Strix occidentalis lucida*). Federally listed as Threatened. This subspecies (*Strix occidentalis lucida*) is typically found in moist, mature forests in canyons of the southwestern U.S. Its documented geographic range does not include the planning area or surrounding portions of Colorado (Kingery 1998). However, BLM has mapped suitable habitat in the first mile extending downstream from the East Fork Parachute Creek waterfall. Potentially suitable habitat also occurs on private land in lower portions of the East Fork and East Middle Fork drainages and the Magpie Gulch area. In the northern part of their range, i.e., Colorado, they often nest in caves or cliff ledges in canyons, and seem to prefer shady habitat with steep cliffs and rocky terrain (Willey 1998) Specific surveys for sensitive species (e.g., CNHP 1997a, 1998) have not resulted in observations of this secretive owl.

Greater Sage-grouse (*Centrocercus urophasianus*). Candidate for Federal listing. The Greater Sage-Grouse is a sagebrush obligate species, meaning that they rely on sagebrush habitats for the majority of their life-cycle. Sage grouse are found only in areas where sagebrush is abundant, providing both food and cover for breeding, nesting, brood-rearing and wintering. Although these birds are found at altitudes of 6000-8500 feet, they are not forest grouse and prefer relatively open sagebrush flats or rolling sagebrush hills. In winter, sagebrush accounts for 100% of their diet. In addition, it provides important

escape cover and protection from the elements. In late winter, males begin to concentrate on traditional strutting grounds or leks. Females arrive at the leks 1-2 weeks later. Leks can occur on a variety of land types or formations including: windswept ridges, knolls, areas of flat sagebrush, or flat bare openings in the sagebrush. Breeding occurs on the leks and in the adjacent sagebrush, typically from March through May. Females and their chicks remain largely dependent on forbs and insects for food well into early fall. Cultivated herbaceous broad-leaved plants (alfalfa, clover) are important early fall food sources when available.

The BLM and USFS National Greater Sage-Grouse Planning Strategy is a framework for identifying two categories of sage-grouse habitat: Preliminary Priority Habitat (PPH) and Preliminary General Habitat (PGH). PPH consists of a combination of essential and irreplaceable (Category 1) and important (Category 2) habitats. These areas include breeding habitat (lek sites and nesting habitat), brood-rearing habitat, winter range, and important movement corridors. PPH primarily consists of sagebrush, but may also include riparian communities, perennial grasslands, agriculturally-developed land, and restored habitat, including recovering burned areas. The BLM and the USFS defines PPH as having the highest conservation value to maintaining sustainable sage-grouse populations. PGH provides some benefit to greater sage-grouse populations but, in many instances, lacks a key component, such as adequate shrub height or density or sufficient herbaceous understory, which prevents it from meeting its full ecological potential. PGH also may include areas recently burned that have not sufficiently recovered or sagebrush communities with pinyon-juniper encroachment. PGH has the potential to be reclassified as PPH if restoration efforts enhance the habitat quality or ongoing field efforts document sage-grouse use.

PPH is located north of the project area in Rio Blanco County and west in parts of Garfield County and extends through much of northern and northwestern Colorado. The project area however has been identified and mapped as PGH by CPW though the actual use has been minimal. The sagebrush parks identified on the Roan Plateau have a large mountain shrub component and would typically be used as brood-rearing and/or summer habitat for broodless hens and males.

Canada Lynx (*Lynx canadensis*) – Federally listed as Threatened. Canada lynx occupy high-latitude or high-elevation coniferous forests characterized by cold, snowy winters and an adequate prey base (Ruggiero et al. 1999). The preferred prey of Canada lynx throughout their range is the snowshoe hare (*Lepus americanus*). In the western United States, lynx are associated with mesic forests of lodgepole pine, subalpine fir, Engelmann spruce, and quaking aspen in the upper montane and subalpine zones, generally between 8,000 and 12,000 feet in elevation. Although snowshoe hares are the preferred prey in Colorado, lynx in also feed on other species such as the mountain cottontail (*Sylvilagus nuttallii*), red squirrel (*Tamiasciurus hudsonicus*), and dusky grouse (*Dendragapus obscurus*). Overall, the Roan Plateau is not considered suitable habitat, and the potential for dispersal of lynx into the project area is reduced by its isolation from more suitable, more extensive habitats in the White River National Forest.

BLM Sensitive Fish and Wildlife Species

Species listed by the BLM in Colorado as sensitive that are known to occur or potentially present within or near the project area are listed in Table 3.

Table 3. BLM Sensitive Vertebrate Species Present or Potentially Present in the Project Area.

Common Name	***Habitat***	***Potential for Occurrence***

Common Name	Habitat	Potential for Occurrence
Fringed myotis	Breeds and roosts in caves, trees, mines, and buildings; hunts over pinyon-juniper, montane conifer, and semi-desert shrubland habitats.	Likely
Townsend's big-eared bat	Breeds and roosts in caves, trees, mines, and buildings; hunts over pinyon-juniper, montane conifer, and semi-desert shrubland habitats.	Likely
Northern goshawk	Predominantly uses spruce/fir forests but also use Douglas-fir, various pines, and aspens.	Likely
Ferruginous hawk	Hunts in grasslands and semi-desert shrublands; nests on cliffs or trees.	Unlikely
Peregrine falcon	Found in a variety of habitats, most with cliffs for nesting and open areas for foraging.	Unlikely
Northern leopard frog	Wet meadows and the banks and shallows of marshes, ponds, glacial kettle ponds, beaver ponds, lakes, reservoirs, streams, and irrigation ditches.	Unlikely
Colorado River cutthroat trout	Occurs in clear, cool headwaters streams with coarse substrates, well-distributed pools, stable streambanks, and abundant stream cover.	Present

Fringed Myotis (*Myotis thysanodes*) and Townsend's Big-eared Bat (*Corynorhinus townsendii*). Both of these species hunt for aerial insects over a variety of low- and mid-elevation habitats, including montane coniferous forests such as occur in the proposed project area. Although they commonly roost in caves, rock crevices, mines, or buildings, they also may roost in tree cavities.

Northern Goshawk (*Accipiter gentilis*). Suitable habitat consists of unfragmented aspen or coniferous forests in the upper montane and subalpine zones. This is a forest species that nests in tall trees and hunts for small birds and diurnal small mammals by darting through the forest and flushing its prey. It may winter at lower elevations, including pinyon/juniper woodland, adjacent to its breeding range. The species is not documented to occur atop the plateau, possibly because the conifer forest is too limited in extent.

Ferruginous Hawk (*Buteo regalis*). Although this species is not documented to nest in the planning area, suitable nest sites occur along rock ledges and cliffs along the edge of the Roan Plateau. The ferruginous hawk is a species primarily associated with open habitats at lower elevations. However, vagrants could make occasional use of the sagebrush-dominated ridge tops. Breeding in the area is not expected.

Peregrine Falcon (*Falco peregrinus*). Previously federally listed as endangered, downgraded to threatened, and then delisted following successful recovery, the peregrine falcon is mostly associated with high cliffs, where it nests, located near rivers or reservoirs, where it hunts primarily for waterfowl. The species nests along the Roan Cliffs and hunts along the Colorado River, often flying many miles in search of prey. Peregrines may also take other birds, such as pigeons and grouse, in upland habitats. The wooded habitats that dominate the project area are

unsuitable for this species. While the sagebrush-dominate ridge tops are suitable for hunting, being open habitats, they lack suitable prey.

Northern Leopard Frog (*Rana pipiens*). Northern leopard frogs are generally found between 3,500 and 11,000 feet in Colorado, in wet meadows and in shallow lentic habitats. Northern leopard frogs require perennial water sources, deep enough to provide ice- free refugia in the winter. The presence of northern leopard frogs has been associated with sites with more herbaceous cover as opposed to sites with earlier successional stages of emergent vegetation. Leopard frogs feed primarily on emergent adults of aquatic insects or on terrestrial insects attracted to the water. Within the CRVFO, this species has been documented in various locales but has not been found in the project area despite numerous aquatic surveys.

Colorado River Cutthroat Trout (*Oncorhynchus clarki pleuriticus)*. This subspecies occurs in clear, cool headwaters streams with coarse substrates, well-distributed pools, stable stream banks, and abundant stream cover. Streams within the planning area that currently contain populations of Colorado River cutthroat trout include portions of Northwater Creek, Trapper Creek, East Fork Parachute Creek, East Middle Fork Parachute Creek, mainstem Parachute Creek, JQS Gulch, First Anvil Creek, and Second Anvil Creek. Results of DNA analyses show that the Roan Plateau populations of Colorado River cutthroat trout are between 90 to 99 percent genetically pure and are therefore considered nationally and regionally significant (Evans and Shiozawa 2004). The Roan Plateau contains one of only a few remaining watersheds where genetically pure, reproducing populations of Colorado River cutthroat trout are found in all streams capable of sustaining a fishery. Maintaining or expanding these populations would play an important role in the overall recovery of this subspecies.

Environmental Effects

Proposed Action:

Federally Listed, Proposed, or Candidate Fish and Wildlife Species

Mexican Spotted Owl. The proposed action is intended to occur outside potential Mexican spotted owl habitat, which is limited to deep canyons below the proposed action. Given this, there is little expected impact on the potential Mexican Spotted Owl habitat. Section 7 of ESA requires BLM to ensure that any action authorized, funded, or implemented or authorized by the agency is not likely to jeopardize the continued existence of any species that is federally listed or proposed for listing, as threatened or endangered and does not reduce the likelihood of recovery of any affected species. Species proposed for Federal listing are managed with the same level of protection as for listed species. BLM policy also ensures that no action contributes to the need to list a species as threatened or endangered (BLM 1997a). This policy applies to candidate species under ESA and to BLM sensitive species.

