

FINAL ENVIRONMENTAL ASSESSMENT



C Ditch/Needle Rock Pipeline Project Delta County, Colorado

Prepared For
**U.S. Bureau of Reclamation
Colorado River Basin Salinity Control Program
and
C Ditch Company**

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1 INTRODUCTION

This Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act (NEPA) to evaluate the environmental effects of C Ditch Company's proposed C Ditch/Needle Rock Pipeline Project (hereinafter, "Project" or "Proposed Action"). Rare Earth Science, LLC prepared this EA on behalf of the U.S. Department of the Interior's Bureau of Reclamation (hereinafter "Reclamation"), which is authorized by the Colorado River Basin Salinity Control Act to provide funding assistance for the Proposed Action. Reclamation awarded a funding agreement to C Ditch Company for the Project in July 2012 (Agreement Number R12AC40002, hereinafter, "Funding Agreement").

This EA represents a coordinated screening and analysis of the environmental effects of the Proposed Action and a "No Action" Alternative. If Reclamation's review of this EA results in a Finding of No Significant Impact for the Proposed Action, preparation of an Environmental Impact Statement would not be required before the Proposed Action could be implemented.

1.1 Proposed Action

The Proposed Action (described in more detail in Section 2.1) entails replacing a total of approximately 14,669 lineal feet (approximately 2.78 miles) of open irrigation ditch with buried pipe, both to improve the efficiency of water delivery to ditch users, and to reduce salinity loading in the Colorado River Basin. Approximately 12,308 lineal feet of C Ditch (aka Lower Needle Rock Ditch or LNRD) and approximately 2,361 lineal feet of the C Ditch Laterals (aka the Hoff and Adam-Davis Extensions) will be piped.

The Proposed Action will be located in Delta County, Colorado, about 3 miles north of the Town of Crawford, in the Cottonwood Creek drainage (Figure 1). Cottonwood Creek is a tributary of the North Fork of the Gunnison River in the lower Gunnison River watershed of the upper Colorado River basin. Part of the land involved in the Proposed Action is privately owned, and part of the land involved in the Proposed Action is administered by the U.S. Bureau of Land Management's (BLM's) Uncompahgre Field Office (Figures 1 and 2).

The Proposed Action Area is situated in soils derived from Mancos Shale, a saline marine deposit, which contributes salts to irrigation water that leaks from unlined irrigation ditches. According to Reclamation, the estimated salt load reduction in the Colorado River Basin resulting from the Proposed Action will be 1,306 tons per year. Conceptual and project plans were developed by C Ditch Company with assistance from Harward Irrigation Systems.

1.2 Background

The Colorado River and its tributaries provide municipal and industrial water to about 27 million people and irrigation water to nearly four million acres of land in the United States. The river also serves about 2.3 million people and 500,000 acres in Mexico. The threat of salinity loading in the Colorado River basin is a major concern in both the United States and Mexico. Salinity affects agricultural, municipal, and industrial water users.

In June 1974, Congress enacted the Colorado River Basin Salinity Control Act, Public Law 93-320, which directed the Secretary of the Interior to proceed with a program to enhance and protect the quality of water available in the Colorado River for use in the United States and

Republic of Mexico. In October 1984, Congress amended the original act by passing Public Law 98-569.

Public Law 104-20 of July 28, 1995, authorizes the Secretary of the Interior, acting through the Bureau of Reclamation, to implement a basinwide salinity control program. The Secretary may carry out the purposes of this legislation directly, or make grants, enter into contracts, memoranda of agreement, commitments for grants, cooperative agreements, or advances of funds to non-federal entities under such terms and conditions as the Secretary may require.

Reclamation's Basinwide Salinity Control Program funds salinity control projects with a one-time grant that is limited to an applicant's competitive bid. Once constructed, the facilities are owned, operated, maintained, and replaced by the applicant at their own expense. The C Ditch/Needle Rock Project signed a cooperative funding agreement with Reclamation in July 2012 (Agreement Number R12AC40002), with a targeted project completion date of 2015.

1.3 Need For & Purpose of Proposed Action

Seepage from unlined leaking irrigation ditches in the region is a significant source of ground water which mobilizes naturally-occurring salts in the Mancos Shale-derived soils and underlying shale formations. Construction of the Proposed Action will provide a buried pipe delivery system to replace existing unlined ditches, which will eliminate seepage and reduce salinity in the Colorado River basin by an estimated 1,306 tons of salt per year. This will provide benefits for a broad spectrum of interests, including downstream water users, environmental interests, and local, state, and federal government agencies.

1.4 Scoping & Coordination

Scoping for this Environmental Assessment was completed by Reclamation during the initial planning stages of the project to 1) determine the alternative action(s) to be evaluated; 2) to determine the significant issues of analysis triggered by the Proposed Action; and 3) to guide consultation and coordination with other agencies to ensure compliance with NEPA.

During scoping, Reclamation and C Ditch Company limited the project alternatives to the "Proposed Action" and "No Action" alternatives (discussed in Section 2). Additionally, Reclamation identified the potential environmental and human environment issues and concerns associated with implementation of the Proposed Action. The following issues were determined to be insignificant or not applicable, and are not analyzed further in this EA:

- Indian trust assets (not applicable). Indian trust assets may include lands, minerals, hunting and fishing rights, traditional gathering grounds, and water rights. No Indian trust assets have been identified within the project area. Therefore, neither the No Action nor the Proposed Action alternative will have an effect on Indian trust assets.
- Environmental justice issues (not applicable). Executive Order 12898 provides that federal agencies analyze programs to assure that they do not disproportionately adversely affect minority or low income populations or Indian Tribes. The project area does not occur on Indian reservation lands or within disproportionately adversely affected minority or low income populations. Therefore, neither the No Action nor the Proposed Action alternative will have an environmental justice effect.

- Jurisdictional wetlands (not applicable). The Proposed Action will affect surface and subsurface hydrology supplied to wetland areas along the project alignment. As an irrigation maintenance project, the Proposed Action is exempt from requiring a Section 404 Permit pursuant to the Clean Water Act (33 USC 1344). The applicable U.S. Army Corps of Engineers exemptions are for 1) Farm or Stock Pond or Irrigation Ditch Construction or Maintenance, and 2) Maintenance of Existing Structures. The exemptions have been confirmed by Nathan Green in the Grand Junction Regulatory Office of the U.S. Army Corps of Engineers. Copies of the Exemption Summaries are provided as Attachment B.

Issues determined to be of potential significance, and therefore appropriate for analysis under this EA, are outlined below and discussed in greater detail in Section 3:

- Water Rights. The ditches involved in the Proposed Action provide water for irrigation. Piping of these ditches is not expected to interfere with operations or adversely affect the ability to use water for irrigation.
- Water Quality. Piping existing ditches is expected to benefit water quality by reducing salinity and selenium loading in the Colorado River basin. There are additional water quality benefits beyond salinity reduction.
- Access & Land Use. The project lies partially on private lands and partially on public lands administered by BLM. C Ditch Company is responsible for obtaining all needed right-of-way and landowner consent prior to construction of the project. Temporary reclaimable land disturbance, and a permanent cut in an existing rock hillside, will result from construction.
- Recreation and visual resources. The Proposed Action is located partially on BLM lands with visual resources and opportunities for public recreation near impacted project area. Temporary reclaimable land disturbance will result from construction.
- Livestock grazing. The Proposed Action is located partially on BLM lands in cattle and sheep grazing allotments. Temporary reclaimable land disturbance will result from construction within the grazing allotments, and the Proposed Action would remove a source of livestock water on the grazing allotments.
- Fish & Wildlife Resources. Public Laws 98-569 and 104-20 require that the Secretary of the Interior "shall implement measures to replace incidental fish and wildlife values foregone" and the development of a program that "shall provide for the mitigation of incidental fish and wildlife values that are lost as a result of the measures and associated works and the replacement of fish and wildlife values foregone."
- Threatened & Endangered Species. The Endangered Species Act (ESA) requires federal agencies to consult with the U.S. Fish & Wildlife Service to ensure any actions they authorize or fund do not cause jeopardy to threatened or endangered species. No new adverse effects to species listed under the Endangered Species Act are expected as a result of implementation of the Proposed Action. Reclamation has consulted with the U.S. Fish & Wildlife Service regarding historic water depletions in the Gunnison basin resulting from the operation of C Ditch, and water quality improvements resulting from the Proposed Action, as they relate to the Gunnison Basin Programmatic Biological

Opinion (the Biological Opinion addresses downstream critical habitat for endangered fish species).

- BLM Sensitive Species. The Proposed Action is located partially on BLM lands managed by BLM's Uncompahgre Field Office (UFO). According to BLM Manual Part 6840, BLM Sensitive species (in addition to those proposed for listing under the federal ESA) are "species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA." BLM Sensitive species are designated by the BLM's state director. Temporary effects to certain BLM Sensitive species may result from implementation of the Proposed Action, however, these effects will be mitigated in a habitat replacement area located near the Proposed Action (as described elsewhere in this EA).
- Cultural Resources. Federal agencies are responsible for ensuring that they take into account the effects of their actions on significant cultural resources and for complying with the National Historic Preservation Act (36 CFR Part 800) and other historic preservation requirements.
- Agricultural Resources. The U.S. Department of Agriculture's Natural Resources Conservation Service identifies farmlands of national and statewide importance (prime and unique farmlands) in the region, based on soil types and irrigation water resources. Temporary disturbance to agriculturally significant lands will occur during construction, and these lands will be returned to production immediately following the project.

1.5 Agency Consultations

In compliance with NEPA and in the interest of addressing environmental issues identified during the scoping process, the following agencies were contacted and consulted in the preparation of this document:

- U.S. Bureau of Land Management, Uncompahgre Field Office, Montrose, CO
- Colorado Office of Archaeology and Historic Preservation, Denver, CO
- Colorado Water Conservation Board, Denver, CO
- Colorado Division of Water Resources, District 40 (North Fork), CO
- Colorado Parks & Wildlife, Gunnison, CO
- U.S. Fish & Wildlife Service, Ecological Service, Grand Junction, CO
- U.S. Army Corps of Engineers, Regulatory Office, Grand Junction, CO

The contact list for agencies consulted during the EA process (also the distribution list for this EA) is included as Attachment A.

2 PROPOSED ACTION & ALTERNATIVES

Alternatives evaluated in this EA include a No Action Alternative and the Proposed Action.

2.1 No Action Alternative

Under this alternative, Reclamation would not provide funding to C Ditch Company to pipe C Ditch and two C Ditch Laterals. Seepage from these structures would continue to contribute to

salt and selenium loading in the Colorado River basin. Riparian and wetland habitats associated with the ditches would likely remain in place and continue to provide benefits to local wildlife.

2.2 Proposed Action Alternative

Reclamation, through the Colorado River Basin Salinity Control Program (CRBSP) has funded C Ditch Company (Agreement Number R12AC40002) to pipe open irrigation ditches to reduce salt loading in the Colorado River basin. Ditches to be piped include C Ditch (aka Lower Needle Rock Ditch) and two C Ditch laterals (the Hoff Extension and the Adam-Davis Extension). Construction for the Proposed Action would take place between October 1, 2013 and April 15, 2014. Construction details can be found in detailed construction drawings and a project overview narrative by Harward Irrigation (as summarized below).

Table 1, below, summarizes the approximate project components. The Proposed Action will replace a total of approximately 14,669 lineal feet (2.78 miles) of open irrigation ditch with buried pipe, installed in or next to the exiting ditch prism. Pipe diameters would range from 28 inches to 8 inches. A screen structure and intake will be built at or near the exiting headgate for C Ditch on Cottonwood Creek. Each of 11 farm turnouts will include a metered outlet.

A total of approximately 3,920 lineal feet of the Proposed Action crosses BLM lands (see Figures 1 through 4): about 3,090 lineal feet cross BLM lands in the east part of the Proposed Action Area, and about 830 lineal feet cross BLM lands in the west part of the Proposed Action Area. A construction right-of-way has been requested on BLM lands consisting of 60 feet on the south side of the existing ditch alignment and 20 feet on the north side of the existing ditch alignment. A maintenance / permanent right-of-way has been requested on BLM lands consisting of 20 feet from project centerline on the south side and 10 feet from project centerline on the north side.

Table 1. Summary of Components for the C Ditch/Needle Rock Pipeline Project

Structure Name	Total Existing Length (lineal feet)	Existing Length on BLM Land (lineal feet)	Length to be Piped (lineal feet)	Acres Served	Estimated Salt Load Reduction (tons/year)
C Ditch	12,308	3,920	12,308	See total below	1,283
C Ditch Laterals	2,361	0	2,361	See total below	23
Totals			14,669	~460	1,306

Four construction staging areas for materials have been identified for the Proposed Action (Figures 2 and 3). All staging will take place on private lands in agricultural areas or on previously disturbed ground, except for the east-most staging area, which will lie on BLM land. The staging area on BLM land will consist of an approximately 100-foot by 200-foot (approximately 0.5 acre) graded pad near the existing diversion structure on Cottonwood Creek. The graded pad will be located in a relatively flat area, partially on the existing BLM road, in an area that was historically disturbed during the construction of the existing diversion structure. This location and placement of this staging area is necessary to allow for long strings of pipe to be built prior to their transport into the east part of the project alignment, which has limited space for safe operation of equipment.

All access ways for construction of the Proposed Action will be on county roads or existing private roads, except for access to the east part of the Proposed Action Area, which will be from an existing road crossing both private and BLM land (Figures 2 and 3). This road, which is approximately 1,495 feet long (with 920 feet on BLM land and 575 feet on private land), will require grading up to 12 feet wide to allow for safe access of vehicles, materials, and equipment. The road alignment will be graded to allow for proper drainage. In the west part of the Proposed Action Area, access to the construction right-of-way on BLM land will be from Davis Road (a county road).

When construction is complete, the abandoned ditch will be in-filled with soil from the berm paralleling the canal, and irrigation structures (head gates, drops, etc.) will be removed. Any rock material generated from project construction in the east part of the Proposed Action Area on BLM land will be hauled off site or used as rip-rap within the Proposed Action Area.

Vegetation slash will be chopped and deposited along the project alignment as mulch. Revegetation and weed control complying with BLM right-of-way permit conditions and Delta County standards will be implemented as soon as practicable following construction.

3 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This section discusses resources that may be affected by actions taken to pipe approximately 2.78 miles of C Ditch and two C Ditch laterals. During preparation of this EA, information on issues and concerns was received from the C Ditch Company, resource agencies, and other interested parties, as noted in the subsections below.

For each resource, the potentially affected area and/or interests are identified, existing conditions described, and impacts predicted under the No Action and Proposed Action Alternatives. This section is concluded with a summary of impacts.

3.1 Description of the Proposed Action Area

The Proposed Action Area lies in the North Fork of the Gunnison River (North Fork River) Valley, about 150 miles southwest of Denver, in Delta County, Colorado. The climate is semi-arid continental, with low humidity and moderately low precipitation, averaging about 10 to 13 inches annually. The average elevation in the Proposed Action Area is about 6,000 feet above mean sea level (Figure 2). Typical crops are irrigated grass pasture and hay crops. The irrigation season is approximately 153 days long.

The ditches subject to the Proposed Action are privately owned irrigation conveyances charged by water diverted from two sources: Cottonwood Creek at a location approximately 2.8 direct miles north-by-northeast of the Town of Crawford, and from Aspen Canal, which intersects C Ditch approximately 0.9 mile downstream of the C Ditch origin on Cottonwood Creek (Figures 2 and 3). C Ditch and the short C Ditch laterals involved in the Proposed Action deliver irrigation water to shareholders from Cottonwood Creek during May through July. As flows diminish in Cottonwood Creek, supplemental water is ordered from Crawford Reservoir and transferred from Aspen Canal into C Ditch. A total of approximately 460 acres of grass pasture and hay crops are served. Drainage from the service area flows back to Cottonwood Creek which drains to the North Fork River (Figure 3). The Proposed Action area begins at the C Ditch origin on

Cottonwood Creek, and extends to the end of C Ditch near the intersection of Davis and Crawford Roads (Figure 2).

The Proposed Action Area consists partially of rural farms on private lands with irrigated hay meadows and pastures and partially of BLM lands in relatively natural vegetation (see Figures 3 and 4), all occurring on Mancos Shale-derived soils. On-farm irrigation is accomplished primarily using gated pipe or sprinkler systems. Prior to conversion to irrigated lands, the irrigated portions of the Proposed Action Area consisted primarily of sagebrush and desert scrublands or pinyon-juniper woodlands. Areas adjacent to ditches and receiving leakage from the ditches have converted to riparian and wetland habitats, and some natural wetlands receiving ditch leakage have likely been enhanced.

Figure 4 shows the major landcover types mapped in the area by the Southwest Regional Gap Analysis Project (SWReGAP 2004). The primary landcover types in the Proposed Action Area are irrigated agricultural and Colorado Plateau pinyon pine-Utah juniper woodlands. Other landcover types intersecting or existing near the ditches / planned buried pipeline alignments involved in the Proposed Action are minor amounts of Inter-mountain Basins big sagebrush shrubland, Rocky Mountain Gambel oak-mixed montane shrublands, and Inter-mountain Basins semi-desert grassland (see Section 3.5). The existing ditch alignments are vegetated mostly with coyote willow and occasional mature cottonwoods, but also support stands of common ruderal and noxious weeds.

3.2 Water Rights & Use

C Ditch originates at a head gate on Cottonwood Creek at a location approximately 2.8 direct miles north-by-northeast of the Town of Crawford, and terminates at the intersection of Crawford Road and Davis Road approximately 2.5 miles west of its origin. C Ditch provides 10 users with irrigation and stock water. The irrigation season is approximately 153 days long. Total average rate of annual diversions of irrigation water through C Ditch is approximately 5,270 acre-feet per year, with a breakdown as follows:

- Cottonwood Creek water right: The absolute total decreed water right (for irrigation and stock water) for this head gate (structure #1729, 1730, 1731) is 12.5 cubic feet per second (cfs), and the average annual through-put resulting from this water right is 3,156 acre-feet for irrigation, and 1,272 acre-feet for winter stock water.
- Crawford Reservoir water right: When flows diminish in Cottonwood Creek during irrigation season, supplemental water is called from Crawford Reservoir and transferred to C Ditch via the Aspen Canal (structure #509), which intersects C Ditch approximately 0.9 mile downstream of its Cottonwood Creek headgate. The total absolute water right for shareholders of C Ditch Company from Crawford Reservoir is 788 acre-feet per year. The average annual through-put, according to the Funding Agreement, is 630 acre-feet per year for irrigation and 212 acre-feet for winter stock water.

Attachment C contains "Structure Summary Reports" for the Cottonwood Creek headgate (structure #1729, 1730, 1731) and Aspen Canal (#509). The reports summarize total water rights associated with the structure (including amounts decreed, appropriation dates, priority information, and adjudication type) and were generated using the Colorado Department of Natural Resources Water Conservation Board Decision Support Systems online reporting tools (CWCB 2013).

Cottonwood Creek, a North Fork of the Gunnison River (North Fork River) tributary, and Iron Creek (Crawford Reservoir), a Smith Fork River tributary, lie within the Gunnison River basin. The Gunnison River basin is approximately 7,800 square miles in size. Information on water rights within the Gunnison basin in general can be found in the report entitled "Gunnison River Basin Information, Colorado's Decision Support Systems" (CWCB 2004).

Proposed Action: Under the Proposed Action Alternative, C Ditch Company would have the ability to better manage its water rights with efficiencies gained from piping the system. Efficiencies gained may result in more water availability during irrigation season. Therefore, no direct adverse effects on water rights in the Gunnison River Basin are expected to occur due to implementation of the Proposed Action.

No Action: The No Action Alternative would have no direct effect on water rights and uses within the Gunnison River Basin. The water delivery system would continue to function as it has in the past.

3.3 Water Quality

The Proposed Action is located within the North Fork of the Gunnison River watershed in west-central Colorado. The North Fork River flows through northwestern Gunnison and Delta Counties, beginning at the confluence of Muddy Creek and Anthracite Creek downstream of Paonia Dam and flowing southwesterly approximately 33 miles to its confluence with the Gunnison River west of the Town of Hotchkiss. The North Fork watershed (HUC 1402004) drains approximately 986 square miles and includes five small communities that line the North Fork as it flows west towards the Gunnison River. Cottonwood Creek drains the Proposed Action Area (Figure 3) and enters the North Fork upstream of the Town of Hotchkiss. Water from Crawford Reservoir (in the Smith Fork of the Gunnison River watershed) is transported to the Proposed Action Area via Aspen Canal, and eventually returns to the Cottonwood Creek drainage. Stream segments and Water Quality Standards for these waters are shown in Table 2, below.

