Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre, and Tyrone Mine Facilities

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October 2013

This Wildlife and Wildlife Habitat Restoration Plan and
Environmental Assessment is in remembrance of
Luke Montoya of the U.S. Fish and Wildlife Service
New Mexico Ecological Services Field Office who was
instrumental in developing and evaluating the
restoration project ideas in this plan.

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Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
BCE	Before the Common Era
BLM	Bureau of Land Management
CE	Common Era
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CWA	Clean Water Act
CWCS	Comprehensive Wildlife Conservation Strategy for New Mexico
DOI	U.S. Department of the Interior
EA	Environmental Assessment
ESA	Endangered Species Act of 1973
FMI	Freeport-McMoRan Copper & Gold Inc.
NAWCA	North American Wetlands Conservation Act
NEPA	National Environmental Policy Act
NGO	nongovernmental organization
NHPA	National Historic Preservation Act
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMLC	New Mexico Land Conservancy
NMSU	New Mexico State University
NRCS	Natural Resources Conservation Service
NRDAR	Natural Resource Damage Assessment and Restoration
NWI	National Wetlands Inventory
ONRT	New Mexico Office of Natural Resources Trustee
PILT	Payments in Lieu of Taxes
RFP	Request for Proposal
RP	Restoration Plan
SGCN	Species of Greatest Conservation Need

TNC	The Nature Conservancy
UBCWA	Upper Burro Cienaga Watershed Association
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WRAP	Watershed Restoration Action Plan
WRAS	Watershed Restoration Action Strategy

Executive Summary

The New Mexico Office of Natural Resources Trustee and the U.S. Fish and Wildlife Service (collectively, the "Trustees") have engaged in a cooperative Natural Resource Damage Assessment and Restoration (NRDAR) process for the Freeport-McMoRan Copper & Gold Inc. and its associated companies (hereafter referred to as FMI) mine sites near Silver City, New Mexico. Wildlife and wildlife habitat resources have been injured by hazardous substances released from three copper mining facilities owned by FMI:

- **Chino Mine:** Located approximately 19 kilometers (12 miles) east of Silver City, New Mexico, this mine is east of the Continental Divide in the Mimbres River Watershed. Open-pit mining began in 1910. The mine was temporarily closed in January 2002 but has since reopened.

- **Tyrone Mine:** Located approximately 16 kilometers (10 miles) southwest of Silver City, New Mexico, this open-pit mine straddles the Continental Divide and the Gila and Mimbres River watersheds. Turquoise, copper, and fluorspar were mined in the area from the late 1870s through the early 1900s. Open-pit copper mining began in 1967. Since 1992, the mine has been solely a copper-leaching operation.

- **Cobre Mine[1]:** Located approximately 5 kilometers (3 miles) north of Hanover, New Mexico, this is the smallest of the three mine sites. It is east of the Continental Divide in the Mimbres River Watershed, and has a long history of iron ore production. Commercial copper production by underground methods began in 1858; underground copper mining ended in 1971. The mine was closed from 1982 to 1993 due to low copper prices, and went on standby status in 1999.

The Trustees undertook a wildlife assessment for these three mines in which they assessed and quantified injuries to wildlife and wildlife habitat resources, as well as terrestrial habitat, and successfully brought claims against FMI for terrestrial and wildlife damages. FMI paid $5.5 million and transferred 289 hectares (714 acres) of grassland to the City of Rocks State Park to settle allegations that the company injured terrestrial and wildlife resources as a result of discharges of hazardous substances from the Chino, Tyrone, and Cobre mines.

The Trustees view the transfer of land to New Mexico State Parks as compensation for injuries to terrestrial resources, as well as unique habitat protection. Thus this Final Restoration Plan and Environmental Assessment (RP/EA) for the Chino, Tyrone, and Cobre mine facilities, prepared

[1] The Cobre Mine is also known as the Continental Mine.

by the Trustees, evaluates proposed restoration projects and determines which of these projects would best compensate the public for injuries to wildlife and wildlife habitat resources that resulted from the release of hazardous substances at the three mines. The Trustees solicited a broad range of ideas for potential restoration projects from local, state, and federal agencies; nonprofit organizations; stakeholder groups; and private citizens. The Trustees identified 21 potential restoration projects, which were described in the Draft RP/EA. During the public comment period, an additional project was identified and included in the evaluation process, and three existing projects were compiled into one watershed-level project.

These projects were evaluated using screening and evaluation criteria developed by the Trustees that are consistent with federal regulations. To be considered for further evaluation, a project had to meet the following criteria:

- Is technically and administratively feasible
- Benefits wildlife or wildlife habitat affected by hazardous substance releases at the Chino, Tyrone, or Cobre mines
- Provides an overall net environmental benefit
- Complies with applicable and relevant federal, state, local, and tribal laws and regulations
- Is subject to Trustee management, control, and monitoring.

Projects that passed the screening criteria were assessed using the following set of evaluation criteria, which were designed to evaluate which projects best provided compensation for injured wildlife and wildlife habitat resources:

- Is likely to directly benefit birds that were affected by hazardous substance releases at the Chino, Tyrone, or Cobre mines
- Has a high potential for long-term success
- Has a low risk of failure
- Has feasible and cost-effective provisions for operations, maintenance, and monitoring
- Needs NRDAR funding
- Is located close to where the injuries occurred at the Chino, Tyrone, or Cobre mines
- Is cost-effective compared with other projects that provide similar benefits

- Is likely to benefit multiple wildlife resources and services
- Is consistent with regional planning and federal and state policies
- Is likely to provide benefits quickly after project implementation
- Allows for appropriate public access
- Leverages funding to enable projects to be larger or more comprehensive in scope.

All projects were initially evaluated for the Draft RP/EA, and then reevaluated after the public comment period to take into account the additional information obtained during that period. Based on the reevaluation of the proposed restoration projects, the Trustees developed a preferred restoration alternative, which included all of the proposed projects that met the screening criteria. However, the funding available to the Trustees is insufficient to fund all of the proposed projects within the preferred alternative. Thus the Trustees developed three priority tiers for funding, which are based on how well each project met the Trustees' evaluation criteria and on the total costs of different combinations of projects.

- Tier 1 proposed projects ranked highest in the project evaluation and have top priority for funding. These projects represent a diverse regional portfolio of wildlife and wildlife habitat restoration projects that would effectively compensate the public for the loss of wildlife, especially birds, and the loss of wildlife habitat that resulted from releases of hazardous substances at the Sites.
- Tier 2 proposed projects ranked the next highest in the project evaluation and will be funded by the Trustees with funding that remains after the Tier 1 projects have been completed.
- Tier 3 proposed projects met the Trustees' criteria; however, they scored lower than the projects in Tier 2 frequently with respect to waterfowl benefits. Once Tiers 1 and 2 projects are implemented, Tier 3 projects will be considered if sufficient funds are available and if these projects provide sufficient waterfowl benefits. An assessment will be made of Tier 1 and 2 waterfowl benefits before any Tier 3 projects are implemented.

Table S.1 shows the wildlife and wildlife habitat restoration projects in the preferred restoration alternative and the funding tiers.

Table S.1. Restoration projects by funding tier (projects listed alphabetically by tier)

Project name	Project category	Brief project description
Tier 1		
Ancheta Springs Ranch Conservation Easement	Habitat protection and improvement	Protect habitat along the Ancheta Springs Creek by placing a conservation easement on the property.
Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration	Watershed habitat restoration	Repair severe erosion damage to the Burro Cienaga, improve water quality and storage, and restore critical habitat for plants and animals.
Burro Cienaga Watershed Restoration	Watershed habitat restoration	Reconstruct stock tanks and ponds to develop and increase wetland and riparian habitats for wildlife. Repair erosion damage to improve watershed function.
Double E Ranch Habitat Protection and Improvement	Habitat protection and improvement	Protect native riparian habitat along Bear Creek through the purchase and conservation of the Double E Ranch.
Mimbres River Wildlife and Habitat Restoration	Riparian habitat restoration	Restore and improve riparian and wetland habitats and modify at least one stock pond.
Redrock Property Habitat Protection and Improvement	Habitat protection and improvement	Protect and restore native riparian habitat along the Gila River through the purchase and conservation of the Redrock property's native riparian habitat along the Gila River.
River Ranch Habitat Protection and Improvement	Habitat protection and improvement	Protect and restore native riparian habitat along the Mimbres River through the purchase and conservation of the River Ranch property.
Tier 2		
Ancheta Springs Ranch Restoration	Riparian habitat restoration	Restore and improve riparian habitat along the Ancheta Springs Creek.
Davis Property Habitat Protection and Improvement	Habitat protection and improvement	Protect and restore native riparian habitat along the Gila River through the purchase and conservation of the Davis property.
Porter Property Habitat Protection and Improvement	Habitat protection and improvement	Protect and restore native riparian habitat along the Gila River through the purchase and conservation of the Porter property.
Upper Bear Creek Habitat Protection and Improvement	Habitat protection and improvement	Protect native riparian habitat along Bear Creek through the purchase and conservation of the Bear Creek Ranch.

Table S.1. Restoration alternatives by proposed funding tier (projects listed alphabetically by tier) (cont.)

Project title	Project category	Brief project description
Tier 3		
Burro Cienaga Grassland Restoration	Grassland habitat restoration	Increase continuous grass cover through prescribed burnings and herbicide treatments in the Burro Cienaga.
Grassland Restoration through Aerial Treatment of Mesquite	Grassland habitat restoration	Increase grass cover through aerial treatments of mesquite on Chihuahuan Desert grassland and shrubland.
Meadow Creek Restoration	Riparian habitat restoration	Restore a portion of Meadow Creek, a tributary of the Gila River.
Migratory Bird Grassland Restoration	Grassland habitat restoration	Increase grass cover through aerial treatments of creosote or mesquite on the Bureau of Land Management priority watersheds.
Swan Pond Habitat Restoration	Riparian habitat restoration	Convert Swan Pond from a cattail monoculture to a diverse wetland habitat.
York Canyon Rehabilitation	Riparian habitat restoration	Implement a levee setback and associated restoration along the San Francisco River.

Additional information can be requested by contacting:

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An electronic version of the Final RP/EA is posted on the New Mexico Office of Natural Resources Trustee website: http://onrt.nmenv.state.nm.us/ChinoCobreTyrone.html.

1. Introduction

This Restoration Plan and Environmental Assessment (RP/EA) presents proposed restoration actions to benefit wildlife and wildlife habitat in the general vicinity of Silver City, New Mexico. These projects are intended to compensate the public for the injuries to wildlife, particularly birds, and wildlife habitat resources that occurred when hazardous substances,[2] including copper and other heavy metals, were released from three copper mining facilities owned by Freeport-McMoRan Copper & Gold Inc. (FMI)[3] in Grant County, New Mexico. The mines are:

- Chino Mine – located approximately 19 kilometers (12 miles) east of Silver City
- Tyrone Mine – located approximately 16 kilometers (10 miles) southwest of Silver City
- Cobre[4] Mine – located approximately 5 kilometers (3 miles) north of Hanover.

These facilities are referred to as "the Sites" throughout this plan. Their locations are shown in Chapter 2 (Figure 2.1).

The New Mexico Office of Natural Resources Trustee (ONRT) and the U.S. Fish and Wildlife Service (USFWS; collectively, the "Trustees") identified the proposed restoration actions described in this RP/EA through discussions with local, state, and federal agencies; nonprofit organizations; stakeholder groups; and private citizens. These projects are being proposed as offsets for injuries to natural resources identified during the NRDAR process undertaken by FMI and the Trustees pursuant to CERCLA [42 USC § 9601 et seq.]. Under CERCLA, as part of the overall NRDAR process, the Trustees are responsible for selecting and implementing appropriate restoration projects to compensate the public for natural resource injuries. These restoration projects will be paid for with funds received from FMI through the settlement. A copy of the settlement Consent Decree can be found at http://www.onrt.state.nm.us/documents/ConsentDecreesignedbyJudge2-21-2012FMIWildlife.pdf.

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[2] The term "hazardous substance" refers to a hazardous substance as defined in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), federal Natural Resource Damage Assessment and Restoration (NRDAR) regulations 43 CFR § 11.14(u). This includes hazardous substances designated or listed by Sections 311(b)(2)(A) and 307(a) of the Federal Water Pollution Control Act (i.e., the Clean Water Act, or CWA), by Section 102 of CERCLA, by Section 3001 of the Solid Waste Disposal Act (i.e., the Resource Conservation and Recovery Act), and Section 112 of the Clean Air Act.

[3] FMI is used in this document to collectively refer to any or all of the following entities: Freeport-McMoRan Corporation, Freeport-McMoRan Chino Mines Company, Freeport-McMoRan Tyrone Inc., Freeport-McMoRan Tyrone Mining LLC, and Freeport-McMoRan Cobre Mining Company.

[4] The Cobre Mine is also known as the Continental Mine.

The purpose of this RP/EA is to inform the public about the wildlife and wildlife habitat resources that were injured by releases of hazardous substances at the Sites, and to present the Trustees' preferred restoration projects that would compensate the public for these injuries. The Trustees released a Draft RP/EA on January 16, 2013 and held the public comment period from January 16, 2013 through March 4, 2013. In addition, a public meeting to discuss the Draft RP/EA was held on January 30, 2013 in Silver City, New Mexico. The Trustees considered written comments on the Draft RP/EA and comments from the public meeting before publishing this revised, Final RP/EA. This Final RP/EA includes a summary of written comments received and the Trustee responses to those comments (Chapter 7). Some of the restoration actions described in this document are still in the initial stages of project design. Detailed project designs and costs will be developed for restoration projects that have been selected for funding prior to implementation.

This introductory chapter explains the responsibilities and legal authority of the Trustees to develop this plan, summarizes the settlement between FMI and the Trustees, describes the role of public involvement in developing this Final RP/EA, discusses the responsible party involvement for this Final RP/EA and the Administrative Record, and provides an overview of the remainder of the document.

1.1 Trustee Responsibilities under CERCLA and the National Environmental Policy Act

The Trustees' authority to pursue NRDAR claims at the Sites is identified in the New Mexico Natural Resources Trustee Act [NMSA 1978, §§ 75-7-1 et seq.] and in the following federal statutes:

- CERCLA, as amended [42 USC § 9601 et seq.]
- CWA [33 USC §1251 et seq.].

Under these authorities, the Trustees are responsible for assessing natural resource damages and identifying compensatory restoration projects.

The purpose of this Final RP/EA is to inform the public of the preferred restoration actions proposed to compensate for wildlife and wildlife habitat injuries and associated lost services resulting from the release of hazardous substances at the Sites. This document serves as an EA pursuant to the National Environmental Policy Act (NEPA) [42 USC 4321 et seq.] and the regulations guiding its implementation at 40 CFR 1500 et seq. This plan describes the purpose and need for the proposed restoration actions; the restoration alternatives considered, including a no-action alternative; and the potential individual and cumulative impacts of restoration actions on the quality of the physical, biological, and cultural environment.

This document also serves as an RP for implementing the selected restoration alternative, pursuant to NRDAR regulations [43 CFR Part 11] issued by the U.S. Department of the Interior (DOI). Under these regulations, the alternatives selected in the RP should ensure that damages recovered from the responsible parties are used to undertake feasible, safe, and cost-effective projects that address injured natural resources; consider actual and anticipated conditions; and are consistent with applicable laws and policies. This RP identifies the proposed alternatives and describes how settlement monies received will be spent to achieve restoration goals.

1.2 Summary of Wildlife and Terrestrial Natural Resource Damage Settlement

As part of the Trustees' NRDAR responsibilities, the Trustees assessed and quantified injuries to wildlife and wildlife habitat, as well as terrestrial habitat associated with the Sites, and successfully brought claims against FMI for these injuries. The Trustees and FMI reached a natural resource damage settlement for land and wildlife resources in the amount of $5.5 million and for the transfer of approximately 289 hectares (714 acres) of grasslands owned by FMI to New Mexico's City of Rocks State Park.

The Trustees view the transfer of land to New Mexico State Parks for permanent protection and management as compensation for injuries to terrestrial resources, as well as unique habitat protection. The hazardous substances released from the mines impacted diverse wildlife, including birds, mammals, and reptiles/amphibians, as well as their habitats. Affected birds include water birds and non-water birds, both resident and migratory. Thus the restoration actions considered in this RP/EA will focus on benefiting wildlife, particularly birds, and wildlife habitat.

Before this land and wildlife settlement, FMI and ONRT reached a settlement for damages to groundwater resources in the amount of $13 million. ONRT identified and evaluated proposed groundwater restoration projects that were presented to the public in both draft and final groundwater restoration plans. A diverse, regional portfolio of groundwater restoration projects was selected that would yield maximum benefits to regional groundwater resources and that is consistent with current approaches to regional water planning in the area. For additional information, see the final groundwater RP at http://onrt.nmenv.state.nm.us/documents/Final.Groundwater.Restoration.Plan.Chino.Cobre.Tyrone_1.4.2012.pdf.

1.3 Public Involvement

During the development of the Draft RP/EA, the Trustees held an informal public meeting in Silver City, New Mexico on May 30, 2012 to inform the public about the restoration planning process and to request that information about potential restoration projects be forwarded to the Trustees for consideration. The Trustees also contacted relevant agencies, organizations, and stakeholder groups to learn more about potential restoration project opportunities.

The Draft RP/EA was published on January 16, 2013. A press release on its availability and a request for public comments were also released on that day. The public was invited to comment on the content of the Draft RP/EA and to propose additional potential wildlife and wildlife habitat restoration projects. The public comment period for the Draft RP/EA was January 16, 2013 through March 4, 2013, and a public meeting was held on January 30, 2013 in Silver City, New Mexico. At this meeting, the Trustees presented information about the restoration process and the projects described in the Draft RP/EA, then answered questions about the Draft RP/EA.

Copies of the Draft RP/EA were made available at the following locations:

The Public Library
515 West College Avenue
Silver City, NM 88061

Bayard Public Library
1120 Central Avenue
Bayard, NM 88023

Gila Valley Library
400 Highway 211
Gila, NM 88038

An electronic version of the Draft RP/EA is on the ONRT website: http://onrt.nmenv.state.nm.us/ChinoCobreTyrone.html.

1.4 Responsible Party Involvement

The assessment process for the Sites was conducted as a cooperative assessment with FMI, through which the Trustees coordinated with responsible parties while undertaking the NRDAR. Cooperative assessments (such as this one) can increase the cost-effectiveness of the process by facilitating the sharing of information and avoiding the duplication of study efforts. Input from FMI was sought and considered throughout the assessment process.

FMI chose not to participate in the restoration planning and implementation process. The Trustees have the final authority to make determinations regarding restoration actions for wildlife and wildlife habitat resources.

1.5 Administrative Record

The administrative record contains the official documents pertaining to the NRDAR activities at and in the area of the Sites, and is housed at ONRT.

1.6 Document Organization

The remainder of this document is organized as follows. Chapter 2 describes the purpose and need for restoration, including an overview of injuries to wildlife and wildlife habitat in the area of the Sites. Chapter 3 describes the process used to evaluate proposed restoration projects. Chapter 4 describes the proposed restoration alternative and the projects that make up this alternative; it also describes the no-action alternative. Chapter 5 describes the affected environment. Chapter 6 presents the environmental and socioeconomic impacts of the proposed restoration alternatives. Chapter 7 summarizes the public comments received on the Draft RP/EA and provides the Trustees responses to those comments. Chapter 8 provides a list of agencies, organizations, and parties consulted during the preparation of this document. Appendix A contains a complete list of the wildlife and wildlife habitat restoration projects identified by the Trustees, and Appendix B provides copies of the original public comments on the Draft RP/EA.

2. Purpose and Need for Restoration

This chapter describes the purpose and need for restoration to address injuries to natural resources resulting from the releases of hazardous substances at the Sites. It also provides an overview of the Sites, summarizes the natural resource injuries resulting from the release of hazardous substances at these Sites, and describes the need for restoration under CERCLA.

2.1 Overview of the Sites

The Sites, located in southwestern New Mexico, are open-pit and underground copper and iron mining, extraction, and processing facilities owned and operated by FMI (Figure 2.1). A brief description and map of each mine facility (i.e., the Chino, Tyrone, and Cobre mines) is provided below. A more detailed description of the mine facilities and their mining history can be found in Section 2 of the final groundwater RP available at http://onrt.nmenv.state.nm.us/documents/Final.Groundwater.Restoration.Plan.Chino.Cobre.Tyrone_1.4.2012.pdf.

Chino Mine

The Chino Mine site is located approximately 19 kilometers (12 miles) east of Silver City in Grant County, New Mexico. It includes the Santa Rita Pit; the Groundhog Mine; the former Hurley smelter; and associated stockpile areas and tailings impoundments, including the historical tailings impoundments known as Lake One and Axiflo Lake (Figure 2.2). The largest drainage at the Chino Mine is Whitewater Creek; Hanover Creek and Lampbright Draw (not shown) are other important drainages. Surface drainage from the Chino Mine drains into the Mimbres River Watershed (MFG, 2003; Golder Associates, 2008).

Tyrone Mine

The Tyrone Mine is located approximately 16 kilometers (10 miles) southwest of Silver City, New Mexico, in southwestern Grant County. This site includes several open-pit areas, leach stockpiles, waste stockpiles, tailings impoundments, and other mine processing facilities (Figure 2.3). The largest drainage at the Tyrone Mine is Mangas Creek; Brick Kiln Gulch, Oak Grove Creek, and Deadman Canyon are other important drainages. Surface drainage from the Tyrone Mine drains into the Gila and Mimbres River watersheds (Daniel B. Stephens & Associates, 1999, 2004).

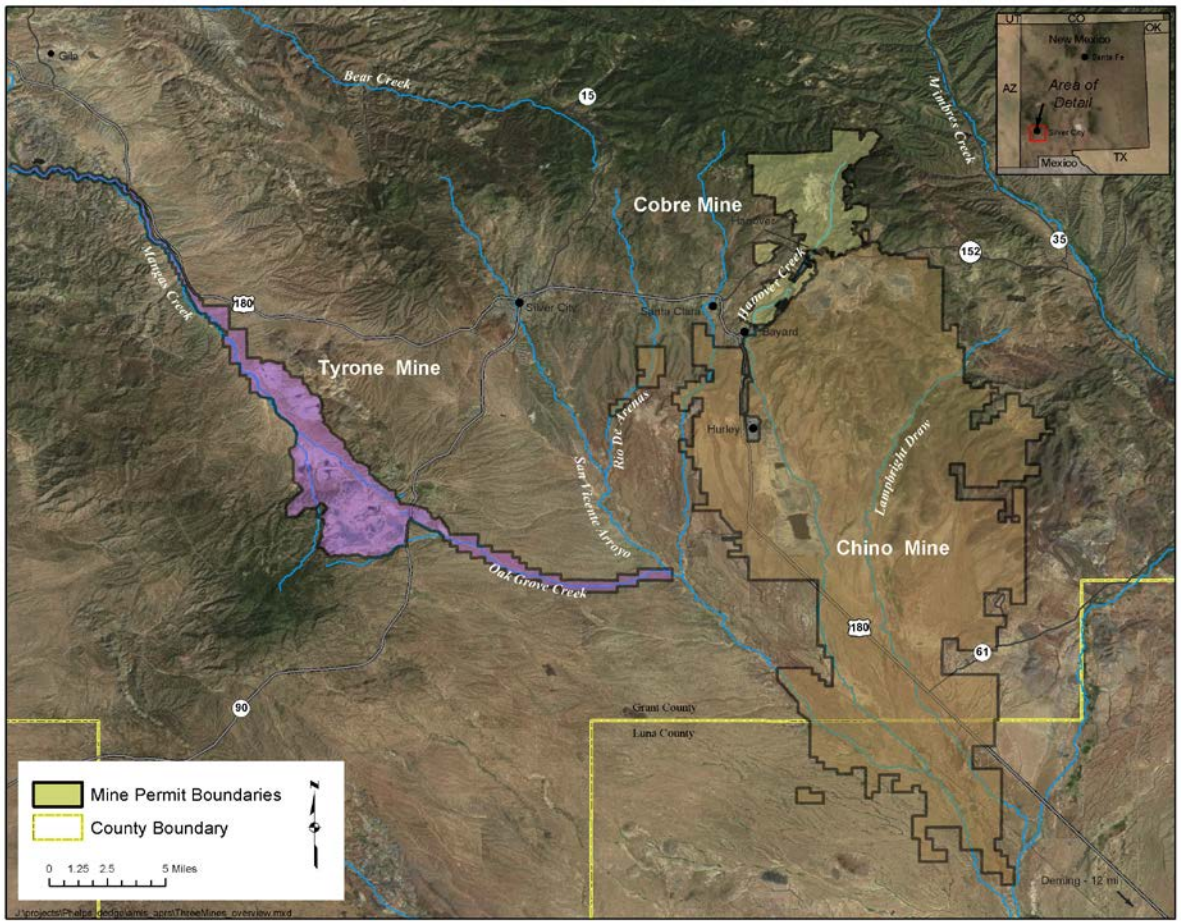


Figure 2.1. Overview map of the Chino, Tyrone, and Cobre mines.

Cobre Mine

The Cobre Mine is located approximately 5 kilometers (3 miles) north of Hanover, New Mexico, in Grant County. The site includes the Continental Pit, underground mine workings, waste rock disposal facilities, low- and high-grade ore stockpiles, and tailings impoundments (M3 Engineering & Technology, 2001; Telesto Solutions, 2005) (Figure 2.4). Major drainages at the Cobre Mine are Buckhorn Gulch and Hanover Creek. Surface drainage from the Cobre Mine drains into the Mimbres River Watershed.