Mitigation for impacts to potential Mexican spotted owl habitat in conjunction with the proposed project includes application of stipulation NSO-12, which requires avoidance of occupied habitat and of any habitat required for maintenance or recovery of a Federally listed or proposed species. Since the proposed action does not occur within suitable habitat, there would be "**No Effect**" to the Mexican spotted owl.

Greater Sage-grouse. Though the project area has been mapped as PGH the proposed action is intended to occur outside actual suitable habitat which is limited to the open sagebrush parks that fall within the mapped area. Suitable habitat will not be removed and the proposed action would most likely improve the water quality for sage-grouse were they to use these areas. Overall the likelihood of the occurrence of sage-grouse is low and displacement would be short-term in nature were it to occur at all.

BLM Sensitive Fish and Wildlife Species

Fringed Myotis and Townsend's Big-eared Bat. Distribution of these species is likely to be locally determined by the availability of roosts such as caves, mines, tunnels, crevices, and masonry structures with suitable temperatures. No bat roosts or hibernacula have been documented within the area of the proposed action. Roosting habitat for bats in cliffs, rock crevices, and abandoned mines would not be affected by the proposed action. Overall, the proposed action would not cause a long-term threat to these bat species or their habitat.

Northern Goshawk, Ferruginous hawk, and Peregrine Falcon. The current CRVFO land use plan protects raptor nesting and fledging habitat with a NSO and TL stipulations. The TL stipulation restricts certain disturbances within a 0.25-mile buffer zone around a nest site from February 1 to August 15. The NSO prohibits any long-term ground disturbance within 0.125 acre of a nest site. No nests of these species are known to occur within the area of the proposed action. The proposed action would not cause a significant long-term threat to this species or its habitat.

Northern Leopard Frog. If this species were present, it would be vulnerable to the same types of impacts as fishes—i.e., inflow of sediments that decrease water quality for reproduction and for survival of aquatic plants. Because this species has not been found in streams or ponds in the project area despite numerous aquatic surveys, no direct or indirect impacts are expected from the proposed action.

Colorado River Cutthroat Trout. Construction of the fence and development of an alternative water source (pond) would exclude grazing use along approximately 0.4 mile of the riparian area. This would eliminate the concentration of cattle and overgrazing of riparian vegetation by cattle. Over time, the condition of riparian area and upland vegetation within the exclosure should improve (e.g., increased riparian vegetation cover/diversity, improved bank stability). The proposed action would have some short-term impacts from construction activities but offers long-term benefits in the form of an improved riparian environment (see section on Wildlife, Aquatic).

No Action Alternative:
The exclosure fencing construction would not occur. Cattle would continue to congregate along the creek resulting in reduced cover and diversity of riparian and adjacent upland vegetation.

Land Health Standards:
This standard is mostly being met for special status wildlife species, except for the decline of Colorado River cutthroat trout populations in JQS Gulch and East Fork Parachute Creek. Measures described for Land Health Standard 2 to improve the riparian vegetation along JQS Gulch in JQS Pasture, and similar measures (reduced grazing use or fencing) to reduce the impact of livestock along other streams, would benefit the trout and other species associated with riparian communities throughout the planning area.

The proposed action would not jeopardize the viability of any special status wildlife species. The project would have no long-term significant consequences on habitat condition, utility, or function or discernible adverse effects on species abundance or distribution at any landscape scale. The no action alternative would not result in a failure of the area to achieve Standard 4 because it would not result in adverse impacts to special status wildlife species.

Wildlife: Terrestrial

Affected Environment:
The CRVFO supports a wide variety of terrestrial wildlife species that summer, winter, or migrate through the area. The habitat diversity provided by the broad expanses of sagebrush, mixed mountain shrub, aspen, pinyon-juniper woodlands, other types of coniferous forests, and riparian/wetland areas support many species. The current condition of wildlife habitats varies across the landscape. Some habitat is altered by power lines, pipelines, fences, public recreation use, residential and commercial development, vegetative treatments, livestock and wild ungulate grazing, oil and gas development, and roads/trails. These factors have contributed to some degradation/fragmentation of habitat as well as causing disturbance to some species.

Wildlife Terrestrial (includes an analysis on Standard 3)

Reptiles. Reptile species most likely to occur in the project area include the western fence lizard (*Sceloporus undulatus*) and gopher snake (bullsnake) (*Pituophis catenifer*) in xeric shrublands or grassy clearings and the western terrestrial garter snake (*Thamnophis elegans*) along creeks/riparian areas. Other reptiles potentially present along creeks, although more commonly found at lower elevations than the site, are the milk snake (*Lampropeltis triangulum*) and smooth green snake (*Opheodrys vernalis*).

Birds. The Roan Plateau contains a variety of a variety of vegetation types, including sagebrush, mountain shrubs, aspen and conifers. These community types typically provide nesting habitat for an array of migrants during the breeding season. Common species include in conifer-aspen communities include, among others, the broad-tailed hummingbird (*Selasphorus platycercus*), western wood-pewee (*Contopus sordidulus*), olive-sided flycatcher (*Contopus cooperi*), Hammond's flycatcher (*Empidonax hammondii*), western flycatcher (*E. difficilis*), violet-green swallow (*Tachycineta thalassina*), tree swallow (*Tachycineta bicolor*), hermit thrush (*Cathartes guttatus*), American robin (*Turdus migratorius*), mountain bluebird (*Sialia currucoides*), western bluebird (*S. mexicanus*), house wren (*Troglodytes aedon*), ruby-crowned (*Regulus calendula*), yellow-rumped warbler (*Dendroica coronata*), orange-crowned warbler (*Oreothlypis celata*), warbling vireo (*Vireo gilvus*), plumbeous vireo (*V. plumbeus*), western tanager (*Piranga ludoviciana*), dark-eyed junco (*Junco hyemalis*), and pine siskin (*Spinus pinus*). Two migratory woodpeckers, the Williamson's sapsucker (*Sphyrapicus thyroideus)* and red-naped sapsucker (S. nuchalis) are potentially present. This list does not include all of the potential migratory species that may be found in the area.

Mixed mountain shrublands dominated by serviceberry and oak support migratory species such as the dusky flycatcher (*Empidonax oberholseri*), black-headed grosbeak (*Pheucticus melanocephalus*), green towhee (*Pipilo chlorurus*), and spotted towhee (*P. maculatus*). The

most common migratory bird in sagebrush shrublands such as those where mowing would occur is the vesper sparrow (*Pooecetes gramineus*).

Birds of prey (eagles, falcons, hawks, and owls) may migrate through the area or nest in cottonwoods, conifers, or very tall oaks, while the numerous songbirds and small mammal populations provide the primary prey base. Common raptor species in the CRVFO include the: red-tailed hawk (*Buteo jamaicenis*), golden eagle (*Aquila chrysaetos*) American kestrel (Falco sparverius), great horned owl (*Bubo virginanus*), Cooper's hawk (*Accipiter cooperii*), and sharp-shinned hawk (*A. striatus*).

Numerous streams, rivers, reservoirs, ponds, and associated riparian vegetation provide habitat for a wide variety of waterfowl and shorebirds. Common species include: great blue herons (*Ardea Herodias*), Canada geese (*Branta canadensis*), mallards (*Anas platyrhynchos*), pintails (*A. acuta*), gadwalls (*A. strepera*), and American wigeon (*A. americana*) are common.

Mammals. Numerous small mammals reside within the planning area, including ground squirrels (*Spermophilus spp*.), chipmunks (*Neotamias spp.)*, rabbits (*Sylvilagus spp*.), skunks (Mephitis mephitis), and raccoons (*Procyon lotor*). Many of these small mammals provide the main prey for raptors and larger carnivores. These species are most likely to occur along the drainages, near the margins of dense oakbrush, in pinyon-juniper woodland, or in the small area of aspen and spruce/fir. Larger carnivores expected to occur include the bobcat (*Lynx rufus*) and the coyote (*Canis latrans*). Black bears (*Ursus americanus*) make use of oaks and the associated chokecherries and serviceberries for cover and food, while mountain lions (*Felis concolor*) are likely to occur during seasons when mule deer (*Odocoileus hemionus*) are present.

Big Game. The mule deer (*Odocoileus hemionus*) is a recreationally important species that are common throughout suitable habitats in the region. Another recreationally important big game ungulate (hoofed animal), the Rocky Mountain elk (*Cervus elaphus nelsonii*), is also present. Mule deer and elk usually occupy higher elevations, forested habitat, during the summer and then migrate to sagebrush-dominant ridges and south-facing slopes at lower elevation in the winter. BLM lands provide a large portion of the undeveloped winter range available to deer and elk. The CRVFO's RMP allocated existing forage proportionately to livestock and big game, the criterion being active preference for livestock and 5-year average demand for big game.

The terrestrial wildlife objectives for the allotment are derived from the Roan Plateau Area RMPA. The terrestrial wildlife objective is "Protect wildlife security areas, habitat connectivity, habitat carrying capacity and winter range". The RMPA identified several management actions however they are mainly directed at gas development and surface disturbing activities.