Currently, the North Fork River and Cottonwood Creek are not on the Colorado Department of Public Health and Environment's (CDPHE's) list of impaired waters in the State of Colorado (CDPHE 2012). Crawford Reservoir has dissolved oxygen [temperature] impairment within the reservoir itself, and this impairment is due to the warm season draw-down occurring on the reservoir by its many irrigation users, and is not anticipated to significantly affect water quality downstream. As mentioned in Section 1.3, seepage from unlined leaking irrigation ditches in the region is a significant source of water which mobilizes naturally-occurring salts and selenium in the Mancos Shale-derived soils and underlying shale formations into the local river system. Construction of the Proposed Action will provide a buried pipe delivery system to replace existing unlined ditches, which will eliminate seepage and reduce salinity in the Colorado River basin by an estimated 1,284 tons of salt per year. The Proposed Action is also expected to reduce selenium loading into the Gunnison River basin (a goal of the Gunnison Basin Selenium Management Program [SMPW 2011]); however, these benefits have not been quantified.

The Colorado River basin provides municipal and industrial water to about 27 million people and irrigation water to nearly four million acres of land in the United States. The river also serves about 2.3 million people and 500,000 acres in Mexico. The threat of salinity loading in the Colorado River basin is a major concern in both the United States and Mexico. The Proposed Action and other similar projects in the region are contributing significantly to salinity reduction in the Colorado River basin.

Table 2. Stream Segments & Water Quality Standards

Stream Segment	Designated Use	Numeric Standards				
		Physical and Biological	Inorganic (mg/L)		Metals (mg/L)	
COGUNF03 (North Fork, Main Stem downstream of Black Bridge)	Aquatic Life (Cold 1) Agriculture Water Supply Recreation P (Oct-Mar) Recreation E (Apr-Sept)	D.O.=6.0 mg/l D.O.(sp)=7.0 mg/l pH=6.5-9.0 Oct. 1 to March 31 E.Coli=205/100ml April 1 to Sept. 30 E.Coli=126/100ml	NH ₃ =TVS Cl ₂ (a)=0.019 Cl ₂ (c)=0.011 CN=0.005	S=0.002 B=0.75 NO ₂ =0.05 NO ₃ =10 Cl=250 SO ₄ =WS	As(ac)=340 As(ch)= 0.02(Trec) Cd(ac)=TVS(tr) Cd(ch)=TVS Cr ^{III} (ac)=50(Trec) Cr ^{III} (ch)=TVS Cr ^{VI} (ac/ch)=TVS Cu(ac/ch)=TVS Fe(ch)=WS(dis) Fe(ch)=1000(Trec) Pb(ac/ch)=TVS	Mn(ac/ch)=TVS Mn(ch)=WS(dis) Hg(ch)=0.01(tot) Mo(ch)=160(Trec) Ni(ac/ch)=TVS Se(ac/ch)=TVS Ag(ac)=TVS Ag(ch)=TVS(tr) Zn(ac/ch)=TVS
COGUNF06b (includes Cottonwood Creek)	Aquatic Life Warm 2 Recreation P Water Supply Agriculture	T=TVS(WS-III) °C D.O.=5.0 mg/l pH=6.5-9.0 E.Coli=205/100ml	NH ₃ (ac/ch)=TVS Cl ₂ (ac)=0.019 Cl ₂ (ch)=0.011 CN=.005	S=0.002 B=0.75 NO ₂ =0.05 NO ₃ =10 Cl=250 SO ₄ =WS	As(ac)=340 As(ch)=0.02(Trec) Cd(ac/ch)=TVS Cr ^{III} (ac)=50(Trec) Cr ^{III} (ch)=TVS Cr ^{VI} (ac/ch)=TVS Cu(ac/ch)=TVS Fe(ch)=WS(dis) Fe(ch)=1000(Trec)	Pb(ac/ch)=TVS Mn(ac/ch)=TVS Mn(ch)=WS(dis) Hg(ch)=0.01(tot) Mo(ch)=160(Trec) Ni(ac/ch)=TVS Se(ac/ch)=TVS Ag(ac)=TVS Ag(ch)=TVS Zn(ac/ch)=TVS
COGULG13 (Crawford Reservoir)	Aq Life Warm 1 Recreation E Agriculture	T=TVS(WL) °C D.O.= 5.0 mg/l pH=6.5-9.0 E.Coli=126/100ml	NH ₃ (ac/ch)=TVS Cl ₂ (ac)=0.019 Cl ₂ (ch)=0.011 CN=.005	S=0.002 B=0.75 NO ₂ =0.05 NO ₃ =100	As(ac)=340 As(ch)=7.6(Trec) Cd(ac/ch)=TVS Cr ^{III} (ac/ch)=TVS Cr ^{III} (ch)=100(Trec) Cr ^{VI} (ac/ch)=TVS Cu(ac/ch)=TVS Fe(ch)=1000(Trec)	Pb(ac/ch)=TVS Mn(ac/ch)=TVS Hg(ch)=0.01(Tot) Mo(ch)=160(Trec) Ni(ac/ch)=TVS Se(ac/ch)=TVS Ag(ac/ch)=TVS Zn(ac/ch)=TVS

(a)=Acute; (c)=Chronic; TVS=Table Value Standards; Trek=Total Recoverable Fraction

Data from Water Quality Control Commission Regulations 31 (CDPHE 2009) and Regulation 35 (CDPHE 2013).

Official designated uses for the North Fork River include domestic potable water supply, livestock and wildlife water supply, aquatic habitat and aquatic harvest, human contact (incidental contact through submersion), and agricultural water supply. Official designated uses for Cottonwood Creek and Crawford Reservoir are warm aquatic habitat, recreation, and agricultural water supply. Maintenance or improvement of water quality in the North Fork River and Cottonwood Creek segments would be of significant importance to users of these water resources.

Proposed Action: Because construction activities will occur within the dry canal or lateral, no change in water quality during construction is predicted. Exemptions under the Clean Water Act apply to the Proposed Action (see Attachment B); therefore no Section 401 Water Quality Certification is required for the Proposed Action. Improvements to water quality in the North Fork River and Cottonwood Creek (and in turn, the Gunnison River and Colorado River basins) are likely to result from implementation of the Proposed Action. An estimated salt loading reduction of 1,306 tons per year to the Colorado River basin will result from implementation of the Proposed Action. The Proposed Action is also expected to reduce selenium loading into the Gunnison River basin (a goal of the Gunnison Basin Selenium Management Program [SMPW 2011]); however, these benefits have not been quantified. Improved water quality would likely benefit downstream aquatic species by reducing salt and selenium loading in the North Fork,

Gunnison, and Colorado rivers. No change in water quality would occur to Crawford Reservoir (which is upgradient of the Proposed Action Area) as a result of the Proposed Action.

No Action: Under the No Action Alternative, no change to existing water quality trends is predicted. The estimated 1,306 tons of salt annually contributed to the Colorado River basin would continue. Current selenium loading levels would continue in the Gunnison basin.

3.4 Access & Temporary Disturbance

During construction of the Proposed Action, an increase in noise and traffic would occur. Access for construction, operations and maintenance would utilize existing roadways. C Ditch Company would obtain easements where necessary for improvements and pipeline alignments.

Temporary disturbances within the right-of-way and footprint of the pipeline would occur during construction and the existing ditches and laterals would be dewatered and modified so that they no longer transport irrigation water. A permanent cut in a rock slope on BLM lands in the east part of the Proposed Action Area would result from construction. Pipeline alignments and construction footprints would be revegetated subject to BLM right-of-way permit conditions and agreements between C Ditch Company and individual land owners. Rock generated from the cut slope would be hauled offsite or used for rip-rap within the Proposed Action Area. To date, all landowners in the footprint of the Proposed Action have agreed to provide access for the proposed buried pipeline alignment as shown on Figures 2 and 3.

Proposed Action: The Proposed Action would cause short-term temporary adverse effects consisting of noise, ground, and vegetation disturbance to property owners in the Proposed Action Area. This disturbance would occur incrementally across the Proposed Action Area during the timeframe of October 1, 2013 through April 15, 2014. In the east part of the Proposed Action Area (on BLM land), it will be necessary to scale back hillslopes above (south of) certain parts of the Project Alignment in order to create a safe work platform for construction. Scaled slopes will be similar in appearance to the original slopes, which are currently mostly unvegetated Mancos shale-derived soils and rock. Rock derived from scaled slopes will be used as rip-rap at the intake structure at the east end of the pipe alignment and/or elsewhere within the Proposed Action Area. Soil will be used to backfill the existing ditch after the pipe is placed. Excess rock and soil material will be transported out of the Proposed Action Area and used as clean fill on private property (to improve upland or agricultural areas). Construction of the Proposed Action could result in creation of a new unintentional access route for recreational use on BLM land, and could lead to trespass on adjoining private lands crossed by the Proposed Action. Private landowners adjoining the Proposed Action Area would be responsible for posting their property boundaries. BLM will stipulate that once the Proposed Action is constructed, a sign will be posted near the inlet structure stating that the "route" along the project right-of-way is "Administrative Access Only" (no motorized access will be permitted along the pipeline route, except by C Ditch Company and BLM).

No Action: The No Action Alternative would have no effect on existing access easements, current agreements, or current land uses.

3.5 Habitat

As described in Section 3.1, the primary landcover types in the Proposed Action Area are irrigated agricultural and Colorado Plateau pinyon pine-Utah juniper woodlands. Other landcover types intersecting or existing near the ditches / planned buried pipeline alignments involved in the Proposed Action are minor amounts of Inter-mountain Basins big sagebrush shrubland, Rocky Mountain Gambel oak-mixed montane shrublands, and Inter-mountain Basins semi-desert grassland (Figure 4).

The pinyon pine-Utah juniper woodland association, intermixed with Rocky Mountain Gambel oak, mixed montane shrubs, and big sagebrush, exists along the eastern approximately 6,000 lineal feet of the Proposed Action Area. Approximately 4,000 lineal feet of this segment of wooded lands are administered by BLM, and about 2,000 feet are on private property. The central approximately 3,500 feet of the Proposed Action Area intersects agricultural (farmland) ground. The western end of the project area crosses mixed sagebrush and Inter-mountain Basin semi-desert grassland vegetation types (Figure 4).

The existing ditch alignment is vegetated mostly with coyote willow, cattails, and occasional mature cottonwoods, but also features stands of common ruderal and noxious weeds. Some ditch bank areas are grazed by livestock and others are sprayed with herbicide to kill weeds, willows, trees, and other vegetation growing in or around the ditches. Invasive weed species in the ditch corridor include Canada thistle and other thistles, Russian knapweed, and whitetop.

A wetland and riparian habitat evaluation was performed for the Proposed Action Area by Wildlife & Natural Resource Concepts & Solutions, LLC (Zeman 2012) to quantify potential wetland and riparian habitat values that would be lost in the project area due to project implementation. The evaluation was modeled after methodology outlined in Reclamation's May 2012 "Basinwide Salinity Control Program: Procedures for Habitat Replacement." Table 3 and Figure 5 show the results of the wetland and riparian habitat evaluation.

Table 3. Predicted Wetland & Riparian Habitat Loss from the Proposed Action

Study Point	Habitat Type	Habitat Segment Length (ft)	Habitat Segment Width (ft)	Acres Affected	Habitat Quality Score (HQS)	Total Habitat Value (THV) (=Acres x HQS)
H1	Shrub/Scrub	761	30	0.52	0.4	0.21
H2*	Shrub/Forested	N/A	N/A	0.48	1.9	0.91
H3	Shrub/Scrub	223	20	0.10	1.2	0.12
H4	Shrub/Scrub	321	40	0.29	1.1	0.32
H5	Shrub/Forested	800	30	0.55	0.9	0.50
H6	Shrub/Forested	568	40	0.52	0.7	0.37
H7	Shrub/Scrub	274	40	0.25	0.9	0.23
H8*	Shrub/Forested	N/A	N/A	1.04	0.6	0.62
H9	Shrub/Forested	425	40	0.39	0.9	0.35
H10	Shrub/Scrub	289	30	0.20	0.2	0.04
H11	Shrub/Forested	634	40	0.58	0.3	0.17
H12*	Shrub/Forested	N/A	N/A	0.70	0.5	0.35
H13	Shrubs/Grass	397	40	0.36	0.8	0.29

Study Point	Habitat Type	Habitat Segment Length (ft)	Habitat Segment Width (ft)	Acres Affected	Habitat Quality Score (HQS)	Total Habitat Value (THV) (=Acres x HQS)
H14	Scrub/Grass	1814	30	1.25	0.6	0.75
H15	Shrub/Forested	637	30	0.44	0.8	0.35
H16	Shrubs/Grass	510	40	0.47	0.5	0.23
H17	Shrub/Forested	1959	30	1.35	0.7	0.94
H18	Shrub/Forested	1733	40	1.59	0.7	1.11
Totals				11.1		7.88

According to the evaluation method, Total Habitat Value (THV) is calculated for each affected wetland or riparian habitat area by multiplying its acreage by its habitat quality score (HQS), which is assigned based on a series of criteria. The predicted total of THV units affected due to project implementation is the sum of the THVs across the Proposed Action Area. A total of approximately 11.1 acres of wetland or riparian habitat (equating to a total wetland and riparian habitat value of 7.88 units based on Habitat Quality Scoring) were identified adjacent to or associated with the existing structures involved in the Proposed Action (Figure 5).

Proposed Action: Implementation of the Proposed Action would result in permanent loss of wetland and riparian habitat because ditch seepage would no longer provide wetland hydrology to adjacent areas and ditch channels and banks would no longer provide a riparian-type environment. However, the quality of the wetland and riparian habitat existing due to the ditches is perceived to be relatively low overall, and the total habitat value to be lost is estimated at 7.88 units. Replacement habitat to mitigate these losses (see Section 4.6) is proposed on private property on the Adam Ranch, approximately 0.5 mile north of the Proposed Action Area. Additionally, construction of the Proposed Action and the replacement habitat would follow Best Management Practices to minimize the construction footprint, protect water quality, and minimize soil erosion. Revegetation and weed control would be implemented according to BLM right-of-way permit conditions and Delta County standards.

No Action: The No Action Alternative would have no effect on existing vegetation or habitat.

3.6 Wildlife Resources

In the Proposed Action Area, riparian areas and seep areas support wetland and riparian habitat of limited value, which are subject to disturbance from periodic maintenance. About half of all adjacent areas are irrigated farmlands, and about half are native vegetation types (see Sections 3.1 and 3.5). The habitat associated with the ditches involved in the Proposed Action Area occurs in narrow strips and small patches. While typically not supporting the numbers of breeding birds and other wildlife that larger blocks of habitat support, they nevertheless are important habitat. In addition to nesting birds, these habitats support small mammals and amphibians, and in association with adjacent irrigated land, provide hunting areas for raptors and forage for other wildlife.

The Colorado Parks & Wildlife (CPW) describes the entire Proposed Action Area as lying within a mule deer resident population area, critical winter range, severe winter range, and summer range, and the west half of the Proposed Action Area as lying within a mule deer concentration

area (CPW 2011; Figure 6). CPW describes the entire Proposed Action Area as elk winter range and elk severe winter range, and elk winter concentration areas (CPW 2011; Figure 7). The project area is also described as a winter forage area for bald eagle (CPW 2011).

Proposed Action: Upland wildlife habitat impacted by the Proposed Action would likely result in minor temporary impacts to wildlife species within the Project Area. Local wildlife may avoid using portions of the Project Area because of temporary disturbances due to pipeline construction. However, these impacts should be short-term in duration. Key wildlife species such as mule deer, elk, and raptors using the Proposed Action Area are also using the adjacent agricultural fields and pastures for forage, and would return to those areas when construction disturbances cease. Estimated impacts to about 11.1 acres of riparian and wetland habitats described in Section 3.5 of this document would directly impact those species dependent on these habitat types. Predicted habitat losses include emergent, shrub/scrub, and forested wetland habitats supported by irrigation seepage and the wetted ditch prisms (see Table 3). Habitat evaluations estimate that 7.88 fish and wildlife habitat units would be affected under the Proposed Action. Development of replacement habitat would mitigate impacts to wildlife and comply with the requirement of the Colorado River Basin Salinity Control Act to replace fish and wildlife values foregone (see Section 4.6 for more detail). Improved water quality would likely benefit downstream aquatic species (amphibians and fish) by reducing salt and selenium loading in the North Fork, Gunnison, and Colorado rivers.

No Action: Under the No Action Alternative, terrestrial wildlife and habitat would remain in their current condition. Salinity loading of the Colorado River drainage would continue at current rates, which will continue to affect water quality within the drainage, potentially affecting the wildlife using the area.

3.7 Threatened & Endangered Species

The Endangered Species Act (ESA) of 1973 protects federally listed endangered, threatened and candidate plant and animal species and their critical habitats. Rare Earth Science conducted a threatened and endangered species inventory for the Proposed Action Area during August, September, and October 2012 (Rare Earth 2013). Table 4 summarizes the results of the inventory, itemizing the federally-listed species that may occur within Delta County, Colorado (USFWS 2013), and explaining habitat requirement information and potential effects of the Proposed Action on each species. BLM Sensitive species are discussed in the next section of this EA.

The only ESA-listed or candidate species with the potential to be affected by the Proposed Action will be four Colorado River basin endangered fishes: the bonytail, the Colorado pikeminnow, the humpback chub, and the razorback sucker. These species and the effects of the Proposed Action, which is due to water depletions in the Colorado River basin, are discussed following Table 4. Other ESA-listed species in Delta County do not occur in the Proposed Action Area, or do not depend on the habitat types in the Proposed Action Area.

Table 4. Federally-Listed Threatened, Endangered, and Candidate Species in Delta County

Common Name	Status	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
BIRDS				
Gunnison sage-grouse <i>Centrocercus minimus</i>	Candidate for listing	Large contiguous patches of sagebrush (>200 acres) with an abundant herbaceous understory, interspersed with wet swales. Documented range is not within project area; habitat in the project area is not suitable (too fragmented / sagebrush patches are small and discontinuous).	Historic range only	No
Yellow-billed cuckoo <i>Coccyzus americanus</i>	Candidate for listing	Breeds in low elevation river corridors with fairly extensive mature cottonwood galleries; breeding birds have been detected in the nearby North Fork River valley almost annually since 2003. Habitat in the project area is not suitable for nesting. Individuals of this species in the Proposed Action Area would be considered incidental.	Yes	Peripheral only
FISHES				
Greenback cutthroat trout <i>Oncorhynchus clarkia stomias</i>	Threatened	High elevation cold water streams and cold water lakes with adequate stream spawning habitat present during spring. Nearest documented populations in Terror Creek and Hubbard Creek drainages, north of the Town of Paonia. No spawning habitat or perennial water in the Project area.	Yes	No
Bonytail <i>Gila elegans</i>	Endangered	Although no habitat is present within the project area for these four species, downstream designated critical habitat on the Colorado & Gunnison Rivers is affected by consumptive use of water from Cottonwood Creek and Crawford Reservoir.	No, but critical habitat is downstream	No, but critical habitat is downstream
Colorado pikeminnow <i>Ptychocheilus lucius</i>				
Humpback chub <i>Gila cypha</i>				
Razorback sucker <i>Xyrauchen texanus</i>				
MAMMALS				
Black-footed ferret <i>Mustela nigripes</i>	Endangered	Needs large active prairie dog colonies; species is extirpated from the state (only experimental populations exist, but not in Delta County). No large active prairie dog colonies are within or near the Project area.	No	No
Canada lynx <i>Lynx canadensis</i>	Threatened	Spruce/fir/mixed conifer/lodgepole pine forests (primary), or mixed deciduous/conifer (secondary). No habitat in Project area.	No	No

Common Name	Status	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
Wolverine <i>Gulo gulo luscus</i>	Candidate for listing	No specific habitat requirements, but high elevations (alpine) environs preferred; deep, persistent, and reliable spring snow cover (April 15 to May 14) is the best overall predictor of wolverine occurrence. Only one individual recently documented in the State of Colorado, not in Delta County.	No	No
PLANTS				
Clay-loving wild buckwheat <i>Eriogonum pelinophilum</i>	Endangered	Adobe soils (Mancos shale) of the Colorado and Gunnison valleys in semi-desert shrublands. No documented populations exist east of Hotchkiss in Delta County. None observed during inspection of project area.	No	No
Colorado hookless cactus <i>Sclerocactus glaucus</i>	Threatened	Known range limited to alluvial river terraces and Mancos Shale formation of the Gunnison River valley from near Delta, Colorado, to southern Mesa County, Colorado; and alluvial river terraces of the Colorado River and in the Plateau and Roan Creek drainages in the vicinity of DeBeque, Colorado. Plant associations include semi-desert shrublands, big sagebrush shrublands, and sagebrush-juniper woodland transition areas. None observed during inspection of project area.	No	No

The western yellow-billed cuckoo may occur incidentally in the Proposed Action Area during foraging bouts or during migration season, but no nesting habitat for this species is within the Proposed Action Area or the immediate surroundings. The nearest known nesting habitat is approximately 5 miles from the Proposed Action Area in the cottonwood forested riparian corridor of the North Fork of the Gunnison River (Rare Earth 2013).