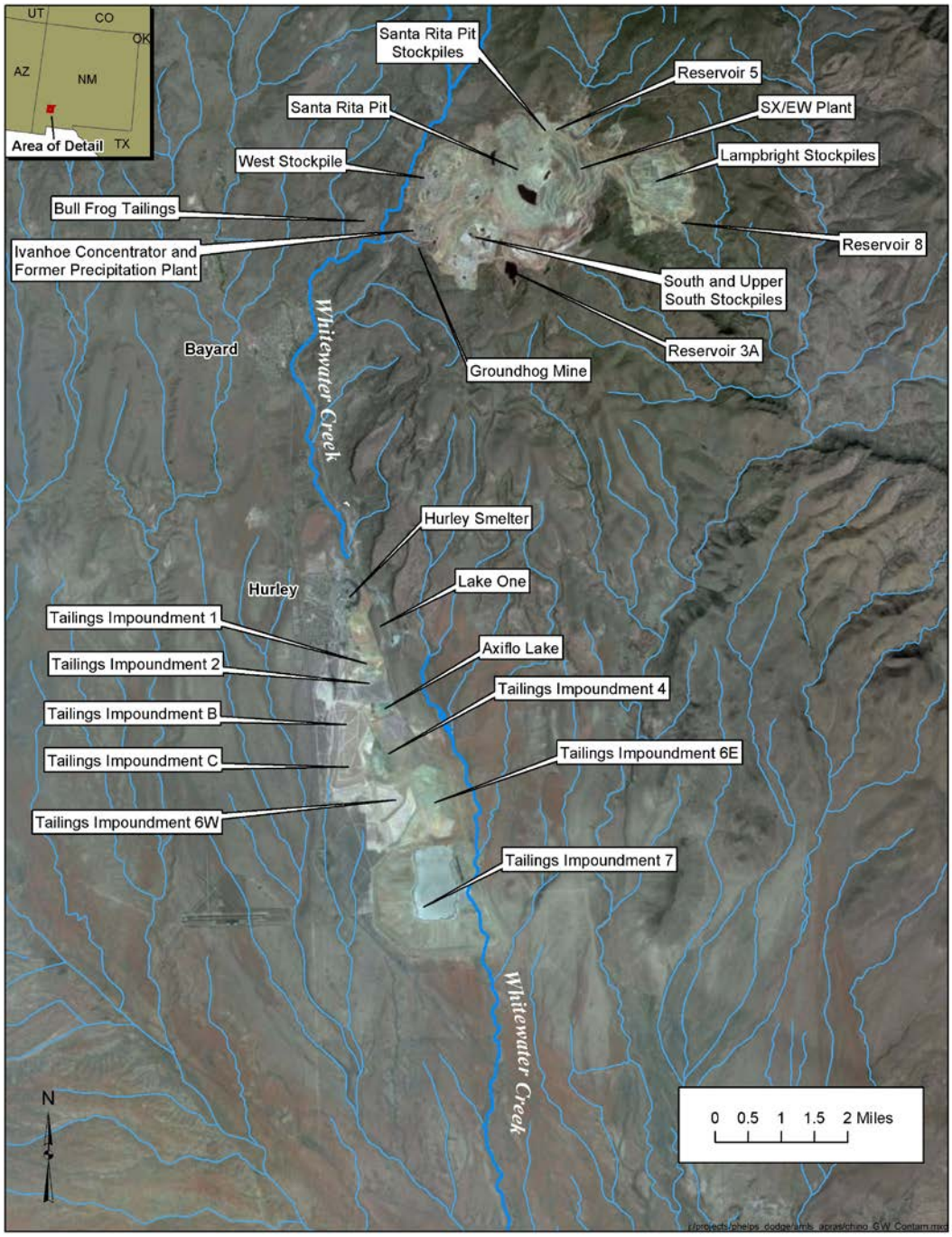


Figure 2.2. Hydrologic features and mine facilities at the Chino Mine.

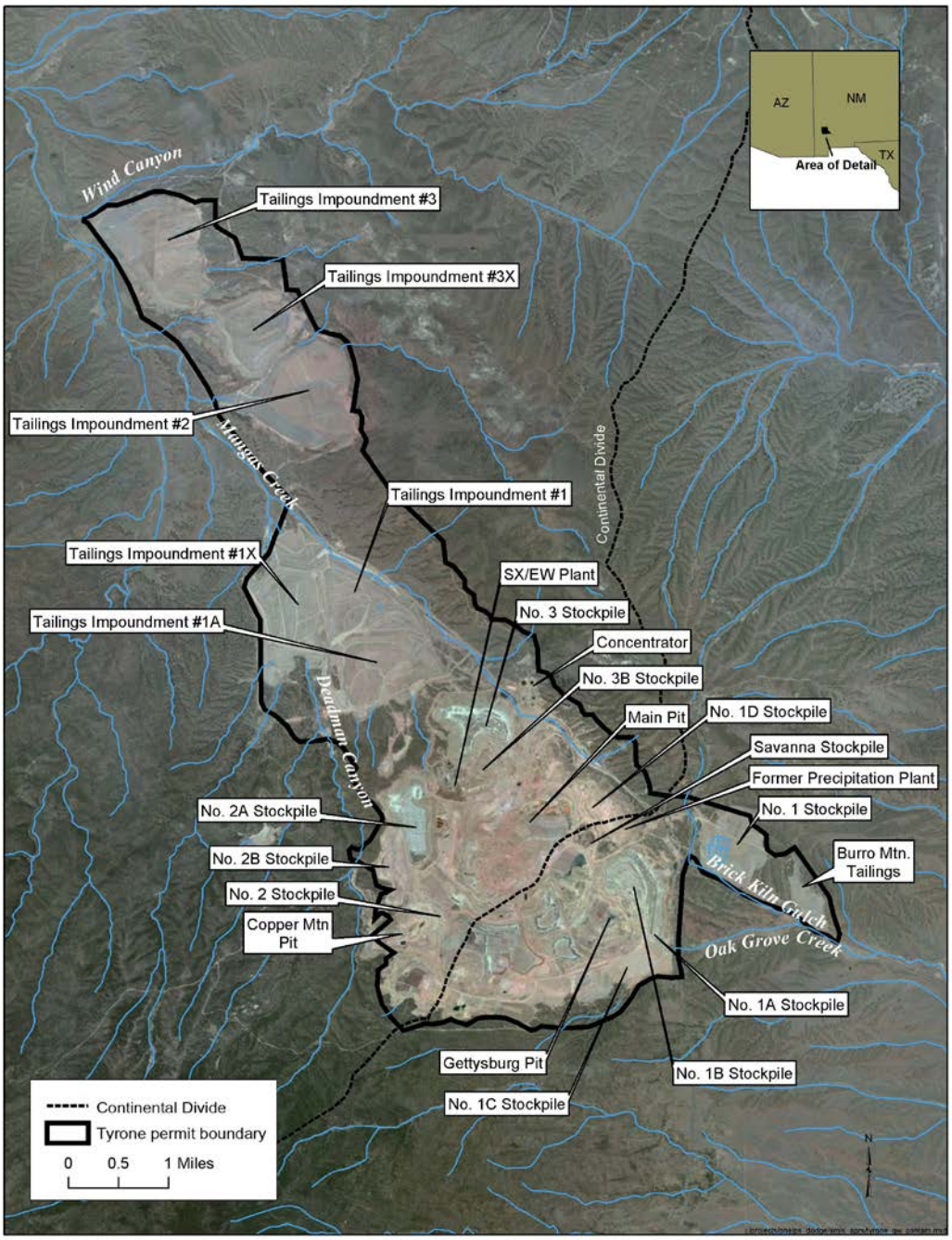


Figure 2.3. Hydrologic features and mine facilities at the Tyrone Mine.

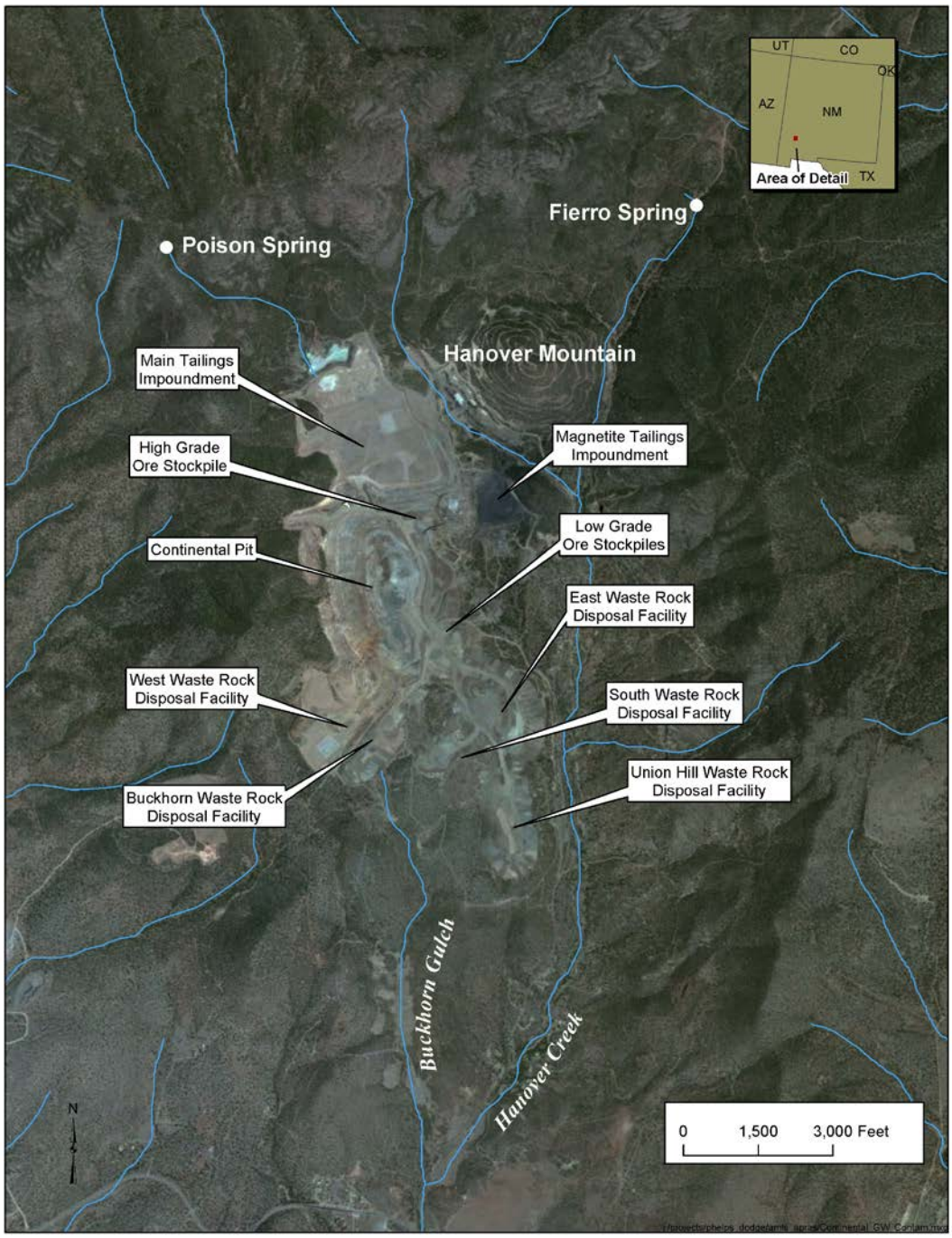


Figure 2.4. Hydrologic features and mine facilities at the Cobre Mine.

2.2 Summary of Natural Resource Injuries

This section includes an overview of sources of hazardous substances at the Sites and pathways to natural resources; and injuries to terrestrial resources, surface water resources and associated wildlife habitat, and birds and wildlife resulting from hazardous substance releases. Surface water resources are considered here in the context of their role in providing wildlife habitat.

2.2.1 Sources of hazardous substances and pathways to natural resources

Hazardous substances released at the Sites include sulfuric acid and metals/metalloids, including arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, and zinc. The primary sources of hazardous substances at the Sites include:

- Mine wastes, including tailings, waste rock, and spent ore leach piles
- Ore and leach stockpiles
- Mine waters, including pregnant leach solution, raffinate, tailings supernatant water, seepage from wastes and mined materials, and stormwater that contacts mine wastes.

Hazardous substances from these and other sources at the Sites were transported to natural resources through a variety of pathways, including but not limited to:

- **Aerial transport.** For example, windblown tailings and hazardous substances released by the Hurley smelter were transported through the atmosphere, then deposited on surrounding habitat.

- **Pipeline breaches and other spills that deposited hazardous substances into waterways.** For example, tailings spills and process water spills released hazardous substances into drainages at the Sites.

- **Direct contact of biota with hazardous substances.** For example, birds and wildlife came into contact with leach solutions in open channels and ponds, as well as with high concentrations of metals and acidic water found in tailings impoundments.

- **Contaminated groundwater contacting geologic resources (including soil) or surface water (including sediment).** For example, contaminated groundwater, including seeps and springs, “daylighted” at the Sites and exposed surrounding geologic resources or surface water to hazardous substances.

Two site-specific examples of contaminant pathways that led to the widespread exposure of natural resources at the Sites include:

1. Exposure of biota to contaminants in tailings areas

All three mine sites have tailings in unlined impoundments. Before the tailings impoundments at the Sites were remediated, they were a key pathway between hazardous substance releases and biota. Tailings impoundments frequently had ponded water on the top, either from water that was pumped with the tailings or from precipitation. The ponded water contained hazardous substances, with concentrations increasing during the summer months as water evaporated and thunderstorms created newly ponded water in areas where metal-sulfate salts had formed on or near the surface. In the arid environment of the Sites, waterfowl and other biota were attracted to the ponded water on the tailings, where they were exposed to high concentrations of hazardous substances through direct contact or ingestion.

2. Riparian habitat resources exposed to hazardous substances in stockpiles, waste rock, or process material

Riparian habitat resources have been exposed to hazardous substances through numerous pathways at the Sites, including process water leaks and spills; tailings spills; dryfall from smelter emissions; windblown materials; runoff, infiltration, or percolation from tailings and waste stockpiles; and transport through erosional processes. Whitewater Creek and Mangas Creek are two important waterways at the Chino and Tyrone mines, respectively, where the riparian and associated streambed habitats have been exposed to hazardous substances from multiple sources. Those sources include direct inputs of contaminated water from the mines, tailings pond breaches during high-volume storm events, and deposition or spills of tailings directly into the streambed areas.

2.2.2 Injuries to terrestrial resources

Terrestrial resources, including soils and vegetation, at the Sites and in surrounding areas were injured by exposure to hazardous substances released from the Sites. For example, surface soils at sampling locations downwind from the Hurley smelter near the Chino Mine had high metals concentrations and low pH, resulting in toxicity to vegetation in controlled tests. Food-chain modeling also indicated that there was the potential for injury to small ground-feeding birds at the Chino Mine due to exposure to copper, lead, and zinc via the food chain. Small mammals at the Chino Mine were also observed to have increased liver and kidney abnormalities compared to animals in reference areas, which is consistent with toxicity from metals exposure (MFG, 2003).

2.2.3 Injuries to surface water resources and associated wildlife habitat

Surface water resources and the wildlife habitat associated with these resources at the Sites and in drainages downstream from them were injured by exposure to hazardous substances released from the Sites. These resources include ephemeral ponds that form on or near tailings piles, mine-related process waters, and natural surface water bodies such as seeps, streams, and ponds. Each of these surface water resources provides habitat or is a drinking water source for wildlife, particularly migrating waterfowl.

Injuries to surface water resources, including sediments, were assessed by comparing concentrations of hazardous substances in surface water to water quality standards and toxicity thresholds for amphibians and other biota. Cadmium, copper, lead, and zinc exceeded water quality standards and toxicity thresholds for amphibians in certain sampling locations and time periods at the Sites. In addition, food-chain modeling showed that there was a potential for injury to amphibians based on exposure to cadmium, copper, lead, or zinc in Whitewater Creek or Bayard Canyon at the Chino Mine site (MFG, 2003).

2.2.4 Injuries to birds and wildlife

Ponds, streams, and other areas of open water are an important resource for wildlife, particularly for migrating waterfowl and other resident and terrestrial birds that seek open water for resting and drinking. This is especially true in southern New Mexico, which has a dry, desert environment, where open water is infrequent. The contaminated open water at the Sites, including ponded water on or near tailings piles, acidic leach solutions in open channels, and other mine-related process water, caused birds and wildlife to die after they came into contact with it. Much of the dead wildlife observed consisted of migratory water birds that had been seeking water. Resident terrestrial birds were also found dead under similar conditions. Some surviving wildlife, including migratory birds, resident birds, amphibians, small mammals, and reptiles, were injured at the Sites, mostly through direct contact with contaminated water that had high concentrations of metals and was highly acidic.

From September to November 2000, 177 dead migratory birds were found near tailings ponds at the Tyrone Mine. In September 2000, after the discovery of bird carcasses, the mine initiated a bird hazing program,[5] with the objective to discourage birds from landing or staying on tailings ponds (Stratus Consulting, 2003). Although the program was unsuccessful in deterring all birds, the remediation of tailings piles has ended these injuries because there are no longer open sources of water in contact with the tailings.

[5] The presence and use of bird hazers is in itself notable for these sites. The hazers' objective was to keep birds from landing on, or minimize the time exposed to, the waters in these ponds. This is a clear recognition of the ponds' potential to injure birds following exposure.

As part of the NRDAR assessment activities, estimates of bird injuries at the Tyrone and Chino mine sites were developed that included the number of birds killed from exposure to contaminated waters at the Sites, as well as the number of years of "lost bird life" associated with the premature mortalities. The Trustees used various sources of information to estimate the approximate number of birds exposed to hazardous substances at the Sites and the likely injuries to these birds. For example, they reviewed observations made by bird hazers at the Tyrone site from 2000 to 2005 regarding the number and types of birds trying to land on the tailings ponds; they also reviewed information about migratory bird counts to understand more about the populations of birds that could have been exposed. The Trustees also estimated the level of bird mortality and sublethal injuries that likely occurred at the ponds based on the assumed length of time that birds were exposed to hazardous substances and the toxicity of the waters at different ponds. Finally, the Trustees estimated the years of "lost bird life" due to the premature mortality of injured birds, based on published information on typical bird lifespans and annual mortality rates.

2.3 Need for Restoration under CERCLA

The objective of the NRDAR process is to compensate the public, through environmental restoration, for natural resources and the services provided by these resources that have been injured, destroyed, or lost as a result of the release of hazardous substances into the environment. As described above, injuries to wildlife and wildlife habitat at the Sites require restoration. The amount, or "scale," of restoration required to compensate for these losses depends on the spatial extent, nature, severity, and duration of losses from injuries and on the gains from restoration.

Given the injuries to wildlife and wildlife habitat described above, the Trustees and FMI jointly reached a natural resource damage settlement for grasslands and wetlands wildlife resources in the amount of $5.5 million and, for terrestrial resources, the transfer of 289 hectares (714 acres) of grasslands owned by FMI to the City of Rocks State Park (see Section 1.2). The Trustees determined that the restoration that could be accomplished with this sum of money would be sufficient to compensate for the estimated level of injury to wildlife and wildlife habitat at the Sites. Settlement funds for NRDAR resource restoration can only be used to restore, rehabilitate, replace, or acquire the equivalent of these injured natural resources and the services provided by them.

This RP/EA has been developed to evaluate and select restoration projects designed to compensate the public for injuries that have occurred to wildlife and wildlife habitat resources at the Sites. Selected restoration projects will be implemented over a period of time, depending on the project type. Because the Sites are still considered active mining operations, the Trustees have chosen to focus on restoration alternatives that will benefit wildlife resources outside the footprint of the Sites.

3. Restoration Project Evaluation

The Trustees' goal under this NRDAR is to compensate the public for the loss of wildlife, especially birds, and the loss of wildlife habitat that resulted from releases of hazardous substances at the Sites. According to the NRDAR regulations developed for CERCLA [43 CFR § 11.82(a)], the Trustees are required to develop restoration alternatives that either (1) restore or rehabilitate injured natural resources to a condition in which they can provide the level of services available at baseline (conditions that would have occurred but for the release of hazardous substances), or (2) replace or acquire equivalent natural resources capable of providing such services.

The Trustees preferred a diverse portfolio of wildlife-focused restoration projects that would provide the maximum benefit to regional wildlife resources; this includes a mix of projects that focus on wildlife habitat protection and wildlife habitat restoration. Because migratory birds and waterfowl have been identified as the primary wildlife resource injured (Chapter 2), preferred projects will benefit migratory birds and waterfowl habitat, or protect land that provides riparian habitat that benefits these bird species. This is consistent with current approaches to regional planning in the area and will meet the Trustees' goal of replacing or acquiring natural resources that are equivalent to those lost.

The Trustees based their process for evaluating restoration projects on the guidance for restoration project selection provided by the NRDAR regulations developed for CERCLA [43 CFR § 11.82]. First, the Trustees developed criteria for screening and evaluating proposed restoration projects (Section 3.1), and then they applied these criteria to proposed restoration projects to develop a preferred restoration alternative and place projects into priority tiers for funding (Section 3.2).

3.1 Screening and Evaluation Criteria for Proposed Restoration Projects

The Trustees developed screening and evaluation criteria to be used in evaluating proposed restoration projects. The criteria reflect not only the guidance for restoration project selection provided by the NRDAR regulations developed for CERCLA [43 CFR § 11.82], but also the guidance for restoration project selection in the regulations developed by the National Oceanic and Atmospheric Administration for restoration planning under the Oil Pollution Act [15 CFR § 990.54].

3.1.1 Screening criteria

The Trustees used screening criteria (see Table 3.1) to determine whether the proposed projects met minimum standards of acceptability. To be deemed acceptable, a project had to comply with all of these criteria. If a project did not meet the screening criteria, it was not given further consideration by the Trustees. Table 3.1 lists both the screening criteria and explanations of how the Trustees interpreted and applied the criteria.

Table 3.1. Screening criteria for proposed restoration projects

Screening criteria	Explanation
Be technically and administratively feasible	Proposed projects must be able to be implemented using reliable technical approaches and by entities with the capacity to effectively complete and manage the project.
Benefit wildlife or wildlife habitat affected by hazardous substance releases at and from the Sites	Proposed projects must restore, rehabilitate, replace, or acquire wildlife or wildlife habitat, particularly birds or bird habitat, which was injured by the release of hazardous substances at and from the Sites.
Provide an overall net environmental benefit	Proposed projects must provide a net gain in environmental services. For example, a project that is solely a research study would not meet this criterion.
Comply with applicable and relevant federal, state, local, and tribal laws and regulations	Proposed projects must be legal, likely to receive required permits, and must consider public health, welfare, and the environment.
Be subject to a reasonable degree of Trustee management, control, and monitoring	Proposed projects must be managed, controlled, and monitored in a way that is consistent with Trustee restoration goals and subject to a reasonable degree of Trustee oversight.

3.1.2 Evaluation criteria

The Trustees applied evaluation criteria to each of the potential restoration projects that successfully passed the project screening process. These criteria were grouped into three categories (high-priority, medium-priority, or low-priority) according to their importance to the Trustees. Ratings were weighted more heavily for high-priority criteria and less heavily for low-priority criteria. Proposed projects were evaluated for each criterion and assigned a rating of below average, average, or above average. A list of evaluation criteria is provided in Table 3.2, together with an explanation of how the Trustees interpreted and applied the criteria.

Table 3.2. Evaluation criteria for proposed restoration projects

Evaluation criteria	Explanation
High-priority criteria	
Is likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites	Birds have been identified as the primary wildlife resource injured. Proposed projects that directly benefit birds will be evaluated more favorably. Factors to be considered include how the proposed project will benefit birds, particularly migratory birds and waterfowl, and whether the project specifically improves high-priority bird habitats, such as riparian and floodplain habitats.
Has a high potential for long-term success	Proposed projects that use proven technologies and have mechanisms in place to ensure long-term success will be evaluated more favorably. Factors to be considered include whether the project includes provisions that promote project longevity, such as a conservation easement, a contract that requires at least 10 years of operations and maintenance for restoration work, or a management commitment by a public agency or conservation organization; whether the proposed restoration technique is appropriate for the project; whether these preservation mechanisms or restoration techniques have been used before with success; and whether the entity proposing to implement the project has the capacity to undertake it.
Has a low risk of failure	Proposed projects that have addressed and limited potential risks will be evaluated more favorably. Factors to be considered include all potential risks that may be faced during project implementation, such as the need for long-term protection, the need for high-quality management by a public entity or qualified organization, the need to coordinate with multiple outside parties, the need for regulatory permits, the complexity of design and engineering, and the lack of public support.
Has feasible and cost-effective provisions for operations, maintenance, and monitoring	Proposed projects that have sufficient provisions or less need for operations, maintenance, and monitoring will be evaluated more favorably. Factors to be considered include whether operations, maintenance, and monitoring costs are reasonable and cost-effective given the project's scope; whether funding is sufficient to support operations, maintenance, and monitoring activities over an appropriate time frame; and whether the proposed duration of operations, maintenance, and monitoring activities is appropriate.
Needs NRDAR funding	Projects that would not likely be implemented unless they receive funding from the NRDAR settlement will be evaluated more favorably. Factors to be considered for land protection projects include whether NRDAR settlement funding will prevent risk of land development and habitat degradation that is otherwise at a high risk of occurring. A secondary priority will be projects for which NRDAR funding would enable earlier implementation.

Table 3.2. Evaluation criteria for proposed restoration projects (cont.)