Environmental Effects

Proposed Action:
Construction of the fence and development of an alternative water source (pond) would exclude grazing use along approximately 0.4 mile of the riparian area. This would eliminate the concentration of cattle and overgrazing of riparian vegetation by cattle. Over time, the condition of riparian vegetation within the exclosure should improve (e.g., increased riparian vegetation cover/diversity, improved bank stability) and benefit terrestrial wildlife. The construction impacts (e.g. disturbance, vegetation removal) would be temporary and short-term.

No Action Alternative:
The exclosure fencing construction would not occur. Cattle would continue to congregate along the creek resulting in reduced cover and diversity of riparian and adjacent upland vegetation.

Mitigation:
Protective stipulations applicable to the project include a 0.125-mile NSO and 0.25-mile TL for raptor nesting areas and avoidance of the migratory bird nesting season of May 1 to July 1. Given the short duration, minimal disturbance and unsuitable habitat identified in the proposed action, this stipulation will not be applied. In the event of a raptor nesting in close proximity to the project, work may have to be delayed until chicks have fledged in order to not contribute to nest failure.

Land Health Standards:
Analysis on the Public Land Health Standard for Terrestrial Animal Communities (partial, see also Vegetation and Wildlife, Aquatic): The 1999 land health assessment noted that there were no limiting factors to the health and productivity of terrestrial wildlife populations on the Roan Cliffs. The vegetative communities on most of the upland assessment sites were in mid to late-seral stage. Restoring and maintaining healthy riparian systems were identified as a management priority. The proposed actions as opposed to the no action alternative would benefit terrestrial wildlife species and maintain land health conditions (Standard 3) for terrestrial wildlife species.

CUMULATIVE EFFECTS

Cumulative impacts are the incremental effects caused by management actions considering all past, present, and reasonably foreseeable future actions affecting a resource. These can result from individually minor but collectively significant actions taken over time and the effects can be either additive or subtract from the effects of other actions.

Wildlife (including special status species). The area covered by the proposed action only comprises a small portion of the watershed. Cumulatively, many of the future actions planned on private and BLM lands may have some undetermined effect on wildlife including special status species habitat. The proposed action would create negligible landscape-level cumulative impacts to wildlife when viewed in conjunction with those activities currently occurring and reasonable certain to occur on adjacent private/BLM lands. The proposed action would contribute to (1) improving the water quality in the East Fork Parachute Creek by reducing sediment loads and (2) improve Colorado River Cutthroat habitat through increasing streambank vegetation.

Soil and Water. Cumulative impacts to soil and water resources can occur from existing roads and trails throughout the landscape. Roads and trails can contribute to increased surface runoff and accelerated erosion, especially where proper drainage is lacking or in the case of JQS Gulch, where the road is in very close proximity to the stream. Other impacts such as vegetation treatments, weed treatments, and livestock grazing may also change water infiltration or runoff rates and affect soil and water resources. Cumulative effects to soil and water are expected to

have short term impacts with the implementation of the proposed action, but provide longer term benefits if proper best management practices are implemented.

5. Tribes, Individuals, Organizations, or Agencies Consulted

Consultation was conducted with Wilderness Workshop and Native Ecosystems for comments on Wild and Scenic Rivers and Wilderness. Permittees were notified of the project during annual meetings.

6. List of Preparers

Members of the CRVFO Interdisciplinary Team who participated in the impact analysis of the Proposed Action and alternatives, development of appropriate mitigation measures, and preparation of this EA are listed in Table 6-1, along with their areas of responsibility.

Table 6-1. BLM Interdisciplinary Team Authors and Reviewers

Name	*Title*	*Areas of Participation*
Monte Senor	Rangeland Management Specialist	Invasive Species
Pauline Adams	Hydrologist	Soil, Water, Air, Geology
Kimberly Miller	Outdoor Recreation Planner	Recreation, Wild and Scenic Rivers, Wilderness
Carla DeYoung	Ecologist	Areas of Critical Environmental Concern, Vegetation, Threatened, Endangered, and Sensitive Plants, Land Health Standards
Sylvia Ringer	Wildlife Biologist	Wildlife (Sensitive, Threatened, Endangered, Migratory birds, Aquatic/Fisheries, Terrestrial)
Everett Bartz	Rangeland Management Specialist	Wetland & Riparian
Isaac Pittman	Rangeland Management Specialist	Rangeland Management
Erin Leifeld	Archeologist	Cultural Resources & Native American Religious Concern

7. References

Bureau of Land Management (BLM). 1984. Glenwood Springs Resource Management Plan. Glenwood Springs Field Office, Colorado.

_____. 1991. Record of Decision, Oil and Gas Plan Amendment. Glenwood Springs Field Office, Colorado.

_____. 1998. Oil & Gas Leasing & Development – Draft Supplemental Environmental Impact Statement. Glenwood Spring Field Office, Colorado.

_____. 1999a. Oil & Gas Leasing & Development – Final Supplemental Environmental Impact Statement. Glenwood Spring Field Office, Colorado.
_____. 1999b. Oil &Gas Leasing & Development – Record of Decision and Resource Management Plan Amendment. Glenwood Spring Field Office, Colorado.
_____. 1999c. Roan Cliffs Land Health Assessment Summary Report. Unpublished report. Colorado River Valley Field Office. Silt, CO.
_____. 1999d. Properly Functioning Condition Assessments and Rangeland Health Evaluations for the Roan Cliffs Landscape. Unpublished data. Colorado River Valley Field Office. Silt, CO.
_____. 2002. The Roan Plateau Eligibility Report for the National Wild and Scenic Rivers System, Glenwood Springs Field Office.
_____. 2006a. The Proposed Plan/Final EIS for the Roan Plateau Planning Area, Colorado.
_____. 2006b. Final Roan Plateau Resource Management Plan Amendment & Environmental Impact Statement, Volume III, Appendix C. Glenwood Springs Field Office, Colorado.
_____. 2007. The Record of Decision, Roan Plateau Approved Resource Management Plan Amendment, Glenwood Springs Field Office.
_____. 2009. Information Bulletin No. CO-2010-007. State Director's Sensitive Species List. December 15, 2009.
_____. 2012. Manual 6400 – Wild and Scenic Rivers – Policy and Program Direction for Identification, Evaluation, Planning, and Management.

Colorado Department of Health and the Environment (CDPHE). 2010a. Regulation No. 37, Classifications and Numeric Standards for Lower Colorado River Basin (5 CCR 1002-37). Water Quality Control Commission. Available online: http://www.cdphe.state.co.us/regulations/wqccregs/
Colorado Department of Health and the Environment (CDPHE). 2010b. Regulation No. 93, Colorado's 303 (d) List of Impaired Waters and Monitoring and Evaluation List, (5 CCR 1002-93**).** Water Quality Control Commission. Available online: http://www.cdphe.state.co.us/regulations/wqccregs/
Colorado Natural Heritage Program (CNHP). 1997. Biological survey of Naval Oil Shale Reserve No. 1 (NOSR-1).
Kingery, H. E. (ed). 1998. Colorado breeding bird atlas. Colorado Bird Atlas Partnership, Denver.
Natural Resource Conservation Service (NRCS). 1985. Soil Survey of Rifle Area, Colorado, Parts of Garfield and Mesa Counties. Available online: http://soils.usda.gov/survey/online_surveys/colorado/
Natural Resource Conservation Service (NRCS). 2011. Map Unit Descriptions for *Rifle Area, Colorado, Parts of Garfield and Mesa Counties*. Soil Data Viewer application. Available online: http://soils.usda.gov/sdv/.
U.S. Fish and Wildlife Service. 2011. [Online]. Website: http://ecos.fws.gov/ipac/wizard/trustResourceList!prepare.action [Last updated November 3, 2011].

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
COLORADO RIVER VALLEY FIELD OFFICE
SILT, COLORADO

FINDING OF NO SIGNIFICANT IMPACT

DOI-BLM-N040-2012-0091-EA

Finding of No Significant Impact
I have reviewed the direct, indirect and cumulative effects of the proposed action documented in the EA referenced above. The effects of the proposed action are disclosed in the Alternatives and Environmental Effects sections of the EA. Implementing regulations for NEPA (40 CFR 1508.27) provide criteria for determining the significance of the effects. Significant, as used in NEPA, requires consideration of both *context* and *intensity* as follows:

(a) Context. This requirement means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long-term effects are relevant (40 CFR 1508.27):

The disclosure of effects in the EA found the actions limited in context. The planning area is limited in size and activities limited in potential. Effects are local in nature and are not likely to significantly affect regional or national resources.

(b) Intensity. This requirement refers to the severity of the impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following are considered in evaluating intensity (40 CFR 1508.27).

1. Impacts that may be both beneficial and/or adverse.

Impacts associated with the Roan Plateau exclosure fence construction and water retention pit are identified and discussed in the Affected Environment and Environmental Consequences section of the EA. The proposed action will improve water quality and riparian habitat in the East Fork Parachute Creek watershed. Colorado River Cutthroat habitat will be enhanced in the long term based on analysis. The proposed action will not have any significant adverse impacts on the resources identified and described in the EA.

2. *The degree to which the proposed action affects health or safety.*

The proposed activities will not significantly affect public health or safety. The purpose of the proposed action is to allow for multiple uses while maintaining or improving resource conditions

to meet standards for BLM sensitive species and aquatic habitats on public land. Similar actions have not significantly affected public health or safety.