The upper Colorado River Basin is home to 12 native fish species, four of which are listed as endangered: bonytail, Colorado pikeminnow, humpback chub, and razorback sucker (USFWS 2012). Decline of the four endangered species is due at least in part to habitat destruction (diversion and impoundment of rivers) and competition and predation from introduced fish species. In 1994, the U.S. Fish and Wildlife Service designated critical habitat for the four endangered species at Federal Register 56(206):54957-54967, which in Colorado includes the 100-year floodplain of the upper Colorado River from Rifle to Lake Powell, and the Gunnison River from Delta to Grand Junction. None of the four endangered Colorado River fishes occur in or near the Proposed Action Area and the Proposed Action Area does not occur within or adjacent to designated critical habitat. The closest designated critical habitat and the closest potential populations of the Colorado pikeminnow, and razorback sucker are in the Gunnison River, approximately 20 miles southwest of the Proposed Action Area. The bonytail has recently been stocked in the Gunnison River and humpback chubs have been recorded.

Potential impacts to Colorado River endangered fishes would result from continued water depletion in Cottonwood Creek and from Crawford Reservoir (on Iron Creek), both of which

drain to the North Fork of the Gunnison River in the greater Colorado River basin. Water depletion in these basins has the potential to diminish backwater spawning areas and other habitat in downstream designated critical habitat. The estimated average historic annual amount of water diverted from the Gunnison basin tributaries due to operation of C Ditch is approximately 3,786 acre-feet for irrigation of approximately 460 acres of grass hay crops and 1,484 for winter stock water (see Section 3.2). The resulting water depletion from the Colorado River basin is estimated at 906 acre-feet per year. This estimated depletion rate is equivalent to the net annual average total crop consumptive use rate calculated using the Colorado Water Conservation Board's "StateCU" consumptive use modeling software [CWCB 2012] with assistance from the Colorado Division of Water Resources (Division 4) Assistant Division Engineer, Jason Ullman, P.E. This depletion rate is expected to remain unchanged if the Proposed Action is implemented.

Proposed Action: A threatened and endangered species inventory was completed in the Proposed Action Area in 2012 (Rare Earth 2013). No threatened, endangered or candidate species were found in the Proposed Action Area. Suitable habitats for the threatened, endangered, or candidate species itemized in Table 4 (above) do not occur within the Proposed Action Area, or the species' documented ranges lie outside the Proposed Action Area. However, water depletions from the upper Gunnison River basin occurring as a result of C Ditch operations have the potential to affect downstream endangered fish habitat. No new depletions would occur as a result of the Proposed Action, and C Ditch Company's historic depletions were included within the 2009 Gunnison Basin Programmatic Biological Opinion (PBO) (USFWS 2009). The U.S. Fish & Wildlife Service has determined that all depletions from the Upper Colorado River Basin are considered an adverse effect to Colorado pikeminnow, razorback sucker, humpback chub and bonytail. Pursuant to the PBO, Reclamation has consulted with U.S. Fish & Wildlife Service regarding C Ditch Company's historic depletions. The result of this consultation (a Recovery Agreement) is included in this Final EA (Attachment D). The cumulative efforts of the Colorado River Basin Salinity Control Program improve water quality within designated critical habitats for the Colorado pikeminnow, razorback sucker, humpback chub, and bonytail throughout the Colorado River and Gunnison river basins by reducing salt and selenium loads. Additionally, potential reductions in selenium loading to the Gunnison basin as a result of the Proposed Action would contribute to the overall success of the Gunnison Basin Selenium Management Program (SMPW 2011).

No Action: In the absence of the Proposed Action, historic water depletions would continue, and salt and selenium loading from the Proposed Action Area would continue at current rates.

3.8 BLM Sensitive Species

The Proposed Action is located partially on BLM lands managed by BLM's Uncompahgre Field Office (UFO). According to BLM Manual Part 6840, BLM Sensitive species (in addition to those proposed for listing under the federal ESA) are "species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA." BLM Sensitive species are designated by the BLM's state director, and BLM Sensitive species found in the UFO (BLM 2011) and with documented occurrences in Delta County are listed on Table 5, below.

Rare Earth Science conducted an inventory for BLM Sensitive species in the Proposed Action Area during August, September, and October 2012 (Rare Earth 2013). While no BLM Sensitive species were observed in the Proposed Action Area during the inventory, seasonal foraging or migratory habitat exists in the Proposed Action Area or in the immediate vicinity of the Proposed Action Area for certain BLM Sensitive species,. One BLM Sensitive species, the northern leopard frog, potentially uses the Proposed Action Area as breeding habitat (see Table 5).

Table 5. BLM Sensitive Species in Delta County

Common Name	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
BIRDS			
American peregrine falcon <i>Falco peregrinus</i>	Uses open country near cliff habitat, often near water. An active peregrine falcon nest site exists on Needle Rock on BLM's Needle Rock ACEC (see Figure 1) about 2.75 miles east-by-southeast of the Project area. Species may forage for passerine birds in the Project area; however, more desirable foraging habitat exists closer to the nest site in the Smith Fork River corridor.	Yes	Foraging only
American white pelican <i>Pelecanus erythrorhynchos</i>	Inhabits large reservoirs but also observed on smaller water bodies including ponds; nests on islands. An extremely rare to uncommon migrant or seasonal resident with no documented nesting records in Delta. Nearest local migratory stopover site is Fruitgrowers Reservoir, about 17 miles northwest of the Project area.	Migratory only	No
Bald eagle <i>Haliaeetus leucocephalus</i>	Nests along forested rivers and lakes; winters in upland areas, often with rivers or lakes nearby. No records of recent nesting in Delta County. CPW maps the project area and surrounding mesas as winter range and winter foraging range. A documented roost site lies about 2 miles southwest on private lands on Grandview Mesa. Bald eagles likely forage across open pastures in the vicinity of the Project area for rodents and carrion.	Yes	Winter foraging only
Brewer's sparrow <i>Spizella breweri</i>	Breeds primarily in sagebrush shrublands, and less commonly in tall desert shrublands; requires relatively large shrubland patches for nesting. Migrants occur in wooded, brushy, and weedy riparian, agricultural, and urban areas, and occasionally in pinyon-juniper woodlands. Breeding records exist for southeast Delta County; however, favored nesting habitat is not within the Project area.	Yes	Primarily migratory
Burrowing owl <i>Athene cunicularia</i>	Prefers level to gently-sloping grasslands and semi-desert grasslands; prairie dog colonies are commonly used for shelter, nesting, and prey. Delta County breeding records are in the Uncompahgre River valley only. No extensive prairie dog colonies are present in or near the Project area which could support burrowing owls.	No	No

Common Name	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
Ferruginous hawk <i>Buteo regalis</i>	Prefers open, rolling and/or rugged terrain in grasslands, shrubsteppe communities, or cultivated fields; nests on cliffs and rock outcrops. No nesting records in Delta County. Wintering birds could be present around the Project area, especially open agricultural fields where burrowing rodents are present.	Yes	Potential winter foraging habitat only (not on BLM lands)
Northern goshawk <i>Accipiter gentilis</i>	Nests in a variety of forest types, including deciduous, coniferous, and mixed forests including ponderosa pine, lodgepole pine, spruce-fir, and aspen. Migrants and wintering individuals occur in all coniferous forest types, including pinyon-juniper woodlands. Disturbance to pinyon-juniper woodlands as a result of the Proposed Action would be minimal.	Yes	Potential winter foraging habitat only
White-faced ibis	Nests and roosts in marshes and emergent wetlands associated with lakes or reservoirs, feeds in wet hay meadows and flooded croplands (in the UFO, a fairly common spring/fall migrant, non-breeding).	Migratory only	No

FISHES

Colorado River cutthroat trout <i>Oncorhynchus clarkii pleuriticus</i>	Cool, clear streams or lakes with well-vegetated stream banks for shading cover, along with deep pools, boulders, and logs; thrives at high elevations. Nearest population documented in the north Smith Fork of the Gunnison River, east of the Town of Crawford. No spawning habitat or consistent perennial water in the Proposed Action Area.	Yes	No
Bluehead sucker <i>Catostomus discobolus</i>	Large rivers and mountain streams, rarely in lakes; variable from cold clear mountain streams to warm, turbid streams; moderate to fast-flowing water above rubble-rock substrate; young prefer quiet shallow areas near shoreline. Although no habitat is present within the project area for this species, downstream habitat on the Gunnison and Colorado Rivers is affected by consumptive use of water from Cottonwood Creek and Crawford Reservoir.	Yes	No, but habitat is downstream
Flannelmouth sucker <i>Catostomus latipinnis</i>	Warm moderate- to large-sized rivers, seldom in small creeks, absent from impoundments; pools and deeper runs often near tributary mouths; also riffles and backwaters; young usually in shallower water than adults. Although no habitat is present within the project area for this species, downstream habitat on the Gunnison and Colorado Rivers is affected by consumptive use of water from Cottonwood Creek and Crawford Reservoir.	Yes	No, but habitat is downstream
Roundtail chub <i>Gila robusta</i>	Water- rocky runs, rapids, and pools of creeks and small to large rivers; also large reservoirs in the upper Colorado River system; generally prefers cobble-rubble, sand-cobble, or sand-gravel substrate. Although no habitat is present within the project area for this species, downstream habitat on the Gunnison and Colorado Rivers is affected by consumptive use of water from Cottonwood Creek and Crawford Reservoir.	Yes	No, but habitat is downstream

Common Name	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
MAMMALS			
Big free-tailed bat <i>Nyctinomops macrotis</i>	Colorado's largest bat. Forages mostly on large moths. Roosts in crevices on cliff faces, or in buildings. No breeding records exist for Colorado; wandering individuals are expected across most of the state. Some loss of foraging habitat will occur as a result of the Proposed Action.	Yes	Foraging only
Desert bighorn sheep <i>Ovis canadensis nelsoni</i>	Steep, mountainous or hilly terrain with grass, low shrubs, rock cover, and areas near open escape and cliff retreats. In Delta County, range (as mapped by CPW) is limited to the Gunnison Gorge area, more than 5 miles west of the Project area.	No	No
Fringed myotis <i>Myotis thysanodes</i>	Feeds in semi-desert shrublands, coniferous woodlands, and oakbrush; associated with caves, mines, and buildings as day and night roosts. No nursery colonies have been reported in Colorado. Individuals may forage in the area during summer months, especially near water. Some loss of foraging habitat will occur as a result of the Proposed Action.	Yes	Foraging only
Kit fox <i>Vulpes macrotis</i>	Semi-desert shrublands, sagebrush shrublands, and shrubby margins of pinyon-juniper woodlands. Denning tends to occur in bottoms of steep-walled washes, and occasionally among rock outcrops and below rimrock. Current range in Colorado is limited to the Gunnison and Colorado River drainages below about 6,000 feet. Historic range apparently never extended into eastern Delta County. Nearest recently documented population (prior to the year 2000) in Delta County was in Peach Valley near the City of Delta.	No	N/A
Spotted bat <i>Euderma maculatum</i>	In Colorado, spotted bats have been observed or captured in ponderosa pine woodlands, montane forests, pinyon-juniper woodlands, semi-desert shrublands, riparian vegetation, and over open sandbars. Individuals forage alone for moths, grasshoppers, beetles, katydids, and other insects. Lactating females have been captured in Colorado, but nursery sites have not been located. Some loss of foraging habitat will occur as a result of the Proposed Action.	Yes	Foraging only
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	Feeds in semi-desert shrublands, pinyon-juniper woodlands, and open montane forests; frequently associated with caves and abandoned mines for day roosts, nursery colonies, and hibernacula, but will also use crevices on rock cliffs and abandoned buildings for summer roosting. Individuals may forage in the area during summer months, especially near water. Some loss of foraging habitat will occur as a result of the Proposed Action.	Yes	Foraging only
White-tailed prairie dog <i>Cynomys leucurus</i>	Level to gently sloping grasslands and semi-desert grasslands from 5,000 to 10,000 feet in elevation. Prairie dog burrows may be present in the margins of private irrigated lands adjacent to and near the Project area. No active burrows lie within the Proposed Action Area.	Yes	No
HERPTILES			

Common Name	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
Longnose leopard lizard <i>Gambelia wislizenii</i>	Semi-desert areas with scattered shrubs or other low plants; areas with abundant rodent burrows, typically below 5,000 feet in elevation.	No	No
Midget faded rattlesnake <i>Crotalus viridis concolor</i>	Prefers rocky outcrops for refuge and hibernacula, often near riparian, upper limit of 7,500 to 9,500 feet in elevation. Suitable hibernacula are not in the Project area. The species may use the Project area incidentally.	Yes	Marginal; without refugia
Milk snake <i>Lampropeltis triangulum taylori</i>	Variable types including shrubby hillsides, canyons, open ponderosa pine stands and pinyon-juniper woodlands, river valleys and canyons, animal burrows, and abandoned mines; hibernates in rock crevices. Suitable hibernacula are not in the Project area. The species may use the Project area incidentally.	Yes	Marginal; without refugia
Northern leopard frog <i>Rana pipiens</i>	Spring, slow-moving streams, marshes, bogs, ponds, canals, floodplains, reservoirs, lakes; in summer, commonly inhabits wet meadows and fields; may forage along water's edge or in nearby meadows or fields. Leopard frogs may breed in ditch alignments, especially those with year-round sluggish water.	Yes	Yes
Boreal toad <i>Anaxyrus boreas boreas</i>	Mountain lakes, ponds, meadows, and wetlands in subalpine forests of spruce, fir, lodgepole pine or aspen, feeding in meadows and forest openings near water but sometimes in drier forest habitats; elevations above 8,500 feet.	No	No

PLANTS

Colorado (Adobe) desert parsley <i>Lomatium nudicaule</i>	Adobe hills and plains on rocky soils derived from the Mancos Shale Formation; shrub communities dominated by sagebrush, shadscale, greasewood, or scrub oak; elevation 5,500 to 7,000 feet. Several populations have been documented in Delta County, but none were observed in the Project area.	Yes	Potential suitable
Eastwood's monkey flower <i>Mimulus eastwoodiae</i>	Shallow caves and seeps on steep canyon walls; elevation 4,700 to 5,500 feet. Known in Delta County only near the west county line in Escalante Canyon.	No	No
Fragile (slender) rockbrake <i>Cryptogramma stelleri</i>	Cool, moist, sheltered calcareous cliff crevices and rock ledges, typically in boreal coniferous forest or other boreal habitats.	No	No
Grand Junction milkvetch <i>Astragalus linifolius</i>	Pinyon-juniper and sagebrush communities with sparse ground cover, often on Chinle and Morrison Formations and selenium-bearing soils; elevation 4,800 to 6,200 feet. Known in Delta County in the extreme west end of the county only, where exposed Chinle and Morrison Formations occur.	No	No

Common Name	Habitat Requirement Summary	Range in Project Area?	Habitat in Project Area?
INVERTEBRATES			
Great Basin silverspot butterfly <i>Speyeria nokomis nokomis</i>	Permanent spring-fed meadows, seeps, marshes, and boggy streamside meadows associated with flowing water in arid country, often in the pinyon-juniper zone. The larval host plant, bog violet (<i>Viola nephrophylla</i>), is required in abundance. Nectar sources for adults are various composites (including thistles). No larval host plants were observed in the Project area, and no adults were observed during flight season. The nearest documented silverspot colony in the Uncompahgre Field Office area is in Unaweep Canyon in Mesa County.	Yes	Larval host plant not present or not abundant in the Project Area

Proposed Action: Implementation of the Proposed Action will result in temporal disturbance (construction activities) in the vicinity of raptor winter foraging areas, namely the open irrigated agricultural fields adjacent to and near the Proposed Action Area. The affected wintering raptors are bald eagle, goshawk, and ferruginous hawk. These raptors are wide-ranging, opportunistic, and flexible in their foraging patterns and are expected to avoid the Proposed Action Area during construction. Temporal disturbance (construction activities) may disrupt early breeding season peregrine falcon foraging in the immediate vicinity; however, these birds are wide-ranging, opportunistic, and spatially flexible in their foraging patterns and can be expected to avoid the Proposed Action Area during construction. Brewer's sparrow may find nesting habitat near the Proposed Action Area, although habitat types in and around the Proposed Action Area are not the preferred nesting habitat of Brewer's sparrow. Migrating individuals may be present during fall and early spring months, and can be expected to avoid the Proposed Action Area during construction activities. BLM Sensitive mammals with the potential to use the Proposed Action Area include fringed myotis (a bat), Townsend's big-eared bat, big free-tailed bat, spotted bat, and white-tailed prairie dog. The bats are expected to forage in the Proposed Action Area during summer months, and therefore will not be affected by construction activities. Relatively little upland shrubs or woodlands serving as foraging habitat for bats will be lost as a result of the Proposed Action. White-tailed prairie dogs are not established in the immediate Proposed Action Area corridor, although a few burrows may be present in the fringes of adjacent or nearby irrigated pastures. Pasture habitats with the potential to support white-tailed prairie dogs will not be affected by the Proposed Action. It is expected that BLM Sensitive snakes potentially using the Proposed Action Area (milk snake and midget faded rattlesnake) will be hibernating outside the Proposed Action Area during project construction. Hibernating northern leopard frogs may be expected to be present during construction of the Proposed Action, and implementation of the Proposed Action will result in the loss of northern leopard frog breeding habitat. To the extent that the loss of riparian or wetland habitat will affect foraging opportunities for BLM Sensitive snakes or bats, or breeding and overwintering habitat for the northern leopard frog, these habitat losses will be mitigated by creation of a Habitat Replacement Area near the Proposed Action Area (see Section 4.6).

No BLM Sensitive fishes are expected to occur in the Proposed Action Area. However, water depletions from the upper Gunnison River basin occurring as a result of C Ditch

operations have the potential to affect downstream BLM Sensitive fish habitat. No new depletions would occur as a result of the proposed action. The reduction of salinity and selenium that is expected to occur downstream in the watershed due to the Proposed Action may provide some benefit for BLM Sensitive fish habitat in downstream waters (similar to the benefits provided to the downstream endangered fish habitat described in Section 3.7).

No Action: The No Action Alternative would have no effect on BLM Sensitive species or their habitats.

3.9 Cultural Resources

In September 2012, Alpine Archaeological Consultants, Inc. conducted a Class III cultural resource inventory of irrigation features and areas slated for disturbance (Horn & Hoose 2012). A total of approximately 35 acres was inventoried, including the area of the Hoff Extension Ditch, which lies directly adjacent to a portion of C Ditch. The inventory resulted in the recordation of C Ditch (approximately 2.45 miles) from its origin on Cottonwood Creek westward to its terminus at the crossing of Crawford Road, and the documentation of 10 associated water control features. No additional historic or prehistoric sites were found during the inventory, with the exception of a portion of Aspen Canal, which had been documented during a different survey. C Ditch itself is officially eligible for listing in the National Register of Historic Places.

Proposed Action: In consultation with the Colorado State Historic Preservation Officer (Colorado SHPO), Reclamation determined that the Proposed Action would have an adverse effect on the C Ditch. A Memorandum of Agreement will be developed between Reclamation and the Colorado SHPO to mitigate the adverse effects of the proposed action. BLM and C Ditch Company are anticipated to participate as consulting parties. A copy of the MOA is included in Attachment E of the Final EA. Horn & Hoose (2012) recommended that to mitigate replacement of C Ditch with a pipeline, photographic documentation be conducted to capture the historic landscape characteristics of the ditch prior to its destruction.

No Action: The No Action Alternative would have no effect on cultural or historic resources.