Evaluation criteria	Explanation
Medium-priority criteria	
Is located close to where the injuries occurred at the Sites	Proposed projects that are located in areas that have a positive impact on wildlife injured at the Sites (e.g., projects that are in the same migratory flyway) will be evaluated more favorably. A secondary geographic priority will be projects located within the Gila or Mimbres River watersheds, where the injuries occurred.
Is cost-effective compared with other projects that provide similar benefits	Proposed projects that are more cost-effective relative to other projects that provide similar benefits will be evaluated more favorably. Factors to be considered include the estimated costs of a proposed project compared to the likely benefits to wildlife and wildlife habitat, especially birds.
Is likely to benefit multiple wildlife resources and services	Proposed projects that provide multiple benefits will be evaluated more favorably. Factors to be considered include the rarity or uniqueness of wildlife species that benefit from the project; the extent to which proposed projects directly benefit multiple wildlife resources; and the extent to which projects provide additional services that indirectly benefit wildlife, such as improvements in water quality, biodiversity, and open space.
Is consistent with regional planning and federal and state policies	Proposed projects that are consistent with regional planning, federal and state policies, or conservation organization priorities will be evaluated more favorably. Factors to be considered include consistency with federal and state regional planning documents, policies, and strategies; and consistency with national, state, and regional conservation priorities. For example, projects that increase or improve habitat that is contiguous with other protected areas will be evaluated more favorably. Similarly, project sites that have been identified by a public agency or conservation organization as priority sites for wetland or riparian habitat and bird management will be evaluated more favorably.
Low-priority criteria	
Is likely to provide benefits quickly after project implementation	Proposed projects that provide benefits sooner will be evaluated more favorably. Factors to be considered include how quickly after project implementation the benefits to birds are realized.
Allows for appropriate public access	Proposed projects that allow regular public access will be evaluated more favorably than projects that allow occasional public access or that do not allow any public access. Factors to be considered include the level and timing of access the public will have to the protected or restored project site.
Leverages funding to enable projects to be larger or more comprehensive in scope	Proposed projects that leverage funding from other sources will be evaluated more favorably. Although matching funds are not required for a project to be eligible for NRDAR funding, the Trustees encourage proposals that leverage additional funding and in-kind services because it expands the scope of projects and benefits supported with NRDAR funds.

3.2 Development of a Preferred Restoration Alternative and Priority Tiers for Funding

After conducting the screening and evaluation process, the Trustees developed a preferred restoration alternative that included all of the proposed projects that met the screening criteria. However, the funding available to the Trustees is insufficient to fund all of the proposed projects within the preferred alternative. Thus the Trustees developed three priority tiers for funding. Projects in the first tier will have top priority for funding; the Trustees have sufficient funding available to fund Tier 1 projects. Projects in Tier 2 may receive funding if funds are available after implementing Tier 1 projects or if a Tier 1 project cannot be implemented. Third-tier projects may receive funding if there are funds available after the Tiers 1 and 2 projects are implemented and achieve sufficient waterfowl resource benefits; however, the Trustees anticipate that all funding will be spent completing projects in the first two tiers.

The Trustees placed projects into the three funding priority tiers based on how well each project met the Trustee evaluation criteria, and on the total cost of different combinations of projects. For example, if two projects that received top evaluations would cumulatively exceed the funding available, then the Trustees could place only one of those projects into the top funding tier. The tiers reflect the Trustees' best efforts to select the combination of projects that will most effectively compensate the public for the loss of wildlife, especially birds, and the loss of wildlife habitat that resulted from releases of hazardous substances at the Sites.

4. Wildlife and Wildlife Habitat Restoration Alternatives

This chapter describes two potential restoration alternatives: a no-action/natural recovery alternative (as required under NEPA) (Section 4.1) and the Trustees' preferred restoration alternative (Sections 4.2–4.5), consisting of a suite of restoration projects that cumulatively aim to compensate for injuries to wildlife and wildlife habitat resources that occurred when hazardous substances were released from the Sites. Potential projects were identified through outreach to local, state, and federal agencies; nonprofit organizations; stakeholder groups; and private citizens (see Chapter 8 for a list of contacts). Through these efforts, the Trustees identified 21 potential restoration projects (see Appendix A for the full list).

Potential restoration projects were evaluated against the screening criteria described in Section 3.1.1 to determine whether each project met minimum standards of acceptability. Projects that did not meet these standards were not evaluated further. This group of four restoration projects, which were considered but not recommended for inclusion as part of the preferred alternative, is discussed in Section 4.6. Projects that met the screening criteria were evaluated using the evaluation criteria described in Section 3.1.2. Based on comments and additional information received after the Draft RP/EA was released for public comment, the Trustees reevaluated the projects described in the Draft RP/EA, and also evaluated additional projects that were submitted. Based on the results of this evaluation, projects were placed into one of the three priority tiers for funding. Projects in the first tier will have top priority for funding.

There were three notable changes in the project evaluation between the Draft RP/EA and Final RP/EA:

- **Burro Cienaga Watershed Restoration project.** In the Draft RP/EA, this project was evaluated as three separate restoration projects: Burro Cienaga Stream Stabilization Restoration (Draft RP/EA Project 4.4.1), Burro Cienaga Pinyon and Juniper Restoration (Draft RP/EA Project 4.5.2), and Burro Cienaga Stock Pond Restoration (Draft RP/EA Project 4.5.3). In response to public comments requesting the Trustees to take into account the watershed approach in the Burro Cienaga Watershed Restoration proposal, the Trustees combined the three Burro Cienaga habitat restoration components that were evaluated as separate projects in the Draft RP/EA into a single watershed project for evaluation in the Final RP/EA. This revision enabled the Trustees to better evaluate the watershed benefits of this project that were intended by the project proponents. In the Draft RP/EA, these projects were evaluated as Tier 2 and Tier 3 projects. Following the issuance of the Draft RP/EA, the project proponents provided additional project

information. When these projects were reevaluated, they moved from Tier 2 and Tier 3 projects to a Tier 1 project.

- **Burro Cienaga Watershed Restoration and River Ranch Habitat Protection and Improvement projects.** In the Draft RP/EA, these two projects were evaluated as Tier 2 projects. Following the issuance of the Draft RP/EA, both project proponents provided additional project information and decreased their funding requests. The Trustees reevaluated these projects, and they moved up to Tier 1 projects (see Section 4.3.3 for more information).

- **Ancheta Spring Ranch projects**. The New Mexico Land Conservancy (NMLC) proposed a new project during the public comment period, the Ancheta Spring Ranch Conservation and Restoration Project. This project was divided into two separate components: a conservation project to place the ranch property under a conservation easement and a restoration project to restore part of Ancheta Creek and associated tributaries on the property. The Ancheta Spring Ranch Conservation Easement project was placed in Tier 1 and the Ancheta Springs Ranch Restoration project was placed in Tier 2 (see Sections 4.3.1 and 4.4.1 for more information about these projects, respectively).

In addition, limited and exclusive to this NRDA restoration plan only if land is acquired then both trustees agreed to change land ownership options to a suitable state landowner. The State has made commitments to manage all proposed land acquisition projects to adequately compensate for the damages and maximize wildlife value.

4.1 No-action/Natural Recovery Alternative

Evaluation of a no-action alternative is required under NEPA [40 CFR § 1502.14(d)]. The selection of this alternative by the Trustees would mean that no actions would be taken by the Trustees to restore injured wildlife and wildlife habitat resources, and that the public would not receive compensation for losses that occurred in the past or are ongoing. This alternative may be used as a benchmark to evaluate the comparative benefit of other actions. Because no action is taken, this alternative also has no cost.

4.2 Summary of Preferred Restoration Alternative

The preferred alternative is the one that the Trustees believe would best compensate the public for injuries to wildlife and wildlife habitat resources resulting from releases of hazardous substances at the Sites. This alternative consists of a suite of habitat protection and habitat

restoration projects that benefit wildlife. The habitat protection and habitat restoration projects include passive and active restoration. Passive restoration primarily relies upon natural ecosystem dynamics to drive the recovery of diverse native habitat with the elimination of environmental stressors such as agriculture or inappropriate grazing. Active restoration relies on management techniques, such as planting seeds or removing of invasives, to accelerate the recovery of native habitats.

The preferred restoration alternative includes all the proposed projects that met the screening criteria. The Trustees appreciate receiving many well-developed and suitable project proposals from project proponents. However, settlement funding is insufficient to fund all of the proposed projects within the preferred alternative. Therefore, the Trustees grouped projects in the preferred restoration alternative into three priority tiers for funding. These tiers are based on how well each project met the Trustee evaluation criteria and the total costs of different combinations of projects. For instance, if two projects that received high scores would cumulatively exceed the available funding, the Trustees could place only one of the projects into the top funding tier. The tiers reflect the Trustees' best efforts to select the combination of projects that will most effectively compensate the public for the loss of wildlife, especially birds, and the loss of wildlife habitat that resulted from releases of hazardous substances at the Sites.

Projects in the first tier will have top priority for funding; the Trustees expect to have sufficient funding available to fund Tier 1 projects. The Trustees may choose not to fund a Tier 1 project, however, if the final budget significantly exceeds current budget estimates, if impediments to implementation develop, or if additional information reveals that projects are not cost-effective. If the Trustees have funding available after Tier 1 is complete, then Tier 2 projects will be eligible for funding. The priorities for funding within Tier 2 will be decided by the Trustees at that time based on the amount of funding available and the current status of Tier 2 projects. The Trustees anticipate waiting to fund second-tier projects until they have greater certainty regarding costs for the first-tier projects. After Tier 1 and 2 projects are determined to meet waterfowl benefits and are implemented, Tier 3 projects will then be considered if sufficient funds are available and these projects provide sufficient waterfowl benefits.

The Trustees will work closely with project proponents (beginning with the Tier 1 projects) as they develop more detailed project implementation plans and budgets, including long-term maintenance commitments, to ensure that the suite of projects remain cost-effective. Prior to project funding, the proponents for habitat protection and restoration projects will need to provide additional information to the Trustees: proponents for habitat protection projects will need to provide an appraisal of the property that supports the project cost and proponents for habitat restoration projects will need to provide budget costs for each specific restoration task. The project proponents are listed in Appendix A.

The Trustees expect to use a variety of different mechanisms for project implementation, and will select the mechanism most appropriate for each project. The following mechanisms may be used for project implementation:

- Cooperative agreement that would be executed between a federal agency and the designated implementing partner. Projects proposed for this funding mechanism are those that can be successfully completed only by the entity already associated with the project.
- Request for Proposals (RFPs) issued by a state agency. An RFP is a competitive process that is open to all qualified bidders. The Trustees will establish the selection criteria for evaluating all proposals that are submitted in response to the RFPs. The selection of a contractor would result in a professional services contract.
- Interagency service agreement executed by a state agency.
- Interagency or intra-agency agreement between federal agencies.

A summary of the projects included in the preferred alternative is provided in Table 4.1. The table provides the name of each project, the primary project category to which it belongs, and the relative project cost. Projects are arranged alphabetically within tiers, and the estimated cost of all the projects in each of the three tiers is included in the table. Specific costs for individual projects are not provided in this Final RP/EA due to concerns that this information could negatively impact negotiations for land acquisition. Figure 4.1 provides a map of approximate project locations for all projects in the preferred alternative.

Descriptions of each of the projects in the preferred restoration alternative, divided into the three tiers, are provided in Sections 4.3–4.5. For each project, there is a brief description of the project and location, an explanation of the expected benefits from the project and the time frame of those benefits, an overview of maintenance and monitoring requirements for the project so that the Trustees can determine if the desired benefits are being achieved and take corrective actions if necessary, and an explanation of how the project was evaluated by the Trustees. Following the preferred alternative, a description is provided of the projects that were not recommended for funding (Section 4.6).

4.3 Tier 1 Restoration Projects

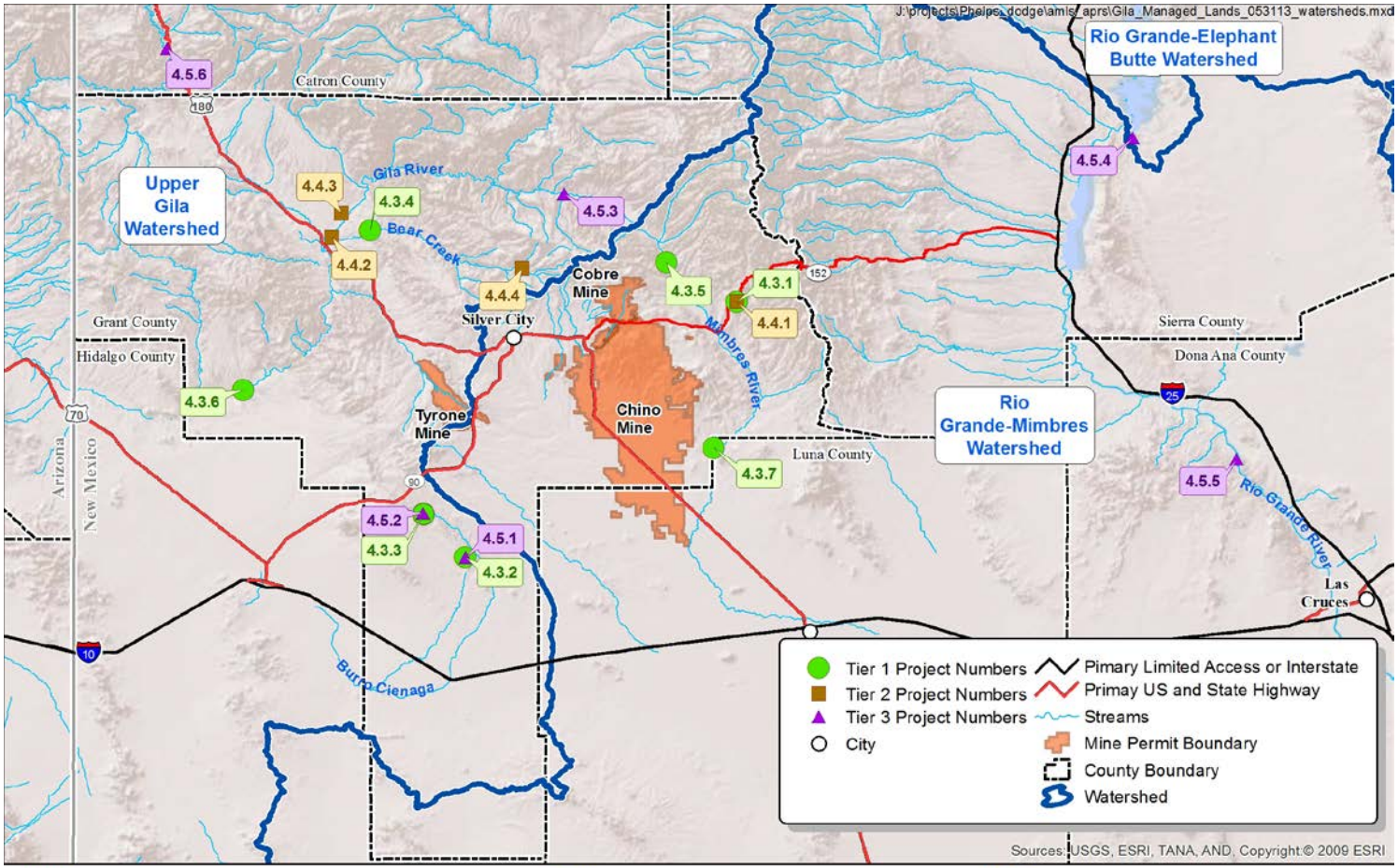
The projects included in Tier 1 represent a diverse regional portfolio of wildlife and wildlife habitat restoration projects that focus on birds and that would provide the maximum benefit to regional wildlife resources. The seven projects in this tier – four habitat protection and

improvement projects and three habitat restoration projects – were ranked highly by the Trustees using the evaluation criteria.

Table 4.1. Summary of projects in the preferred alternative (projects listed alphabetically within tiers)

Project name		Project category	Relative project cost[a]
Tier 1			
4.3.1	Ancheta Springs Ranch Conservation Easement	Habitat protection and improvement	$
4.3.2	Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration	Watershed habitat restoration	$
4.3.3	Burro Cienaga Watershed Restoration	Watershed habitat restoration	$ to $$$
4.3.4	Double E Ranch Habitat Protection and Improvement	Habitat protection and improvement	$$$
4.3.5	Mimbres River Wildlife and Habitat Restoration	Riparian habitat restoration	$
4.3.6	Redrock Property Habitat Protection and Improvement	Habitat protection and improvement	$$
4.3.7	River Ranch Habitat Protection and Improvement	Habitat protection and improvement	$
Approximate cost estimate for Tier 1			***$4,967,000***
Tier 2			
4.4.1	Ancheta Springs Ranch Restoration	Riparian habitat restoration	$
4.4.2	Davis Property Habitat Protection and Improvement	Habitat protection and improvement	$$$
4.4.3	Porter Property Habitat Protection and Improvement	Habitat protection and improvement	$$
4.4.4	Upper Bear Creek Habitat Protection and Improvement	Habitat protection and improvement	$ to $$$
Approximate cost estimate for Tier 2			***$2,530,000–3,220,000***
Tier 3			
4.5.1	Burro Cienaga Grassland Restoration	Grassland habitat restoration	$
4.5.2	Grassland Restoration through Aerial Treatment of Mesquite	Grassland habitat restoration	$
4.5.3	Meadow Creek Restoration	Riparian habitat restoration	$ to $$$
4.5.4	Migratory Bird Grassland Restoration	Grassland habitat restoration	$$
4.5.5	Swan Pond Habitat Restoration	Riparian habitat restoration	$$
4.5.6	York Canyon Rehabilitation	Riparian habitat restoration	$
Approximate cost estimate for Tier 3			***$3,343,000***

a. Projects associated with the $ symbol are low-cost projects below $500,000; projects associated with the $$ symbol are medium-cost projects between $500,000 and $1,000,000; and projects associated with the $$$ symbol are high-cost projects over $1,000,000.



Tier 1

4.3.1 Ancheta Springs Ranch Conservation Easement
4.3.2 Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration
4.3.3 Burro Cienaga Watershed Restoration
4.3.4 Double E Ranch Habitat Protection and Improvement
4.3.5 Mimbres River Wildlife and Habitat Restoration
4.3.6 Redrock Property Habitat Protection and Improvement
4.3.7 River Ranch Habitat Protection and Improvement

Tier 2

4.4.1 Ancheta Springs Ranch Restoration
4.4.2 Davis Property Habitat Protection and Improvement
4.4.3 Porter Property Habitat Protection and Improvement
4.4.4 Upper Bear Creek Habitat Protection and Improvement

0 5 10 20 Miles

Tier 3

4.5.1 Burro Cienaga Grassland Restoration
4.5.2 Grassland Restoration through Aerial Treatment of Mesquite
4.5.3 Meadow Creek Restoration
4.5.4 Migratory Bird Grassland Restoration
4.5.5 Swan Pond Habitat Restoration
4.5.6 York Canyon Rehabilitation

Figure 4.1. Location of restoration projects included in the preferred alternative.

This combination of projects would effectively compensate the public for the loss of wildlife, especially birds, and the loss of wildlife habitat that resulted from releases of hazardous substances at the Sites (e.g., Stratus Consulting, 2003). These projects would significantly benefit wildlife, especially birds affected by hazardous substance releases at the Sites. They also have a high potential for long-term success, largely due to the strong land protection mechanisms associated with each project.

The Trustees estimate that the group of Tier 1 projects will cost approximately $4,967,000. Details for each of the Tier 1 projects appear below, in alphabetical order by project name.

4.3.1 Ancheta Springs Ranch Conservation Easement

This project aims to protect valuable wildlife habitat on the Ancheta Springs Ranch in perpetuity by enabling the ranch owners to voluntarily put a conservation easement in place on the ranch. A related project, restoring riparian habitat on the Ancheta Springs Ranch, is described in Section 4.4.1.

Project description

The Ancheta Springs Ranch is located in the Mimbres River Watershed along Highway 152, adjacent to the Gila National Forest. The property comprises approximately 368 hectares (910 acres) and is composed of primarily steep and rugged terrain, dominated by pinyon pine (*Pinus edulis*), juniper (*Juniperus* spp), and oak woodland. The hydrologic features of the property include Ancheta Creek, an intermittent tributary to the Mimbres River, and Ancheta Springs, a natural, perennial spring, is found at the headwaters of Ancheta Creek. Previous restoration efforts supported by the Partners for Fish and Wildlife program have helped restore permanent wetlands around the springs. Immediately south of the property is a large playa that is fed from Ancheta Springs Ranch drainage. During periods of high runoff and rainfall, this playa become a large pond that provides habitat for migratory waterfowl species such as mallard (*Anas platyrhynchos*), northern pintail (*Anas acuta*), gadwall (*Anas strepera*), and canvasback (*Aythya valisineria*).

The owners of the Ancheta Springs Ranch have expressed a desire to put a conservation easement on the ranch, which would protect its habitat values and permanently prevent development and subdivision on the property. They have indicated a willingness to donate the conservation easement. This project would provide the financial support needed to cover the transaction and long-term management costs associated with placing the easement on the ranch.

Project location

The project is located on private land in the Mimbres River Watershed, northeast of the town of San Lorenzo. This project is located approximately 23 kilometers (14 miles) from the Chino Mine, 50 kilometers (31 miles) from the Tyrone Mine, and 21 kilometers (13 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

Wildlife and wildlife habitat would benefit through the avoidance of a future risk of subdivision and development on the property, which could harm habitat values. This property contains a diverse set of habitats, including wetlands; pinyon-juniper woodlands; a unique vegetative community that includes a large, mature overstory of grey oak and alligator juniper (*Juniperus deppeana*) with an open understory; and grassy meadows with mountain mahogany. In their present condition, these habitats support a wide variety of birds and other wildlife species. This project avoids the risk of habitat loss, degradation, and fragmentation that would result from development or subdivision of the property. In addition, this project avoids the risk of impacts to current hydrology and drainage patterns that could result from development of upland habitat on the site. Currently, this property drains into Ancheta and Gallinas creeks, both of which feed into the Mimbres River. Runoff from this property also feeds a large, seasonal playa.

More specifically, the wetlands along the upper portions of Ancheta Creek support habitat for Lucy's warbler (*Oreothlypis luciae*), and Ancheta Springs could provide year-round habitat for several amphibians, including tiger salamander (*Ambystoma tigrinum*), Sonoran mud turtle (*Kinosternon sonoriense sonoriense*), western chorus frog (*Pseudacris triseriata triseriata*), and the federally threatened Chiricahua leopard frog (*Lithobates chiricahuensis*). The pinyon-juniper community provides nesting habitat for the gray vireo (*Vireo vicinior*), a migratory bird. Nonmigratory birds, such as pinyon jay (*Gymnorhinus cyanocephalus*) and juniper titmouse (*Baeolophus ridgwayi*), are permanent residents that forage on coniferous species. The woodlands provide roosting and maternity habitat for the migratory western red bat (*Lasiurus blossevillii*). The mountain mahogany and grassy meadows interspersed in the pinyon-juniper-oak woodland provide year-round habitat for mule deer and seasonal habitat for elk, particularly during hard winters.

Overview of maintenance and monitoring

NMLC will work with the landowners to place the property under a permanent conservation easement. Once the conservation easement is in place, NMLC will be responsible for providing long-term stewardship, including annual monitoring of the property to ensure compliance with the terms of the easement and long-term legal defense (e.g., insurance and legal costs associated with any potential violations). Protection will help leverage additional restoration funding through the Partners for Fish and Wildlife program.

Trustee evaluation

The Ancheta Springs Ranch Conservation Easement is included as a Tier 1 project. This project provides long-term protection for riparian habitat in the Mimbres River Watershed, which directly benefits birds and wildlife resources and services.

Specifically, this project received above-average ratings for three high-priority evaluation criteria: “high potential for long-term success,” “feasible and cost-effective provisions for operations, maintenance, and monitoring,” and “needs NRDAR funding.” The project has a high potential for long-term success because the owners have indicated their willingness to place a conservation easement on the property, and NMLC has extensive experience providing long-term stewardship for easements. Maintenance and monitoring for this project would be provided by NMLC at a reasonable cost. Although the owners are willing to donate the conservation easement, the project is unlikely to move forward without NRDAR funding to cover the transaction and long-term stewardship costs associated with the easement.

This project also received above-average ratings for three medium-priority evaluation criteria: “located close to where the injuries occurred,” “likely to benefit multiple wildlife resources and services,” and “cost-effective compared with other projects that provide similar benefits,” as well as one low-priority criterion: “leverages funding.” The project is located in the Mimbres River Watershed, close to the Sites, and will benefit multiple wildlife resources in a diverse set of habitats. This project was also evaluated as very cost-effective and having a high degree of leveraged funding when compared to other habitat protection and improvement projects, because the Ancheta Springs Ranch landowners intend to donate the conservation easement to NMLC.

This project received average ratings for all the other evaluation criteria, except for one below-average rating for the low-priority criterion “allows for appropriate public access.” Although there are several pull-offs along Highway 152 from which the public can view the property, the conservation easement will not allow the public to access this property.

Overall, this project was evaluated favorably within the habitat protection and improvement category. The Ancheta Springs Ranch Conservation Easement project has been included as a Tier 1 project.

4.3.2 Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration

This project aims to continue ongoing restoration along a reach of the Burro Cienaga located on the Pitchfork Ranch.

Project description

The Pitchfork Ranch encompasses 2,088 hectares (5,160 acres) of deeded land that is bisected, north to south, by a 14-kilometer (8.6-mile) reach of the Burro Cienaga, which flows from the Big Burro Mountains of the Gila National Forest, eventually entering into a playa east of Lordsburg. The Pitchfork Ranch also maintains leases on 2,520 hectares (6,230 acres) of the Bureau of Land Management (BLM) and state-leased lands. The Burro Cienaga is located in the Animas Valley Watershed, which has several unique habitats but few surface waters. The cienaga is a unique southwestern desert wetland (Hendrickson and Minckley, 1984; Minckley et al., 2013) and an important stopover point for migratory birds in this dry landscape.