3. *Unique characteristics of the geographic area such as prime and unique farmlands, caves, wild and scenic rivers, wildernesses study areas, or ACECs.*

The East Fork Parachute Creek ACEC unique characteristics will be preserved by the construction of the project's proposed actions. Wild and scenic rivers unique characteristics will also maintained.

4. The degree to which the effects are likely to be highly controversial.

The possible effects of constructing several small exclosures are not likely to be highly controversial.

5. The degree to which the effects are highly uncertain or involve unique or unknown risks.

The possible effects on the human environment are not highly uncertain nor do they involve unique or uncertain risks. The technical analyses conducted for the determination of the impacts to the resources are supportable with use of accepted techniques, reliable data, and professional judgment. Therefore, I conclude that there are no highly uncertain, unique, or unknown risks

6. The degree to which the action may establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration.

This EA is specific to the Roan Plateau East Fork Parachute Creek ACEC. It is not expected to set precedent for future actions with significant effects or represent a decision in principle about a future management consideration.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

The area covered by the proposed action only comprises a small portion of the watershed. Cumulatively, many of the future actions planned on adjacent private and BLM lands may have some undetermined effect on wildlife including special status species habitat. The proposed action would create negligible landscape-level cumulative impacts to wildlife when viewed in conjunction with those activities currently occurring and reasonably certain to occur on adjacent private/other lands.

8. The degree to which the action may adversely affect scientific, cultural, or historical resources, including those listed in or eligible for listing in the National Register of Historic Places.

All proposed fence exclosures have been previously inventoried. One area for the proposed retention pond was not previously surveyed, so a Class III cultural resource inventory was conducted for this area. No cultural resources were located within the proposed retention pond or within seven of the eight fence exclosures. Within the JQS exclosure there is one potentially

eligible site (5GF36) which is currently being impacted by livestock hoof-action and wallowing. By expanding the initial exclosure, the proposed exclosure will encompass the site, which mitigates current impacts to the cultural resources. One eligible cultural resource (5GF32) is located near Exclosure 2 but the fence was designed to avoid the site by more than 100 meters. Additionally, one potentially eligible cultural resource (5GF29) was located near Exclosure 3 but will also be avoided by the fence construction by more than 100 meters. Since the majority of the fencing will be buck-and-rail fencing, this will have minimal surface disturbing impacts to any potentially unknown cultural resources. The project has a determination of no historic properties affected. The project inventory and evaluation is in compliance with the NHPA, the Colorado State Protocol Agreement, and other federal law, regulation, policy, and guidelines regarding cultural resources. If the BLM determines that exclosure construction activities adversely impact the properties, mitigation will be identified and implemented in consultation with the Colorado SHPO. The EA discloses the adverse impacts that could occur to cultural resources from exclosure construction.

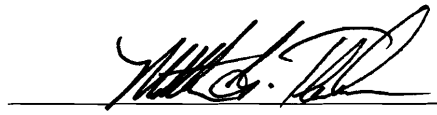
9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

There is no endangered or threatened species or habitat found within the assessment area.

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

The proposed action does not violate or threaten to violate any Federal, State or local laws or requirements imposed for the protection of the environment.

Based upon the review of the test for significance and the environmental analyses conducted, I have determined that the actions analyzed in the EA will not significantly affect the quality of the human environment. Accordingly, I have determined that the preparation of an Environmental Impact Statement is not necessary for this proposal.



12-7-2012

Authorized Officer
Colorado River Valley Field Office

Date

DECISION RECORD

DOI-BLM-CO-040-2012-0091 EA

FINAL DECISION: To construct several riparian exclosures and an upland water development in selected tributaries located within the East Fork Parachute Creek watershed.

RATIONALE: This project meets the stated purpose and need with no significant negative impacts to the quality of the human environment. It is expected that this project will have a positive benefit to native Colorado River Cutthroat trout and the Roan Plateau riparian systems. Failure to implement the project will forego an opportunity to relieve some of the livestock grazing pressure on the East Fork Parachute Creek riparian areas through a partnership project.

MITIGATION MEASURES:

Access and Transportation

If any of the fences cross a designated route, a gate or cattle guard must be installed to allow for continued public access.

Cultural Resources

Cultural Resource Standard Stipulations

If subsurface cultural values are uncovered during operations, all work in the vicinity of the resource will cease and the authorized officer with the BLM notified immediately. The operator shall take any additional measures requested by the BLM to protect discoveries until they can be adequately evaluated by the permitted archaeologist. Within 48 hours of the discovery, the State Historic Preservation Officer (SHPO) and consulting parties will be notified of the discovery and consultation will begin to determine an appropriate mitigation measure. BLM in cooperation with the operator will ensure that the discovery is protected from further disturbance until mitigation is completed. Operations may resume at the discovery site upon receipt of written instructions and authorization by the authorized officer.

Pursuant to 43 CFR 10.4(g), the holder must notify the authorized officer, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony on federal land. Further, pursuant to 43 CFR 10.4 (c) and (d), the holder must stop activities in the vicinity of the discovery that could adversely affect the discovery. The holder shall make a reasonable effort to protect the human remains, funerary items, sacred objects, or objects of cultural patrimony for a period of thirty days after written notice is provided to the authorized officer, or until the authorized officer has issued a written notice to proceed, whichever occurs first.

Plants: Invasive Non-Native Species (Noxious Weeds)

To help minimize the potential for spread of invasive non-native species during or after the treatments, the project inspector would ensure that equipment involved in surface disturbing actions is clean of noxious weed seeds or propagative parts prior to entry onsite. Post-construction weed monitoring and treatments would be conducted for three years following construction. Any Colorado-listed noxious weeds would be promptly treated and controlled according to the appropriate timing for each particular weed species. Staging of vehicles and equipment would not occur in weed-infested areas.

Plants: Vegetation

Noxious weeds within and immediately adjacent to the project area would be aggressively treated for a minimum of 3 years following project construction to reduce competition with native species. If native species do not become established within the exclosures at a density and cover sufficient to inhibit noxious weeds becoming re-established, the area will be seeded with native grasses adapted to the site. In addition, plugs of willows and other riparian species may need to be planted within the exclosures to accelerate restoration of the riparian areas.

Wild and Scenic Rivers

Proceed with a barbed wire fence design, since that is less visually "intrusive" than a buck and rail design to protect the preliminary classification of JQS Gulch (except in locations where rock beds prohibit use of pounding a post in the ground). The fences should be placed as far as possible from the stream banks, since heavier cattle use will occur along the edge of the exclosures as the cattle drift along the fences. Ongoing monitoring of cattle impact on riparian areas should occur to provide data to prove that the developments are maintaining and/or enhancing riparian values.

Wildlife: Migratory Birds

To minimize impacts on breeding migratory birds, it is recommended that no surface disturbing activities occur from May 15 through July 15. This timeframe encompasses the core breeding period for the majority of migratory birds in the project area. Exceptions or variances to this restriction will be considered and evaluated according to policies and deemed appropriate by local staff/wildlife biologist.

Wildlife: Terrestrial

Protective stipulations applicable to the project include a 0.125-mile NSO and 0.25-mile TL for raptor nesting areas and avoidance of the migratory bird nesting season of May 1 to July 1. Given the short duration, minimal disturbance and unsuitable habitat identified in the proposed action, this stipulation will not be applied. In the event of a raptor nesting in close proximity to the project, work may have to be delayed until chicks have fledged in order to not contribute to nest failure.

RIGHT OF PROTEST AND / OR APPEAL:

All of the documents supporting this decision are available for the review by the public. Appeal procedures for this decision are outlined in Title 43 of the Code of Federal Regulations (CFR), Part 4. In accordance with Title 43 CFR 4.410 any party to a case who is adversely affected by the decision of an officer of the Bureau of Land Management shall have a right to appeal to the Interior Board of Land Appeals (Board). The Notice of Appeal must be filed in the Bureau of

Land Management office that issued the decision within 30 days after the date of service (43 CFR 4.411). Procedures for filing an appeal are described on BLM Form 1842-1 (September 2005) and available online at:
http://www.blm.gov/pgdata/etc/medialib/blm/co/field_offices/slvplc/travel_managemet/final_tmp.Par.46660.File.dat/BLM_1842-1%5B1%5D.pdf