3.10 Agricultural Resources & Soils

The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) identifies farmlands of national and statewide importance in the region, based on soil types and irrigation status. It is the policy of NRCS to "maintain and keep current an inventory of the prime farmland and unique farmland of the Nation...The objective of the inventory is to identify the extent and location of important rural lands needed to produce food, feed, fiber, forage, and oilseed crops" (7 CFR 657.2). The Proposed Action crosses two types of USDA-designated important farmland: *Prime Farmland if Irrigated*, and *Farmland of Statewide Importance* (Figure 8). Approximately 1,300 lineal feet of the project area cross or lie adjacent to *Prime Farmland if Irrigated* (Agua Fria clay loam, 1 to 6 percent slopes – Map Unit 5) and approximately 1,500 lineal feet cross *Farmland of Statewide Importance* (Limon silty clay loam, 3 to 6 percent slopes – Map Unit 51). Some of the designated important farmland areas crossed by the Proposed Project are irrigated by (and will continue to be irrigated by) the C Ditch System. NRCS defines prime farmlands as follows:

Prime farmland has the best combination of physical and chemical characteristics for producing food, feed, forage fiber and oilseed crops. Unique farmland is land other than prime farmland that is used for the production of specific high-value food and crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has a special combination of soil quality, location, growing season, and moisture supply required to produce sustained high quality crops when properly managed. In addition, farmlands of statewide importance are lands that nearly meet the requirements for prime farmland and have been identified by state agencies.

Other mapped soil units found in the immediate Proposed Action Area (Figure 8) are Chipeta silty clay, 3 to 30 percent slopes (Map Unit 23), Killpack silty clay loam, 3 to 12 percent slopes (Map Unit 48), and Midway-Gaynor silty clay loams, 10 to 40 percent slopes (Map Unit 56). All of these soil types are derived from Mancos Shale, which formed in a marine environment and now contributes salinity loading in the Colorado River basin.

Proposed Action: Under the Proposed Action Alternative, temporary disturbance to agriculturally important lands and soils will occur during construction. C Ditch Company would coordinate construction activities with adjacent landowners to minimize disturbance, and these lands will be returned to production immediately following construction and restoration of the ground surface. No farmlands will be permanently removed from production as a result of the Proposed Action. The Proposed Action would give C Ditch Company the ability to better manage its water rights with efficiencies gained from piping the system. Efficiencies gained may result in a longer irrigation season, and potentially in increased agricultural productivity. Therefore, no direct adverse effects on agriculturally significant lands are expected to occur due to implementation of the Proposed Action. Water contact with Mancos Shale derived soils would be minimized in the irrigation system as a result of the Proposed Action, which would help reduce salinity loading in the Colorado River basin.

No Action: The No Action Alternative would have no effect on prime or unique farmlands. Farmlands in the project area would continue to produce as in the past. Salinity loading from irrigation water contact with Mancos Shale-derived soils in the current irrigation ditch system would continue as it has in the past.

3.11 Recreation Resources

A single-track trail exists on BLM lands immediately south of a water crossing in the east part of the Project Area, and user-proliferated trails with motorized use exist on BLM lands in the west part of the Proposed Action Area (Figures 2 and 3). The Proposed Action is located in Colorado Parks & Wildlife Game Management Unit (GMU) 53, and licensed big game hunters hunt on BLM lands encompassing the Project Area during hunting seasons.

Proposed Action: Construction of the Proposed Action would take place between October and April. Under the Proposed Action Alternative, access to the single-track trail from the water crossing over C Ditch and access to motorized trails from Davis Road will be temporarily disrupted during construction of the Proposed Action. The Proposed Action could disrupt recreational big game hunting during fall months (quality of experience and hunting success) on BLM lands south of the Project Area, due to construction activity. The Proposed Action would not result in permanent displacement of big game in the Proposed Action Area. Trail access for hunting, hiking, and motorized travel is available to the BLM lands crossed by the Proposed Action from several other

points near or on public roads, namely, the Youngs Peak trail in the Town of Crawford. Pipeline trenches left open overnight would be kept to a minimum to reduce potential for hazards to the public and to wildlife. On BLM land, construction holes or pipeline trenches left open overnight will be covered. Covers will be secured in place and strong enough to prevent livestock or wildlife from falling through.

No Action: The No Action Alternative would have no effect on recreational resources on BLM lands. Recreation in the Project Area would continue as in the past.

3.12 Livestock Grazing

Cattle and sheep grazing allotments exist on BLM lands within the Project Area. Sheep grazing takes place on BLM lands traversed by about 830 lineal feet of the Project Area for one week between the dates of December 1 to February 10 (in the west part of the Project Area). Cattle grazing is permitted on BLM lands traversed by about 3,090 lineal feet of the Project Area from May 15 through June 1 (in the east part of the Project Area).

Proposed Action: Construction would take place between October and April. Under the Proposed Action Alternative, temporary disturbance to lands within BLM grazing allotments will occur during construction. Also, the Proposed Action will remove a source of livestock water from the grazing allotments; however, Cottonwood Creek would still be available as a source of livestock water. Lands affected by construction would be revegetated with a BLM-recommended seed mix containing grasses and forbs palatable for forage. No lands currently capable of being grazed will be rendered permanently incapable of being grazed as result of the Proposed Action. The Proposed Action may result in a small increase in lands capable of providing livestock grazing within the Project Area. Therefore, no direct adverse effects on livestock grazing allotments are expected to occur due to implementation of the Proposed Action. The timing of grazing on the cattle allotment will most likely not coincide with construction of the Proposed Action. The timing of grazing on the sheep allotment may coincide with construction of the Proposed Action in the west part of the Project Area. Grazing access to the allotment will not be affected by the Proposed Action. Pipeline trenches left open overnight would be kept to a minimum to reduce potential entrainment of livestock. Notification to the grazing permit holder(s) will be made if construction is to occur during a grazing period. C Ditch Company and its contractors will cooperate and coordinate with BLM and the grazing permit holder(s) to avoid conflicts with grazing operations.

No Action: The No Action Alternative would have no effect on grazing allotments on BLM lands. Livestock grazing in the Proposed Action Area would continue as in the past.

3.13 Visual Resources

A total of approximately 3,920 lineal feet of the Proposed Action Area lies on BLM lands, and part of the Proposed Action Area will be accessed via approximately 920 lineal feet of an existing BLM road (see Project Plan sheet; attached to BLM copy of the EA only). The BLM Manual 8410-1 (Visual Resource Management) defines and categorizes visual resource management classes that provide objectives for visual resources on BLM lands as projects are proposed and implemented in the landscape. These Visual Resource Management (VRM) classes are determined through an inventory process described in BLM Manual 8410-1, and are used to provide guidance to BLM and project proponents when contemplating proposed surface disturbing activities. Class I areas are protected from visible change, Class II areas allow for

visible changes that do not attract attention, Class III areas allow for visible changes that attract attention but are not dominant, and Class IV areas allow for visible changes that can dominate the landscape. BLM manages the proposed project area as a Class III area.

Proposed Action: There will be short-term temporary effect to visual resources on BLM land during construction of the Proposed Action (i.e., presence of equipment, materials, and spoil piles). The visual effects of construction on BLM lands are proposed to take place at some point during the time period of October 1, 2013 through April 15, 2014. Following construction, the Proposed Action Area will be graded and vegetated to match the surrounding landscape as much as possible. In the east part of the Proposed Action Area, it will be necessary to scale back hillslopes above (south of) certain parts of the Project Alignment in order to create a safe work platform for construction. Scaled slopes will be similar in appearance to the original slopes, which are currently mostly unvegetated Mancos shale-derived soils. Scaled soil and rock will be used onsite for construction purposes, or hauled outside the Proposed Action Area and used for adjoining private property improvements. Overall, the level of change to the visual characteristics of the landscape in and around the Proposed Action Area during and following construction will be low to moderate, and not out of character with the surrounding landforms, or with the rural-agricultural character of the vicinity.

No Action: The No Action Alternative would have no effect on visual resources on BLM lands in the Proposed Action Area.

3.14 Cumulative Impacts

Cumulative impacts are impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The Gunnison Basin Selenium Management Program (SMPW 2011) identifies the vicinity of the Proposed Action Area as a potential contributor to selenium in the basin. Implementation of the Proposed Action will help further the following goals of the Gunnison Basin Selenium Management Program (SMPW 2011): to maintain or improve the existing downward trend in lower Gunnison River selenium concentrations, and to sufficiently improve water quality conditions to assist in the recovery of the endangered Colorado pikeminnow and razorback sucker by reducing selenium concentrations in the lower Gunnison basin. Locally, the Proposed Action Area and duration of disturbance under the Proposed Action are small and short-term, and long term impacts are not expected to raise cumulative negative impacts to a significant level. The Proposed Action will comply with all relevant federal, state and local permits (detailed in the Summary and Environmental Commitments Section of this document).

There are three federal programs (including the Gunnison Basin Selenium Management Program) that include the project area at a basin-wide scale. When the Proposed Action is analyzed with components of these basin-wide programs, the cumulative beneficial effects on water quality are significant. The first program is the Colorado River Basin Salinity Control Program, which provided the funding for implementation of the Proposed Action. Collectively, projects funded under the Program result in improved water quality with the goal of reducing salt loading in the Colorado River. The second is the Upper Colorado River Endangered Fish Recovery Program. The Recovery Program involves federal, state and private organizations and agencies in Colorado, Utah, and Wyoming. Partners of the Recovery Program are

recovering four species of endangered fish in the Colorado River and its tributaries while water use and development continues to meet human needs in compliance with interstate compacts and applicable federal and state laws. The third program is the development and implementation of the Gunnison Basin Selenium Management Program which is required as a conservation measure by the Gunnison Basin Programmatic Biological Opinion (USFWS 2009). Reclamation is working with entities in the Gunnison Basin to develop the Gunnison Basin Selenium Management Plan to reduce selenium levels in the Gunnison River at Whitewater.

3.15 Summary of Impacts

Table 6 lists predicted impacts of the No Action and Proposed Action Alternatives analyzed in this EA.

Table 6. Summary of Impacts of the C Ditch/Needle Rock Pipeline Project

Resource Issue	Impacts	
	No Action Alternative	Proposed Action Alternative
Water Rights and Use	No Effect	No Effect
Water Quality	Salt and selenium loading from the project area would continue to affect water quality in the Colorado River Basin	An estimated salt loading reduction of 1,306 tons per year to the Colorado River Basin will result from implementation of the Proposed Action. The Proposed Action is also expected to reduce selenium loading into the Gunnison River; however, these benefits have not been quantified. Improved water quality would likely benefit downstream aquatic species by reducing salt and selenium loading in the North Fork, Gunnison, and Colorado rivers.
Access & Temporary Disturbance	No Effect	Short-term temporary adverse effects consisting of noise, ground, and vegetation disturbance to property owners in the Proposed Action Area. A permanent cut in a rock slope on BLM lands in the east part of the Proposed Action Area would result from construction. Spoils from the cut slope will be used for project construction, and any excess will be hauled to adjoining private property for use as clean fill material.
Habitat	No Effect	Estimated loss of 11.1 acres of Clean Water Act-exempt wetland and riparian habitat (see Attachment B) and 7.88 total habitat value units, to be replaced/mitigated at a site near the Proposed Action Area.
Fish and Wildlife Resources	No Effect	Short-term temporary adverse effect to local wildlife during construction.

Resource Issue	Impacts	
	No Action Alternative	Proposed Action Alternative
Threatened and Endangered Species	Salt and selenium loading from the project area would continue to affect aquatic dependent species	Depletions (irrigation water consumption) would continue at historic levels, and would adversely affect the four Colorado River federally endangered fishes. However the Upper Colorado River Endangered Fish Recovery Program serves as mitigation for these impacts. The Proposed Action would improve water quality by contributing to the reduction of salt and selenium loading in the Gunnison and Colorado rivers (see Attachment D).
BLM Sensitive Species	Salt and selenium loading from the project area would continue to affect aquatic dependent species	The Proposed Action will affect breeding habitat for the BLM Sensitive northern leopard frog. It may also affect foraging habitat for BLM Sensitive snakes and bats. These habitat losses will be mitigated with Replacement Habitat. The Proposed Action would improve water quality by contributing to the reduction of salt and selenium loading in the Gunnison and Colorado rivers, to the benefit of BLM Sensitive fishes downstream of the Proposed Action Area.
Cultural Resources	No Effect	Adverse effect to NRHP eligible site, the C Ditch System. The adverse effect would be mitigated with a Memorandum of Agreement between Reclamation and the Colorado SHPO (see Attachment E).
Agricultural Resources & Soils	No Effect	Short-term temporary effect during construction, with agricultural production resuming following restoration of the ground surface.
Indian Trust Assets	No Effect	No Effect
Environmental Justice	No Effect	No Effect
Recreation Resources	No Effect	Access to a BLM foot trail in the east part of the Project Area will be disrupted temporarily during construction. The Proposed Action is tentatively scheduled to begin in October 2013, and could disrupt recreational big game hunting (quality of experience and hunting success) on BLM lands to the south (due to construction noise and temporarily disrupted access to the BLM foot trail in the east part of the Project Area). Trail access for hunting, hiking, and motorized travel is available to the BLM lands crossed by the project area from several other points near or on public roads, namely, the Youngs Peak trail in the Town of Crawford.

Resource Issue	Impacts	
	No Action Alternative	Proposed Action Alternative
Livestock Grazing	No Effect	Temporary effect. No lands capable of providing grazing will be permanently lost. The Proposed Action is proposed to take place on BLM land outside the cattle allotment grazing timeframe. Sheep grazing may possibly coincide with one week during construction of the proposed action; however, construction activities will not impede access to the grazing allotment and project personnel will coordinate with the grazing permit holder(s) to avoid conflicts with grazing operations. A livestock water source will be lost on the allotments due to the Proposed Action, but alternate water resources are available.
Visual Resources	No Effect	Short-term temporary effect during construction (i.e., presence of equipment, spoil piles), with revegetation commencing following completion of the project. A permanent cut in a rock slope on BLM lands in the east part of the Proposed Action Area would result from construction. Spoils from the cut slope will be used for project construction, and any excess will be hauled to adjoining private property for use as clean fill material. The cut slope will be similar in appearance and character to its appearance and character prior to construction.

The Proposed Action will result in no change or have no effect on Indian trust assets, environmental justice, recreation resources, agricultural resources (prime & unique farmlands), or livestock grazing. Water rights and uses, water quality, and endangered species would all benefit from the proposed action. Negative impacts to vegetation, fish and wildlife, cultural, recreational, and visual resources would not be significant with implementation of the mitigation measures described in Section 4, the Environmental Commitments and Mitigation Section of this document.

4 ENVIRONMENTAL COMMITMENTS & MITIGATION MEASURES

This section discusses the environmental commitments and related mitigation developed to protect resources and mitigate adverse impacts to a non-significant level. The cooperative agreement between Reclamation and C Ditch Company requires that Company be responsible for "...implementing and/or complying with the environmental commitments contained in the NEPA/Endangered Species Act compliance documents to be developed by Reclamation for the project".

The following environmental commitments will be implemented as an integral part of the Proposed Action.

4.1 Construction Access

All construction activities would be confined to rights-of-way negotiated between C Ditch Company and the landowners. Construction staging (for pipe and equipment) will take place in several areas, as shown on the Project Plan drawings and on Figures 2 and 3 of this report. Environmental commitments will be included in BLM right-of-way authorizations and agreements with private landowners. Any construction activities outside of the inventoried Proposed Action Area would require additional review by Reclamation to determine if the existing surveys and information are adequate to evaluate additional impacts outside this corridor. Additional NEPA or Endangered Species Act compliance activities may be required if determined necessary by Reclamation.

4.2 Water Quality

The following Best Management Practices (BMPs) and environmental commitments would be implemented to minimize erosion and protect water quality of downstream resources:

- The contractor would obtain a CWA Section 402 Storm Water Discharge Permit (NPDES) from the Colorado Department of Public Health and Environment for dewatering the construction area if dewatering is needed. (Dewatering will not be necessary, as construction will take place when water conveyances are empty.)
- Silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures will be used to prevent erosion from entering water bodies during construction.
- Concrete pours will occur in forms and/or behind cofferdams to prevent discharge into waterways. Any wastewater from concrete-batching, vehicle wash down, and aggregate processing will be contained and treated or removed for off-site disposal.
- Fuels, lubricants, hydraulic fluids, and other petrochemicals will be stored and dispensed in an approved staging area. Equipment will be inspected daily for petrochemical leaks. Construction equipment will be parked, stored, and serviced only at an approved staging area.
- A spill response plan will be prepared for areas of work where spilled contaminants could flow into water bodies. All employees and workers, including those under separate contract, will be briefed and made familiar with this plan. The plan will be developed prior to initiation of construction. A spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and onsite at all times.
- Onsite supervisors and equipment operators will be trained and knowledgeable in the use of spill containment equipment.
- Appropriate federal and Colorado authorities (including BLM) will be immediately notified in the event of any contaminant spill.
- Because the Proposed Action is exempted, no Section 401 Water Quality Certification is required; however, BMPs would be implemented to protect water resources.

4.3 Irrigation Facilities & Structures

Pursuant to the Cooperative Agreement between C Ditch Company and Reclamation, C Ditch Company will permanently dewater, remove from irrigation service, and render incapable of irrigation water delivery those open ditches abandoned as part of the Proposed Action. C Ditch Company will be responsible for removing all irrigation structures (head gates, drops, etc.) and refilling the abandoned ditch prism with soil.

4.4 Ground Disturbances

Ground disturbances would be limited to only those necessary to safely implement the Proposed Action. Best Management Practices to reduce disturbances to vegetation resources reduces the amount of planting or reseeding needed. Planting and reseeding disturbed areas, per landowner specifications; monitoring plantings to ensure establishment, control noxious weeds in disturbed areas, and the use of accepted erosion control measures during construction are all incorporated as environmental commitments for the Proposed Action.

During construction, topsoil would be saved and then redistributed after completion of construction activities. All disturbed areas would be smoothed, shaped, contoured and reseeded to as near their pre-project conditions as practicable. Seeding would occur at appropriate times with weed-free seed mixes per landowner specifications and the BLM right-of-way permit condition. Weed control will be implemented in accordance with BLM right-of-way permit conditions and current Delta County weed control standards.

4.5 Fish & Wildlife Resources

Construction areas would be confined to the smallest feasible area to limit disturbance to wildlife within the Proposed Action Area. Pipeline trenches left open overnight would be kept to a minimum to reduce potential entrainment of small animals and public safety problems.

4.6 Habitat Replacement

Habitat development and/or enhancement to replace the predicted 7.88 fish and wildlife habitat units affected under the Proposed Action are required under the Colorado River Salinity Control Act. C Ditch Company is responsible for developing and implementing a Reclamation-approved wildlife habitat replacement plan to replace fish and wildlife values foregone as a result of project implementation.

Habitat replacement will be implemented concurrently with implementation of the Proposed Action. C Ditch Company and Reclamation staff is currently working with Wildlife and Natural Resource Concepts & Solutions, LLC to develop a proposed Habitat Replacement Plan, which will be implemented on the nearby Adam Ranch and create enough habitat value units to replace the 7.88 total habitat value units affected due to project implementation. The proposed Habitat Replacement Site location is shown on Figures 2, 3, and 4.

The Habitat Replacement Plan involves rebuilding and enlarging a series of small dams to create three enlarged wetlands on an existing irrigation ditch which is fed by a spring. Each enlarged wetland will be about 0.75 acre in size, 3 to 6 feet in depth, and irregular in shape. Willows, alders, and cottonwoods will be planted in the margins around the wetlands, and native upland and mesic shrubs will be planted in a habitat shelterbelt on the north side of the site. Shrubs will include species such as three-leaf sumac, wild rose, chokecherry, native plum, and

silver buffaloberry. The site will be fenced with 8-foot-tall big game fencing to exclude deer, elk, and cattle while the plantings are establishing, and following satisfactory establishment of plantings, livestock fencing will be installed to exclude cattle. Water control structures will be installed to help regulate water levels in the wetlands, and to provide water to stock tanks outside the Habitat Replacement Area. A weed treatment program will be implemented to meet standards set by Delta County and the State of Colorado. The Habitat Replacement Plan and any associated agreements must be finalized and approved by Reclamation prior to any construction activities.

The wetlands will be created by digging irregular shaped potholes and utilizing three existing dams on the irrigation ditch in the Habitat Replacement Area. The material excavated from the potholes will be used offsite to level nearby agricultural fields. By disposing excavated materials off site and using existing dams, no wetlands permit from the Corps of Engineers will be required.