The upper 5 kilometers (3 miles) of the cienaga are perennial and the lower 9 kilometers (5.6 miles) are intermittent, with subsurface water throughout the year. The owners of the Pitchfork Ranch adopted a Restoration Management Plan in 2005 that focused on (1) restoring the cienaga, including retaining and storing water; (2) improving important habitat for birds, wildlife, and a small herd of cattle; (3) reintroducing endangered species; and (4) preserving the archeological features of the property. The previous restoration work that focused on erosion control appears to be successfully raising both cienaga surface water and groundwater levels, thus allowing for natural revegetation along the cienaga. This project would continue the ongoing active habitat restoration through the installation of erosion control structures in two canyons and 25 side channels in the floodplain, and the creation of terraces and up-slopes along the sides of the cienaga. The objective of the restoration work is to raise the groundwater table (by stopping erosive down-cutting of the stream channel and drainages) and thereby maintain the cienaga as a perennial wetland, which provides key habitat for birds and other wildlife.

The proponents of this project are the owners of the Pitchfork Ranch, who have successfully implemented previous restoration projects along the cienaga and on other parts of the property. This project is a continuation of previous restoration and maintenance projects on the Pitchfork Ranch. However, there is no current funding available, outside of the NRDAR settlement, to undertake the restoration work described here. NRDAR funding from the wildlife settlement provides an opportunity to restore cienaga and floodplain habitats that are vital to birds and other wildlife species.

The property also contains a cultural site, which contains archaeological remnants of Archaic people, who lived along the cienaga more than 13,000 years ago, and the Mimbres people, who populated the area by 750 Common Era (CE). A small amount of the funding for this project is proposed for stabilizing 2.3 hectares (5.8 acres) of the severely incised Mimbres archaeological site by installing smaller erosion control structures; these actions would simultaneously provide benefits to wildlife and wildlife habitat in this location.

Project location

The project is located on the Pitchfork Ranch in the Animas Valley Watershed, which is approximately 40 kilometers (25 miles) southwest of Silver City on the southeastern corner of the Burro Mountains. This is in the watershed adjacent to where the injury occurred. This project is located approximately 45 kilometers (28 miles) from the Chino Mine, 31 kilometers (19 miles) from the Tyrone Mine, and 51 kilometers (32 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

The wildlife and wildlife habitat benefits stem from restoring and protecting the Pitchfork Ranch's reach of the Burro Cienaga. The cienaga provides surface water that is important to birds and other wildlife, including a number of federally and state-listed species such as the bald eagle (*Haliaeetus leucocephalus*), southwestern willow flycatcher (*Empidonax traillii extimus*), Bell's vireo (*Vireo bellii*), Chiricahua leopard frog, Gila topminnow (*Poeciliopsis occidentalis*), and the Aplomado falcon that has been reintroduced by the Peregrine Fund. More than 50 bird species have been recorded on the Pitchfork Ranch, with many nesting near or on the ranch, such as the scaled quail (*Callipepla squamata*), vermilion flycatcher (*Pyrocephalus rubinus*), and Cassin's kingbird (*Tyrannus vociferans*). Other bird species wintering on the ranch or in its vicinity are the northern harrier (*Circus cyaneus*), long-eared owl (*Asio otus*), and red-naped sapsucker (*Sphyrapicus nuchalis*). Many of these bird species are listed as species of "continental importance" in the 2004 North American Landbird Conservation Plan (Rich et al., 2004). Restoration actions will provide long-term benefits to habitat by reducing erosion and improving wetland functions. Although some habitat benefits will begin immediately after project implementation, full restoration of the cienaga to the desired hydrologic and vegetated condition will take time.

In addition to the ecological benefits, this project would also benefit the public, who are allowed to access the ranch for birding and educational purposes. In the past, the ranch has hosted various groups for birding, bird surveys, and plant inventories. Universities and organizations (e.g., Audubon New Mexico) have used the Pitchfork Ranch as an outdoor classroom for scientific and archeological research, as well as birding. In the future, the public will be able to access the restoration area on a limited basis.

Overview of maintenance and monitoring

This project will be completed over three years. The owners of the Pitchfork Ranch have committed to spending $15,000 annually on maintenance, and have received some funding awards to pay for maintenance on the property. Monitoring on the property has been accomplished historically with photographs. Thirty-three photo-monitoring points have been established on the ranch, and photographs have been taken at these sites from the same location

each year since 2005 on the same date. This practice is conducted and funded by the property owners, so no settlement funding will be necessary for this effort.

Trustee evaluation

The Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration project is a Tier 1 project. It has a strong nexus to the bird and wildlife injury at the Sites because of its significant benefits to riparian and wetland habitats along a 14-kilometer (8-6 mile) reach of the Burro Cienaga, a unique habitat and an important stopover point for migratory birds and wildlife that may have been affected by hazardous substance releases at the Sites.

Specifically, this project received above-average ratings for three high-priority evaluation criteria: “high potential for long-term success,” “low risk of failure,” and “feasible and cost-effective provisions for operations, maintenance, and monitoring.” It has a high likelihood of success and a low risk of failure because (1) there is a long history of implementing restoration plans on this ranch, (2) the ranch is protected by a highly restrictive conservation easement held by NMLC, (3) the property owners intend to bequeath the land to a nonprofit organization that will continue to manage the property for wildlife benefits, and (4) the owners intend to seek ACEC (Area of Critical Environmental Concern) designation from the BLM-leased land (1,457 hectares, 3,600 acres) and are hoping to attain comparable treatment of state-leased land (1,052 hectares, 2,600 acres). This will afford the Pitchfork Ranch’s public land the same protection that the conservation easement affords the deeded land. The Pitchfork Ranch will be responsible for undertaking operations and maintenance. In addition, repeat photographic monitoring is included as part of the proposal. Photographic monitoring has been conducted on the ranch since 2005 and confirms the benefits of previous restoration projects that are similar to the ones proposed here.

This project also received above-average ratings for two medium-priority evaluation criteria: “likely to benefit multiple wildlife resources and services” and “cost-effective compared with other projects that provide similar benefits.” As described above, the project will improve habitat, benefiting multiple resident and migratory bird species (some of which are federally and state-listed species) and other wildlife. The project was also evaluated as very cost-effective when compared to other watershed restoration projects, considering both the estimated cost of the project and the area that would benefit from the treatments. This project received average ratings for all the other evaluation criteria; it did not receive any below-average ratings.

Overall, this project was evaluated favorably within the watershed habitat restoration category. The Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration project has been selected as a Tier 1 project.

4.3.3 Burro Cienaga Watershed Restoration

This project aims to restore riparian and wetland habitats throughout the Upper Burro Cienaga Watershed. It will also restore and improve surface water ponds for the benefit of migrating waterfowl and other wildlife.

Project description

The Upper Burro Cienaga Watershed Association (UBCWA) – a group of five private ranches and the Gila National Forest – is working to restore and enhance ecosystem health and watershed conditions in the Burro Cienaga Watershed, including reclaiming historical wetland and riparian habitats that once existed in the watershed. This watershed has been identified by the Gila National Forest as functioning at risk. Intense livestock grazing in the late 1800s and early 1900s, combined with vegetation clearing in the valley bottom for agriculture, led to the degraded conditions that are present today. The land is currently managed for livestock production, with some fuel wood harvesting and hunting (Southwest Native Ecosystems Management, 2012).

A Watershed Restoration Action Plan (WRAP) has been developed for the watershed to improve ecosystem health, water quality, and watershed conditions. A key goal of the plan is to reduce the heavy sediment loads that are carried through the watershed during moderate and large precipitation events and deposited in riparian and wetland areas, resulting in impairment to riparian and wetland habitats. Guided by this action plan, the watershed association has implemented several wetland, riparian, and upland restoration projects and changed some livestock grazing management practices. This project would build on these previous successes to implement further watershed restoration efforts, with the goal of continuing natural recovery of the watershed.

This project includes the active restoration of surface water ponds and watershed restoration efforts, including:

- Restoration of surface water ponds aims to provide habitat for migrating waterfowl and other wildlife that depend on open water. Restoration actions include reconstructing 16 stock tanks to develop wetland and riparian habitats while providing an offsite water source for livestock and restoring approximately 7.5 hectares (18.6 acres) of ponds with riparian vegetation for birds and wildlife. Stock pond restoration would occur at various locations throughout the watershed, including sites on the C Bar Ranch, the M-N Ranch, the Thorne Ranch, and the Gila National Forest.

- Watershed restoration aims to further improve watershed function through reducing erosion rates and sediment transport. Restoration actions include constructing earthen

erosion control structures located in actively eroding head cuts and gullies at various locations throughout the watershed. At some locations, the existing stream banks will be reshaped, stream banks will be armored with local rock, and native vegetation will be planted along restored bank areas. Erosion control work would occur on land owned by project partners, i.e., the C Bar Ranch, the M-N Ranch, and the Prevost Ranch.

This project, in conjunction with the Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration project (Section 4.3.2), implements a suite of restoration actions across the Burro Cienaga watershed that is expected to improve and enhance wildlife and riparian habitats, water quality and quantity, and overall watershed health. The project proponents for these projects intend to continue to work to implement additional watershed restoration projects in the future, with the likely result of enhanced benefits to resources at a watershed scale.

Project location

The project is located on public and private lands in the Upper Burro Cienaga Watershed, which is approximately 40 kilometers (25 miles) southwest of Silver City on the southeastern corner of the Burro Mountains. This project is located approximately 47 kilometers (29 miles) from the Chino Mine, 23 kilometers (14 miles) from the Tyrone Mine, and 51 kilometers (32 miles) from the Cobre Mine. This project is adjacent to the Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration project described in Section 4.3.2.

Expected benefits and time frame of benefits

The wildlife and wildlife habitat benefits from this project stem from restoring the Burro Cienaga. In the dry Chihuahuan Desert, the Burro Cienaga provides surface water that is used by birds and other wildlife, including federally and state-listed species such as the bald eagle, the southwestern willow flycatcher, Bell's vireo, Chiricahua leopard frog, and Gila topminnow. Installing erosion control structures and restoring riparian and wetland habitats will provide long-term benefits to habitats. Although some habitat benefits will begin immediately, improvements to hydrologic function (i.e., raising the groundwater table) and natural revegetation will develop over time.

Overview of maintenance and monitoring

Specific monitoring tasks are included as part of the project, such as monitoring acres of restored riparian habitat and acres of surface water available to wildlife. Over the long term, monitoring will be the responsibility of the private and public landowners within the watershed. There may be some opportunities to have other organizations provide maintenance and monitoring support, such as Soil and Water Conservation Districts. Because there are no long-term land protection mechanisms on the private properties, landowners will be required to enter into a minimum 10-year monitoring and maintenance contract.

In addition, a steering committee has been developed to oversee the implementation and monitoring of the WRAP. This steering committee is also monitoring watershed improvement and wetland/riparian reclamation success through transect surveys of planted vegetation, repeat photography, noxious weed surveys, stream temperature monitoring, and qualitative evaluation of sediment movement.

Trustee evaluation

The Burro Cienaga Watershed Restoration project is included as a Tier 1 project. It has a strong nexus to the bird and wildlife injury at the Sites because of its significant benefits to riparian and wetland habitats along the Burro Cienaga, a unique habitat and an important stopover point for migratory birds and wildlife that may have been affected by hazardous substance releases at the Sites.

Specifically, this project received above-average ratings for four high-priority evaluation criteria: "high potential for long-term success," "low risk of failure," "likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites," and "feasible and cost-effective provisions for operations, maintenance, and monitoring." This project has a high likelihood of success and a low risk of failure because the landowners are committed to restoration; the WRAP details project implementation, monitoring, and evaluation guidelines and oversight. In addition, this project encompasses a number of subprojects – particularly surface water pond restoration – that provide significant benefits to birds that were affected by hazardous substance releases at the Sites.

This project also received above-average ratings for two medium-priority evaluation criteria: "consistent with regional planning and federal and state policies" and "likely to benefit multiple wildlife resources and services." As described above, the project will improve habitat, benefiting multiple resident and migratory bird species and other wildlife. The WRAP describes considerable federal, state, and local partner involvement in the planning and implementation of planned restoration actions. This project, in conjunction with the Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration project (Section 4.3.2), should cumulatively improve watershed health. This project received average ratings for all the other evaluation criteria; it did not receive any below-average ratings.

Overall, this project was evaluated favorably within the watershed habitat restoration category. The Burro Cienaga Watershed Restoration project has been included as a Tier 1 project.

4.3.4 Double E Ranch Habitat Protection and Improvement

The purpose of this project is to permanently protect and improve valuable wildlife habitat on the Double E Ranch.

Project description

The Double E Ranch in Grant County, New Mexico comprises approximately 2,400 hectares (5,900 acres) of deeded land that lies adjacent to the Gila National Forest and to land managed by BLM; 1,477 hectares (3,650 acres) of BLM grazing leases; 1,010 hectares (2,495 acres) of state grazing leases; and 4,452 hectares (11,000 acres) of U.S. Forest Service (USFS) leases. The property also includes the rights to approximately 16,000 cubic meters (12.9 acre-feet) of surface water in Bear Creek, a perennial stream that runs through the property before it joins the Gila River. There are also approximately 38 hectares (94 acres) of riparian habitat on the Double E Ranch (USFWS, 2013). This project would include the purchase of the Double E Ranch with the objective of protecting and restoring riparian habitat along Bear Creek and maintaining perennial flow. The project proponents include the Gila Resources Information Project, the Center for Biological Diversity, and the Upper Gila Watershed Alliance. The Trust for Public Land would work closely with the proponents to acquire this property for ownership and long-term stewardship by the New Mexico Department of Game and Fish (NMDGF).

Approximately 5 kilometers (3 miles) of Bear Creek run through the Double E Ranch. Riparian habitat on the ranch is dominated by mature Fremont cottonwood (*Populus fremontii*) and Arizona sycamore (*Platanus wrightii*) that provides habitat for migratory birds. However, the riparian habitat lacks younger age-classes and understory vegetation. In addition to having a high-quality riparian habitat, this portion of Bear Creek is designated by the USFWS as critical habitat for the endangered loach minnow (*Tiaroga cobitis*) (USFWS, 2012), and may also provide habitat for the threatened Chiricahua leopard frog. The ranch surrounds the 600-hectare (1,480-acre) BLM Bear Creek ACEC, which is managed for the high conservation value of its riparian and aquatic habitats (BLM, 1993). Restoration actions would focus on passive restoration, including allowing riparian vegetation to reestablish naturally, and could include changes to grazing management or construction of exclosure fences to limit grazing and off-road vehicle use in the riparian areas.

The ranch owners have had the ranch on the market for several years, and several 14-hectare (35-acre) parcels have already been sold, including one sale completed in the summer of 2012. Thus there is an immediate development threat on the ranch. Currently, the property is not subject to a conservation easement or other provision that could be used to encourage or require a buyer to manage the ranch for conservation and wildlife benefits. If the property is not protected, it may be subdivided for residential use or otherwise managed in a way that would lead to further degradation of the valuable riparian and aquatic habitats. Acquiring the property would add to the amount of protected land in this key habitat area.

Project location

The property is located along the southwestern edge of Gila National Forest, approximately 6 kilometers (4 miles) east of Gila, New Mexico. This project is located approximately 51 kilometers (32 miles) from the Chino Mine, 35 kilometers (22 miles) from the Tyrone Mine, and 43 kilometers (27 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

Wildlife and wildlife habitat would benefit from protecting and restoring the high-quality riparian habitat along Bear Creek on the property. Riparian habitat is critical for hundreds of migrating birds that visit the area, including the federally endangered southwestern willow flycatcher and the candidate species yellow-billed cuckoo (*Coccyzus americanus*). Bear Creek has been designated as critical habitat for the loach minnow by the USFWS (2012). Conserving Bear Creek may also provide habitat for the threatened Chiricahua leopard frog. Wildlife benefits would be achieved through preventing degradation and fragmentation of habitat on the Double E Ranch.

The owners are actively selling portions of the ranch to other private owners, which may lead to the degradation or loss of riparian habitat on the property. Preserving the habitat under state ownership would maintain Bear Creek in its free-flowing state. Protecting and restoring riparian areas is also expected to improve water quality and provide improved or increased access for wildlife to riparian habitat. Robust riparian vegetation and hydrologically connected floodplains can increase shading and reduce stream velocities, which in turn can help to reduce erosion and decrease water temperatures, all of which may support and sustain native riparian, wetland, and aquatic species (Beschta, 1997; Tabacchi et al., 1998). This project provides long-term benefits to habitat, as the property is protected from subdivision and fragmentation that could otherwise occur and as restoration efforts are implemented.

Acquisition of the Double E Ranch would also benefit the public, as it would connect USFS land to BLM and state lands, providing contiguous public access to Hell's Half Acre (a popular recreational area) and Bear Creek. In addition, this project would conserve historically important cultural resources from the Pithouse and Classic Mimbres periods (Russell, 1992).

Overview of maintenance and monitoring

Maintenance and monitoring efforts would include managing grazing and water use to benefit riparian restoration and support wildlife populations. There are multiple management options for restoring the riparian habitat, including passive restoration such as installation of fencing in the riparian area, reduced stocking levels, or closure of the grazing lease to allow riparian vegetation to become reestablished. Given the focus on passive restoration, which primarily relies upon

natural ecosystem dynamics to drive the recovery of diverse native habitat, ongoing maintenance is expected to be minimal. Maintenance and monitoring would depend on which restoration actions are implemented, and could include maintenance of exclosure fencing, if constructed. Implementation of these options could involve stipulated agreement at the time of transfer of ownership and would require subsequent evaluation.

Trustee evaluation

The protection and improvement of the Double E Ranch is included as a Tier 1 project. The project has a strong nexus to the bird and wildlife injury at the Sites because of its significant benefits to riparian habitat along Bear Creek, a tributary to the Gila River that provides important riparian and upland habitats for migratory and resident birds and wildlife that may have been affected by hazardous substance releases at the Sites.

Specifically, this project received above-average ratings for all five high-priority evaluation criteria: “high potential for long-term success,” “low risk of failure,” “likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites,” “feasible and cost-effective provisions for operations, maintenance, and monitoring,” and “needs NRDAR funding.” The protection and improvement of the Double E Ranch has a high likelihood of success and a low risk of failure because the NMDGF will manage the land to benefit wildlife and wildlife habitat. Passive restoration, such as fencing around riparian areas, reduced livestock levels, or closure of the grazing lease will also protect wildlife and wildlife habitat and contribute to the long-term success of the project.

There is an immediate development threat on the ranch, and if the property is not purchased for conservation purposes, it may be further subdivided. Heavy grazing and excessive off-road vehicle use could lead to further degradation of the valuable riparian and aquatic habitats. As described above, the protection and improvement of riparian habitat within the Double E Ranch will benefit many resident and migratory bird species, some of which are federally and state-listed species. Maintenance and monitoring for the project will be ongoing by the NMDGF . Finally, protection and improvement of this property will not move forward without NRDAR funding. There are no other provisions in place to protect the habitat (e.g., there is no existing conservation easement or long-term land protection mechanisms) and the federal government has no other funding opportunities to complete the purchase.

This project received above-average ratings for two medium-priority evaluation criteria: “consistent with regional planning and federal and state policies” and “likely to benefit multiple wildlife resources and services.” This project is consistent with regional planning. The property surrounds the BLM Bear Creek ACEC, which is managed for the high conservation value of its riparian habitat. In addition, a portion of the property is designated as critical habitat for the federally listed loach minnow (USFWS, 2012). Protecting this property will support regional

planning efforts to conserve and improve riparian habitat for critical wildlife species, including birds, along Bear Creek. As described above, the project will protect and improve riparian habitat that benefits multiple resident and migratory bird species and other wildlife.

The project received above-average ratings for one low-priority criterion: “allows for appropriate public access.” It will provide improved opportunities for public access to existing popular recreation areas. It received an average rating for “leverages funding to enable projects to be larger and more comprehensive in scope” and “likely to provide benefits quickly after project implementation.” The project will leverage in-kind services from the Trust for Public Land, including securing the property under an option agreement with the landowner and investing its staff time and due diligence in the project appraisal, environmental inspections, and title insurance and any needed survey costs (this contribution is estimated to have a value of $50,000 to $80,000). The benefits of protecting and improving this property will be realized over time as the property is protected from subdivision and fragmentation and as passive restoration efforts are implemented. For example, it will take time for trees to be regenerated in the riparian zone, which will create a denser understory and multi-canopy layers.

The project received a below-average rating for “cost-effective compared with other projects that provide similar benefits.” Due to the large amount of land associated with the property, this project is very cost-effective when compared to other habitat protection and improvement projects on a total acreage basis. However, if cost-effectiveness is calculated solely for riparian habitat, then this project is not considered as cost-effective as other similar projects. Overall, this project was evaluated very favorably within the habitat protection and improvement category. The Trustees believe that this project represents a unique opportunity to benefit birds and wildlife because of the large land area it protects, including 4.8 kilometers (3 miles) of perennial stream, 38 hectares (94 acres) of riparian habitat, and approximately 2,400 hectares (5,900 acres) of deeded land. The Double E Ranch Habitat Protection and Improvement project has been selected as a Tier 1 project.

4.3.5 Mimbres River Wildlife and Habitat Restoration

This project aims to restore and improve riparian and wetland habitats, and modify at least one stock pond for wildlife and wildlife habitat at several locations within the Mimbres River Watershed.

Project description

This project is a collaboration of several public and private landowners working together to restore riparian and wetland habitats throughout the Mimbres River Watershed. The project proponent is Bat Conservation International, and partners include The Nature Conservancy (TNC), USFS, and several private landowners. Headwaters of the Mimbres River are in the

Black Range in the Gila National Forest (NMDGF, 2006); downstream, much of the river is on private land, where gravel mining and water diversions affect the river and its riparian habitat. Below the confluence with Bear Canyon, the Mimbres River passes into the Chihuahuan Desert zone, where it becomes intermittent but remains a major water resource in this area. Much of the historical riparian and wetland habitats along the Mimbres River have been converted to agricultural land.

Two types of active restoration projects will be completed: riparian restoration and stock pond restoration. Riparian restoration actions will include removing invasive plants [e.g., juniper, tree-of-heaven (*Ailanthus altissima*), and Siberian elm (*Ulmus pumila*)], and stabilizing and restoring eroding riverbanks using local materials (e.g., boulders and large woody debris) by creating natural river features, planting native vegetation along the riverbanks (e.g., willows and cottonwoods), and installing fencing to protect the restored areas. This restoration work is expected to create a complex wetland pool and riparian habitat for wildlife, including migratory and resident shorebirds and waterfowl, as well as species of concern, such as the federally listed Chihuahua chub (*Gila nigrescens*). The stock pond restoration project will transform a large old stock pond that no longer holds water into a surface water wetland pond. Clay soils at the bottom of the old stock pond will be compacted to improve water holding, and a compacted clay-filled trench will be built to prevent losses under the existing dam. The slope of the stock pond will be lessened to create a natural appearance, and large woody debris and native plants will be added to increase wildlife habitat. The current fencing around the pond will be modified to restrict livestock access to a single point at the pond, allowing 90% of the pond to be accessible to wildlife, including migratory waterfowl, shorebirds, and others. In addition, the stock pond could be used as a reintroduction site for the Chiricahua leopard frog.

Project location

The project is located at several sites in the Mimbres River Watershed, which is in Grant, Luna, Sierra, and Dona Ana counties. It is approximately 23 kilometers (14 miles) from the Chino Mine, 45 kilometers (28 miles) from the Tyrone Mine, and 14 kilometers (9 miles) from the Cobre Mine.

In upper portions of the Mimbres River Watershed, riparian restoration will occur in the Gila National Forest and on the Headwaters Ranch, where TNC holds grazing allotments. Along the main channel of the Mimbres River, riparian restoration will take place on the Mimbres River Preserve and the Lower Mimbres River Preserve, both of which are owned by TNC. In the lower portions of the Mimbres River Watershed, restoration and conversion of an old stock pond to wetland habitat will be completed on private land.

Expected benefits and time frame of benefits

The two restoration actions in this project are expected to restore a 10-kilometer (6-mile) stretch of the Mimbres River and up to 243 hectares (600 acres) of riparian and wetlands habitat. The restoration is located in the Mimbres River Watershed, which is where the Chino and Cobre mines are located. The Mimbres River Wildlife and Habitat Restoration project will improve water quality and availability, and increase areas of pooled water that may be used by bats and other wildlife in the Mimbres River Watershed.

This watershed has a high diversity of native fauna, including the southwestern willow flycatcher, yellow-billed cuckoo, Abert's towhee (*Melozone aberti*), Gila woodpecker (*Melanerpes uropygialis)*, Chihuahua chub, and Chiricahua leopard frog. Bats, one of the species targeted by this project, require pooled water for survival because they must drink while in flight; increased pooled-water wetland habitat along the Mimbres River will benefit these bat species. The benefits of this project will begin to be realized immediately; however, benefits from the restoration of the hydrologic condition and revegetation will take time to be realized.

The public would also benefit from the project through enhanced access to wildlife viewing areas and environmental engagement and education.

Overview of maintenance and monitoring

Monitoring and maintenance will be performed by the project proponents for two years following restoration. Additional maintenance needed once the project is implemented will be the responsibility of the specific landowners (i.e., USFS, TNC, and private landowners). TNC has an active management and monitoring plan for their properties (i.e., Mimbres River Preserve and the Lower Mimbres River Preserve) and the land leased from the USFS. The private landowners are long-term residents who have a history of implementing restoration projects on this land. They are committed to providing for maintenance needs associated with the project on this property through in-kind services or donations.

Trustee evaluation

The Mimbres River Wildlife and Habitat Restoration project is included as a Tier 1 project. The project has a strong nexus to the bird and wildlife injury at the Sites because of its significant benefits to riparian habitat in the Mimbres River. The Mimbres River Watershed is where most of the injuries to birds and wildlife occurred.