NAME OF PREPARER: Kristy Wallner

SIGNATURE OF AUTHORIZED OFFICIAL

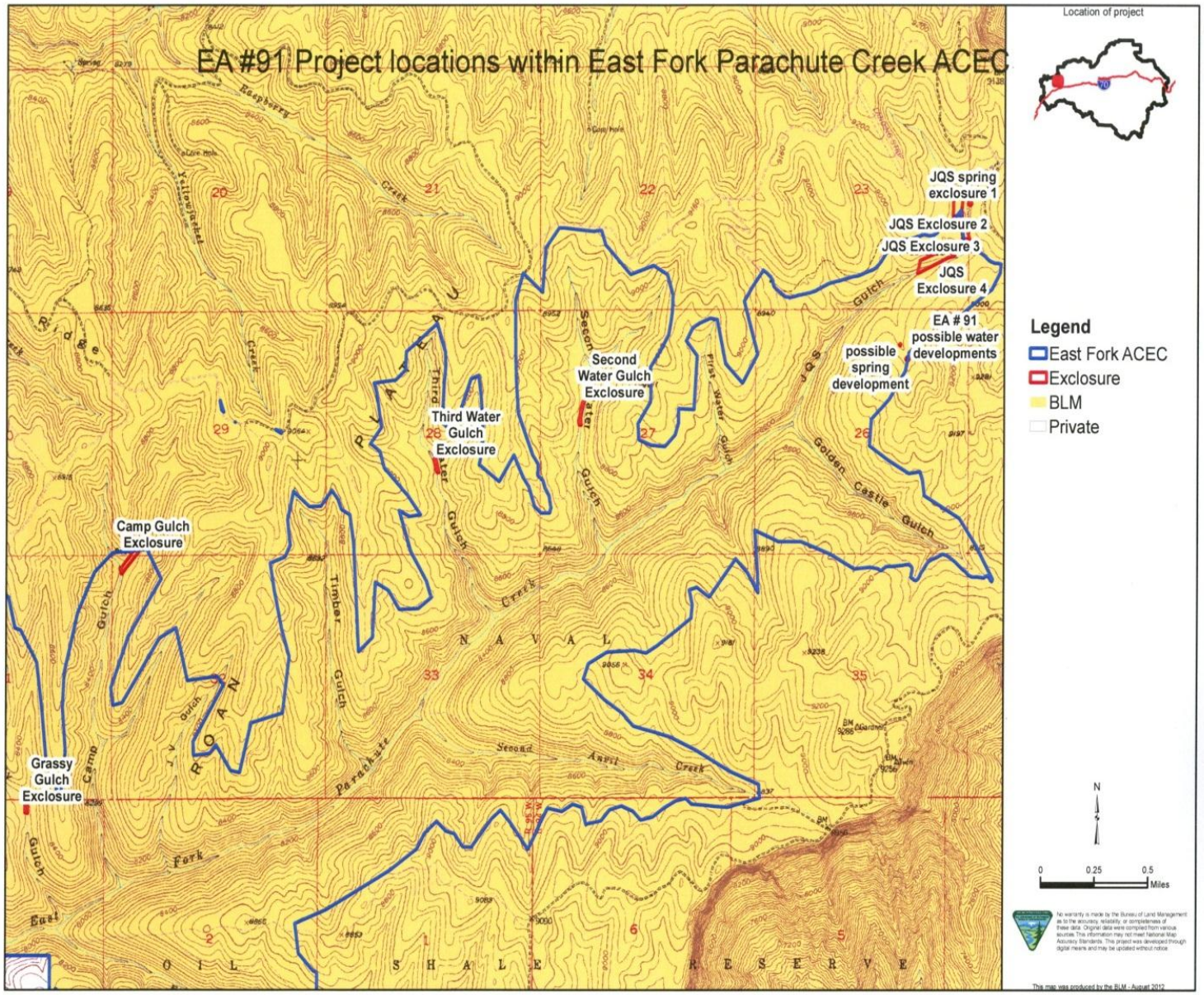
Matthew Thorburn
Supervisory Natural Resource Specialist

DATE: 12-7-2012

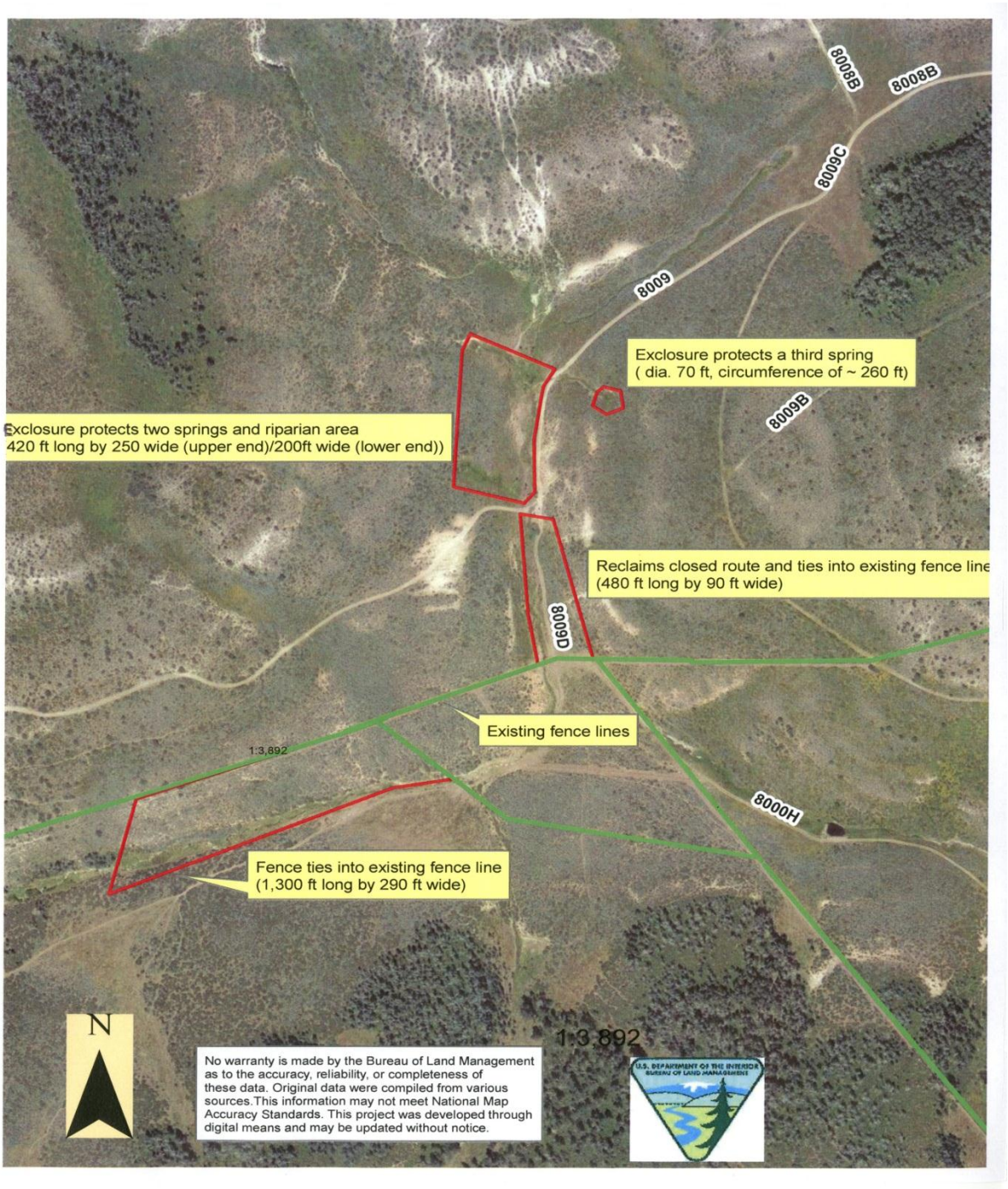
Appendices: 1. Project Map
2. Project specifications for barb and buck & rail fencing, and water retention pit

Appendix A- Project Maps

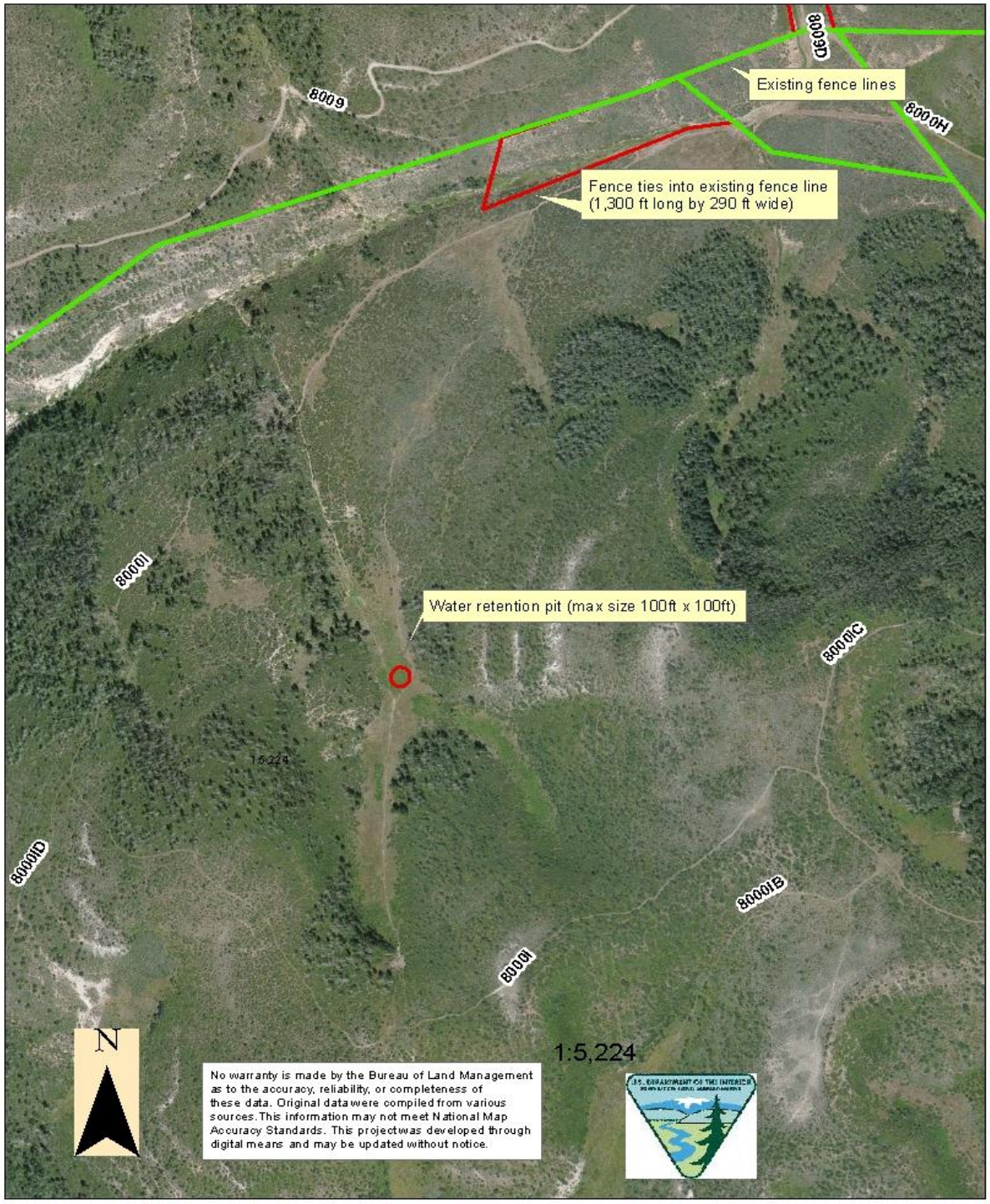
Map 1. Overall view of the proposed exclosures and water developments within East Fork Parachute Creek Area of Environmental Concern (ACEC).