The Habitat Replacement Area will provide habitat for a diversity of local wildlife, including big game, songbirds, raptors, a variety of small mammals, reptiles, and amphibians, including the BLM Sensitive northern leopard frog.

C Ditch Company will be responsible for maintaining the Habitat Replacement area. Failure to develop and implement concurrent habitat replacement may result in delays in obligating funding under the Cooperative Agreement.

4.7 Federally-Listed Species

C Ditch Company has entered into a recovery agreement with the U.S. Fish & Wildlife Service to incorporate its historic depletions under the umbrella of the Gunnison Basin Biological Opinion. A copy of the recovery agreement is included in Attachment D of this Final EA. In the event that threatened or endangered species (see Table 4) are encountered during construction, C Ditch Company shall stop construction activities until Reclamation has completed consultation with the U.S. Fish & Wildlife Service to ensure that adequate measures are in place to avoid or reduce impacts to the species.

4.8 Cultural Resources

Reclamation and the Colorado State Historic Preservation Office (SHPO) will enter into a Memorandum of Agreement (MOA) to mitigate the Proposed Action's adverse effects to cultural resources. The MOA will commit Reclamation to complete historic resource documentation of the exiting ditch and structures prior to construction activities in accordance with the guidance for Level I documentation found in "Historic Resource Documentation, Standards for Level I, II and III Documentation" (COAHP 2007). C Ditch Company and BLM will participate and sign as consulting parties in the MOA. In the event that cultural and/or paleontological resources are discovered during construction, C Ditch Company shall stop construction activities until Reclamation has completed consultation with the SHPO and appropriate measures are implemented to protect or mitigate the discovered resource.

4.9 Agricultural Resources & Soils

During construction, topsoil would be saved and then redistributed after completion of construction activities. Silt curtains, cofferdams, dikes, straw bales, or other suitable erosion control measures will be used to minimize soil erosion and prevent soil erosion from entering

water bodies during construction. All disturbed areas would be smoothed, shaped, contoured and reseeded to as near their pre-project conditions as practicable. Lands previously in agricultural production will be returned to agricultural production following construction.

4.10 Recreation Resources

During construction, trail access for hunting, hiking, and motorized travel is available to the BLM lands crossed by the Proposed Action from several other points near or on public roads, namely, the Youngs Peak trail in the Town of Crawford. Pipeline trenches left open overnight would be kept to a minimum to reduce potential for hazards to the public and to wildlife. On BLM land, construction holes or pipeline trenches left open overnight will be covered. Covers will be secured in place and strong enough to prevent livestock or wildlife from falling through.

4.11 Livestock Grazing

The timing of grazing on the BLM cattle allotment (east end of the Proposed Action Area) will not likely coincide with construction of the Proposed Action. The timing of grazing on the BLM sheep allotment (west end of the Proposed Action Area) may coincide with construction of the Proposed Action. Notification to the grazing permit holder(s) will be made if construction is to occur during a grazing period. Pipeline trenches left overnight would be kept to a minimum to reduce potential entrainment of livestock. Construction holes or pipeline trenches left open overnight will be covered. Covers will be secured in place and strong enough to prevent livestock or wildlife from falling through. Project personnel will cooperate with the grazing permit holder(s) to avoid conflicts with grazing operations. Access to the grazing allotments will not be affected by the Proposed Action. Temporarily disturbed BLM lands will be revegetated with a BLM-recommended seed mix containing grasses and forbs palatable for forage.

4.12 Visual Resources

Following construction, the Proposed Action Area will be graded and vegetated to match the surrounding landscape as much as possible. Scaled slopes will be similar in appearance to the original slopes, which are currently mostly unvegetated Mancos shale-derived soils. Overall, the level of change to the visual characteristics of the landscape in and around the Proposed Action Area during and following construction will be low to moderate, and not out of character with the surrounding landforms, or with the rural-agricultural character of the vicinity.

4.13 Hazardous Materials, Waste Management & Pollution Prevention

Environmental impacts from hazardous materials or waste related to the Proposed Action involve potential spills or leaks of motor fuels and lubricants. Fuel and lubricant spills have the potential to impact soil and water resources, but because of the relatively small amounts of such materials that would be used in the Proposed Action Area (i.e., a 55-gallon drum), impacts from accidental spills or leaks are expected to be minimal.

During construction, the use, storage and disposal of hazardous materials and wastes within the Proposed Action Area will be managed in accordance with all federal, state, and local standards, including the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq., 40 CFR Part 702-799, and 40 CFR 761.1-761.193). Any trash or solid wastes generated during the Proposed Action will be properly disposed offsite.

The following Best Management Practices (BMPs) and environmental commitments would be implemented with regard to hazardous materials, waste management, and pollution prevention:

- The construction contractor shall transport, handle, and store any fuels, lubricants, or other hazardous substances involved with the Proposed Action in an appropriate manner that prevents them from contaminating soil and water resources.
- Portable secondary containment shall be provided for any fuel or lubricant containers staged on BLM land within the Proposed Action Area. Any staging of fuel or lubricants, or fueling or maintenance of vehicles or equipment, will not be conducted within 100 feet of any live water or drainage.
- A spill response plan will be prepared for areas of work where spilled contaminants could flow into water bodies. All employees and workers, including those under separate contract, will be briefed and made familiar with this plan. The plan will be developed prior to initiation of construction.
- A spill response kit, which includes appropriate-sized spill blankets, shall be easily accessible and onsite at all times.
- Onsite supervisors and equipment operators will be trained and knowledgeable in the use of spill containment equipment.
- All spills, regardless of size, shall be cleaned up promptly and contaminated soil shall be disposed of at an approved facility.
- Appropriate federal and Colorado authorities will be immediately notified in the event of any contaminant spill. Any spills on BLM lands will be reported to BLM promptly. Any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, section 102b. A copy of any report required or requested by any federal agency or state government as a result of a reportable release or spill of any toxic substances shall be furnished to BLM concurrent with the filing of the reports to the involved Federal agency or State government.

5 REFERENCES

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http://www.blm.gov/pgdata/etc/medialib/blm/co/field_offices/uncompahgre_field/documents/biological.Par.87656.File.dat/Special%20Status%20Species%20of%20the%20BLM%20Uncompahgre%20Field%20Office_04_15_2011.pdf. Last updated April 15, 2011

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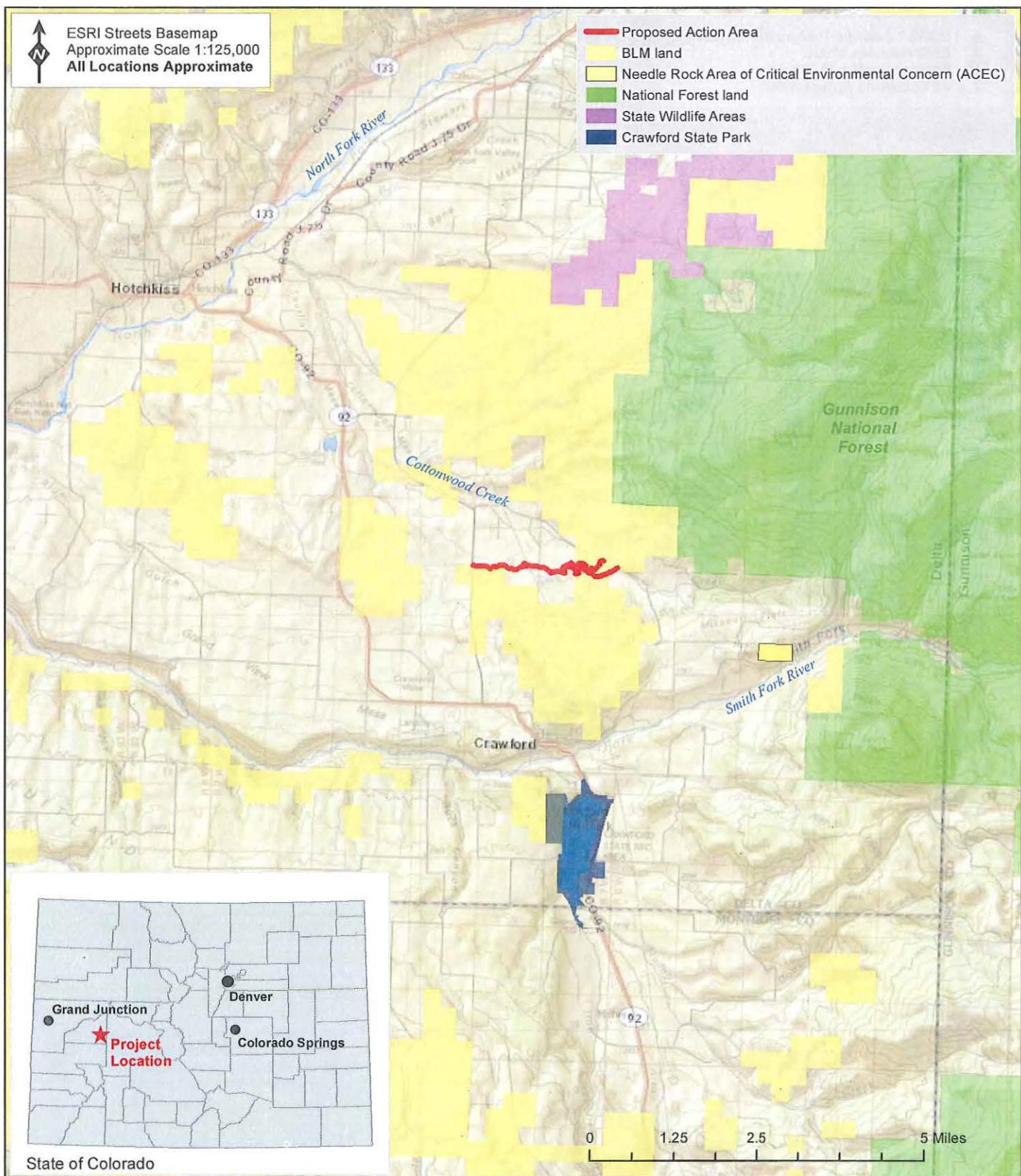
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FIGURES



DATE: May 2013

DRAWN BY: D. Reeder



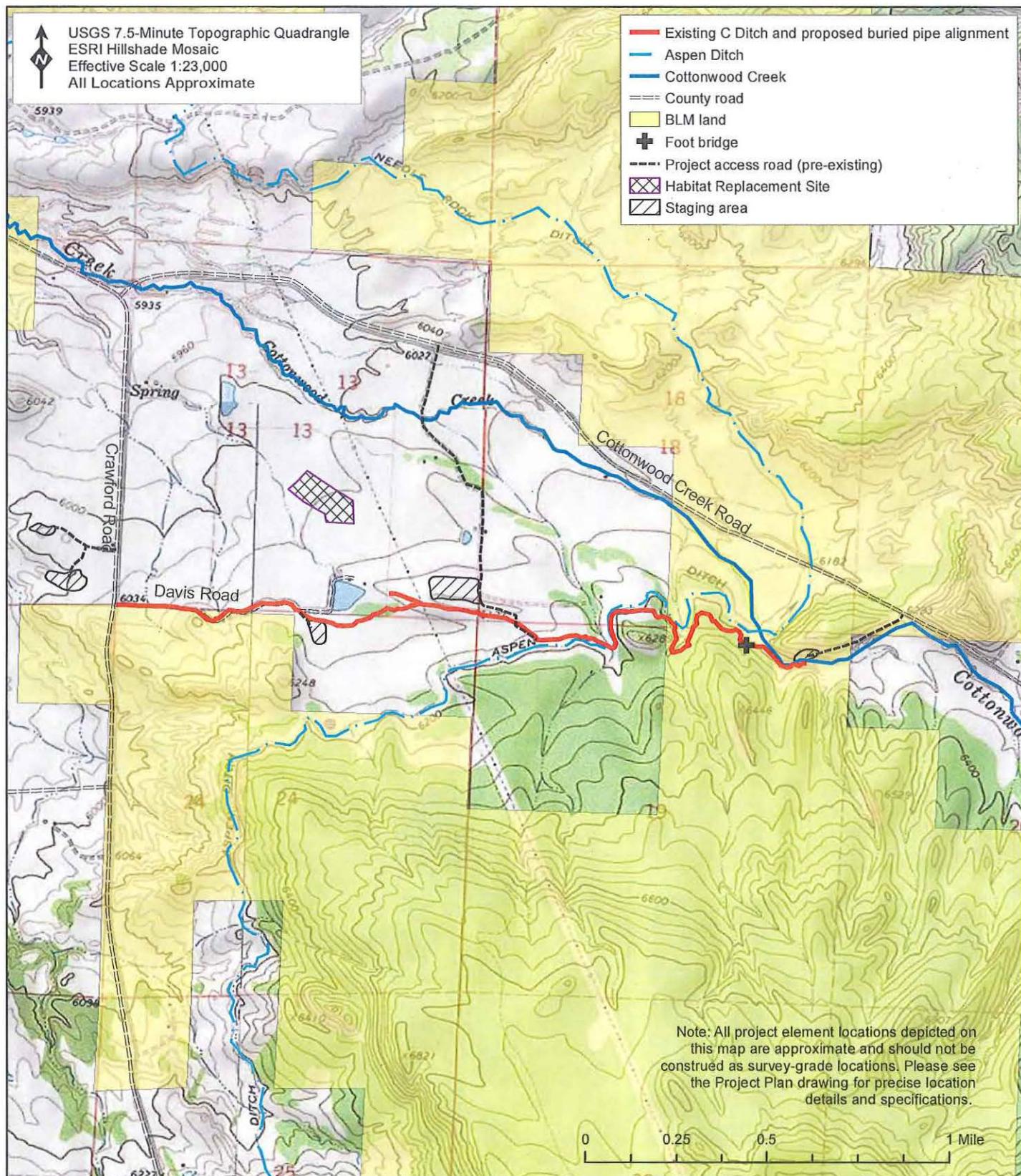
RARE EARTH SCIENCE
PO Box 1245
Paonia, Colorado 81428
(970) 527-8445
www.rareearthscience.com

REGIONAL & LOCAL LOCATOR MAPS

C DITCH / NEEDLE ROCK PROJECT
ENVIRONMENTAL ASSESSMENT
Delta County, Colorado

FIGURE

1



DATE: May 2013

DRAWN BY: D. Reeder



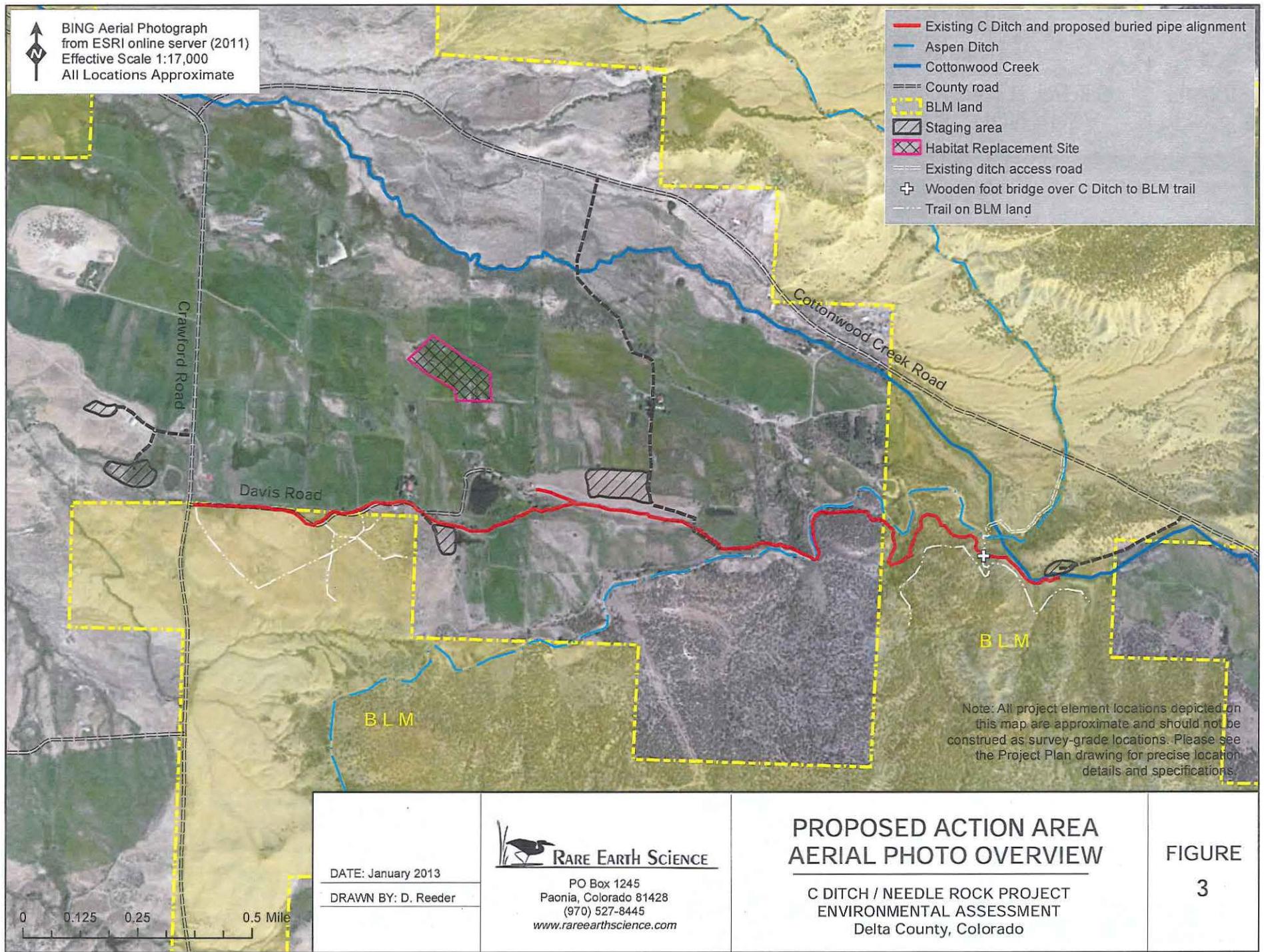
RARE EARTH SCIENCE

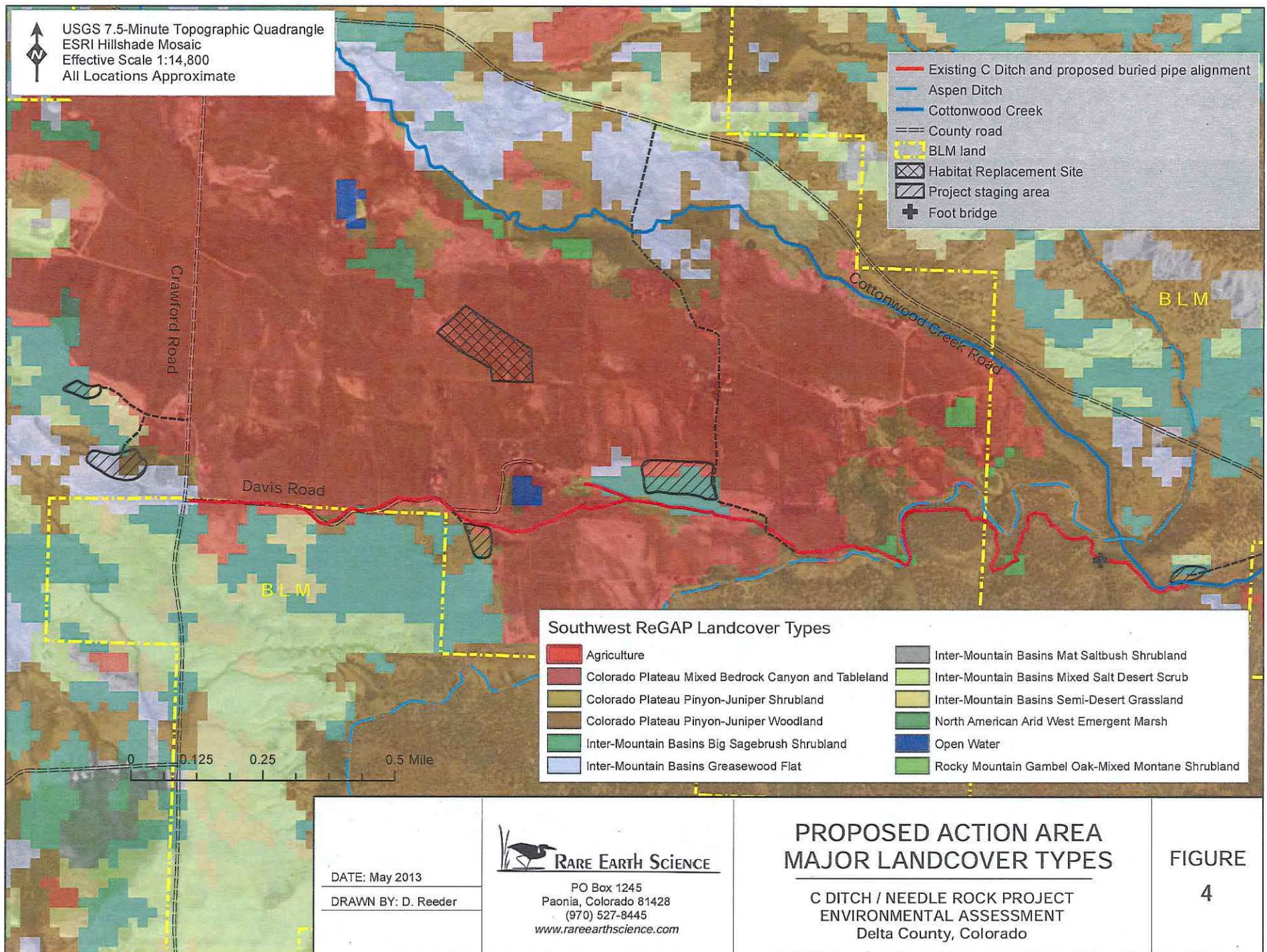
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(970) 527-8445
www.rareearthscience.com