This project received above-average ratings for four high-priority evaluation criteria: "high potential for long-term success," "likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites," "feasible and cost-effective provisions for operations, maintenance, and monitoring," and "needs NRDAR funding." This project is likely to succeed

because the project partners (i.e., TNC, USFS, and several private landowners) have a history of implementing restoration projects in the Mimbres River Watershed. TNC has managed two preserves in the area (the Mimbres River Preserve and the Lower Mimbres River Preserve) since 1994.

The project will restore a large area of riparian and wetland habitats that directly benefit birds, including migratory waterfowl and shorebirds. Also, land owned and operated by the USFS and TNC have long-term land protection mechanisms that guarantee the long-term maintenance of the restoration actions. In addition, private landowners will be required to have long-term protection mechanisms on their properties – either a conservation easement or contracts for at least a 10-year operations and maintenance commitment, before the project commences. Maintenance and monitoring would be ongoing and these costs would be assumed by project partners (i.e., USFS, TNC, and private landowners). Finally, this project is unlikely to proceed without Trustee support. If this project is not implemented, the upper and lower Mimbres River will continue to erode and nonnative species will continue to expand along the river's corridor. This will negatively affect migratory and resident birds, as well as other aquatic and terrestrial wildlife.

This project received above-average ratings for three medium-priority evaluation criteria: "located close to where the injuries occurred," "likely to benefit multiple wildlife resources and services," and "cost-effective compared with other projects that provide similar benefits." The project is located in the Mimbres River Watershed, within approximately 19 kilometers (11.5 miles) of the Chino and Cobre mines. This is the same watershed in which birds and wildlife were affected by hazardous substance releases at the Sites. This project will benefit multiple wildlife resources and services because it includes restoration of both riparian and ponded water habitats. It is also considered very cost-effective when compared to other riparian habitat restoration projects. This project received average ratings for all other evaluation criteria; it did not receive any below-average ratings.

Overall, this project was evaluated favorably within the riparian habitat category. The Mimbres River Wildlife and Habitat Restoration project has been selected as a Tier 1 project.

4.3.6 Redrock Property Habitat Protection and Improvement

This project aims to protect and restore native riparian habitat along the Gila River through the purchase and conservation of private lands. Projects 4.4.2 and 4.4.3 have similar objectives but target different parcels of land along the Gila River.

Project description

This project would support the protection and improvement of 53 hectares (130 acres) of private land along the Gila River in Redrock, New Mexico. The upper Gila River is one of the Southwest's only free-flowing rivers, and its natural flow regime supports an exceptional array of biological diversity, both on land and in water. This project would include the purchase of the riparian portion of a larger parcel of privately owned land. Riparian habitats comprise the majority of the property – approximately 48.6 hectares (120 acres) of restorable riparian habitat (USFWS, 2013). The upland portion, which includes a home, would remain in private ownership. A suitable state landowner would take over ownership and stewardship of the protected property. After purchase, restoration would focus on passive restoration and would include fencing the riparian area to prevent unmanaged grazing and off-road vehicle use, while allowing riparian vegetation to become reestablished naturally. TNC has found that this passive restoration approach is a cost-effective strategy for developing the types of complex, multi-aged stands of riparian vegetation that best support riparian-dependent species. Where necessary, nonnative species [e.g., salt cedar (*Tamarix* spp.) or Siberian elm] will be removed.

Project location

The project is located at the end of the Game Department Road in Redrock, New Mexico, approximately 40 kilometers (25 miles) west of Silver City in Grant County. It directly adjoins property currently managed by the NMDGF, which is using the land to support the restoration of bighorn sheep (*Ovis canadensis*) in the area. This project is located approximately 64 kilometers (40 miles) from the Chino Mine, 34 kilometers (21 miles) from the Tyrone Mine, and 61 kilometers (38 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

The project has multiple benefits for wildlife and people. High-quality habitat in the Gila River supports a wide array of wildlife, including multiple threatened or endangered aquatic or riparian obligate species. There are 15 state-listed threatened and endangered species that could benefit from improved habitat in the Gila River, including the southwestern willow flycatcher, Bell's vireo, Gila chub (*Gila intermedia*), lowland leopard frog (*Lithobates yavapaiensis*), and Mexican garter snake (*Thamnophis eques*). The Gila River Watershed provides important riparian habitat for migratory birds and supports high avian diversity (Hubbard, 1977; Baltosser, 1986), including the Species of Greatest Conservation Need (SGCN; NMDGF, 2006). Passive restoration planned for this project would reestablish native vegetation and encourage the reestablishment of natural floodplain hydrodynamics. Both terrestrial and aquatic species are likely to benefit from the enhanced, complex habitat provided through such restoration.

Local communities could also benefit from the project. Specifically, local hikers and bird watchers would enjoy increased access to natural areas near the river.

Overview of maintenance and monitoring

Given the focus on passive restoration, which primarily relies upon natural ecosystem dynamics to drive the recovery of diverse native habitat, ongoing maintenance is expected to be minimal. Fences will be repaired and nonnative plants will be removed as needed, but the effort expended on these activities is expected to be small. Monitoring will focus on tracking the effectiveness of fences in excluding cattle and off-road vehicles and the progression of natural recovery. Before installing fences, baseline data will be collected, including aerial photographs and floodplain surveys, as well as data on surface water and groundwater characteristics, avian community composition and abundance, and vegetation composition and structure. Analysis of aerial photographs will be used to evaluate vegetative change over time.

Trustee evaluation

The protection and improvement of the Redrock property is included as a Tier 1 project. The project has a strong nexus to the bird and wildlife injury at the Sites because of its significant benefits to riparian habitat along the Gila River, a free-flowing river that supports riparian habitat for migratory and resident birds and wildlife that may have been affected by hazardous substance releases at the Sites.

This project received above-average ratings for three of the five high-priority evaluation criteria: “high potential for long-term success,” “likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites,” and “needs NRDAR funding.” Protection and improvement of the Redrock property has a high likelihood of success because a suitable state landowner will hold the title to the land and manage it to benefit wildlife and wildlife habitat. In addition, long-term stewardship is included in the project scope. As described above, protection and improvement of riparian habitat on the Redrock property will benefit many resident and migratory bird species, some of which are federally and state-listed species. Finally, the protection and improvement of this property will not move forward without NRDAR funding. There are no other provisions in place to protect the habitat (e.g., there is no existing conservation easement).

One commenter expressed concern about jeopardizing the integrity of the community acequia or irrigation ditch – the Grandpa Harper Ditch – that may traverse the property; this risk reduced the “low risk of failure” criterion rating from above average in the Draft RP/EA to average in this Final RP/EA. In addition, the high-priority evaluation criterion “feasible and cost-effective provisions for operations, maintenance, and monitoring” was reduced from an above-average rating in the Draft RP/EA to an average rating in the Final RP/EA. Although maintenance,

monitoring, and management of the property are included in the project budget and would be conducted by the new landowner, there is some uncertainty regarding costs associated with community management of the Grandpa Harper Ditch and water rights.

This project received above-average ratings for three medium-priority evaluation criteria: "consistent with regional planning and federal and state policies," "likely to benefit multiple wildlife resources and services" and "cost-effective compared with other projects that provide similar benefits." This project is consistent with regional planning efforts. The property adjoins the NMDGF property, and is adjacent to the Gila Middle Box ACEC. In addition, of the three habitat protection and improvement projects submitted by TNC (see Projects 4.4.2 and 4.4.3), TNC has identified this project as its top priority because of the significant amount of riparian habitat that can be protected and restored with the purchase of this land parcel. Due to its isolated location, there is not a high short-term risk of residential subdivision, but there are mining operations in the area that could degrade the habitat. Protecting this property will support regional planning efforts to conserve and improve riparian habitat for critical wildlife species, including birds, along the Gila River. As described above, the project will protect and improve riparian habitat that benefits multiple resident and migratory bird species and other wildlife. In addition, this project is considered very cost-effective with regard to riparian habitat when compared to similar habitat protection and improvement projects. It protects and improves a large area of riparian habitat (48.6 hectares, or 120 acres) that directly benefits birds and multiple wildlife resources and services (USFWS, 2013).

This project also received above-average ratings for one low-priority criterion: "allows for appropriate public access." The project will provide public access to the Gila River at the lower end of the Gila Middle Box. For one of the low-priority criteria, "likely to provide benefits quickly after project implementation," the project received an above-average rating in the Draft RP/EA, but received an average score in the Final RP/EA. The benefits of protecting and improving this property will be realized over time as the property is protected from livestock grazing and as restoration efforts are implemented. For example, it will take time for trees to be regenerated in the riparian zone, which will create a denser understory and multi-canopy layers. This project received average ratings for all other evaluation criteria; it did not receive any below-average ratings.

Overall, this project was evaluated very favorably within the habitat protection and improvement category. The Trustees believe that this project represents a unique opportunity to benefit birds and wildlife because of the large riparian area it protects (48.6 hectares, or 120 acres). The Redrock Property Habitat Protection and Improvement project has been selected as a Tier 1 project.

4.3.7 River Ranch Habitat Protection and Improvement

This project aims to protect valuable wildlife habitat and allow for effective management through the acquisition, restoration, and management of the River Ranch.

Project description

This project, proposed by NMLC, would protect, restore, and manage habitat on the River Ranch. The River Ranch comprises 409 hectares (1,010 acres) of deeded land, along with 1,182 hectares (2,920 acres) of federal and leased lands, and water rights. Approximately 3 kilometers (2 miles) of the Mimbres River transect the property; this is the lowest reach of the river that still flows perennially. The river corridor and floodplain on the ranch are wide, and riparian and floodplain areas cover a large area of the property. Riparian and wetland habitats comprise approximately 60 hectares (147 acres) of the property (USFWS, 2013). Habitat on the property includes riparian gallery forests, irrigated pastureland, sacaton grasslands, and upland Chihuahuan Desert scrubland. Almost all of the leased lands associated with the ranch are upland Chihuahuan Desert scrubland and grasslands. The property also contains a 4-hectare (10-acre) cultural site (the Pruitt site), which contains archaeological remnants of the pre-Columbian Mimbres community of "Old Town."[6]

Since 2009, the owners of the River Ranch have been working with NMLC to help conserve key wildlife habitat on the property. In 2011, the New Mexico Forestry Division used state funding to purchase a conservation easement for the entire property, which is held by NMLC. The remaining land value will be acquired and the property transferred to management by NMDGF. NMLC, the project proponent, will facilitate the acquisition of the property between the landowners and NMDGF. NRDAR funding for this project will help with (1) property acquisition, (2) habitat restoration, (3) property and habitat management, and (4) conservation easement stewardship. Restoration activities supported through NRDAR funding would focus on passive restoration and would include fencing the entire riparian corridor. Eliminating grazing from the riparian areas will prevent stream bank erosion, thus improving hydrologic function, and will stimulate natural regeneration of cottonwood, ash, and other riparian species of trees, shrubs, and plants.

Project location

The River Ranch is located on New Mexico State Highway 61, approximately 56 kilometers (35 miles) southeast of Silver City and 48 kilometers (30 miles) northwest of Deming in Grant

[6] The archaeological site was donated to the Archaeological Conservancy by the landowners, and is not accessible to the general public. It is fenced off and used solely for research and educational purposes. The archeological site will not be affected by this project.

and Luna counties, New Mexico. The property is also just east of the City of Rocks State Park and southeast of the Chino Mine Permit Area. This project site is approximately 21 kilometers (13 miles) from the Chino Mine, 45 kilometers (28 miles) from the Tyrone Mine, and 31 kilometers (19 miles) from the Cobre Mine. The project is located in the Mimbres River Watershed, where most of the injuries to birds and wildlife occurred.

Expected benefits and time frame of benefits

Protecting and improving riparian habitat on the River Ranch will benefit birds and wildlife, water resources, and local communities. While the property is currently protected under a conservation easement from division and development, the easement, as currently written, allows for continued livestock grazing. Purchase and restoration of the property through this project will ensure that the property will have the opportunity and benefit of being protected and managed as a natural area, specifically for wildlife purposes. Restoration and management actions on the property are expected to provide additional benefits to riparian habitat. For example, increased riparian vegetation (with associated woody debris such as logs, sticks, and other wood that falls into streams and rivers) is likely to improve local water quality through increased shading and slower water velocities, which reduce water temperature and erosion. The public would also benefit from the project through enhanced access to wildlife viewing and photography, hiking, environmental education, and limited hunting.

In the Comprehensive Wildlife Conservation Strategy for New Mexico (CWCS), two habitat types found on River Ranch are noted as containing a high diversity and abundance of SGCN (NMDGF, 2006). Sixty-seven species of birds have been documented as inhabiting the riparian forest and woodlands of the River Ranch during the breeding season. Of those species, six are SGCN. Notable bird SGCN documented during the 2000 nesting-season survey on the River Ranch include the yellow-billed cuckoo, a federal candidate species, and Bell's vireo, which is state-listed as threatened under the New Mexico Wildlife Conservation Act. Protection of the property through this project will benefit these bird SGCN.

Overview of maintenance and monitoring

Under NMDGF ownership, the River Ranch property will be managed as a Wildlife Management Area (WMA) with some limited, compatible public recreational and educational use. Activities are likely to include wildlife viewing and wildlife photography opportunities, which will be available by hiking, bicycling, skiing, snowshoeing, and horseback. The property will likely be managed for its SGCN and for Gaining Access into Nature, a non-sporting recreational program offered by the NMDGF. It is possible that some limited, seasonal hunting of game species, such as whitetail deer (*Odocoileus virginianus*), javelina (*Pecari tajacu*), turkey (*Meleagris* spp.), quail (*Callipepla* spp.), and dove (*Zenaida* spp.), will be allowed. The property

includes the ranch headquarters, which NMDGF envisions using for staff/volunteer housing in the short term or for educational and interpretive purposes in the long term.

NMLC will continue to steward the easement, and funding is included in this project for easement monitoring, insurance, and legal defense. NMDGF will be responsible for funding and constructing fencing around the riparian areas of the property. NMDGF will also be responsible for annual operations and maintenance, which they expect to fund through Federal Aid in Wildlife Restoration Action (Pittman-Robertson) funding.

Trustee evaluation

This project was reevaluated after the public comment period based on additional project information that was provided, including a reduced project cost. A detailed description of the changes in the project's evaluation is provided in Chapter 7, under comment 7.2.7. The protection and improvement of River Ranch is included in the Final RP/EA as a Tier 1 project. The project has a strong nexus to the NRDAR injury because of its benefits to riparian habitat along the Mimbres River. Overall, this project was evaluated very favorably within the habitat protection and improvement category and, as a result of decreased project costs and updated project information, this project has been moved from a Tier 2 to a Tier 1 project.

This project received above-average ratings for four high-priority evaluation criteria: "high potential for long-term success," "low risk of failure," "likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites," and "feasible and cost-effective provisions for operations, maintenance, and monitoring." This project has a high likelihood of success and a low risk of failure because a state agency, NMDGF, will hold the title to the land and this project is ready to implement. This property also has a conservation easement in place that limits the potential for development and provides wildlife and wildlife habitat benefits into the future. The River Ranch contains perennial and intermittent aquatic habitat and associated riparian forest and woodland along the Mimbres River. Sixty-seven species of birds have been documented to exist during the nesting season in the riparian forest and woodlands of the River Ranch. Of these, six are SGCN. This project includes sufficient monitoring and maintenance; these costs have been included in the project proposal's budget. NMDGF will be responsible for long-term operations and maintenance on the property.

This project received above-average ratings for all four medium-priority criteria: "located close to where the injuries occurred," "consistent with regional planning and federal and state policies," "likely to benefit multiple wildlife resources and services," and "cost-effective compared to other projects that provide similar benefits." This project is in an area that will have a positive impact on the wildlife injured at the Sites. It is in the Mimbres River Watershed, within approximately 26 kilometers (16 miles) of the Cobre and Chino mines. The rating "consistent with regional planning and federal and state policies" was updated from average to

above average because (1) the project is contiguous with the City of Rocks State Park and other federal and state lands, and (2) the project is consistent with the CWCS. For example, the property functions as an important wildlife migratory corridor (primarily for neotropical migrant songbirds), which has been identified in the strategy as a critically important component of wildlife habitat to protect (NMDGF, 2006). Lastly, the project protects and improves a large area of riparian habitat (60 hectares, or 147 acres) that directly benefits multiple wildlife resources and services, including at least 16 SGCN and a number of other rare or threatened species. For the medium-priority criterion, "cost-effective compared to other projects that provide similar benefits," the project received a below-average score in the Draft RP/EA; however, due to significantly lower costs, the project received an above average score in the Final RP/EA.

This project received above-average ratings for two of the three low-priority criteria: "allows for appropriate public access" and "leverages funding." The project will provide improved opportunities for public access for bird watching and other recreational activities. It also leverages a large amount of funding, including the value of the conservation easement and the state wildlife grant that will use the NRDAR funding as its non-federal match.

Overall, this project was evaluated very favorably within the habitat protection and improvement category. The Trustees believe that this project represents a unique opportunity to benefit birds and wildlife because of the large land area it protects, including 3 kilometers (2 miles) of the Mimbres River, 60 hectares (147 acres) of riparian habitat, and approximately 409 hectares (1,010 acres) of deeded land. The River Ranch Habitat Protection and Improvement project has been selected as a Tier 1 project.

4.4 Tier 2 Proposed Restoration Projects

Projects proposed as second-tier projects meet the restoration criteria but were scored lower than projects of similar cost in Tier 1 based on the application of the screening and evaluation criteria. The priorities for funding within Tier 2 will be decided by the Trustees based on funding availability and project status, after the Tier 1 projects have been implemented. The Trustees do not yet know which, if any, Tier 2 projects may be funded.

Tier 2 includes three habitat protection and improvement projects and one riparian habitat restoration project, all of which would benefit wildlife, especially migratory and resident birds. Most of these projects have a high potential for long-term success and a low risk of failure because of strong habitat protection mechanisms associated with each project.

The Trustees estimate that the group of Tier 2 projects will cost between $2,530,000 and $3,220,000, although it is unlikely that this amount of funding will be available for Tier 2 projects. Details for each of the Tier 2 projects appear below, in alphabetical order by project name.

4.4.1 Ancheta Springs Ranch Restoration

This project aims to restore riparian habitat on the Ancheta Springs Ranch. A related project that aims to protect valuable wildlife habitat on the ranch in perpetuity by enabling the ranch owners to voluntarily put a conservation easement on the ranch is described in Section 4.3.1.

Project description

As described in Section 4.3.1, the Ancheta Springs Ranch is located in the Mimbres River Watershed along Highway 152, west of the Gila National Forest. The property comprises approximately 368 hectares (910 acres) and is composed of primarily steep and rugged terrain, dominated by pinyon pine, juniper, and oak woodland. The hydrologic features of the property include the Ancheta Creek, an intermittent tributary to the Mimbres River, and the Ancheta Springs, a natural, perennial spring, found at the headwaters of Ancheta Creek. Previous restoration efforts supported by the Partners for Fish and Wildlife program have helped restore permanent wetlands around the springs. Immediately south of the property is a large playa that is fed from Ancheta Springs Ranch drainage. During periods of high runoff and rainfall, this playa becomes a large pond that provides habitat for migratory waterfowl species such as mallard, northern pintail, gadwall, and canvasback.

This component of the Ancheta Springs Ranch projects includes active stream restoration along portions of Ancheta Creek and other tributaries. Restoration efforts will include installation of one-rock dams and other low-stone structures, and native seeding on 3.2 kilometers (2 miles) of Ancheta Creek and side tributaries. The funding provided for this component of the project will be used as a match for future funding requests through the USFWS Partners for Fish and Wildlife Program and other funding sources.

Project location

The project is located on private land in the Mimbres River Watershed, northeast of the Town of San Lorenzo. This project is located approximately 23 kilometers (14 miles) from the Chino Mine, 50 kilometers (31 miles) from the Tyrone Mine, and 21 kilometers (13 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

This project is expected to restore a 3.2-kilometer (2-mile) stretch of the Ancheta Creek and other tributaries, which feed into the Mimbres River. It will increase riparian habitat and improve water quality and availability for wildlife species. These restoration efforts are likely to benefit the southwestern willow flycatcher, common black-hawk (*Buteogallus anthracinus*), yellow warbler (*Setophaga petechia*), and Chihuahua chub, all of which currently exist a few miles downstream from the property. The benefits of restoration of the hydrologic condition and revegetation will take time to be realized.

This project would also protect the scenic viewshed along the well-traveled Highway 152 from the Gila National Forest boundary to San Lorenzo. Although the conservation easement will not allow public access, there are pull-offs along a portion of the Audubon Trail along Highway 152 from which the public can view the property.

Overview of maintenance and monitoring

Restoration work will be designed to mimic natural processes. As such, the project proponents believe that the proposed restoration will require very little maintenance. However, it is not clear which entity will be responsible for providing any necessary long-term restoration maintenance and monitoring.

Trustee evaluation

The Ancheta Springs Ranch Restoration project is included as a Tier 2 project. It was evaluated as the second phase of the Ancheta Springs Ranch Conservation Easement project (Project 4.3.1), and restores riparian habitat in the Mimbres River Watershed, which benefits birds and wildlife resources and services.

This project received above-average ratings for two high-priority evaluation criteria: “high potential for long-term success” and “needs NRDAR funding.” The project has a high potential for long-term success because the conservation easement on the property, as described in Project 4.3.1, will ensure its long-term protection and because of the restoration actions. The project is unlikely to move forward without NRDAR funding.

This project also received above-average ratings for three medium-priority evaluation criteria: “located close to where the injuries occurred,” “likely to benefit multiple wildlife resources and services,” and “cost-effective compared with other projects that provide similar benefits,” as well as an above-average rating for one low-priority criterion: “leverages funding.” The project is located in the Mimbres River Watershed, close to the Sites, and will benefit multiple wildlife resources in a diverse set of habitats. This project was evaluated as very cost-effective and with a high degree of leveraged funding when compared to other riparian habitat restoration projects.

This project received average ratings for all of the other evaluation criteria, except for one below-average rating for the low-priority criterion "allows for appropriate public access." Although there are several pull-offs along Highway 152 from which the public can view the property, the conservation easement will not allow the public to access this property.

Overall, this project was evaluated favorably within the riparian habitat restoration category, but received a lower ranking than the Tier 1 projects. The Ancheta Springs Ranch Restoration project has been included as a Tier 2 project.

4.4.2 Davis Property Habitat Protection and Improvement

This project aims to protect and restore native riparian habitat along the Gila River through the purchase and conservation of private lands. Projects 4.3.6 (Redrock Property Habitat Protection and Improvement) and 4.4.3 (Porter Property Habitat Protection and Improvement) are also located along the Gila River and have similar objectives, but target different parcels of land.

Project description

This project, proposed by TNC, would support the purchase and protection of 40.5 hectares (100 acres) of private land and associated water rights at the confluence of Bear Creek and the Gila River. Of this area, there are 36 hectares (89 acres) of riparian habitat (USFWS, 2013). The land is currently agricultural, with a small area of riparian habitat along the Gila River. The property lies entirely in the former floodplain of the Gila River, and a levee currently stands between Bear Creek and the property and between the Gila River and the property. Bear Creek in this reach is intermittent, while the Gila River flows year-round. The highest value for wildlife would be to restore the majority of the property to wetland habitat (i.e., shallow seasonal and permanent ponds with rushes, sedges, and other wetland vegetation) with associated semi-riparian native vegetation [e.g., Arizona walnut (*Juglans major*), hackberry (*Celtis* spp.), Arizona or velvet ash (*Fraxinus velutina*)]. Like Projects 4.3.6 and 4.4.3, the main focus of this project would be passive restoration of wetland and riparian habitats, which would be achieved primarily through fencing and by allowing native vegetation to regrow. If the property is purchased, a suitable state landowner may apply for North American Wetlands Conservation Act (NAWCA) funds to create wetlands in the agricultural area using existing water rights associated with the property. The grant funds from this NRDAR project could be used to meet the required 50% match for the NAWCA grant.

Project location

The project is located in the heart of the Gila Basin at the confluence of the Gila River and Bear Creek, approximately 1.6 kilometers (1 mile) southwest of Gila and 35 kilometers (22 miles) northwest of Silver City, New Mexico. This project is located approximately 55 kilometers

(34 miles) from the Chino Mine, 37 kilometers (23 miles) from the Tyrone Mine, and 48 kilometers (30 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

The benefits of this project are expected to be similar to those of Projects 4.3.6 and 4.4.3. Specifically, birds and wildlife will benefit from increases in riparian habitat extent, diversity, and quality. Increased riparian vegetation is also expected to benefit aquatic resources by increasing shading of surface water and decreasing water velocities, which improve water quality by reducing water temperature and decreasing erosion (Beschta, 1997; Tabacchi, et al., 1998). Water rights could potentially be used to maintain a wet river channel during the irrigation season. Success in obtaining NAWCA funding for wetland restoration would significantly increase the benefits provided by this project to bird and wildlife species.

The Cliff-Gila Valley has the largest southwestern willow flycatcher population (Durst et al., 2008) and is a breeding location for the candidate species, yellow-billed cuckoo. Protection of this property would increase protected habitat for the southwestern willow flycatcher, as well as the loach minnow and spikedace (*Meda fulgida*). As with Project 4.4.3, local hikers and bird watchers visit TNC's Gila Riparian Preserve regularly, and would enjoy additional access to natural areas near the river.

Overview of maintenance and monitoring

The maintenance and monitoring associated with this project would be similar to those described for Projects 4.3.6 and 4.4.3. Fencing would be monitored and maintained and nonnative species would occasionally be removed. Baseline and monitoring data would be collected regarding vegetation composition and structure, water quality, and wildlife composition and abundance. The state landowner would also conduct annual surveys for the southwestern willow flycatcher.

Trustee evaluation

The protection and improvement of the Davis property is included as a Tier 2 project. This project protects and improves a large area of riparian habitat (36 hectares, or 89 acres) at the confluence of Bear Creek and the Gila River. Overall, this project was evaluated favorably within the habitat protection and improvement category. However, because the benefits from wetland restoration are not guaranteed by this project and the expected cost of the project is too high to fit into Tier 1, it has been selected as a Tier 2 project.