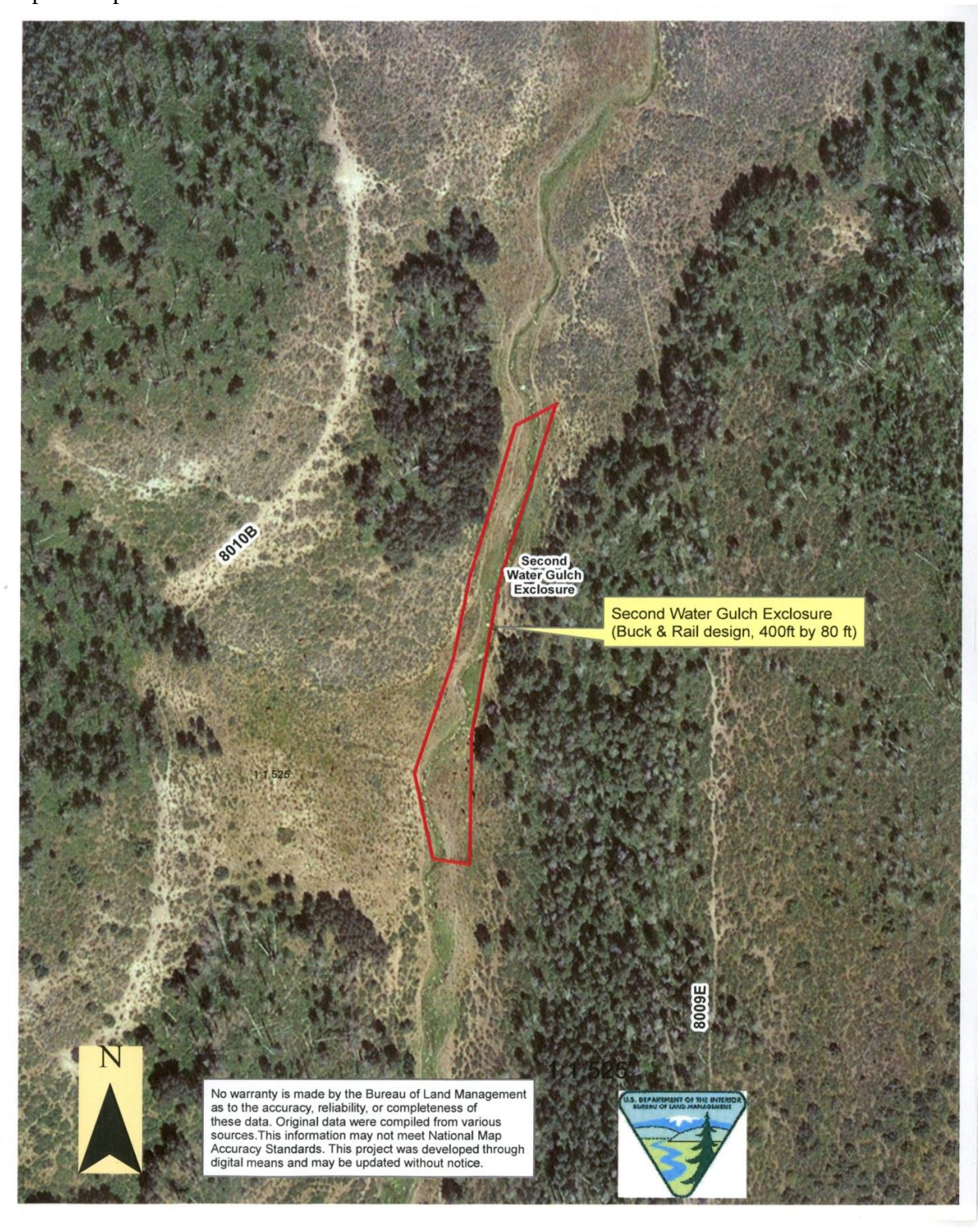
Map 2. JQS Gulch proposed exclosures



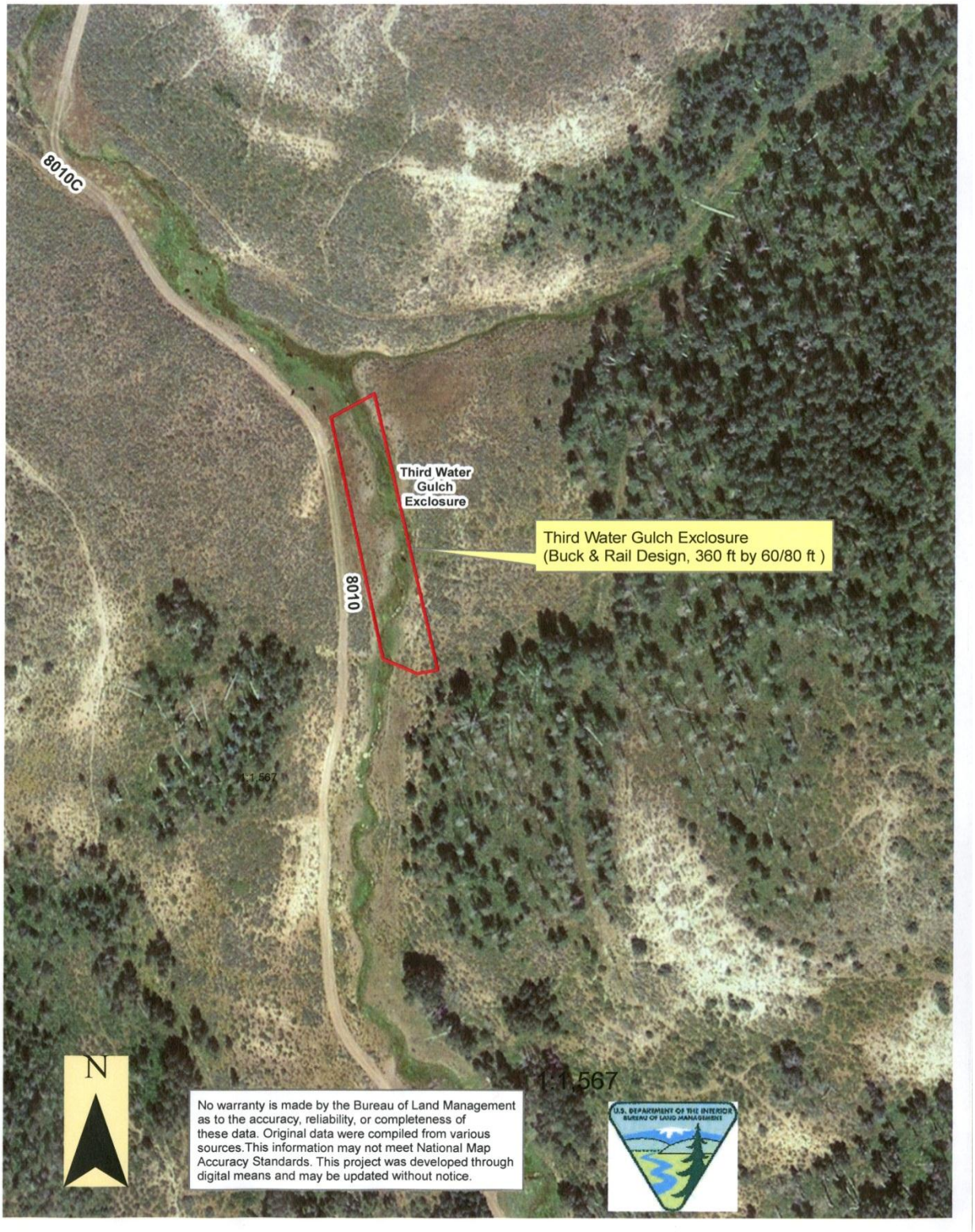
Map 3. JQS Gulch proposed water developments