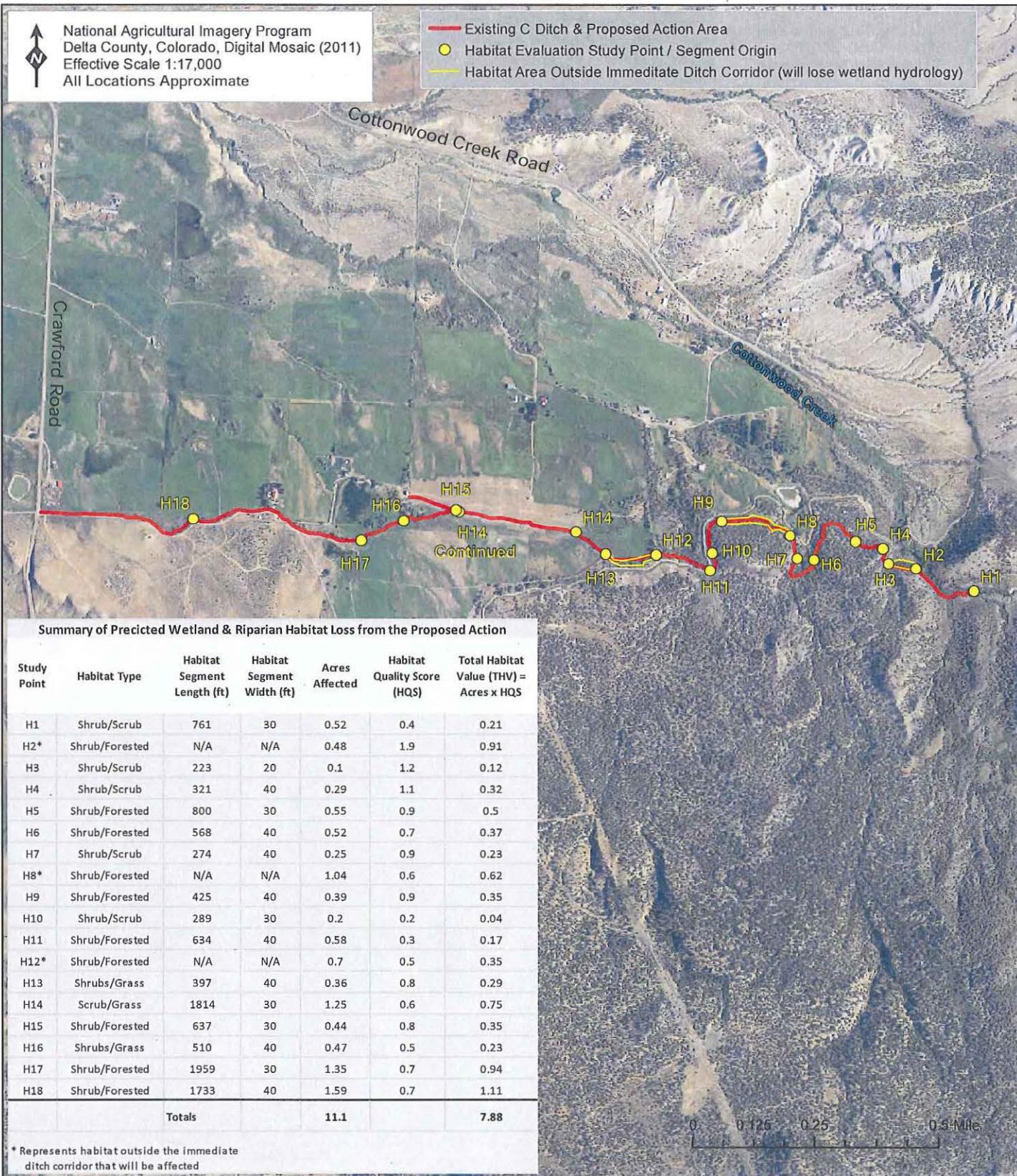
PROPOSED ACTION AREA TOPOGRAPHIC MAP OVERVIEW

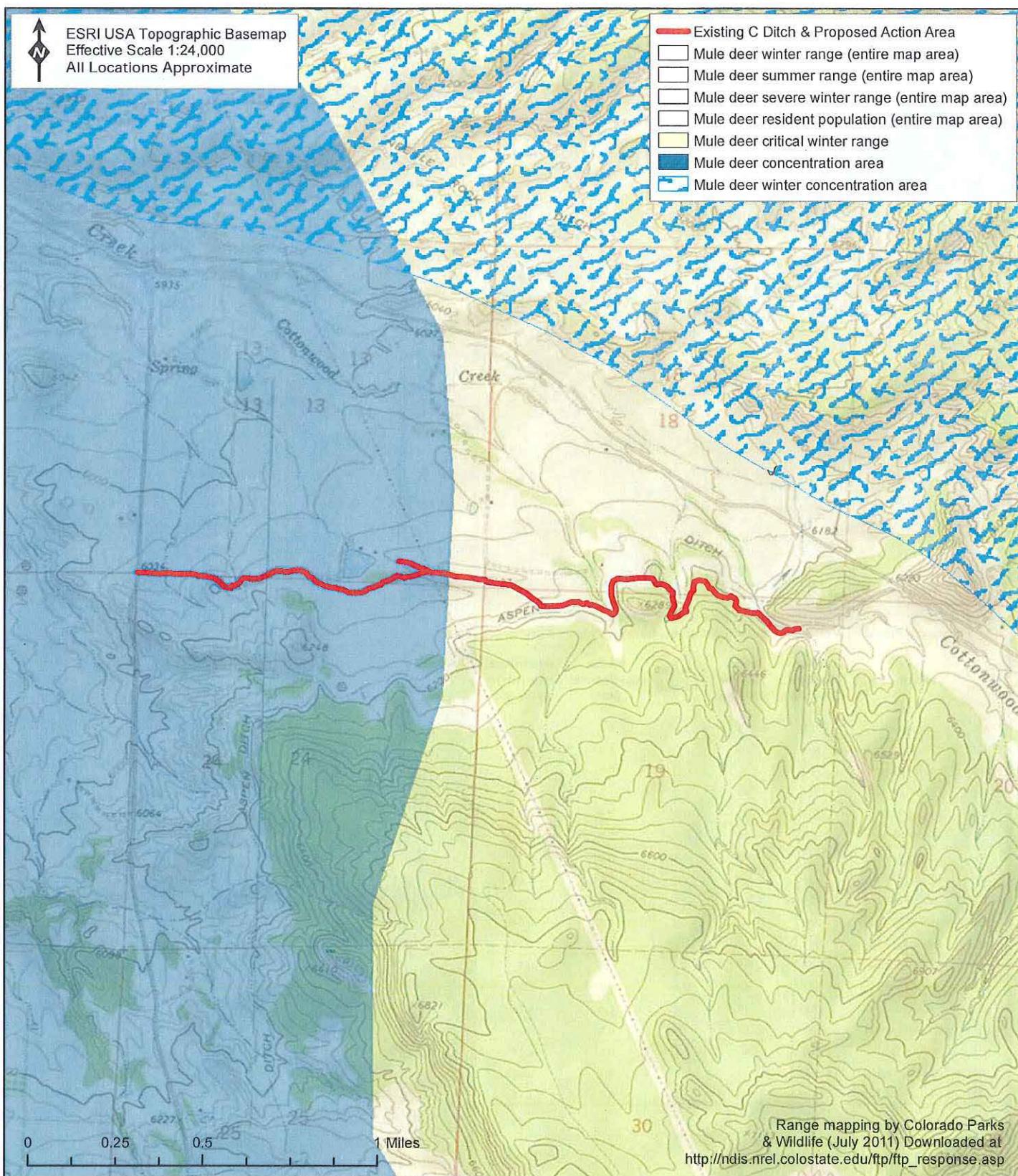
C DITCH / NEEDLE ROCK PROJECT
ENVIRONMENTAL ASSESSMENT
Delta County, Colorado

FIGURE
2









DATE: May 2013	
DRAWN BY: D. Reeder	



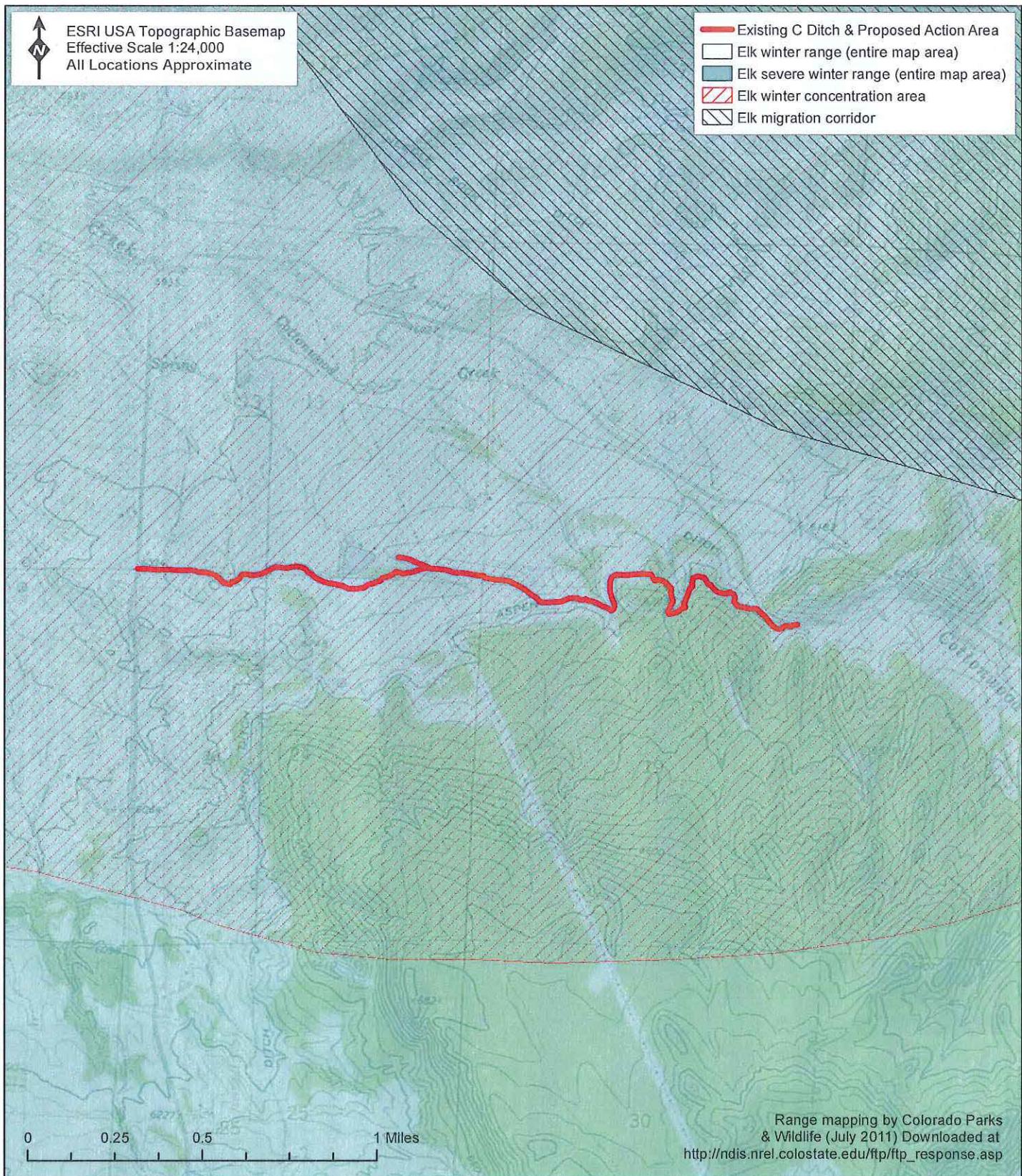
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(970) 527-8445
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MULE DEER RANGE MAP

C DITCH / NEEDLE ROCK PROJECT
ENVIRONMENTAL ASSESSMENT
Delta County, Colorado

FIGURE
6



DATE: May 2013
DRAWN BY: D. Reeder



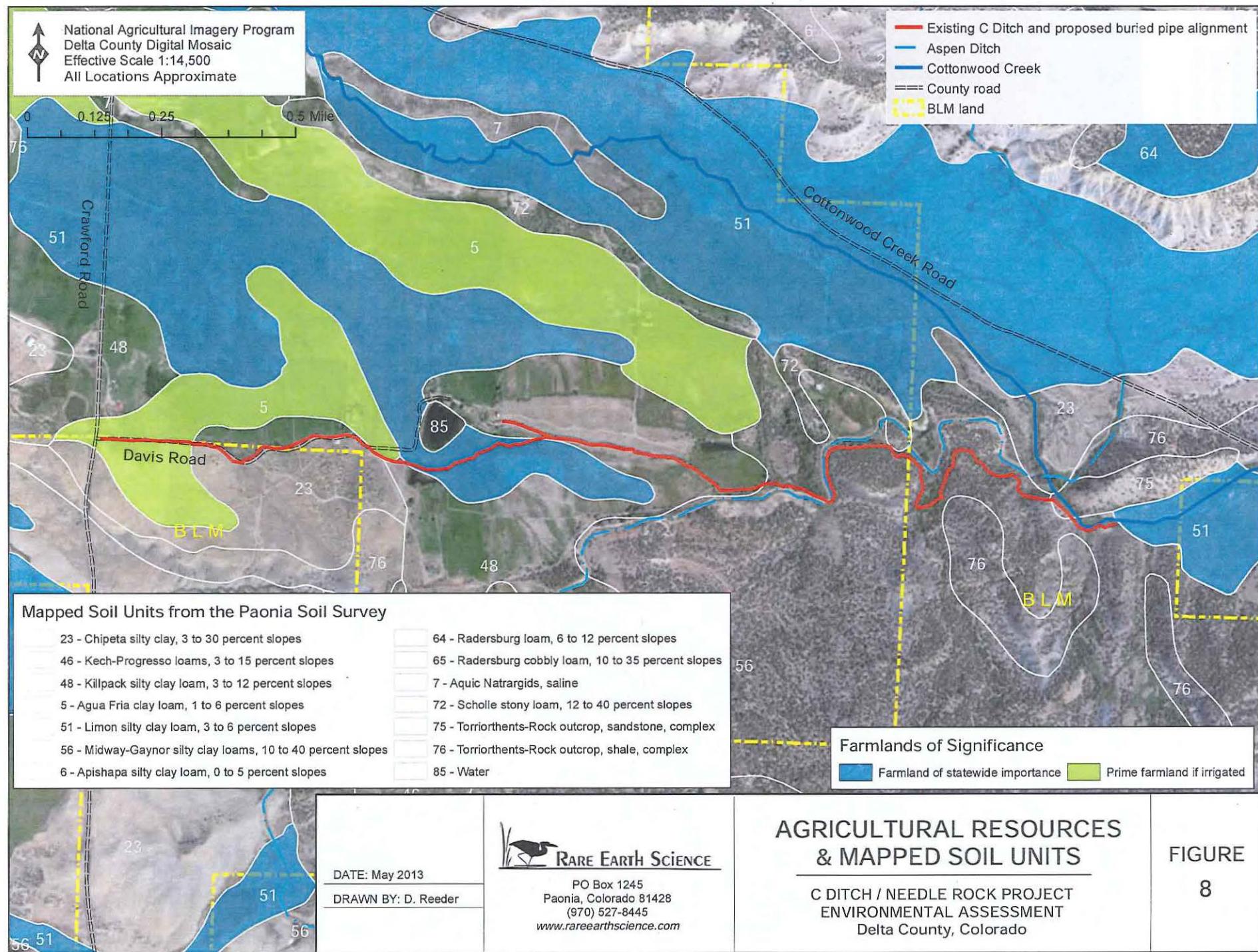
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Paonia, Colorado 81428
(970) 527-8445
www.rareearthscience.com

ELK RANGE MAP

C DITCH / NEEDLE ROCK PROJECT
ENVIRONMENTAL ASSESSMENT
Delta County, Colorado

FIGURE
7



ATTACHMENT A

Distribution List

Organizations

Mr. Kyle Banks
District Wildlife Manager
Colorado Parks and Wildlife

Mr. J. Wenum
Gunnison Area Wildlife Manager
Colorado Parks and Wildlife

Delta County Planning and Development

Delta County Road and Bridge

Ms. Patty Gelatt
Assistant Field Supervisor
US Fish and Wildlife Service

Hotchkiss Crawford Historical Museum
P.O. Box 724
Hotchkiss, CO 81415

Crawford Area Chamber of Commerce
P.O. Box 22
Crawford, CO 81415

Mr. Nathan Green
US Army Corps of Engineers
Colorado West Regulatory Branch

Mayor Jim Crook
Town of Crawford
P.O. Box 56
Crawford, CO 81415

Ms. Barb Sharow
Uncompahgre Field Office
Bureau of Land Management
Montrose, CO

Mr. Steve Miller
Colorado Water Conservation
Board
Denver, CO

Mr. Dave Kanzer
Colorado Water Conservation
District
Glenwood Springs, CO

Mr. Ralph D'Alessandro
Delta Conservation District
Delta, CO

Landowners

Mr. Theodore Hoff
39794 Cottonwood Creek Rd
Crawford, CO 81415

Mr. Joseph Fighera
39494 Davis Rd
Crawford, CO 81415

Mr. Arlie Clark
40386 Cottonwood Creek Rd
Crawford, CO 81415

TB Ranches Inc
6147 Crawford Rd
Crawford, CO 81415

Mr. Jeffrey Wentzel
39457 Davis Rd
Crawford, CO 81415

Mr. David Davis
39695 Davis Rd
Crawford, CO 81415

Adam Ranch LLC
6648 Crawford Rd
Crawford, CO 81415

Ms. Debra Hunt
6397 Crawford Rd
Crawford, CO 81415

Mr. Anthony Mautz
6144 Crawford Rd
Crawford, CO 81415

ATTACHMENT B

Exemptions from Section 404 of the Clean Water Act



US Army Corps of Engineers

Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Irrigation Exemption Summary

FARM OR STOCK POND OR IRRIGATION DITCH CONSTRUCTION OR MAINTENANCE

Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4(a)(3)), certain discharges for the construction or maintenance of farm or stock ponds or irrigation ditches have been exempted from requiring a Section 404 permit. Included in the exemption are the construction or maintenance of farm or stock ponds or irrigation ditches, or the maintenance (but not the construction) of drainage ditches. Discharges associated with siphons, pumps, headgates, wingwalls, weirs, diversion structures, and such other facilities as are appurtenant and functionally related to irrigation ditches are included in this exemption.

A Section 404 permit is required if either of the following occurs:

- (1) Any discharge of dredged or fill material resulting from the above activities which contains any toxic pollutant listed under Section 307 of the Clean Water Act shall be subject to any applicable toxic effluent standard or prohibition, and shall require a permit.
- (2) Any discharge of dredged or fill material into waters of the United States incidental to the above activities must have a permit if it is part of an activity whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced. Where the proposed discharge will result in significant discernible alterations to flow or circulation, the presumption is that flow or circulation may be impaired by such alteration. For example, a permit will be required for the conversion of a wetland from silvicultural to agricultural use when there is a discharge of dredged or fill material into waters of the United States in conjunction with construction of dikes, drainage ditches, or other works or structures used to effect such conversion. A discharge which elevates the bottom of waters of the United States without converting it to dry land does not thereby reduce the reach of, but may alter the flow or circulation of, waters of the United States.