The Davis property project received above-average ratings for four of the five high-priority evaluation criteria: "high potential for long-term success," "low risk of failure," "feasible and cost-effective provisions for operations, maintenance, and monitoring," and "needs NRDAR funding." Protection and improvement of the Davis property has a high likelihood of success and

a low risk of failure because a suitable state landowner will hold the title to the land and manage it to benefit wildlife and wildlife habitat.

This project includes sufficient monitoring and maintenance; these costs will be assumed by the selected project landowner and have been included in the project proposal's budget. If this property is not purchased with NRDAR settlement funding, it may remain in high water-use agricultural practices (e.g., alfalfa fields) that provide lesser benefits for birds and wildlife, or there could be subdivision and residential development that further reduce the wildlife value. There are no other provisions in place to protect the habitat (e.g., there is no existing conservation easement). For the high-priority evaluation criterion "likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites," this project received an above-average rating in the Draft RP/EA and an average rating in the Final RP/EA. While the protection of riparian habitat on the Davis property will benefit many resident and migratory bird species, it remains unclear if the property's wetlands will be restored. Restoration of wetland conditions would provide significant benefits to bird species.

This project received average ratings for all four medium-priority criteria. The medium-priority criterion "likely to benefit multiple resources and services" received an above-average rating in the Draft RP/EA and an average rating in the Final RP/EA. While this project protects and improves a large area of riparian habitat (36 hectares, or 89 acres) that directly benefits birds and multiple wildlife resources and services, it protects fewer hectares of riparian habitat than the Tier 1 habitat protection and improvement projects, and it remains unclear if the project landowner could successfully obtain a NAWCA grant to convert the property's fields to wetlands.

This project received above-average ratings for one low-priority criterion: "allows for appropriate public access." This project will provide improved opportunities for public access for bird watching and other recreational activities. For the low-priority criterion "likely to provide benefits quickly after project implementation," the project received an above-average rating in the Draft RP/EA and an average rating in the Final RP/EA. The benefits of protecting this property will be realized over time as the property is protected from livestock grazing and as restoration efforts are implemented. Benefits from the conversion of agricultural fields to wetlands will depend on additional funding and, once implemented, these benefits will take many years to be realized.

This project received average ratings for all other evaluation criteria; it did not receive any below-average ratings. Overall, this project was evaluated favorably within the habitat protection and improvement category; however, its cost was too high to fit into Tier 1. The Davis Property Habitat Protection and Improvement project has been selected as a Tier 2 project.

4.4.3 Porter Property Habitat Protection and Improvement

This project aims to protect and restore native riparian habitat along the Gila River through the purchase and conservation of private lands. Projects 4.3.6 (Redrock Property Habitat Protection and Improvement) and 4.4.2 (Davis Property Habitat Protection and Improvement) have similar objectives, but are targeted to different parcels of land.

Project description

This project, proposed by TNC, would support purchasing 25.5 hectares (63 acres) of land and associated water rights on the east side of the Gila River, approximately 1 mile north of Gila, New Mexico. All of the property's 36 hectares (89 acres) are restorable riparian habitat (USFWS, 2013). The land consists of high-quality riparian habitat and an adjacent agricultural field that lies in the former floodplain of the river. Like Projects 4.3.6 and 4.4.2, the main focus of this project would be passive restoration of wetland and riparian habitats, which would be achieved primarily through fencing and by allowing native vegetation to regrow. If the property is purchased, the state landowner may apply for funds through the NAWCA to create wetlands in the agricultural area using existing water rights associated with the property. As with Project 4.4.2, the grant funds from this NRDAR project would be used to meet the required 50% match for the NAWCA grant, thus significantly leveraging the initial investment. Multiple sites on the property provide appropriate habitat for such active restoration, including the lower terrace of the agricultural field and a portion of the property that is intersected by the Gila Farm ditch. If other funding is unavailable, the existing alfalfa fields would be converted to native grasses. TNC has successfully created wetland habitat on a similar property near the Davis and Porter parcels (i.e., the Gila Riparian Preserve), also along the Gila River.

Project location

The parcel of land to be purchased lies 1 mile north of Gila on the east side of the Gila River and approximately 35 kilometers (22 miles) northwest of Silver City, New Mexico. This project is located approximately 56 kilometers (35 miles) from the Chino Mine, 40 kilometers (25 miles) from the Tyrone Mine, and 48 kilometers (30 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

The benefits of this project are expected to be similar to that of Projects 4.3.6 and 4.4.2. Specifically, birds and wildlife will benefit from increases in riparian habitat extent, diversity, and quality. Increased riparian vegetation also is expected to benefit aquatic resources by increasing shading of surface water and decreasing water velocities, which improve water quality by reducing water temperature and decreasing erosion (Beschta, 1997; Tabacchi et al., 1998).

Success in obtaining NAWCA funding for wetland restoration would significantly increase the benefits provided by this project to bird and wildlife species.

As with Project 4.4.2, protection of the Porter property would increase protected habitat for the southwestern willow flycatcher, loach minnow, and spikedace. Local birders and hikers will also benefit from increased access to natural areas near the river.

Overview of maintenance and monitoring

The maintenance and monitoring associated with this project would be similar to those described for Projects 4.3.6 and 4.4.2. Fencing would be monitored and maintained and nonnative species would occasionally be removed. Baseline vegetation, water, and wildlife surveys would be conducted, as would aerial photography. The state landowner would also conduct annual surveys for the southwestern willow flycatcher. Changes in vegetation and wildlife would be documented periodically as restoration proceeds. If the additional wetland restoration is completed with other funding, more maintenance and monitoring would be required, which would be supported through other funding sources.

Trustee evaluation

The protection and improvement of the Porter property is included as a Tier 2 project, and its evaluation is very similar to the Davis project (Project 4.4.2). The Porter property protects and improves a large area of riparian habitat (25.5 hectares, or 63 acres) that directly benefits birds and multiple wildlife resources and services. Overall, this project was evaluated favorably within the habitat protection and improvement category. However, because the benefits from wetland restoration are not guaranteed by this project and the expected cost of the project is too high to fit into Tier 1, this project has been selected as a Tier 2 project.

The Porter property received above-average ratings for four or the five high-priority evaluation criteria: “high potential for long-term success,” “low risk of failure,” “feasible and cost-effective provisions for operations, maintenance, and monitoring,” and “needs NRDAR funding.” The protection and improvement of the Porter property has a high likelihood of success and a low risk of failure because a state landowner will hold the title to the land and manage it to benefit wildlife and wildlife habitat. This project includes sufficient monitoring and maintenance; these costs will be assumed by the project landowner and have been included in the project proposal’s budget. If this property is not purchased with settlement funding, it may remain in high water-use agricultural practices (e.g., alfalfa fields) that provide lesser benefit for birds and wildlife. There are no other provisions in place to protect the habitat (e.g., there is no existing conservation easement). For the high-priority evaluation criterion “likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites,” this project received an above-average rating in the Draft RP/EA and an average rating in the Final RP/EA. While the

protection of riparian habitat on the Davis property will benefit many resident and migratory bird species, it remains unclear if the property's wetlands will be restored. Restoration of wetland conditions would provide significant benefits to bird species.

This project received average ratings for all four medium-priority criteria. For the medium-priority criterion "likely to benefit multiple wildlife resources and services," the project received an above-average rating in the Draft RP/EA and an average rating in Final RP/EA. While this project protects and improves a large area of riparian habitat (25.5 hectares, or 63 acres) that directly benefits birds and multiple wildlife resources and services, it protects fewer hectares of riparian habitat than the Tier 1 habitat protection and improvement projects, and it remains unclear if the project landowner could successfully obtain a NAWCA grant to convert the property's field to wetlands.

This project received above-average ratings for one low-priority criterion: "allows for appropriate public access." This project will provide improved opportunities for public access for bird watching and other recreational activities. For the low-priority criterion "likely to provide benefits quickly after project implementation," the project received an above-average rating in the Draft RP/EA and an average rating in the Final RP/EA. The benefits of protecting and improving this property will be realized over time as the property is protected from livestock grazing and as restoration efforts are implemented. Benefits from conversion of agricultural fields to wetlands will depend on additional funding and, once implemented, these benefits will take many years to be realized.

This project received average ratings for all other evaluation criteria; it did not receive any below-average ratings. Overall, this project was evaluated favorably within the habitat protection and improvement category; however, its cost was too high to fit into Tier 1. The Porter Property Habitat Protection and Improvement project has been selected as a Tier 2 project.

4.4.4 Upper Bear Creek Habitat Protection and Improvement

This project aims to protect valuable wildlife habitat and allow for its effective management through the acquisition and management of the Upper Bear Creek property.

Project description

The Upper Bear Creek property is currently owned by Bear Creek Ranch, LLC. It is located on a tributary of the upper Gila River, and is one of the largest private inholdings within the Gila National Forest. The property comprises approximately 89 hectares (220 acres), which includes 2.4 kilometers (1.5 miles) of the Bear Creek, a perennial interrupted stream. The property also includes the Ben Lilly Pond, which is approximately 0.4 hectares (1 acre) and supports waterfowl, fish, and other wildlife. Of its total land area, the property contains 11.7 hectares

(28.8 acres) of riparian habitat (USFWS, 2013). The non-riparian area on the Upper Bear Creek property includes pinyon, alligator juniper, and evergreen oak (*Quercus* spp.) woodlands with a mix of Ponderosa pine (*Pinus ponderosa*) (USFS, 2009).

There is some development pressure on this land parcel, which could include eventual subdivision and residential development. There is road access to this property, and there have been some inquiries about the possibility of widening the access road to the property for potential buyers. Protection of the property, however, would protect it from future development. If purchased, ownership of the property would be transferred to an appropriate state landowner.

Project location

The property is located approximately 3 kilometers (2 miles) northwest of the community of Pinos Altos, New Mexico. It is located approximately 27 kilometers (17 miles) from the Chino Mine, 29 kilometers (18 miles) from the Tyrone Mine, and 18 kilometers (11 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

Protecting and restoring the riparian habitat along Bear Creek and the Ben Lilly Pond would benefit birds and wildlife. Riparian habitat in these locations is critical for hundreds of migrating birds that visit the area. Ben Lilly Pond provides habitat for waterfowl that include mallards, coots (*Fulica* spp.), great blue herons (*Ardea herodias*), gadwalls, and other species. However, the homogeneous vegetation and more abundant water sources at this area's elevation make the stream less valuable than other water sources to migratory birds. As with the other habitat protection and improvement projects, wildlife benefits from this project would be achieved through the prevention of habitat degradation.

Overview of maintenance and monitoring

The state landowner would assume all monitoring and maintenance activities for the property; specific monitoring actions have not been identified. The property would be managed to benefit wildlife and wildlife habitat. The benefits of this project to wildlife and wildlife habitat would continue in perpetuity.

Trustee evaluation

The protection and improvement of the Upper Bear Creek property is included a Tier 2 project. This project protects and improves riparian habitat along Bear Creek (11.7 hectares, or 28.8 acres) that directly benefits birds and wildlife resources and services. This project was evaluated favorably within the habitat protection and improvement category. However, because

the riparian habitat area is minimal compared to other projects and the expected cost of the project was too high to fit into Tier 1, this project has been selected as a Tier 2 project.

The Upper Bear Creek property received above-average ratings for three high-priority evaluation criteria: “high potential for long-term success,” “feasible and cost-effective provisions for operations, maintenance, and monitoring,” and “needs NRDAR funding.” The protection and improvement of the Upper Bear Creek property has a high likelihood of success because a state landowner will hold the title to the land and manage it to benefit wildlife. Finally, protection of this property will not move forward without NRDAR funding. There are no other provisions in place to protect the habitat (e.g., there is no existing conservation easement) and there are no other funding opportunities to complete the purchase. Also, if this property is not purchased with settlement funding, there is some risk of development.

This project received an average rating for two high-priority evaluation criteria: “low risk of failure” and “likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites.” There is some uncertainty in the cost of purchasing this property and the nature of the water rights associated with the property’s Ben Lilly Pond. If this project is selected for funding, the Trustees will work closely with project proponents to ensure a reasonable and cost-effective purchase price of the Upper Bear Creek property. Moreover, the Trustees will work closely with project proponents and the Office of the State Engineer to ensure that water rights are attached to the pond. In addition, protecting this property from degradation will benefit birds. However, the smaller area of riparian habitat compared to other habitat protection and improvement projects, as well as the homogeneous vegetation and other significant sources of water at this area’s elevation, make this property less valuable to birds and wildlife than other similar projects.

This project received above-average ratings for two medium-priority criteria: “located close to where the injuries occurred” and “consistent with regional planning.” This project is located in the Gila River Watershed, within approximately 18 kilometers (11 miles) of the Cobre Mine and 29 kilometers (18 miles) of the Tyrone Mine. As an inholding, this property is a high priority for protection to help maintain the integrity of surrounding conservation lands. This project received a below-average rating for one medium-priority criterion: “likely to benefit multiple wildlife resources and services.” Compared to other proposed projects, protection of the Upper Bear Creek property would be less likely to benefit unique wildlife resources or services.

This project received above-average ratings for one low-priority criterion: “allows for appropriate public access.” The project could provide improved opportunities for public access along Upper Bear Creek. The low-priority criterion “likely to provide benefits quickly after project implementation” received an above-average rating in the Draft RP/EA and an average rating in the Final RP/EA. The benefits of protecting this property will be realized over time as the property is protected from development.

Overall, this project was evaluated slightly less favorably within the habitat protection and improvement category compared to the other Tier 1 and Tier 2 habitat protection and improvement projects. The Upper Bear Creek Habitat Protection and Improvement project has been selected as a Tier 2 project.

4.5 Tier 3 Proposed Restoration Projects

Projects in the third tier meet Trustee screening criteria; however, they were scored lower than projects in the first and second tiers. Third-tier projects may receive funding if there are funds available after the projects in Tiers 1 and 2 are completed.

4.5.1 Burro Cienaga Grassland Restoration

The goal of this project is to increase continuous grass cover in the Burro Cienaga through prescribed burning and herbicide treatments that will reduce mesquite (*Prosopis* spp.) and benefit grassland-dependent birds and wildlife and wildlife habitat.

Project description

Chihuahuan Desert grasslands have undergone a dramatic vegetation change due to encroachment by shrubs and loss of perennial grass cover. The Burro Cienaga has been identified as a priority borderlands grassland landscape, where restoring intact grasslands and recovering grassland-dependent wildlife has a high probability of success (Bodner et al., In press). This active grassland restoration project, proposed by TNC, AT Cross Ranch, and Pitchfork Ranch, will increase continuous grass cover on more than 2,185 hectares (5,400 acres) of land, and link high-quality grassland patches with restored patches, resulting in more than 20,234 hectares (50,000 acres) of grassland habitat in the Burro Cienaga. Active restoration actions will include prescribed burning and herbicide treatments that reduce the density and cover of mesquite and other shrubs and increase perennial grass cover.

Areas for treatment will be targeted (1) where mesquite canopy cover is low and perennial grasses persist, and (2) adjacent to high-quality, open grassland patches so that restoration has the “multiplicative” effect of increasing the contiguous areas of open grassland, which in turn helps to maintain grasslands by reducing opportunities for mesquite invasion. Herbicide treatment will be used to initiate restoration in areas where mesquite shrubs are too large to treat effectively with only prescribed burning. Restored areas will be maintained through prescribed burning. This project is expected to (1) eradicate mesquite within the first year after treatment, (2) increase herbaceous and perennial grass canopy cover within two growing seasons after treatment, and (3) increase perennial grass recruitment when climate conditions are suitable.

Project location

This project is located in the Burro Cienaga Watershed, which is approximately 40 kilometers (25 miles) southwest of Silver City on the southeastern corner of the Burro Mountains. This project is located approximately 45 kilometers (28 miles) from the Chino Mine, 31 kilometers (19 miles) from the Tyrone Mine, and 51 kilometers (32 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

Chihuahuan Desert grasslands are important breeding sites for migratory grassland birds (Panjabi et al., 2010). This project will benefit grassland-dependent wildlife, including migratory and breeding birds that use or depend on grassland habitats. Removing mesquite from grassland areas is expected to reduce competition between mesquite and grass, increase soil moisture, and allow grassland habitat to persist and expand. Restoring grassland habitat will improve wintering habitat and food availability for migratory birds and facilitate the recovery of grassland species that are already present in the area, including the grasshopper sparrow (*Ammodramus savannarum*), Sprague's pipit (*Anthus spragueii*), Botteri's sparrow (*Aimophila botterii*), Cassin's sparrow (*Peucaea cassinii*), chestnut-collared longspur (*Calcarius ornatus*), lark bunting (*Calamospiza melanocorys*), and meadowlark (*Sturnella* spp.). The benefits associated with grassland treatment will take time to be realized. This project will primarily benefit grassland-dependent birds and wildlife; it will also benefit livestock grazing by increasing forage availability.

Overview of maintenance and monitoring

After the initial implementation of herbicide treatments and prescribed burns, the ranch owners will maintain the treatments over time at a relatively low cost using periodic prescribed burning to reduce newly invading shrubs and maintain open grassland conditions in restored areas. With these maintenance activities, the benefits are expected to be long-lasting. Additional monitoring actions will include photo-point monitoring, establishment of permanent vegetation transects, and installation of three rain gauges to document and interpret the effects of treatment. Grassland bird monitoring will also be conducted using field-tested methodology developed by the Rocky Mountain Bird Observatory for grasslands.

Trustee evaluation

The Burro Cienaga Grassland Restoration project is included as a Tier 3 project. It ranked less highly than other proposed habitat restoration projects in Tiers 1 and 2. In general, the project received a mix of average and above-average ratings. However, the project received below-average ratings for three high-priority criteria: "likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites," "high potential for success," and "low

risk of failure." This project primarily benefits grassland-dependent birds and wildlife, with some indirect benefits to waterfowl and migratory birds. Because the wildlife affected by hazardous substance releases at the Sites were primarily waterfowl and migratory bird species, this project does not have as strong a nexus to the birds injured at the Sites as other proposed projects. In addition, the protection of 289 hectares (714 acres) of desert grasslands at the City of Rocks State Park, which was part of the overall NRDAR wildlife settlement, has helped to compensate for injury to grassland bird species. The ratings for two high-priority criteria – "high potential for long-term success" and "low risk of failure" – were reduced to below-average in the Final RP/EA as a result of a public comment indicating that the BLM has had less success with herbicide applications to mesquite than treatment of creosote-invaded grasslands (Section 7.2.9).

This project also received one below-average rating for the medium-priority criterion: "cost-effective compared with other projects that provide similar benefits," because the project is not as cost-effective as other proposed grassland restoration projects. Lastly, if funding becomes available for this project, the Trustees will need to work with project proponents to determine if proposed mesquite treatment sites are located on BLM lands. If so, the BLM will need to conduct site evaluations to determine site potential and undertake an additional NEPA analysis.

4.5.2 Grassland Restoration through Aerial Treatment of Mesquite

The goal of this project is to increase grass cover through aerial treatments of mesquite on approximately 4,000 hectares (10,000 acres) of Chihuahuan Desert grasslands and shrublands.

Project description

Chihuahuan Desert grasslands have undergone a dramatic vegetation change due to encroachment by shrubs and loss of perennial grass cover. This active grassland restoration project, proposed by the AT Cross, Bar VK, and Cow Spring ranches, will increase grass on approximately 4,000 hectares (10,000 acres) of Chihuahuan Desert grasslands and shrublands. Aerial treatment will be completed using a new herbicide designed for removing mesquite. Herbicide treatment will be completed at three locations, covering approximately 1,335 hectares (3,300 acres) at each location. The goal of the treatment is to kill at least 64% of the treated mesquite. During the growing seasons after treatment, livestock stocking rates will be decreased to allow grasses to regrow more easily.

Project location

The project is located in the Burro Cienaga Watershed, which is approximately 24–48 kilometers (15–30 miles) southwest of Silver City on the southeastern corner of the Burro Mountains. The project site is located approximately 47 kilometers (29 miles) from the Chino Mine,

23 kilometers (14 miles) from the Tyrone Mine, and 51 kilometers (32 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

Chihuahuan Desert grasslands are important breeding sites for migratory grassland birds (Panjabi et al., 2010). This project will benefit grassland-dependent wildlife, including migratory and breeding birds, and is expected to provide indirect benefits to migrating birds and waterfowl. Improvements in grassland habitat conditions will improve wintering habitat and food availability for migratory birds and facilitate the recovery of grassland species that are already present in the area. The benefits associated with grassland treatment will take time to be realized. This project will benefit livestock grazing and other large wildlife species, and may also provide benefits to the public with regard to wildlife viewing and hunting.

Overview of maintenance and monitoring

After the initial herbicide treatments, the landowners will maintain the treated areas to prevent reestablishment of mesquite using stewardship practices already used on the ranches.

Trustee evaluation

The Grassland Restoration through Aerial Treatment of Mesquite project is included as a Tier 3 project. It ranked less highly than other proposed habitat restoration projects in Tiers 1 and 2. The project received below-average ratings for three high-priority criteria: “likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites,” “high potential for long-term success,” and “low risk of failure.” This project primarily benefits grassland-dependent birds, wildlife, and grazing livestock, with some indirect benefits to waterfowl and migratory birds. Because the wildlife affected by hazardous substance releases at the Sites were primarily waterfowl and migratory bird species, this project does not have as strong a nexus to birds injured at the Sites as other proposed projects. As discussed in Project 4.5.1, protection of 289 hectares (714 acres) of desert grasslands at the City of Rocks State Park, as part of the overall NRDAR wildlife settlement, has also helped to compensate for injuries to grassland bird species. As a result of a public comment indicating that the BLM has had less success with herbicide applications to mesquite than treatment of creosote-invaded grasslands (Section 7.2.9), the rating for high potential for success was reduced to below-average in the Final RP/EA. Furthermore, the project was also considered below-average for high potential for success and low risk of failure, because the success of aerial treatment of mesquite depends on the spraying being conducted under specific environmental and post-treatment management conditions. Lastly, if funding becomes available for this project, the Trustees will need to work with project proponents to determine if proposed mesquite treatment sites are

located on BLM lands. If so, the BLM will need to conduct site evaluations to determine site potential and undertake an additional NEPA analysis.

4.5.3 Meadow Creek Restoration

This project aims to restore 11 kilometers (7 miles) of Meadow Creek in the Gila National Forest.

Project description

Meadow Creek is a tributary of the Gila River that feeds through Sapillo Creek. Under this project, proposed by WildEarth Guardians, the Gila National Forest would implement a riparian and wetland restoration project on up to 11 kilometers (7 miles) of the creek. Specific restoration actions have not yet been determined, and the final restoration design will depend on site-specific needs. Anticipated restoration actions include fencing riparian areas to limit access of grazing wildlife and cattle. The fences would be designed to allow access to water in a limited area for wildlife and cattle needs and for human access to recreation, while allowing most riparian areas to recover through natural restoration. Invasive species would also be removed as part of the project, but it is believed that the restoration site does not have a large population of invasive species. This project can be scaled to fit various levels of funding.

Project location

This project is located on Meadow Creek in the Gila National Forest. The project site is located approximately 37 kilometers (23 miles) from the Chino Mine, 45 kilometers (28 miles) from the Tyrone Mine, and 26 kilometers (16 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

The proposed project is expected to conserve, restore, and enhance existing migratory bird habitat and surface waters. Many wildlife species are expected to benefit from this project, including native fish and amphibians, waterfowl and other bird species, and the Chiricahua leopard frog.

Overview of maintenance and monitoring

The Gila National Forest would assume responsibility for long-term operations and maintenance. Maintenance and monitoring activities would focus on maintaining fences in riparian areas to limit access of grazing wildlife and livestock, monitoring vegetation, and controlling invasive species, if required.

Trustee evaluation

The Meadow Creek restoration project is included as a Tier 3 project. It ranked less highly than other proposed habitat restoration projects in Tiers 1 and 2. In general, the project received a mix of average and above-average ratings. However, the project received a below-average rating for one high-priority criterion: "likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites," and two below-average ratings for the medium-priority criteria: "likely to benefit multiple wildlife resources and services" and "cost-effective compared with other projects that provide similar benefits." Although the project is intended to benefit migratory bird habitat and wildlife, the extent of the benefits and the particular species that will benefit will depend on the specific locations chosen. Because specific restoration techniques and locations have not yet been identified, the Trustees rated the project as below-average for "likely to directly benefit birds that were affected by the hazardous substance releases at and from the Sites" and "likely to benefit multiple wildlife resources and services." In addition, this project was rated as less cost-effective compared to similar riparian restoration projects.

4.5.4 Migratory Bird Grassland Restoration

The goal of this project is to increase grass cover on Chihuahuan Desert grasslands through aerial treatments of creosote bush (*Larrea tridentata*) and mesquite on approximately 20,234 hectares (50,000 acres) of BLM priority watersheds.

Project description

Chihuahuan Desert grasslands have undergone a dramatic vegetation change due to encroachment by shrubs and loss of perennial grass cover. This active grassland restoration project is part of the Restore New Mexico initiative, which has the goal of restoring degraded lands within priority watersheds on a landscape scale through a public-private partnership approach. This project will restore native grassland habitat in priority landscapes identified by the BLM Las Cruces District and the Natural Resources Conservation Service (NRCS) as part of their Cooperative Conservation Planning Initiative: 15,718 hectares (38,839 acres) in Grant and Hidalgo counties, and 4,249 hectares (10,500 acres) in Sierra County. This project is part of a partnership between NRCS and the BLM to fund grassland restoration projects in which private lands are commingled with state and public lands within priority watersheds. Grassland restoration will be accomplished through the treatment of creosote using a soil-activated herbicide (i.e., tebuthiuron) and the treatment of mesquite using herbicides [i.e., Reclaim (*clopyralid*) and Remedy (*butoxyethel ester of triclopyr*)]. The goal of this project is to reduce existing shrub densities, allowing more desirable vegetation species to flourish.