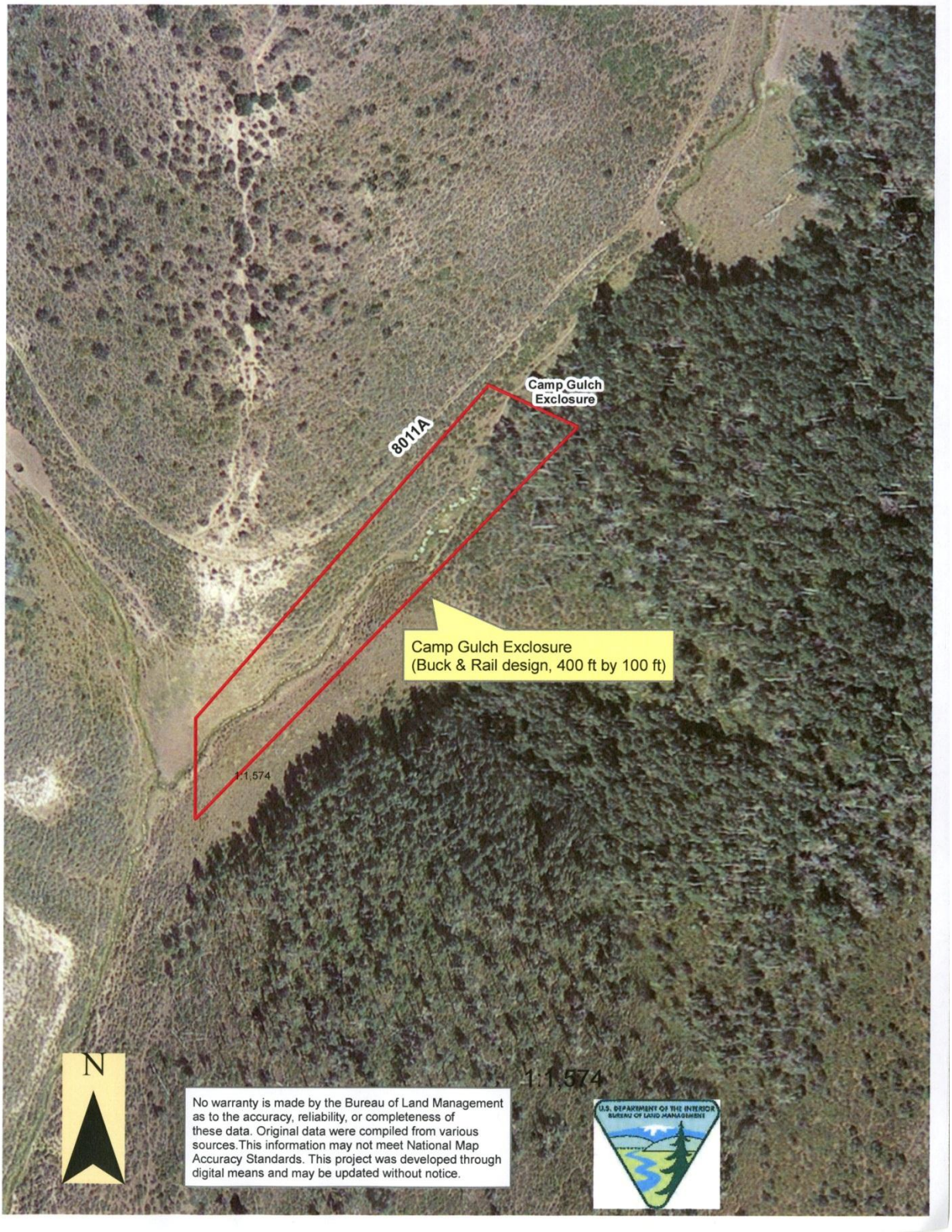
Map 4. Proposed Second Water Gulch Exclosure



Map 5. Third Water Gulch proposed exclosure



Map 6. Camp Gulch proposed Exclosure



Map 7. Grassy Gulch proposed Exclosure

Appendix B- Project specifications for fencing, and water retention pit

Project Specifications and Drawings
SECTION 02834
WORK DATA SHEET FOR
WIRE FENCES, BUCK AND RAIL FENCES, WATER RETENTION PIT, AND GATES

Fence type: Four Strand Barbed

Type of top wire: Barbed

Type of intermediate wires: Barbed

Type of bottom wire: Barbed

Wire locations/dimensions in inches (spacing): Four Strand

D: ___12

C: 8

B: 6

A: 16

Line post spacing (L): 16 ft 6 inches

Ratio wood to steel line posts: 1 to 5

Type of Stays: Wood

Stay spacing (l): 5 ft 6 inches

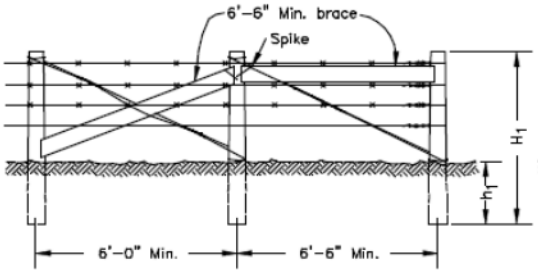
Length of wood posts (H1): 8 or 7 ft

Depth of wood posts in ground (h1): 3 ft

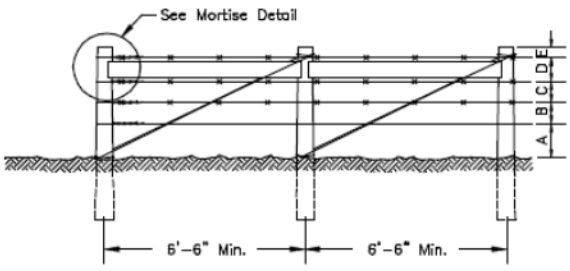
Length of steel posts (H2): 5 ft 6 inches

Depth of steel posts in ground (h2): To top of anchor plate

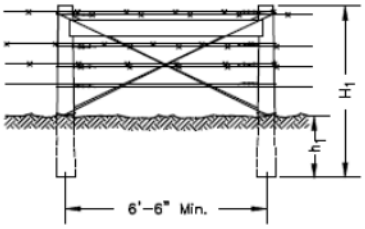
End Panel: Type I or II



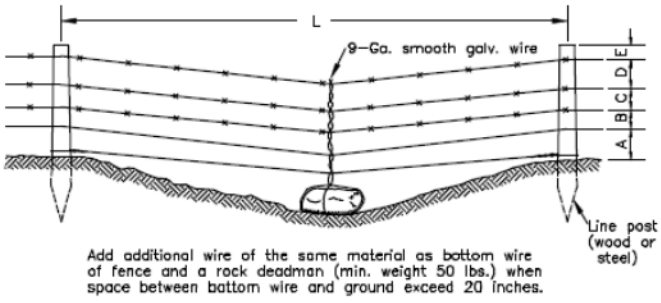
END PANEL—TYPE I



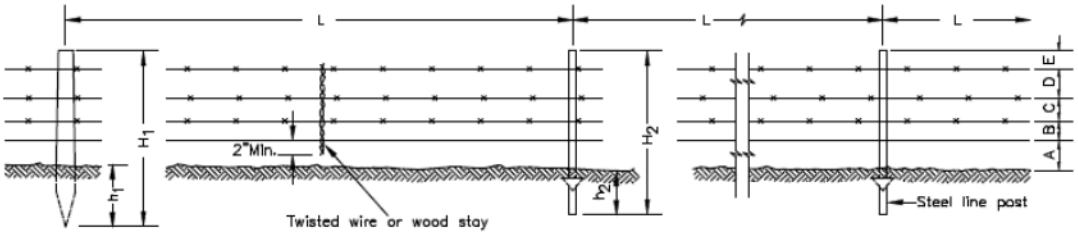
END PANEL—TYPE II



STRESS PANEL



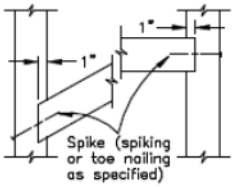
PANEL AT MINOR DEPRESSION



LINE PANELS

NOTE:

1. See specifications for the following:
   a. Ratio of steel to wood line posts.
   b. Post spacing, length and depth in ground.
   c. Type of end panel to be used.
   d. Type of wire to be used.
   e. Spacing between wires.
   f. Number of stays per span (L).



MORTISE DETAIL

ALWAYS THINK SAFETY

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF TECHNICAL SERVICES SERVICE CENTER

TYPICAL
BARBED WIRE FENCE
(4-WIRE)

DESIGNED by others
REVIEWED
APPROVED

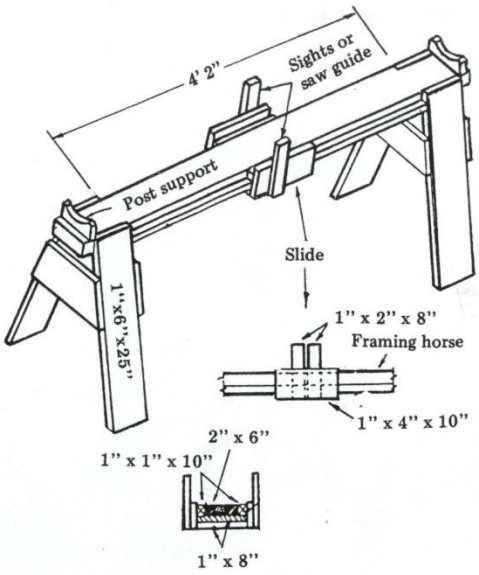
DRAWN
SCALE NONE
DATE FEBRUARY 25, 1991
SHEET OF
DRAWING NO. 02834-1

Buck And Pole Fence

Buck fences are sometimes called jack leg fences.