If the proposed discharge satisfies all of the above restrictions, it is automatically exempted and no further permit action from the Corps of Engineers is required. If any of the restrictions of this exemption will not be complied with, a permit is required and should be requested using ENG Form 4345 (Application for a Department of the Army permit). A nationwide permit authorized by the Clean Water Act may be available for the proposed work. State or local approval of the work may also be required.

For general information on the Corps' Regulatory Program please check our web site at www.spk.army.mil/regulatory. For additional information or for a written determination regarding a specific project, please contact the Corps at the following addresses:

Sacramento Main Office-1325 J Street, Room 1480, Sacramento, CA 95814	(916) 557-5250
Redding Field Office-152 Hartnell, Redding, CA 96002	(530) 223-9534
Reno Office-300 Booth Street, Room 2103, Reno, NV 89509	(775) 784-5304
Intermountain Region Main Office-533 West 2600 South, Suite 150, Bountiful, UT 84010	(801) 295-8380
Colorado/Gunnison Basin Office-402 Rood Ave., Room 142, Grand Junction, CO 81501	(970) 243-1199
Durango Office-278 Sawyer Dr., Unit #1, Durango, CO 81301	(970) 375-9506
Frisco Office-301 W Main, Suite 202, P.O. Box 607, Frisco, CO 80443	(970) 668-9676
St. George Office-321 North Mall Drive, Suite L-101, St. George, UT 84790	(435) 986-3979



US Army Corps of Engineers

Sacramento District
1325 J Street
Sacramento, CA 95814-2922

Maintenance Exemption Summary

Maintenance (Including Emergency Reconstruction)

Pursuant to Section 404 of the Clean Water Act (33 USC 1344) and Federal Regulations (33 CFR 323.4(a)(2)), certain discharges for the maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures, have been exempted from requiring a Section 404 permit. Maintenance does not include any modification that changes the character, scope, or size of the original fill design. Emergency reconstruction must occur within a reasonable period of time after damage occurs in order to qualify for this exemption.

A Section 404 permit is required if either of the following occurs:

(1) Any discharge of dredged or fill material resulting from the above activities which contains any toxic pollutant listed under Section 307 of the Clean Water Act shall be subject to any applicable toxic effluent standard or prohibition, and shall require a permit.

(2) Any discharge of dredged or fill material into waters of the United States incidental to the above activities must have a permit if it is part of an activity whose purpose is to convert an area of the waters of the United States into a use to which it was not previously subject, where the flow or circulation of waters of the United States may be impaired or the reach of such waters reduced. Where the proposed discharge will result in significant discernible alterations to flow or circulation, the presumption is that flow or circulation may be impaired by such alteration. For example, a permit will be required for the conversion of a wetland from silvicultural to agricultural use when there is a discharge of dredged or fill material into waters of the United States in conjunction with construction of dikes, drainage ditches, or other works or structures used to effect such conversion. A conversion of a Section 404 wetland to a non-wetland is a change of use of an area of waters of the United States. A discharge which elevates the bottom of waters of the United States without converting it to dry land does not thereby reduce the reach of, but may alter the flow or circulation of, waters of the United States.

If the proposed discharge satisfies all of the above restrictions, it is automatically exempted and no further permit action from the Corps of Engineers is required. If any of the restrictions of this exemption will not be complied with, a permit is required and should be requested using ENG Form 4345 (Application for a Department of the Army permit). A nationwide permit authorized by the Clean Water Act may be available for the proposed work. State or local approval of the work may also be required.

For general information on the Corps' Regulatory Program please check our web site at www.spk.army.mil/regulatory.html. For additional information or for a written determination regarding a specific project, please contact the Corps at the following addresses:

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Redding Field Office-152 Hartnell, Redding, CA 96002	(530) 223-9534
Reno Office-300 Booth Street, Room 2103, Reno, NV 89509	(775) 784-5304
Intermountain Region Main Office-533 West 2600 South, Suite 150, Bountiful, UT 84010	(801) 295-8380
Colorado/Gunnison Basin Office-402 Rood Ave., Room 142, Grand Junction, CO 81501	(970) 243-1199
Durango Office-278 Sawyer Dr., Unit #1, Durango, CO 81301	(970) 375-9506
Frisco Office-301 W Main, Suite 202, P O. Box 607, Frisco, CO 80443	(970) 668-9676
St. George Office-321 North Mall Drive, Suite L-101, St. George, UT 84790	(435) 986-3979

Updated OCT 2005

ATTACHMENT C

Structure Summary Report for the C Ditch Headgate

#1729 ["Needle Rock Ditch HGT No. 1"]

#1730 ["Needle Rock Ditch HGT No. 2"]

#1731 ["Needle Rock Ditch HGT No. 2"]

and #509 [Aspen Canal]

Structure Summary Report											HydroBase		
State of Colorado													
Structure Name: NEEDLE ROCK D HGT NO 1											Water District:	40	
Source: COTTONWOOD CREEK											Structure ID Number:	1729	
Location: Q10 Q40 Q160 Section: 19 Township: 15S Range: 81W PM: NW NE NE S													
Distance From Section Lines: From N/S Line: 327 N From E/W Line: 1032 E													
UTM Coordinates (NAD 83): Northing (UTM y): 4291166 Easting (UTM x): 274134 Spotted from PLSS distances from section lines													
Latitude/Longitude (decimal degrees):													
Water Rights Summary:			Total Decreased Rate(s) (CFS):			Absolute:	0.0000	Conditional:	0.0000	AP/EX:	0.0000		
			Total Decreased Volume(s) (AF):			Absolute:	0.0000	Conditional:	0.0000	AP/EX:	0.0000		

Water Rights -- Transactions

Case Number	Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority Number	Decreased Amount	Adjudication Type	Uses	Action Comment
11CW0008	1937-05-28	1988-04-20	29260.13990	0	H7	5,000.00 C	S,TF	1	AKA WATSON DIVIDER P1231, TRANS TO NEEDLE
CA2563	1937-05-20	1988-04-20	29260.13990	0	H7	5,000.00 C	S	1	AKA WATSON DIVIDER P1231

Water Rights -- Net Amounts

Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority/Caso Number	Rate (CFS)	Volume (Acre-Feet)				
					Absolute	Conditional	AP/EX	Absolute	Conditional	AP/EX
No data available for this report										

Irrigated Acres Summary -- Totals From Various Sources

GIS Total (Acres):	Reported:
Diversion Command Total (Acres):	Reported:
Structure Total (Acres):	Reported:

Irrigated Acres From GIS Data

Year	Land Use	Acres Flood	Acres Furrow	Acres Sprinkler	Acres Drip	Acres Groundwater	Acres Total
No data available for this report							

Diversion Summary in Acre-Feet - Total Water Through Structure

Year	FDU	LDU	DWC	Maxq & Day	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Total
2008	2008-05-12	2008-10-23	165	20 05-12	0	0	0	0	0	0	783	1022	822	734	248	15	3734
2009	2009-05-14	2009-10-31	171	20 05-29	0	0	0	0	0	0	565	1091	637	136	78	71	2578
2010	2010-04-05	2010-10-31	210	15	0	0	0	0	0	28	262	660	554	430	123	134	2192
2011	2011-04-05	2011-10-25	210	20 05-07	0	0	0	0	0	335	746	1093	826	189	114	119	3432
Minimum:																	
Maximum:																	
Average:																	

4.00 years with diversion records

Notes: The average considers all years with diversion records, even if no water is diverted.

The above summary lists total monthly diversions.

*= Infrequent Diversion Record. All other values are derived from daily records.

Average values include infrequent data if infrequent data are the only data for the year.

Diversion Comments

IYR	NUC Code	Acres Irrigated	Comment
No data available for this report			

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

Report Date: 2013-02-04

Page 1 of 1

HydroBase Refresh Date: 2012-07-22

Structure Summary Report											HydroBase	
State of Colorado												
Structure Name: NEEDLE ROCK D HGT NO 2											Water District: 40	Structure ID Number: 1730
Source: COTTONWOOD CREEK												
Location:	Q10 NW	Q40 NE	Q160 NE	Section 19	Twnshp 15S	Range 91W	PM S					
Distance From Section Lines:	From N/S Line:	281 N				From EW Line:	1216 E					
UTM Coordinates (NAD 83):	Northing (UTM y):	4291218				Easting (UTM x):	274079	Spotted from PLSS distances from section lines				
Latitude/Longitude (decimal degrees):												
Water Rights Summary:	Total Decreed Rate(s) (CFS):	Absolute: 12.5000	Conditional: 0.0000	API/EX: 0.0000								
	Total Decreed Volume(s) (AF):	Absolute: 0.0000	Conditional: 0.0000	API/EX: 0.0000								

Water Rights -- Transactions												
Case Number	Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority Number	Decreed Amount	Adjudication Type	Uses	Action Comment			
11CW0008	1937-05-28	1888-04-20	29260.13990	0	H7	5.0000 C S,T,T	1	AKA WATSON DIVIDER P1231, TRANS FROM NEEDLE				
11CW0006	1937-05-28	1888-04-20	29260.13990	0	H7	1.0000 C S,T,T	1	AKA WATSON DIVIDER P1231, TRANS FROM NEEDLE				
CA2563	1937-05-28	1888-04-20	29260.13990	0	H7	0.5000 C S	1	AKA STEVENS DIVIDER P1231				

Water Rights -- Net Amounts										
Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority/Case Number	Rate (CFS)			Volume (Acre-Feet)		
					Absolute	Conditional	API/EX	Absolute	Conditional	API/EX
1937-05-28	1888-04-20	29260.13990	0	H7	12.5000	0	0	0	0	0

Irrigated Acres Summary – Totals From Various Sources

GIS Total (Acres): Reported:
 Diversion Comments Total (Acres): Reported:
 Structure Total (Acres): Reported:

Irrigated Acres From GIS Data									
Year	Land Use	Acres Flood	Acres Furrow	Acres Sprinkler	Acres Drip	Acres Groundwater	Acres Total		
No data available for this report									

Diversion Summary in Acre-Feet - Total Water Through Structure

Year	FDU	LDU	DWC	Maxq & Day	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Total
No data available for this report																	

Minimum:

Maximum:

Average:

Notes: The average considers all years with diversion records, even if no water is diverted.
 The above summary lists total monthly diversions.
 * = Infrequent Diversion Record. All other values are derived from daily records.
 Average values include infrequent data if infrequent data are the only data for the year.

Diversion Comments

IVR	NUC Code	Acres Irrigated	Comment
2011	No information available	WATER TAKEN NO RECORD	

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

Structure Summary Report											HydroBase	
State of Colorado												
Structure Name: NEEDLE ROCK D HGT NO 2											Water District: 40	Structure ID Number: 1730
Source: COTTONWOOD CREEK												
Location:	Q10 NW	Q40 NE	Q160 NE	Section 19	Twp/Sp 16S	Range 9NW	PM					
Distance From Section Lines:	From NVS Line:	261 N				From E/W Line:	1210 E					
UTM Coordinates (NAD 83):	Northing (UTM Y):	4291218				Easting (UTM X):	274079					
Latitude/Longitude (decimal degrees):												
Water Rights Summary:	Total Decreed Rate(s) (CFS):	Absolute: 12,5000				Conditional: 0,0000					API/EX: 0,0000	
	Total Decreed Volume(s) (AF):	Absolute: 0,0000				Conditional: 0,0000					API/EX: 0,0000	

Water Rights -- Transactions									
Case Number	Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority Number	Decreed Amount	Adjudication Type	User	Action Comment
11CW0006	1937-05-28	1888-04-20	29260 13990	0	H7	5,0000 C S,TT	1		AKA WATSON DIVIDER P1231, TRANS FROM NEEDLE
11CW0006	1937-05-28	1888-04-20	29260 13990	0	H7	1,0000 C S,TT	1		AKA WATSON DIVIDER P1231, TRANS FROM NEEDLE
CA2563	1937-05-28	1888-04-20	29260 13990	0	H7	8,5000 C S	1		AKA STEVENS DIVIDER, P1231

Water Rights -- Net Amounts									
Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority/Case Number	Rate (CFS)	Volume (Acre-Feet)			
						Absolute	Conditional	API/EX	
1937-05-28	1888-04-20	29260 13990	0	H7	12,5000	0	0	0	

Irrigated Acres Summary -- Totals From Various Sources

GIS Total (Acres):	Reported:
Diversion Commands Total (Acres):	Reported:
Structure Total (Acres):	Reported:

Irrigated Acres From GIS Data									
Year	Land Use	Acres Flood	Acres Furrow	Acres Sprinkler	Acres Drip	Acres Groundwater	Acres Total		
No data available for this report									

Diversion Summary in Acre-Feet - Total Water Through Structure																		
Year	FDU	LDU	DWC	Maxq & Day	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Total	
No data available for this report																		

Minimum:
Maximum:
Average:

Notes: The average considers all years with diversion records, even if no water is diverted.
The above summary lists total monthly diversions.
* = Infrequent Diversion Record. All other values are derived from daily records.
Average values include infrequent data if infrequent data are the only data for the year.

Diversion Comments

IVR	NUC Code	Acres Irrigated	Comment
2011	No information available	WATER TAKEN NO RECORD	

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

Structure Summary Report										HydroBase
State of Colorado										
Structure Name: ASPEN CANAL							Water District: 40		Structure ID Number:	509
Source: IRON CREEK										
Location: Q10 Q40 Q160 Section Township Range PM NE NW NW 13 51N 7W N										
Distance From Section Lines: From NS Line: 411 N From EW Line: 1133 W										
UTM Coordinates (NAD 83): Northing (UTM Y): 4285791 Easting (UTM X): 273328 Latitude/Longitude (decimal degrees):							Spotted from PLSS distances from section lines			
Water Rights Summary:			Total Decreed Rate(s) (CFS):	Absolute:	150.0000	Conditional:	0.0000	AP/EX:	0.0000	
			Total Decreed Volume(s) (AF):	Absolute:	0,0000	Conditional:	0.0000	AP/EX:	0.0000	

Water Rights -- Transactions									
Case Number	Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority Number	Decreed Amount	Adjudication Type	Uses	Action Comment
CA4808	1984-01-31	1948-09-03	38064.35309	0	K80	85.2500 C S,C,A	1		CA 3/10/1986 P 3537
CA4808	1984-01-31	1948-09-03	38064.35309	0	K80	64.7500 C S,C,A	1		CA 3/6/1988 P3555
CA4808	1984-01-31	1948-09-03	38064.35309	0	K80	150.0000 C S,C	1		D LIMITED TO 150 CFS AT ANY TIME P2651

Water Rights -- Net Amounts									
Adjudication Date	Appropriation Date	Administration Number	Order Number	Priority/CASE Number	Rate (CFS)	Absolute	Conditional	API/EX	Volume (Acre-Feet)
1984-01-31	1948-09-03	38064.35309	0	K80	150.0000	0	0		

Irrigated Acres Summary – Totals From Various Sources

GIS Total (Acres):	49.411	Reported: 2005
Diversion Comments Total (Acres):	0	Reported: 2008
Structure Total (Acres):		Reported:

Year	Land Use	Irrigated Acres From GIS Data					
		Acres Flood	Acres Furrow	Acres Sprinkler	Acres Drip	Acres Groundwater	Acres Total
2005	***Year Total***	0	0	49.41	0	0	49.41
2005	GRASS_PASTURE	0	0	22.18	0	0	22.18
2005	SMALL_GRAINS	0	0	27.23	0	0	27.23

Diversion Summary in Acre-Feet - Total Water Through Structure

Year	EDU	LDU	DWC	Max & Day	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Total	
1970	1970-05-29	1970-10-15	132	15 07-24	0	0	0	0	0	0	18	127	439	458	584	125	1751	
1971	1971-05-24	1971-10-15	145	16 08-24	0	0	0	0	0	0	32	126	357	696	243	19	1472	
1972	1972-05-09	1972-10-05	150	14 07-07	0	0	0	0	0	0	126	187	791	538	247	10	1909	
1973	1973-07-01	1973-10-22	114	21 08-17	0	0	0	0	0	0	0	0	431	1022	684	45	2182	
1974	1974-05-07	1974-10-31	178	17 07-12	0	0	0	0	0	0	198	219	628	522	846	258	2472	
1975	1975-05-06	1975-10-30	164	15 08-26	0	0	0	0	0	0	137	167	254	601	675	399	2232	
1976	1976-04-27	1976-10-14	171	16 07-20	0	0	0	0	0	30	184	217	782	734	487	87	2521	
1977	1977-04-12	1977-09-29	171	18 08-10	0	0	0	0	0	164	348	393	116	38	30	0	1086	
1978	1978-04-21	1978-10-26	157	11 08-01	0	0	0	0	0	69	66	121	247	564	551	310	1930	
1979	1979-05-22	1979-10-22	154	10 07-24	0	0	0	0	0	0	40	119	218	372	321	208	1338	
1980	1980-04-24	1980-09-29	155	14 08-19	0	0	0	0	0	42	184	179	252	678	436	0	1760	
1981	1981-05-08	1981-10-15	101	12 07-24	0	0	0	0	0	0	163	238	545	486	259	148	1848	
1982	1982-08-28	1982-10-04	96	16 08-03	0	0	0	0	0	0	0	12	243	635	413	16	1318	
1983	1983-08-09	1983-10-20	73	10 09-23	0	0	0	0	0	0	0	0	0	104	312	179	595	
1984	1984-07-10	1984-10-25	91	7 08-03	0	0	0	0	0	0	0	0	0	28	286	206	619	
1985	1985-07-16	1985-09-26	73	9 08-27	0	0	0	0	0	0	0	0	0	69	484	354	0	807
1986	1986-07-11	1986-10-02	84	15 08-12	0	0	0	0	0	0	0	0	0	94	497	345	14	950
1987	1987-07-07	1987-10-12	98	8 08-04	0	0	0	0	0	0	0	0	0	258	354	176	50	836
1988	1988-07-15	1988-09-29	77	10 08-12	0	0	0	0	0	0	0	0	0	156	594	285	0	1035
1989	1989-07-04	1989-09-28	87	7 07-21	0	0	0	0	0	0	0	0	0	374	344	266	0	984
1990	1990-08-19	1990-10-08	112	6 07-03	0	0	0	0	0	0	0	55	335	245	99	0	741	
1991	1991-08-28	1991-09-30	95	9 09-06	0	0	0	0	0	0	0	9	161	368	373	0	910	
1992	1992-07-14	1992-10-15	94	5 08-21	0	0	0	0	0	0	0	0	0	110	437	268	104	910
1993	1993-07-23	1993-10-14	84	6 07-30	0	0	0	0	0	0	0	0	0	64	302	247	42	656
1994	1994-07-08	1994-09-19	74	8 08-30	0	0	0	0	0	0	0	0	0	235	418	174	0	827
1995	1995-08-11	1995-10-02	53	10 08-10	0	0	0	0	0	0	0	0	0	0	328	317	17	662
1996	1996-07-09	1996-03-03	87	10 08-27	0	0	0	0	0	0	0	0	0	197	420	183	18	816
1997	1997-07-15	1997-10-27	105	7 07-29	0	0	0	0	0	0	0	0	0	165	349	185	27	726
1998	1998-07-10	1998-10-05	88	8 08-25	0	0	0	0	0	0	0	0	0	248	401	208	21	878
1999	1999-07-06	1999-10-28	112	7 08-08	0	0	0	0	0	0	0	0	0	283	262	131	68	744
2000	2000-05-26	2000-10-02	127	8 07-28	0	0	0	0	0	0	24	99	371	378	191	10	1074	
2001	2001-06-19	2001-10-08	112	9 07-13	0	0	0	0	0	0	0	31	375	358	156	24	943	
2002	2002-05-28	2002-08-01	66	7 07-05	0	0	0	0	0	0	8	271	300	3	0	0	583	
2003	2003-08-27	2003-10-16	112	11 08-08	0	0	0	0	0	0	0	2	440	479	208	41	1170	
2004	2004-06-22	2004-10-18	119	10 07-27	0	0	0	0	0	0	0	31	455	385	236	74	1181	
2005	2005-07-08	2005-10-17	102	10 08-09	0	0	0	0	0	0	0	0	0	127	453	208	74	802
2006	2006-04-23	2006-10-31	131	7 07-25	0	0	0	0	0	0	0	4	270	361	125	65	826	
2007	2007-05-25	2007-10-14	112	12 08-14	0	0	0	0	0	0	0	36	492	566	289	82	1465	
2008	2008-07-11	2008-10-20	102	9 08-12	0	0	0	0	0	0	0	0	217	439	241	78	975	
2009	2009-04-23	2009-10-26	128	12 08-11	0	0	0	0	0	0	0	133	465	603	456	69	1726	
2010	2010-08-25	2010-10-31	125	13 08-03	0	0	0	0	0	0	0	32	491	647	289	180	1638	
2011	2011-08-01	2011-10-31	146	10 08-12	0	0	0	0	0	0	65	224	791	541	304	1025		
<i>Minimum:</i>					6	0	0	0	0	0	0	0	0	0	3	0	0	583
<i>Maximum:</i>					21	0	0	0	0	164	348	393	791	1022	684	309	2521	
<i>Average:</i>					11	0	0	0	0	7	38	69	293	453	301	79	1238	

42.00 years with diversion records.