Project location

The project is located in the BLM Las Cruces District priority watersheds that have been designated as Cooperative Conservation Planning Initiatives, including the Arizona-New Mexico borderlands initiative in Grant and Hidalgo counties and the Jornada/Elephant Butte, Caballo, and El Paso initiative in Sierra County. Although the specific project sites have not yet been selected, approximate site locations are up to 108 kilometers (67 miles) from the Chino Mine, 124 kilometers (77 miles) from the Tyrone Mine, and 114 kilometers (71 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

As described in Project 4.5.1 and 4.5.2, Chihuahuan Desert grasslands are important breeding sites for migratory grassland birds (Panjabi et al., 2010). This project will benefit grassland-dependent wildlife, including migratory and breeding birds. Removal of encroaching shrubs from the grasslands will improve wintering habitat and food availability for migratory birds, and facilitate the recovery of grassland species that are already present in the area. In addition, grassland restoration will benefit the watershed by stabilizing the soil in upland areas. The benefits associated with grassland treatment will take time to be realized. It will take 2–5 years for the herbaceous understory vegetation to respond to treatments and for the ground cover to expand. Post-treatment precipitation will be an important factor in the amount of time required for grasslands to recover. The primary wildlife benefit of this project will be to grassland-dependent species; the project will also benefit livestock grazing.

Overview of maintenance and monitoring

After herbicide treatments, there may be opportunities to maintain the desert grassland habitat through prescribed burns. Livestock operators will be required to defer grazing in the treated area for 2–5 years during the growing season after treatment; retreatment may be necessary in 20–30 years. The project proponents have begun scientific studies to establish baseline conditions and document changes in the vegetation conditions and migratory grassland bird diversity and abundance over time.

Trustee evaluation

The Migratory Bird Grassland Restoration project is included as a Tier 3 project. It ranked less highly than other proposed habitat restoration projects in Tiers 1 and 2. The project received a below-average rating for one high-priority criterion: “likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites.” Similar to Projects 4.5.1 and 4.5.2, this project primarily benefits grassland-dependent birds, wildlife, and grazing livestock, with some indirect benefits to waterfowl and migratory birds. Because the wildlife affected by

hazardous substance releases at the Sites were primarily waterfowl species, this project does not have as strong a nexus to birds injured at the Sites as other proposed projects. As discussed in Projects 4.5.1 and 4.5.2, protection of 289 hectares (714 acres) of desert grasslands at the City of Rocks State Park, as part of the overall NRDAR wildlife settlement, has also helped to compensate for injuries to grassland bird species. This project also received a below-average rating for one medium-priority criterion: "located close to where the injuries occurred at the Sites." This is because the project locations are far from the Sites and a longer distance than that between the Sites and many of the other proposed projects. For the high-priority criterion "low risk of failure," the project was increased from an average rating in the Draft RP/EA to an above-average rating in the Final RP/EA as a result of the BLM's extensive experience with this type of treatment and the fact that the NEPA analysis has been completed for this project.

4.5.5 Swan Pond Habitat Restoration

The purpose of this project is to diversify Swan Pond's wetland habitat for migratory passerine species, migratory water birds, marsh birds, and shorebirds.

Project description

Swan Pond is a 16.2-hectare (40-acre) marsh along the Rio Grande River in Broad Canyon Ranch, which is owned by New Mexico State Parks. To date, New Mexico State Parks, the USFWS, and the New Mexico Interstate Stream Commission have funded restoration projects to complete salt cedar eradication, conduct soil surveys, and plant willows and cottonwoods at Broad Canyon Ranch. In addition, Audubon New Mexico is working to acquire land and water rights for habitat restoration at this site.

This project will continue the active restoration by converting the marsh dominated by cattail (*Typha* spp.) into a diverse wetland with four habitat types: open water, channel margin wetlands, cattail marsh, and coyote willow thicket (*Salix exigua*). To accomplish this, an open-water channel will be excavated along the western and southern shorelines of the pond to limit light penetration and help prevent future cattail growth. The interior channel edge would be shaped to create varying water depths and replanted with native sedges, rushes, and bulrushes. The excavated materials will be placed to create a 4.25-hectare (10.5-acre) island in the middle of Swan Pond. The island will be elevated approximately 1 meter (3 feet) above the existing grade and planted with native vegetation by volunteers. Lastly, a hydraulic analysis will be conducted to evaluate the feasibility of constructing a high-flow side channel to bring Rio Grande River flows to the wetlands during high-water conditions. Water rights to maintain the pond would need to be clarified. Other restoration actions, including possible future side-channel construction, are planned as part of a broader restoration plan for this location.

Project location

Swan Pond is located in Broad Canyon Ranch, which is owned by New Mexico State Parks, approximately 31 kilometers (19 miles) north of Las Cruces in northern Dona Ana County. The project site is located approximately 101 kilometers (63 miles) from the Chino Mine, 130 kilometers (81 miles) from the Tyrone Mine, and 108 kilometers (67 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

This project will add structural diversity and plant species diversity to the site, which will attract and support a variety of birds and wildlife. In a year when drought reduces habitat availability along the Gila or Mimbres rivers, migratory birds may seek stopover habitat in the Rio Grande River corridor. If successful, the project will provide valuable habitat along an alternative migratory corridor for birds that use the Gila and Mimbres rivers. Habitat along the Rio Grande has been largely converted to agriculture; remaining habitat patches tend to be small and uniform. This project will contribute to enhancing and restoring pond and marsh habitats, making the area more similar to the historical oxbow lakes present in the area. Benefits will begin immediately; however, full restoration of the hydrologic condition and revegetation will take time.

This project is expected to have a lifespan of 10–30 years, unless another source of funding (not included here) is obtained for long-term stewardship and maintenance. There is some risk that high flows through the upland arroyo could deposit sediment into the excavated open water channel and limit its lifespan.

Local communities could also benefit from the project. The site is expected to become a state park in the near future and will allow for appropriate public access for wildlife viewing. Specifically, local hikers and bird watchers already visit the Broad Canyon Ranch regularly, and would enjoy additional birding opportunities resulting from the Swan Pond Habitat Restoration project.

Overview of maintenance and monitoring

Audubon New Mexico will conduct bird monitoring at the restoration site; their volunteers may also conduct plant surveys to monitor the success of the revegetation and identify and remove invasive species.

Trustee evaluation

The Swan Pond Habitat Restoration project is included as a Tier 3 project. It ranked less highly than other proposed habitat restoration projects in Tiers 1 and 2. The project received below-

average ratings for two medium-priority criteria: “located close to where the injuries occurred at the Sites” and “cost-effective compared with other projects that provide similar benefits.” The project is located far from the Sites and a longer distance than that between the Sites and many of the other proposed projects. The project also has a higher cost per riparian acre restored than other projects in the riparian restoration category. The rating for the high-priority criterion “likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites” was increased from an average rating in the Draft RP/EA to an above-average rating in the Final RP/EA. This is because this project will benefit waterfowl and migratory birds that were likely injured by the release of hazardous substance releases at the Sites.

4.5.6 York Canyon Rehabilitation

This project aims to restore the floodplain along the San Francisco River through levee setback, reconnecting of York Canyon to the river, broadening of the floodplain, and revegetation.

Project description

This project, proposed by the San Francisco River Association, entails active restoration on 1.3 kilometers (0.8 miles) of the San Francisco River, encompassing 16 hectares (40 acres) of private land on five parcels. A levee has disconnected York Canyon from the river, which has interrupted natural fluvial processes and made the area vulnerable to flooding events. Aquatic and riparian habitats along the river are at risk from changes in peak flows, erosion, and loss of streamside shade. This project would set back the levee, reconnect York Canyon to the San Francisco River, broaden the floodplain, and revegetate the banks of the river. Restoration will be accomplished using induced meander methods and by revegetating bank areas with native species to create habitat and to filter and slow floodwaters. A one-rock dam will be placed at the mouth of the delta to promote overbank flooding, and the substrate under the rock blanket will retain moisture, allowing grasses and sedges to trap fine particles in muddy water, build soil, and increase groundwater recharge.

Project location

The project is located on five parcels of private property in Pleasanton, Catron County, New Mexico in the San Francisco River Watershed approximately 72 kilometers (45 miles) northwest of Silver City. The project site is located approximately 98 kilometers (61 miles) from the Chino Mine, 84 kilometers (52 miles) from the Tyrone Mine, and 90 kilometers (56 miles) from the Cobre Mine.

Expected benefits and time frame of benefits

The wildlife and wildlife habitat benefits would stem from increased surface water in the San Francisco River, a larger riparian vegetation zone, reestablishment of the wetland mouth of York Canyon, and an increased geomorphic complexity of the river. The San Francisco River is a migration corridor for migratory birds and provides roosts and foraging habitat for these birds, as well as for residential birds. Other wildlife species, such as coati (*Nasua narica*), black bear (*Ursus americanus*), deer (*Cervidae*), and mountain lion (*Puma concolor*), currently use the habitat and may benefit from this project. Widening the floodplain will also protect small farms in the area from flood risk.

Overview of maintenance and monitoring

The project will be completed in a single field season; the long-term biological studies and maintenance will be conducted for five years by the project proponents.

Trustee evaluation

The York Canyon Rehabilitation project is included as a Tier 3 project. It ranked less highly than other proposed habitat restoration projects in Tiers 1 and 2. In general, the project received primarily average ratings. However, the project received two below-average rating for the medium-priority criteria: “cost-effective compared with other projects that provide similar benefits” and “located close to where the injuries occurred.” If implemented, this project may require consultation with the U.S. Army Corps of Engineers regarding any legal or regulatory implications of the levee setback. In addition, this project is located far from the Sites and a longer distance than that between the Sites and many of the other proposed projects.

4.6 Projects Considered but Not Recommended for Funding

The wildlife restoration projects described in this section were evaluated by the Trustees but not recommended for funding.

4.6.1 EcoMetrix Ecosystem Service Model

The EcoMetrix Ecosystem Service Model is an assessment tool that quantifies the biodiversity and ecosystem value of the other wildlife restoration projects proposed for NRDAR funding. This model can quantify and score proposed wildlife projects by ecosystem function (such as wildlife habitat formation, carbon cycle support, and soil retention) and ecosystem service (such as biodiversity and freshwater provisioning). The score developed by this model would identify

the ecosystem benefits that would result from the wildlife restoration projects proposed for NRDAR funding.

While this project assists in quantifying and enhancing environmental benefits supported by NRDAR funding, it does not provide an overall environmental benefit as a standalone project. To pass the screening criteria, projects must provide an overall environmental benefit.

4.6.2 Grant County Reservoir

Grant County proposes the construction of a reservoir in the Cameron Creek-Twin Sisters Creek Watershed. The project would be located in the vicinity of Bayard, Santa Clara, and Fort Bayard in central Grant County. According to the *Preliminary Hydrogeologic Evaluation of the Grant County Reservoir and Water Reuse Project, near Fort Bayard, New Mexico*, the reservoir "would store treated effluent from the Bayard Regional Wastewater Treatment Plant and potentially capture stormwater offset by an equal amount of effluent released downstream of the storage facility" (John Shomaker & Associates, 2011, p. 1). The hydrogeologic evaluation also indicates that the reservoir would be used primarily for recreation, fire suppression, and irrigation of recreational facilities, and would free up potable groundwater supplies. The county has proposed to plant vegetation along the reservoir to create riparian and wetland habitats, which could create a source of surface water and habitat for wildlife, including migratory birds.

While this project would provide benefits to wildlife and wildlife habitat, the main focus is to support recreation and provide a water supply for human use. The reservoir would be managed for these human uses, with wildlife and wildlife habitat indirectly benefiting from the project. To pass the screening criteria, projects must be subject to Trustee management, control, and monitoring. It is unclear whether this project would be subject to Trustee management, control, and monitoring aimed at maximizing benefits to wildlife and wildlife habitat.

4.6.3 Solar-powered Water Pumping Station

The Solar-powered Water Pumping Station project would replace obsolete pumping plants with a solar water pumping plant located centrally on three ranches – AT Cross Ranch, Bar VK Ranch, and Cow Spring Ranch – that will preserve the viability of the current pipeline water distribution system and accommodate future growth of the system. The project is expected to benefit wildlife and wildlife habitat by providing a low-cost water source for stock ponds and, if possible, irrigating meadow grasslands.

The solar-powered water pumping station will be managed primarily for livestock, with wildlife and wildlife habitat indirectly benefiting from the project. To pass the screening criteria, projects must be subject to Trustee management, control, and monitoring. It is unclear whether this

project would be subject to Trustee management, control, and monitoring aimed at maximizing benefits to wildlife and wildlife habitat.

4.6.4 Wetland and Beaver Habitat Assessment

The Wetland and Beaver Habitat Assessment project will model suitable beaver (*Castor canadensis*) and wetland habitat in the Gila National Forest. The project proponent, WildEarth Guardians, is currently conducting a statewide beaver and wetland assessment on a broad scale. This project would conduct the next phase of the statewide assessment by continuing an on-the-ground, field verification assessment in a smaller region of New Mexico. The intent of this project is to eventually develop a plan for restoration and beaver management in the Gila National Forest that will provide benefits to multiple wildlife resources and services in perpetuity.

Similar to the EcoMetrix Ecosystem Service Model, this project assists in quantifying and enhancing environmental benefits supported by NRDAR funding; however, it does not provide an overall environmental benefit as a standalone project. To pass the screening criteria, projects must provide an overall environmental benefit.

5. Affected Environment

This chapter describes the environmental conditions in the region where the preferred restoration alternatives would be implemented. It provides the background information needed to assess the potential impacts of these preferred restoration alternatives on the environment, as required by NEPA. It also describes the ecological environment (Section 5.1), the socioeconomic environment (Section 5.2), and the cultural and paleontological environment (Section 5.3) that could be affected by restoration activities.

The main sources of information for this chapter (listed in Table 5.1) were the biological and socioeconomic analyses provided in existing regional planning documents.

Table 5.1. Selected sources with detailed information on the biological and socioeconomic features of the region

Title	Citation and link
Mimbres Resource Management Plan	BLM, 1993 http://www.blm.gov/nm/st/en/fo/Las_Cruces_District_Office/mimbres_rmp.html
Mimbres Watershed Restoration Action Strategy (WRAS)	Meridian Institute et al., 2006 http://www.nmenv.state.nm.us/swqb/wps/WRAS/MimbresWRAS.pdf
Comprehensive Wildlife Conservation Strategy for New Mexico	NMDGF, 2006 http://www.wildlife.state.nm.us/conservation/comp_wildlife_cons_strategy/cwcs
Gila National Forest Plan	USFS, 1986 http://www.fs.usda.gov/Internet/FSE_DOCUMENTS
Gila River: Watershed Improvement Plan and Strategies	Soles, 2009 http://www.nmenv.state.nm.us/swqb/Gila

5.1 Ecological Environment

The restoration projects that together form the preferred restoration alternative would be implemented in southwestern New Mexico's Gila and Mimbres River watersheds, primarily in Grant County. The elevation of Grant County ranges from approximately 1,219 meters (4,000 feet) above sea level in the desert in the southern portion of the county to approximately 3,048 meters (10,000 feet) above sea level in the mountains. In Grant County, average high temperatures are 10.4°C (50.7°F) in January and 30.7°C (87.3°F) in July, while average low temperatures are 4.4°C (24.0°F) in January and 15.3°C (59.6°F) in July. The southwestern portion of the state receives some of the lowest levels of precipitation in New Mexico. In Grant County, precipitation ranges from an average annual low of 173 millimeters (6.8 inches) to an

average annual high of 632 millimeters (24.9 inches), with an annual average of 409 millimeters (16.1 inches). Most of the precipitation occurs during the summer monsoon season, from late July through early September (Town of Silver City, 2013). Average annual snowfall in Grant County is 300 millimeters (11.8 inches) and falls primarily from December through February.

5.1.1 Ecoregions

The main ecoregions (Wiken et al., 2011)[7] where proposed restoration projects would be implemented are the Arizona/New Mexico Mountain and the Chihuahuan Desert ecoregions (Figure 5.1). The Arizona/New Mexico Mountain ecoregion extends from northwestern Arizona into central and southern New Mexico. The southern reach of this ecoregion falls in the upper half of Grant County and the Gila River Watershed; the Gila National Forest also lies within this ecoregion. Vegetation associated with drier, warmer environments is found in this ecoregion.

In the lower elevations, chaparral is common, and middle elevations are primarily covered in pinyon-juniper and oakwoods. At higher elevations there are mostly open to dense ponderosa pine (*Pinus ponderosa*) forests with some Douglas fir (*Pseudotsuga menziesii*), southwestern white pine (*Pinus strobiformis*), white fir (*Abies concolor*), and aspen (*Populus tremuloides*). There are many ephemeral, intermittent streams in this ecoregion, along with some perennial streams, with different levels of incline. This ecoregion provides water resources to adjacent lower-elevation regions. Common wildlife in this ecoregion includes mule deer (*Odocoileus hemionus*), bighorn sheep, mountain lion, bobcat (*Lynx rufus*), ringtail cat (*Bassariscus astutus*), kit fox (*Vulpes macrotis*), black-tailed jackrabbit (*Lepus californicus*), tassel-eared squirrel (*Sciurus aberti*), Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), canyon wren (*Catherpes mexicanus*), and Gila trout (*Oncorhynchus gilae*). Land use is primarily forestry, mining, recreation, woodland grazing, and some ranching and rangeland (Wiken et al., 2011).

The Chihuahuan Desert ecoregion begins in north-central New Mexico and extends through west Texas and south into Mexico more than 805 kilometers (500 miles). The northern reach of this ecoregion falls in the lower half of Grant County, including Silver City. In addition, most of the Mimbres River Watershed is part of this ecoregion (Figure 5.1). The vegetation of this ecoregion is primarily desert grasslands and arid shrublands. At higher elevations, there are islands of oak (*Quercus* spp.), juniper, and pinyon pine woodlands. Streams are primarily ephemeral, and a few springs occur. This ecoregion has great diversity and endemic species adapted to desert conditions. Representative species in this ecoregion include desert bighorn sheep (*Ovis canadensis mexicana*), mule deer, pronghorn (*Antilocapra americana*), coyote (*Canis latrans*),

[7] Ecological regions (ecoregions) of North America are defined according to a variety of biological, physical, and human factors, including location, climate, vegetation, hydrology, terrain, wildlife, and land use/human activities. For additional information about the ecoregions, see Wiken et al., 2011.

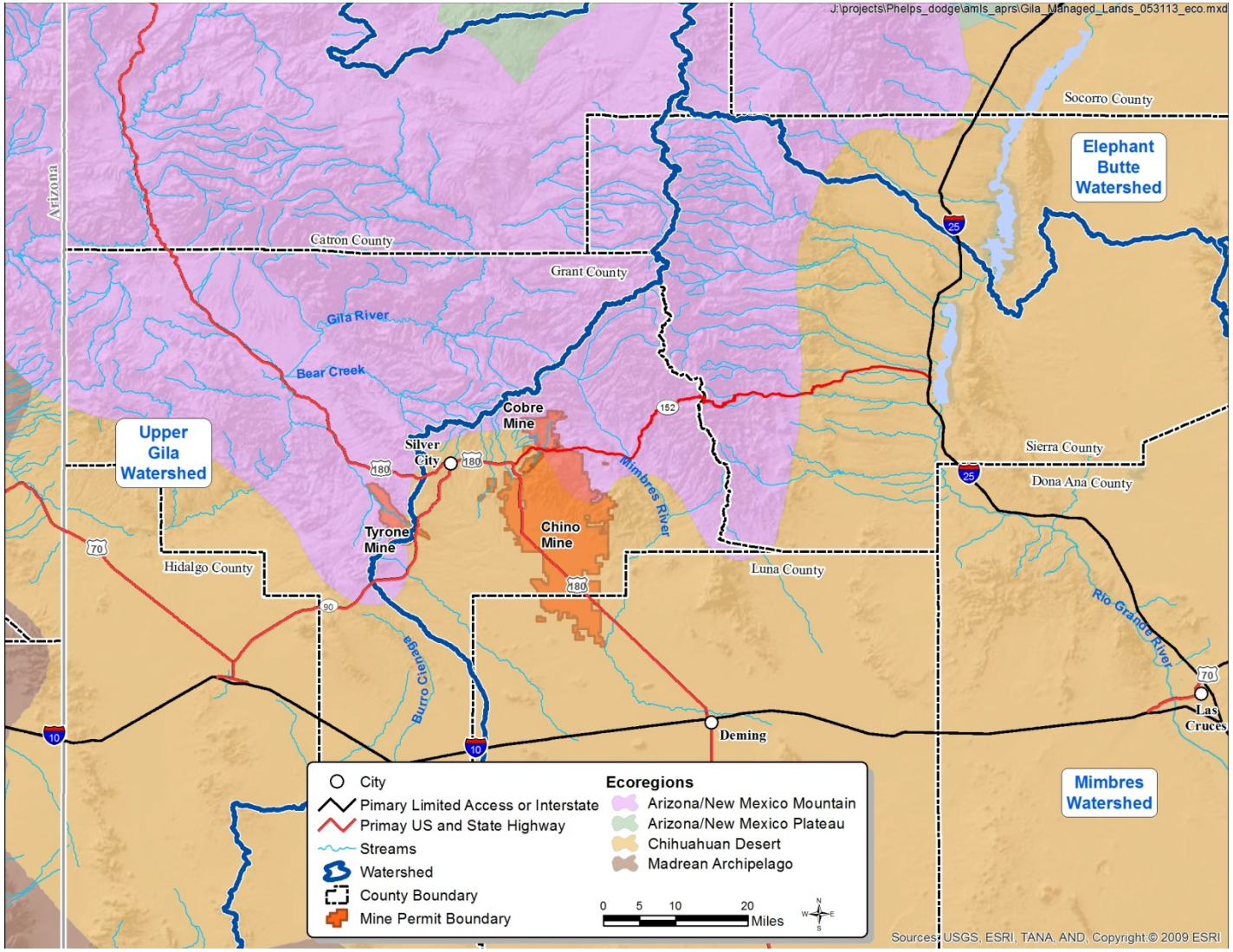


Figure 5.1. Ecoregions of the affected environment (modified after Wiken et al., 2011).

bobcat, kit fox, javelina, jackrabbit (*Lepus*), Montezuma quail (*Cyrtonyx montezumae*), black-throated sparrow (*Amphispiza bilineata*), and Texas horned lizard (*Phrynosoma cornutum*). (See the list of additional Chihuahuan Desert bird species in Section 5.2, New Mexico State Parks.)

Land use is primarily ranching, livestock grazing, agriculture, and mining (Wiken et al., 2011).

5.1.2 Rivers and riparian habitat

In the watersheds where proposed restoration projects would be implemented, the major rivers are the Gila and the Mimbres. The Gila River is the only major free-flowing river in New Mexico, and its natural flow regime supports a unique array of biological diversity, both on land and in water. The Mimbres River is a closed-basin desert river that terminates approximately 16 kilometers (10 miles) east of Deming, New Mexico (NMWRRI, 2000), and most of its perennial waters are within Grant County (NMDGF, 2006). The Mimbres River supports the country's only remaining population of the Chihuahua chub and one of the largest remaining populations of Chiricahua leopard frogs.

Along these rivers and their tributaries, riparian habitat can be found. Riparian habitat is the interface between land and water and can occur where water is perennial, intermittent, or ephemeral. These riparian ecosystems support a greater diversity of plants and animals than upland ecosystems, and many wildlife species in the region depend on riparian habitat at some time during their lifecycles. In particular, migratory and waterfowl bird species depend on riparian habitat for food and resting places along their migration routes. In the Gila and Mimbres River watersheds, riparian habitat includes not only the montane and floodplain habitats found along the rivers and their tributaries, but also reservoir and pond habitats (including stock ponds) and cienaga and spring habitats.

Riparian forests support a variety of species: in higher elevations, riparian forests support blue spruce (*Picea pungens*), Douglas fir, and aspen, while lower elevations support Arizona sycamore, Fremont cottonwood, willows (*Salix* spp.), and mesquite. This diverse vegetation provides vital habitat for wildlife species. In New Mexico, riparian habitat is relatively rare. Over the last century, riparian habitat has largely been altered, degraded, or lost due to a variety of impacts, including overgrazing by livestock, habitat modification, water withdrawal (i.e., groundwater pumping and draining), and invasive species. An estimated 85–95% of Arizona and New Mexico riparian forests have been lost (Noss et al., 1995; Mac et al., 1998). Despite the scarcity of riparian habitat, this remains an important habitat type for wildlife, particularly birds (NMDGF, 2006).

There are several small reservoirs (e.g., the Snow, Roberts, Wall, Bill Evans, and Bear Canyon reservoirs) and a number of ponds (e.g., the Ben Lilly and stock ponds) throughout the Gila and Mimbres River watersheds. These riparian habitats regulate stream flows and support fish, bird, and other wildlife species. Currently, these reservoirs support nonnative fish species, including

catfish (*Ictalurus punctatus*) and rainbow trout (*Oncorhynchus mykiss*). There may be opportunities to reintroduce native fish and amphibians, such as the Chiricahua leopard frog, to these habitats, if nonnative species can be removed.

Cienaga and spring habitats occur when geomorphology forces groundwater to the surface over a large area. Lower groundwater tables, largely a result of groundwater pumping, have decreased the extent of cienaga and spring habitats throughout the region (Hendrickson and Minckley, 1984). Those that exist provide islands of riparian habitat that are beneficial as resting and watering spots for migratory wildlife species, particularly birds.