The first step in building a buck and pole fence is to gather the materials. Ideal buck sticks are between 5 inches and 12 inches in diameter. Eight-inch diameter are most common. Poles or rails vary in length from 10 to 20 feet and in diameter from 4 to 6 inches. Seasoned or green poles may be used, but green poles are heavy to handle. Thin poles tend to split when nailed and bend or break under snow pressure. A 60d common nail is preferred; 40d common nails can be used for the extra small pole ends.

The next step is to cut the mortice joint into the buck sticks. Generally two angles are suggested — 60° for standard bucks and 80° for bucks in severe wind areas. The following drawings illustrate how to make this mortice joint:



Framing horse for jack leg of buck mortice joints.

Both legs are cut the same.

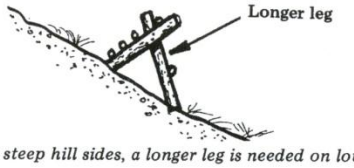
The notch width of a post is determined by the diameter of the post it is to match. This fit should be snug. The notch should be made one-third to one-half way through the post.

The pattern board is a guide to gauge notch width.

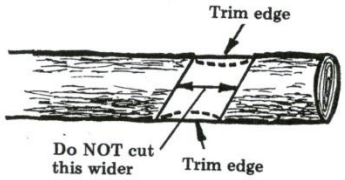
To fit the mortice joint together, place the high point of the cut on each leg together.

For steep hill sides a longer leg is needed for the low side of the hill.

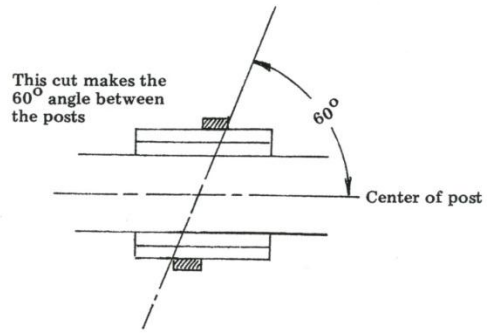
Once the materials are laid out, the bucks must be fitted and nailed if this was not done as they were being made. If the buck sticks do not fit together, trim the outside edges of the mortice joint rather than cut the joint wider.

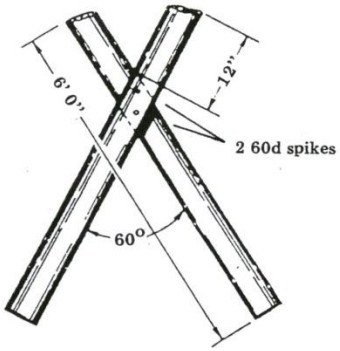


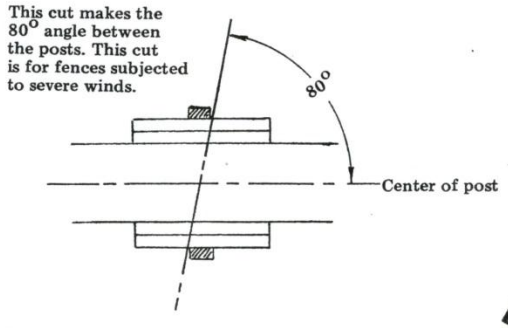
On steep hill sides, a longer leg is needed on low side.

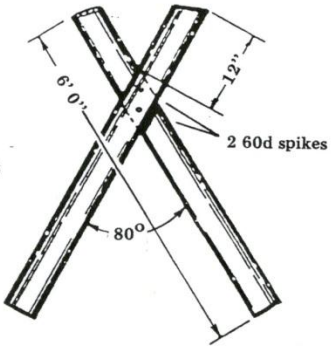


Widening tight post notch width.



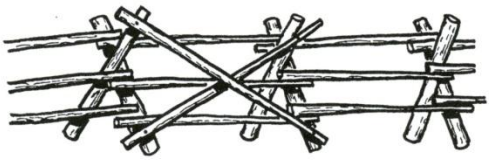






Cutting 60° and 80° angles on posts.

A double pole outside "X" brace may be added after the poles have been attached to the bucks.



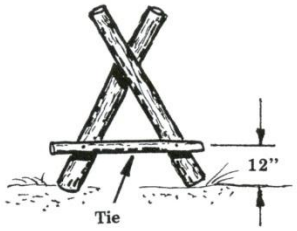
After fence has been completed, a double pole "X" brace may be attached for reinforcement.

Once the inside diagonal or double pole "X" braces are attached in the appropriate locations, attach the poles to the bucks. On level terrain plan a brace for every tenth pole length. The number and height of the poles will vary according to the animal pressure expected. The standard pole pattern is shown; however, one to six poles to one side of a buck have been used. One to two poles are used on the opposite side.

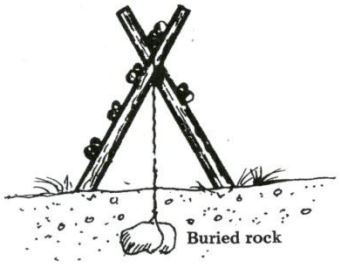
If more than four poles are placed on one side of the buck, a tie may have to be added to keep the weight of the poles from causing the legs to spread out. The tie is usually around 3 inches in diameter and placed 1 foot above ground level.

In high wind areas, every tenth buck should be anchored.

In swampy areas, mud sills should be added to the bottom of the bucks to prevent them from sinking into the soft soil.

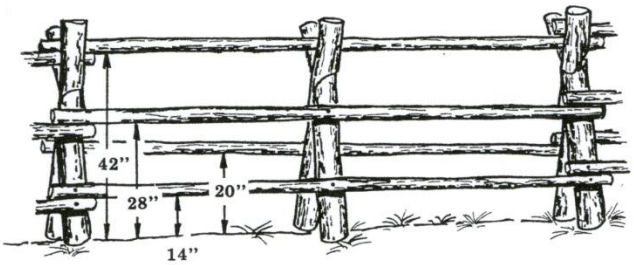


Using a reinforcing tie to prevent legs from spreading.



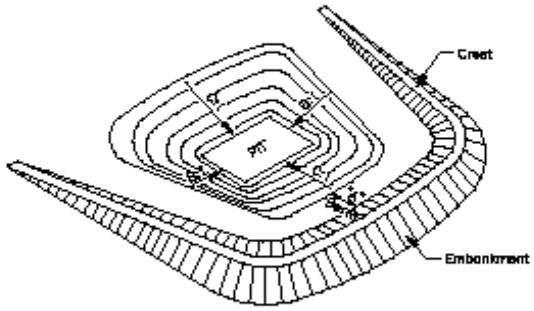
In high winds, every tenth buck should be anchored.

Using mud sills in swampy areas.

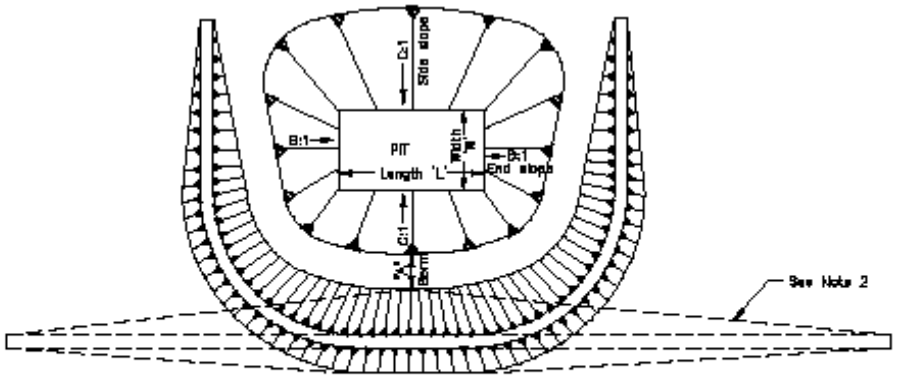


Standard pole configuration. However, many variations are used.

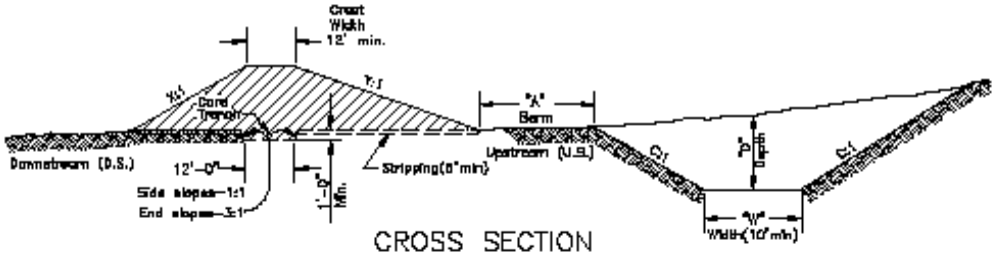
Figure 1. An example of a buck & rail fence being utilized on the Roan Plateau in shale conditions



PERSPECTIVE VIEW



PLAN



CROSS SECTION

NOTES:

1. Pit and embankment slopes and dimensions shall be as shown on the Work Data Sheet or as staked.
2. Embankment may be "U", "L", "I", or straight line shape. Construct as indicated in specifications or as staked.

ALWAYS THINK SAFETY

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF TECHNICAL SERVICES SERVICE CENTER

TYPICAL
WATER RETENTION PIT

DESIGNED	by others
REVIEWED	
APPROVED	
DRAWN	SCALE NONE
DATE AUGUST 5, 1980	SHEET OF
DRAWING NO. 02291-1	