Note: The average considers all years with diversion records, even if no water is diverted.

The above summary lists total monthly diversions.

* = Infrequent Diversion Record. All other values are derived from daily records.

Average values include infrequent data if infrequent data are the only data for the year.

YR	NUC Code	Acres Irrigated	Diversion Comments	Comment
1970		1029		
1972		1560		
1975			CARRIER-CRAWFORD RES. DELIVERY	
1976			CARRIER FOR CRAWFORD RES	
1978			@CARRIER FOR CRAWFORD RES@	
1979			CARRIER FOR CRAWFORD RES. WATER	
1980			CARRIER FOR CRAWFORD RES. WATER	
1985			ACREAGE COVERED BY CRAWFORD RESERVOIR.	
1987			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1988			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1989			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1990			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1991			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1992			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1993			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1994			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1995			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1996			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1997			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1998			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
1999			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
2000			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
2001			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
2002			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
2003			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
2004			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
2005			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
2006			0 ACREAGE COVERED BY CRAWFORD RESERVOIR	
2007			ACREAGE COVERED BY CRAWFORD RESERVOIR	

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

ATTACHMENT D

Endangered Species Act Compliance Documents



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
764 Horizon Drive, Building B
Grand Junction, Colorado 81506-3946

IN REPLY REFER TO:
ES/GJ-6-CO-09-F-001-GP024
TAILS 06E24100-2013-F-0208

September 13, 2013

Memorandum

To: Area Manager, Bureau of Reclamation, Grand Junction, Colorado

From: Acting Western Colorado Supervisor, Ecological Services, Grand Junction, Colorado

Subject: Consultation C-Ditch Company Historic Depletions for Gunnison Basin Programmatic Biological Opinion (PBO)

In accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.), and the Interagency Cooperation Regulations (50 CFR 402), the Fish and Wildlife Service (Service) transmits this correspondence to serve as the final biological opinion (BO) for the C-Ditch Company Historic Depletions for Gunnison Basin PBO.

The Bureau of Reclamation under the Colorado River Salinity Control Program has entered into a contract with the C-Ditch Company to pipe portions of the Cottonwood Canal to reduce salt loading into the Colorado River. C Ditch has an estimated average annual depletion of 906 acre-feet (AF), with diversion on Cottonwood Creek. C-Ditch provides ten users with irrigation and stock water during an irrigation season which lasts approximately 153 days. No new depletions are associated with the project.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated on January 22, 1988. The Recovery Program was intended to be the reasonable and prudent alternative for individual projects to avoid the likelihood of jeopardy to the endangered fishes from impacts of depletions to the Upper Colorado River Basin. In order to further define and clarify the process in the Recovery Program, a section 7 agreement was implemented on October 15, 1993, by the Recovery Program participants. Incorporated into this agreement is a Recovery Implementation Program Recovery Action Plan (RIPRAP) which identifies actions currently believed to be required to recover the endangered fishes in the most expeditious manner.

On December 4, 2009, the Service issued a final Gunnison River Basin PBO (this document is available for viewing at the following internet address: www.coloradoriverrecovery.org). The

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GRAND JUNCTION

SEP 18 2013

CLASS	INITIALS	SURNAME
PRJ.		Rehalen
CNTR.		Dunn
FLDR.		Bullock
9/18	T8	T Strott
9/20	JCH	J Scott
		Jenny Hamilton

[Handwritten signatures over the signature block]

Service has determined that projects that fit under the umbrella of the Gunnison River PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts. The Gunnison River PBO states that in order for actions to fall within the umbrella of the PBO and rely on the RIPRAP to offset its depletion, the following criteria must be met.

1. A Recovery Agreement must be offered and signed prior to conclusion of section 7 consultation.
2. A fee to fund recovery actions will be submitted as described in the proposed action for new depletion projects greater than 100 AF/year. The 2013 fee is \$19.82 per AF and is adjusted each year for inflation.
3. Reinitiation stipulations will be included in all individual consultations under the umbrella of this programmatic.
4. The Service and project proponents will request that discretionary Federal control be retained for all consultations under this programmatic.

The Recovery Agreement was signed by the Service and the Water User. The depletions associated with this project are historic depletions which do not make contributions to fund recovery actions. The Bureau of Reclamation has agreed to condition its approval documents to retain jurisdiction should section 7 consultation need to be reinitiated. Therefore, the Service concludes that the subject project meets the criteria to rely on the Gunnison PBO to offset depletion impacts and is not likely to jeopardize the continued existence of the species and is not likely to destroy or adversely modify designated critical habitat.

The reinitiation criteria for the Gunnison PBO apply to all projects under the umbrella of the PBO. For your information the reinitiation notice from the Gunnison River PBO is presented below.

REINITIATION NOTICE

This concludes formal consultation on the subject action. The proposed action includes adaptive management because additional information, changing priorities, and the development of the States' entitlement may require modification of the Recovery Action Plan. Therefore, the Recovery Action Plan is reviewed annually and updated and changed when necessary and the required time frames include changes in timing approved by means of the normal procedures of the Recovery Program, as explained in the description of the proposed action. Every 2 years, for the life of the Recovery Program, the Service and Recovery Program will review implementation of the Recovery Action Plan actions that are included in this BO to determine timely compliance with applicable schedules. As provided in 50 CFR sec. 402.16, reinitiation of formal consultation is required for new projects where discretionary Federal Agency involvement or control over the action has been retained (or is authorized by law) and under the following conditions:

1. **The amount or extent of take specified in the incidental take statement for this opinion is exceeded.** The terms and conditions outlined in the incidental take statement are not implemented. The implementation of the proposed reoperation of Aspinall and the Selenium Management Program will further decrease the likelihood of take caused by water depletion impacts.
2. **New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion**, such as impacts due to climate change. In preparing this opinion, the Service describes the positive and negative effects of the action it anticipates and considered in the section of the opinion entitled "EFFECTS OF THE ACTION."
3. **The identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the BO.** It would be considered a change in the action subject to consultation if the reoperation of Aspinall and the Selenium Management Program described in this opinion are not implemented within the required timeframes. If a draft Selenium Management Program document is not completed within 18 months of the final PBO and a final document within 24 months, reinitiation of consultation will be required. Reinitiating consultation could consist of an exchange of memoranda examining the progress made on the plan and evaluating the consequences of extending the timeframe. Also, at any time, if funding is not available to implement the Selenium Management Program reinitiation of consultation will be required.

The analysis for this BO assumed implementation of the Colorado River Mainstem Action Plan of the RIRRAP because the Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*) that occur in the Gunnison River use the Colorado River and are considered one population. The essential elements of the Colorado River Plan are as follows: 1) provide and protect instream flows; 2) restore floodplain habitat; 3) reduce impacts of nonnative fishes; 4) augment or restore populations; and 5) monitor populations and conduct research to support recovery actions. The analysis for the non-jeopardy determination of the proposed action that includes about 37,900 AF/year of new water depletions from the Gunnison River Basin relies on the Recovery Program to provide and protect flows on the Gunnison and Colorado Rivers.

4. **The Service lists new species or designates new or additional critical habitat, where the level or pattern of depletions covered under this opinion may have an adverse impact on the newly listed species or habitat.** If the species or habitat may be adversely affected by depletions, the Service will reinitiate consultation on the PBO as required by its section 7 regulations. The Service will first determine whether the Recovery Program can avoid such impact or can be amended to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for such depletion impacts. If the Recovery Program can avoid the likelihood of jeopardy and/or adverse modification of critical habitat no additional recovery actions for individual projects would be required, if the avoidance actions are included in the Recovery Action Plan. If the Recovery

Program can't avoid the likelihood of jeopardy and/or adverse modification of critical habitat then the Service will reinitiate consultation and develop reasonable and prudent alternatives.

If the annual assessment from Reclamation's reports indicates that the operation of the Aspinall Unit to meet flow targets or that the Selenium Management Program, as specified in this opinion has not been implemented as proposed, Reclamation will be required to reinitiate consultation to specify additional measures to be taken by Reclamation or the Recovery Program to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletions and water quality. Also, if the status of all four fish species has not sufficiently improved, as determined by the Service in a formal sufficient progress finding under provisions of the Recovery Program, Reclamation will be required to reinitiate consultation. If other measures are determined by the Service or the Recovery Program to be needed for recovery prior to the review, they can be added to the Recovery Action Plan according to standard procedures. If the Recovery Program is unable to complete those actions which the Service has determined to be required, Reclamation will be required to reinitiate consultation in accordance with ESA regulations and this opinion's reinitiation requirements.

All individual consultations conducted under this programmatic opinion will contain language requesting the applicable Federal agency to retain sufficient authority to reinitiate consultation should reinitiation become necessary. The recovery agreements to be signed by non-Federal entities who rely on the Recovery Program to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts related to their projects will provide that such non-Federal entities also must request the Federal agency to retain such authority. Non-Federal entities will agree by means of recovery agreements to participate during reinitiated consultations in finding solutions to the problem which triggered the reinitiation of consultation.

If you have any questions regarding this consultation or would like to discuss it in more detail, please contact Barb Osmundson of our Grand Junction Ecological Services Field Office at (970) 243-2778, extension 21.

Attachment

cc: FWS/UCREFRP, Denver

GUNNISON RIVER RECOVERY AGREEMENT

This RECOVERY AGREEMENT is entered into this 13 day of September, 2013, by and between the United States Fish and Wildlife Service (Service) and C-Ditch Company (Water User).

WHEREAS, in 1988, the Secretary of Interior, the Governors of Wyoming, Colorado and Utah, and the Administrator of the Western Area Power Administration signed a Cooperative Agreement to implement the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program); and

WHEREAS, the Recovery Program is intended to recover the endangered fish while providing for water development in the Upper Basin to proceed in compliance with state law, interstate compacts and the Endangered Species Act; and

WHEREAS, the Colorado Water Congress has passed a resolution supporting the Recovery Program; and

WHEREAS, on December 4, 2009, the Service issued a programmatic biological opinion (2009 Opinion) for the Gunnison River Basin and the operation of the Wayne N. Aspinall Unit concluding that implementation of specific operation of the Aspinall Unit, implementation of a Selenium Management Plan and specified elements of the Recovery Action Plan (Recovery Elements), along with existing and a specified amount of new depletions, are not likely to jeopardize the continued existence of the endangered fish or adversely modify their critical habitat in the Gunnison River subbasin and Colorado River subbasin downstream of the Gunnison River confluence; and

WHEREAS, Water User is the C-Ditch Company (Water Project), which causes or will cause depletions to the Gunnison River subbasin; and

WHEREAS, Water User desires certainty that its depletions can occur consistent with section 7 and section 9 of the Endangered Species Act (ESA); and

WHEREAS, the Service desires a commitment from Water User to the Recovery Program so that the Program can actually be implemented to recover the endangered fish and to carry out the Recovery Elements.

NOW THEREFORE, Water User and the Service agree as follows:

1. The Service agrees that implementation of the Recovery Elements specified in the 2009 Opinion will avoid the likelihood of jeopardy and adverse modification under section 7 of the ESA, for depletion impacts caused by Water User's Water Project. Any consultations under section 7 regarding Water Project's depletions are to be governed by the provisions of the 2009 Opinion. The Service agrees that, except as provided in the 2009 Opinion, no other measure or action shall be required or imposed on Water Project to comply with section 7 or section 9 of the ESA with regard to Water Project's depletion impacts or other impacts covered by the 2009 Opinion. Water User is entitled to rely on this Agreement in making the commitment described in paragraph 2.
2. Water User agrees not to take any action which would probably prevent the implementation of the Recovery Elements. To the extent implementing the Recovery Elements requires active cooperation by Water User, Water User agrees to take reasonable actions required to implement those Recovery Elements. Water User will not be required to take any action that would violate its decrees or the statutory authorization for Water Project, or any applicable limits on Water User's legal authority. Water User will not be precluded from undertaking good faith negotiations over terms and conditions applicable to implementation of the Recovery Elements.
3. If the Service believes that Water User has violated paragraph 2 of this Recovery Agreement, the Service shall notify both Water User and the Management Committee of the Recovery Program. Water User and the Management Committee shall have a reasonable opportunity to comment to the Service regarding the existence of a violation and to recommend remedies, if appropriate. The Service will consider the comments of Water User and the comments and recommendations of the Management Committee, but retains the authority to determine the existence of a violation. If the Service reasonably determines that a violation has occurred and will not be remedied by Water User despite an opportunity to do so, the Service may request reinitiation of consultation on Water Project without reinitiating other consultations as would otherwise be required by the Reinitiation Notice section of the 2009 Opinion. In that event, the Water Project's depletions would be excluded from the depletions covered by the 2009 Opinion and the protection provided by the Incidental Take Statement.
4. Nothing in this Recovery Agreement shall be deemed to affect the authorized purposes of Water User's Water Project or The Service's statutory authority.
5. This Recovery Agreement shall be in effect until one of the following occurs.
 - a. The Service removes the listed species in the Upper Colorado River Basin from the endangered or threatened species list and determines that the Recovery Elements are no longer needed to prevent the species from being relisted under the ESA; or
 - b. The Service determines that the Recovery Elements are no longer needed to recover or offset the likelihood of jeopardy to the listed species in the Upper Colorado River Basin; or

- c. The Service declares that the endangered fish in the Upper Colorado River Basin are extinct; or
 - d. Federal legislation is passed or federal regulatory action is taken that negates the need for [or eliminates] the Recovery Program.
6. Water User may withdraw from this Recovery Agreement upon written notice to the Service. If Water User withdraws, the Service may request reinitiation of consultation on Water Project without reinitiating other consultations as would otherwise be required by the Reinitiation Notice section of the 2009 Opinion.

Thomas E. Dunlap pres.
C-Ditch Company

8/30/13
Date

[Signature] *J. K. Lewis* *Acting*

Western Colorado Supervisor
U.S. Fish and Wildlife Service

9/13/13
Date

ATTACHMENT E

Cultural Resources Compliance Documents

**MEMORANDUM OF AGREEMENT
BETWEEN
THE WESTERN COLORADO AREA OFFICE, BUREAU OF RECLAMATION
AND THE COLORADO STATE HISTORIC PRESERVATION OFFICER
REGARDING THE COTTONWOOD LATERAL OF THE C-DITCH PIPING PROJECT,
COLORADO RIVER BASIN SALINITY CONTROL PROGRAM**

WHEREAS, the Bureau of Reclamation (Reclamation) as lead Federal agency has determined that the Cottonwood Lateral of the C-Ditch Piping Project will have an adverse effect on the Cottonwood Lateral (5DT1594.1). The lateral has been determined by Reclamation and the Colorado State Historic Preservation Officer (SHPO) to be eligible for inclusion in the National Register of Historic Places (NRHP). Reclamation has consulted with the SHPO pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (26 U.S.C. 470f); and

WHEREAS, the C-Ditch Company is the sponsor of the South Cottonwood Lateral of the C-Ditch Piping Project and has participated in the consultation and has been invited to sign the Memorandum of Agreement (MOA) as a concurring party; and

WHEREAS, the Bureau of Land Management has participated in the consultation and has been invited to sign the Memorandum of Agreement (MOA) as a concurring party; and

WHEREAS, the Hotchkiss-Crawford Historical Society has been invited to participate and sign the Memorandum of Agreement (MOA) as a concurring party; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), Reclamation has notified the Advisory Council on Historic Preservation (Council) of its adverse effect determination providing the specified documentation, and the Council has chosen not to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii);

NOW, THEREFORE, pursuant to Section 106 of the NHPA, Reclamation and the SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect on historic properties.

STIPULATIONS

1. It is mutually understood and agreed by and between the parties that:
 - a. Prior to any modification of the South Cottonwood Lateral of the C-Ditch (5DT1594.1), Reclamation will ensure that this property will be recorded in

accordance with the guidance for Level I Documentation found in "Historic Resource Documentation, Standards for Level I, II, and III Documentation" (Office of Archaeology and Historic Preservation Publication 1595, October 2007). The documentation will include mapping of the property and photographic documentation of those portions of the historic property to be included in the piping project. Photographs will be black and white archival quality (4" x 6") prints. Features will be plotted on the maps with GPS waypoints and will be extensively described and indexed in the report.

- b. Reclamation will supplement the Level I Documentation with a descriptive and historical narrative. The narrative will synthesize the existing documentation on Site 5DT1594.1 and describe it in the context of the development and history of the Smith Fork area. The narrative will include photographs of the landscape features taken during the cultural resources survey. A Summary Report for the recorded segment, which includes the Level I Documentation and the narrative, will be prepared.

The Summary Report will be prepared within one year of the execution of this MOA.

2. Monitoring: The signatories may monitor activities pursuant to this MOA, and the Council will review such activities if so requested by a party to this MOA. Reclamation will cooperate with the signatories in carrying out their review and monitoring responsibilities.
3. Dispute Resolution: Should the SHPO object within 30 days to any documentation provided for its review pursuant to this agreement, Reclamation shall consult with the SHPO to resolve the objection. If Reclamation determines the objection cannot be resolved Reclamation shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all pertinent documentation, the Council will:
 - a. Advise the agency that the Council concurs in the agency's proposed response to the objection, whereupon the agency will respond to the objection accordingly;
 - b. Provide the agency with recommendations, which the agency shall take into account in reaching a final decision regarding its response to the objection; or
 - c. Notify the agency that the objection will be referred for comment pursuant to 36 CFR § 800.7(a)(4), and proceed to refer the objection and comment. The agency shall take the resulting comment into account in accordance with 36 CFR § 800.7(c)(4).

4. Amendment and Termination: Any signatory to this agreement may request that it be amended, whereupon the parties will consult to reach a consensus on the proposed amendment. Where no consensus can be reached, the agreement will not be amended.
5. Duration: This MOA will be null and void if its stipulations are not carried out within five (5) years from the date of its execution. At such time, and prior to work continuing on the undertaking, Reclamation shall either (a) execute a MOA pursuant to 36 CFR § 800.6, or (b) request, take into account, and respond to the comments of the Council under 36 CFR § 800.7. Prior to such time, Reclamation may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation 4 above. Reclamation shall notify the signatories as to the course of action it will pursue.
6. In the event that Congress amends Section 106 of the NHPA or in the case of substantial changes to 36 CFR Part 800, the parties to this agreement will consider whether it would be appropriate to amend the agreement. Any signatory to this agreement may terminate it by providing thirty (30) days notice to the other parties, provided that the signatories and concurring parties will consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination.
7. Failure to Carryout Terms: Failure to carry out the terms of this MOA requires that Reclamation again request the Council's comments in accordance with 36 CFR Part 800. If Reclamation cannot carry out the terms of the MOA, it will not take or sanction any action or make an irreversible commitment that would result in an adverse effect to the historic property covered by the MOA or that would foreclose the Council's considerations of modifications or alternatives that could avoid or mitigate the adverse effect on the properties until the commenting process has been completed.

Execution of this MOA by Reclamation and the SHPO, its subsequent acceptance by the Council, and implementation of its terms, evidence that Reclamation has afforded the Council an opportunity to comment on the effects of the Minnesota Canal Piping Project on the two historic properties and that Reclamation has taken into account the effects of the undertaking on historic properties.

SIGNATORIES:

Colorado State Historic Preservation Officer

By: _____ Date:
Edward C. Nichols, SHPO

Bureau of Reclamation, Western Colorado Area Office

By: _____ Date:
Ed Warner, Area Manager

CONCURRING PARTIES:

C-Ditch Company

By: _____ Date:
Tom Dunlap, President

Bureau of Land Management, Uncompahgre Field Office

By: _____ Date:
Barbara Sharow, Field Manager