5.1.3 Threatened and endangered species

The Gila and Mimbres River watersheds host a high diversity of SGCN. In the CWCS, SGCN are defined as "species that are indicative of the diversity and health of the state's wildlife that are associated with key habitats, including low and declining populations, and species of high recreational, economic, or charismatic value" (NMDGF, 2006, p. 8). The Gila River Watershed hosts 49 SGCN, excluding arthropods other than crustaceans. Most of these species (28 species; 57%) are classified as vulnerable, imperiled, critically imperiled, or possibly extirpated, both statewide and nationally. Nine species (18%) are federally listed as threatened or endangered, and 23 species (47%) are state-listed as threatened or endangered. The Mimbres River Watershed hosts 37 SGCN, excluding arthropods other than crustaceans, and 17 of these species (46%) are classified as vulnerable, imperiled, critically imperiled, or possibly extirpated, both statewide and nationally. In addition, five species (14%) are federally listed as threatened or endangered and 12 species (32%) are state-listed as threatened or endangered (see Table 5.2).

5.2 Socioeconomic Environment

Most of the restoration projects would be implemented in Grant County. The population of the county is 29,514 (U.S. Census Bureau, 2010), 10,315 of whom live in Silver City. Grant County has a median household income of $36,591. Of the 12,387 civilian employed population over 16 years of age in the county, 4,142 people (33.4%) are in the educational services, health care, or social assistance industries; 1,547 (12.5%) are in the agriculture, forestry, fishing and hunting, or mining industries; and 1,310 (10.6%) are in the retail trade industry (U.S. Census Bureau, 2010).

Land ownership in the region is a mix of private and public lands (Figure 5.2). Public land includes the Gila National Forest, BLM lands, New Mexico State Lands, and New Mexico State Parks. Land in this region is primarily managed for agriculture (both irrigated pasture and rangeland grazing), silviculture, recreation, mining, and municipal activities. Crop production is mainly grasses, small grains, alfalfa, and hay, and the main livestock production is cow/calf operations (Meridian Institute et al., 2006).

Table 5.2. SGCN in the Gila and Mimbres River watersheds in New Mexico

Common name (*scientific name*)	Watershed (Gila or Mimbres)	State codes[a]	Federal codes[a]	USFWS status[b]	State status[c]
Birds					
Abert's towhee (*Melozone aberti*)	Gila	Imperiled	Vulnerable		Listed threatened
American bittern (*Botaurus lentiginosus*)	Gila, Mimbres	Vulnerable	Apparently secure		
American peregrine falcon (*Falco peregrinus anatum*)	Gila, Mimbres	Vulnerable	Apparently secure	Species of concern	Listed threatened
Bald eagle (*Haliaeetus leucocephalus*)	Gila, Mimbres	Vulnerable	Apparently secure	Protected by Eagle Act[d]	Listed threatened
Bank swallow (*Riparia riparia)*	Gila, Mimbres	Vulnerable	Secure		
Bell's vireo (*Vireo bellii*)	Gila, Mimbres	Imperiled	Apparently secure	Species of concern	Listed threatened
Common black-hawk (*Buteogallus anthracinus*)	Gila, Mimbres	Imperiled	Vulnerable	Species of concern	Listed threatened
Eared grebe (*Podiceps nigricollis*)	Gila, Mimbres	Vulnerable	Secure		
Gila woodpecker (*Melanerpes uropygialis*)	Gila	Vulnerable	Apparently secure		Listed threatened
Lucy's warbler (*Oreothlypis luciae)*	Gila, Mimbres	Apparently secure	Apparently secure		
Northern harrier (*Circus cyaneus*)	Gila, Mimbres	Vulnerable	Vulnerable		
Northern pintail (*Anas acuta*)	Gila, Mimbres	Imperiled	Apparently secure		
Osprey (*Pandion haliaetus*)	Gila, Mimbres	Imperiled	Apparently secure		
Sandhill crane (*Grus canadensis*)	Gila, Mimbres	Vulnerable	Secure		
Southwestern willow flycatcher *(Empidonax traillii extimus)*	Gila, Mimbres	Imperiled	Apparently secure	Listed endangered	Listed endangered
White-faced ibis (*Plegadis chihi*)	Gila, Mimbres	Imperiled	Secure		
Yellow warbler (*Setophaga petechia)*	Gila, Mimbres	Vulnerable	Secure		

Table 5.2. SGCN in the Gila and Mimbres River watersheds in New Mexico (cont.)

Common name (*scientific name*)	Watershed (Gila or Mimbres)	State codes[a]	Federal codes[a]	USFWS status[b]	State status[c]
Fish					
Chihuahua chub *(Gila nigrescens)*	Mimbres	Critically imperiled	Critically imperiled	Listed threatened	Listed endangered
Colorado pikeminnow (*Ptychocheilus lucius*)	Gila	Critically imperiled	Critically imperiled	Listed endangered	Listed endangered
Desert sucker (*Catostomus clarki*)	Gila	Imperiled	Imperiled	Species of concern	Sensitive species
Gila chub *(Gila intermedia)*	Gila	Critically imperiled	Critically imperiled	Listed endangered	Listed endangered
Gila topminnow *(Poeciliopsis occidentalis)*	Gila	Imperiled	Imperiled	Listed endangered	Listed threatened
Gila trout *(Oncorhynchus gilae*)	Gila, Mimbres	Critically imperiled	Critically imperiled	Listed threatened	Listed threatened
Headwater chub *(Gila nigra)*	Gila	Critically imperiled	Imperiled	Listed candidate	Listed endangered
Loach minnow *(Tiaroga cobitis)*	Gila	Critically imperiled	Critically imperiled	Listed endangered	Listed endangered
Razorback sucker (*Xyrauchen texanus*)	Gila	Critically imperiled	Critically imperiled	Listed endangered	Sensitive species
Rio Grande sucker (*Catostomus plebeius*)	Mimbres	Imperiled	Imperiled	Species of concern	
Roundtail chub *(Gila robusta)*	Gila	Critically imperiled	Imperiled	Listed candidate	Listed endangered
Sonora sucker (*Catostomus insignis*)	Gila	Imperiled	Imperiled	Species of concern	Sensitive species
Spikedace *(Meda fulgida)*	Gila	Critically imperiled	Critically imperiled	Listed endangered	Listed endangered

Table 5.2. SGCN in the Gila and Mimbres River watersheds in New Mexico (cont.)

Common name (*scientific name*)	Watershed (Gila or Mimbres)	State codes[a]	Federal codes[a]	USFWS status[b]	State status[c]
Mammals					
Allen's big-eared bat (*Idionycteris phyllotis*)	Gila, Mimbres	Imperiled	Vulnerable	Species of concern	Sensitive species
American beaver (*Castor canadensis*)	Gila, Mimbres	Secure	Secure		
Arizona shrew (*Sorex arizonae*)	Gila, Mimbres	Critically imperiled	Imperiled	Species of concern	Listed endangered
Desert bighorn sheep (*Ovis canadensis mexicana*)	Gila	Imperiled	Vulnerable		Listed threatened
New Mexico meadow jumping mouse (*Zapus hudsonius luteus*)	Gila, Mimbres	Imperiled	Imperiled	Listed candidate	Listed endangered
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	Gila, Mimbres	Critically imperiled	Vulnerable		
Spotted bat (*Euderma maculatum*)	Gila, Mimbres	Vulnerable	Vulnerable		Listed threatened
Western red bat (*Lasiurus blossevillii*)	Gila, Mimbres	Imperiled	Apparently secure	Species of concern	
Amphibians					
Arizona toad (*Anaxyrus microscaphus)*	Gila, Mimbres	Vulnerable	Vulnerable		Sensitive species
Chiricahua leopard frog *(Lithobates chiricahuensis)*	Gila, Mimbres	Critically imperiled	Critically imperiled	Listed threatened	Sensitive species
Lowland leopard frog (*Lithobates yavapaiensis*)	Gila, Mimbres	Possibly extirpated	Imperiled	Species of concern	Listed endangered
Northern leopard frog (*Lithobates pipiens*)	Gila, Mimbres	Imperiled	Vulnerable		
Plains leopard frog (*Lithobates blairi*)	Mimbres	Vulnerable	Vulnerable		
Tiger salamander (*Ambystoma tigrinum*)	Gila, Mimbres	Secure	Secure		
Western chorus frog (*Pseudacris triseriata*)	Gila, Mimbres	Secure	Secure		

Table 5.2. SGCN in the Gila and Mimbres River watersheds in New Mexico (cont.)

Common name (*scientific name*)	Watershed (Gila or Mimbres)	State codes[a]	Federal codes[a]	USFWS status[b]	State status[c]
Reptiles					
Mexican garter snake (*Thamnophis eques*)	Gila, Mimbres	Possibly extirpated	Imperiled	Listed candidate	Listed endangered
Narrowhead garter snake (*Thamnophis rufipunctatus*)	Gila, Mimbres	Imperiled	Imperiled	Species of concern	Listed threatened
Sonoran mud turtle (*Kinosternon sonoriense*)	Gila, Mimbres	Apparently secure	Apparently secure		
Molluscs					
Blunt ambersnail (*Oxyloma retusum*)	Gila	Critically imperiled	Secure		
Gila pyrg snail (*Pyrgulopsis gilae*)	Gila	Imperiled	Imperiled		Listed threatened
New Mexico hotspring pyrg snail (*Pyrgulopsis thermalis*)	Gila	Critically imperiled	Critically imperiled		Listed threatened
Snail (*Pyrgulopsis* spp.)	Mimbres				
Crustacean					
Sideswimmers/scuds (*Hyalella* spp.)	Gila, Mimbres	Secure	Secure		

[a] These conservation codes are from NatureServe:

Possibly extirpated: Species or community occurred historically in the nation or state/province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20–40 years.
Critically imperiled: Critically imperiled in the nation or state/province because of extreme rarity (often five or fewer occurrences) or because of some factor(s) such as very steep declines, making it especially vulnerable to extirpation from the nation or state/province.
Imperiled: Imperiled in the nation or state/province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors, making it very vulnerable to extirpation from the nation or state/province.
Vulnerable: Vulnerable in the nation or state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
Apparently secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors.
Secure: Common, widespread, and abundant in the nation or state/province.

Table 5.2. SGCN in the Gila and Mimbres River watersheds in New Mexico (cont.)

[b.] The definitions of USFWS status codes:

Species of concern: Taxa for which further biological research and field study are needed to resolve their conservation status or are considered sensitive, rare, or declining on lists maintained by natural heritage programs, state wildlife agencies, other federal agencies, or professional/academic scientific societies.
Listed candidate: Candidate species (taxa for which the USFWS has sufficient information to propose that they be added to list of endangered and threatened species, but the listing action has been precluded by other higher priority listing activities).
Listed threatened: Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
Listed endangered: Any species which is in danger of extinction throughout all or a significant portion of its range.

[c.] The definitions of state status:

Sensitive species: Taxa which, in the opinion of a qualified NMDGF biologist, deserve special consideration in management and planning, and are not listed as threatened or endangered by the State of New Mexico.
Listed threatened: Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range in New Mexico.
Listed endangered: Any species whose prospects of survival or recruitment within the state are in jeopardy due to any of the following factors: (1) the present or threatened destruction, modification, or curtailment of its habitat; (2) overutilization for scientific, commercial, or sporting purposes; (3) the effect of disease or predation; (4) other natural or man-made factors affecting its prospects of survival or recruitment within the state; or (5) any combination of the foregoing factors.

[d.] Bald and Golden Eagle Act (16 USC § 668).

Sources: NMDGF, 2006; BISON-M Database, 2012; USFWS, Undated; state and federal codes are based on NatureServe conservation status codes and adjusted, as needed, by NMDGF experts; federal status codes are based off of USFWS New Mexico Ecological Services Field Office; and state status codes are based off of the NMDGF-maintained Biota Information System of New Mexico database.

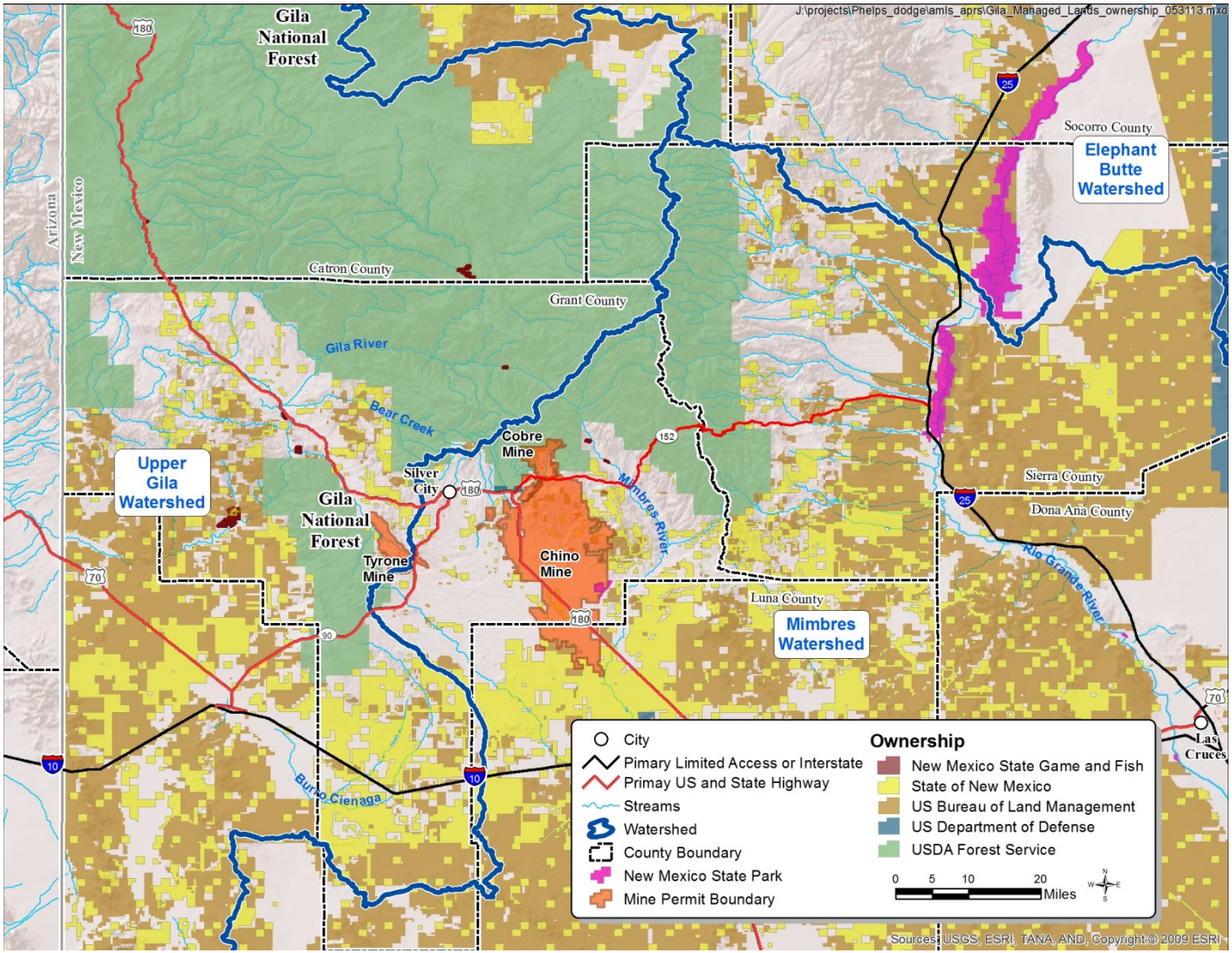


Figure 5.2. Land ownership in the affected environment.

Gila National Forest

The Gila National Forest, established in 1905, covers approximately 1,097,000 hectares (2,710,700 acres) of public land, making it the sixth largest national forest in the United States. Part of the Gila National Forest, the Gila Wilderness, was established in 1924 as the first designated wilderness area in the country. The headwaters for the Gila, Mimbres, and San Francisco rivers are in the Gila National Forest. Terrain ranges from mountain ecosystems with deep canyons to semi-desert grasslands.

BLM

BLM manages public land in the region for ecological and human uses, including leasing land for livestock grazing and mineral extraction, and improving land for wildlife habitat. Within this region, BLM has three ACECs, which can be designated on federal land when special management attention is required. An ACEC is defined in the Federal Land Policy and Management Act as:

> … areas within the public land where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural system or process, or to protect life and safety from natural hazards [43 USC §§ 1601.0-5(a)].

The three ACECs established in the area where restoration activities may be implemented include:

1. The Bear Creek ACEC is approximately 600 hectares (1,480 acres) and is located on BLM land in central Grant County, approximately 24 kilometers (15 miles) northwest of Silver City, New Mexico. This ACEC is a riparian area that includes a perennial stream with a rare Arizona sycamore/Fremont cottonwood plant community. The Bear Creek ACEC is managed to protect riparian values.

2. The Gila Middle Box ACEC is approximately 340 hectares (840 acres) and is located in southwestern Grant County, about 43 kilometers (27 miles) north of Lordsburg and 32 kilometers (20 miles) west of Silver City, along the Gila River. The area is a narrow canyon with a rich riparian community at the canyon bottom. It supports high species diversity, including a diverse bird community. The Gila Middle Box ACEC is managed for special status species (e.g., southwestern willow flycatcher, loach minnow, and spikedace), riparian habitat, and recreational values.

3. The Gila Lower Box ACEC is 2,626 hectares (6,490 acres) and is located in northwest Hidalgo County, approximately 48 kilometers (30 miles) north of Lordsburg, New Mexico, also on BLM land. This riparian area along the Gila River includes stands of

Arizona sycamore, Fremont cottonwood, willow, and associated riparian vegetation. The area provides habitat for several state-listed and federal candidate species. The Gila Lower Box ACEC is managed to protect riparian values.

New Mexico State Land

The New Mexico State Land Office is responsible for managing approximately 3.6 million surface hectares (9 million surface acres) of trust land and 5 million subsurface hectares (13 million subsurface acres) of trust land (NM State Land Office, 2012). These lands are managed for oil and gas, mineral mining, livestock grazing, open space, and commercial and residential development uses. State trust lands are administered to generate the highest possible level of sustainable revenue for public schools, public institutions of higher learning, and other public institutions (NM State Land Office, 2012). Much of New Mexico's trust lands are scattered throughout the state, although there are a few large contiguous parcels. Sizable tracks of state trust land are located in the Gila and Mimbres River watersheds (Meridian Institute et al., 2006) (Figure 5.2). Many of the preferred projects include leased New Mexico State Land Office lands.

New Mexico State Parks

The mission of New Mexico State Parks is to "protect and enhance natural and cultural resources, provide first-class recreational and education facilities and opportunities, and promote public safety to benefit and enrich the lives of visitors" (NM EMNRD, 2000, p. 5). Currently, the City of Rocks State Park is the only state park in the region where restoration activities would be implemented; however, one additional park, Broad Canyon State Park, is in the process of being established as a state park.

The City of Rocks State Park was established on March 20, 1953 and is located near Deming, New Mexico. The additional transfer of 289 hectares (714 acres) of grasslands from FMI to the City of Rocks State Park increases the park to 526 hectares (1,300 acres). It is primarily a Chihuahuan semi-desert grasslands ecosystem. Wildlife includes common mammals [e.g., chipmunks (*Neotamias* spp.), kangaroo mice (*Dipodomys* spp.), deer, coyote], red-tailed hawk, northern harrier, golden eagle (*Aquila chrysaetos*), great horned owl (*Bubo virginianus*), turkey vultures, common raven (*Corvus corax*), purple finch (*Carpodacus purpureus*), canyon towhee (*Melozone fusca*), southwestern willow flycatcher, cactus wren (*Campylorhynchus brunneicapillus*) and canyon wren, mockingbirds (*Mimus polyglottos*), curve-billed thrashers (*Toxostoma curvirostre*), gambel's quail (*Callipepla gambelii*), scaled quail, rufous hummingbird (*Selasphorus rufus*) and black-chinned hummingbirds (*Archilochus alexandri*), the greater roadrunner (*Geococcyx californianus*), and many other songbirds. The dominant plant species are emory and black oak trees (*Quercus emoryi* and *velutina*), soaptree yucca (*Yucca elata*), lechuguilla agave (indigenous to the Chihuahuan Desert; *Agave lechuguilla*), barrel cactus

(*Ferrocactus cylindraceus*), cholla (*Cylindropuntia* spp.), prickly pear (*Opuntia* spp.), creosote bush, and a wide variety of grasses and wildflowers.

Broad Canyon State Park, a former ranch along a stretch of the Rio Grande River, is expected to become a New Mexico State Park in the near future. Protection of these 317 hectares (783 acres) at Broad Canyon Ranch would protect cottonwood and willow riparian habitat, including habitat for the endangered southwestern willow flycatcher (The Trust for Public Land, 2013). Swan Pond, which is the location of a proposed restoration project, is located within the future Broad Canyon State Park.

Other protected land

Along the Gila River, TNC manages the Gila Riparian Preserve, which protects 486 hectares (1,200 acres) of riparian habitat along the river and provides habitat for neotropical migratory songbirds, particularly the southwestern willow flycatcher. Part of the Gila River Preserve includes the 32-hectare (80-acre) Gila River Farm, an agricultural farm that has been converted to an ecologically rich floodplain habitat of wet meadows, wetlands, semi-riparian woodlands, floodplain grasslands, and mesquite bosques. The Lichty Ecological Research Center, which has a goal of advancing understanding of the Gila and Mimbres River watersheds, is located on the Gila River Farm. TNC was instrumental in protecting an additional 227 hectares (560 acres) in the Gila Lower Box, which is now managed by BLM.

Along the Mimbres River, TNC owns and manages two riparian reserves along its main channel. The Mimbres River Preserve, established in 1994, covers 243 hectares (600 acres) of riparian habitat along an 8-kilometer (5-mile) stretch of the river. This preserve was established to conserve river habitat for the endangered Chihuahua chub and Chiricahua leopard frog. Farther downstream where perennial flows persist, additional parcels were added to create the Lower Mimbres River Preserve, which provides additional river habitat for birds and wildlife.

5.3 Cultural and Paleontological Environment

Several distinct cultural groups have inhabited the region where restoration activities would be implemented. The earliest believed occupants of the region were there during the Paleo-Indian period, from about 9500 BCE (Before the Common Era) to 4000 BCE. The “Archaic” or “Desert Archaic” cultures are believed to have occupied the region from approximately 7000 BCE to 100 CE. The Mogollon cultural group occupied the region from approximately 200 CE to 1400 CE, and archeological sites from the three Mogollon periods – Early Pithouse Period, Late Pithouse Period, and Pueblo Period – are known to exist within the region. Lastly, the Apache are known to have occupied southern New Mexico from approximately 1650 CE to 1890 CE; however, archeological evidence is rare (BLM, 1993).

In the Gila National Forest and near the headwaters of the Gila River is the National Park Services' Gila Cliff Dwellings National Monument. This monument was established in 1907 to protect the architecture and artifacts of the Puebloan people who lived in the Mogollon area more than 700 years ago. This site is managed by the USFS (Russell, 1992).

Paleontological resources occur throughout the region. These include vertebrate fossils and trace fossils from the Paleozoic, Cretaceous, early Tertiary, and Pliocene and Quaternary ages. There are also vertebrate fossil faunas from Permian amphibians and early reptiles (240 to 280 million years ago), Cretaceous dinosaurs (65 to 80 million years ago), primitive mammals from the Pliocene Santa Fe group (3 to 15 million years ago), and Pleistocene mammals (12 thousand to 3 million years ago) (BLM, 1993).

6. Environmental and Socioeconomic Impacts of Restoration Alternatives

The environmental and socioeconomic consequences associated with each individual restoration project in the preferred restoration alternative were identified in Chapter 4. This chapter provides a description of the cumulative impacts of the preferred alternative, and compares these impacts to those of the no-action alternative. In addition, this chapter describes the federal, state, and local laws, regulations, and policies that may affect completion of the restoration projects. All project proponents that receive NRDAR funding will be responsible for obtaining necessary permits and complying with relevant local and federal laws, policies, and ordinances.

Over the long term, the restoration projects that together form the preferred restoration alternative identified in this Final RP/EA would provide positive environmental and socioeconomic benefits for the general vicinity of Silver City, New Mexico. The analysis of impacts assumes that all of the Tier 1 and Tier 2 restoration projects would be implemented. If funding is insufficient for implementation of any Tier 1 or Tier 2 projects, then the cumulative impacts of restoration (both positive and negative) would be lessened. The analysis of the impacts of Tier 3 projects will occur at a later date should these projects be considered for implementation.

6.1 Environmental Impacts of the Preferred Alternative

Overall, the cumulative environmental impacts of the preferred alternative would be positive because natural resources would benefit from the preferred restoration actions. The impacts on specific categories of environmental resources are described below.

6.1.1 Water resources

Over the long term, the preferred alternative would have a net positive impact on water resources in the Gila River, Mimbres River, Bear Creek, surface water portions of the Burro Cienaga, and the Rio Grande River. During implementation of restoration actions, including erosion control, riparian revegetation, and wetland and surface pond enhancement projects, there would likely be temporary increases in sediment transport and in the turbidity level of surface water caused by heavy equipment, excavation, movement of large materials such as logs and rocks, and fence installation. These impacts would be temporary because the restoration activities would ultimately stabilize and revegetate stream banks, lead to long-term decreases in erosion from upland and riparian areas, and lead to improvements in water quality.

Temporary impacts would be minimized by appropriately adhering to all federal, state, and local laws, regulations, and policies and following Best Management Practices for erosion control work. Preferred restoration project may require compliance with the CWA. The CWA is intended to protect surface water quality and regulate the discharge of pollutants into waters of the United States. Preferred restoration projects that are subject to the CWA must obtain any necessary permits for proposed restoration actions through the U.S. Army Corps of Engineers. Restoration projects that move material in or out of waterways and wetlands, or result in alterations to a stream channel will typically require CWA Section 404 permits. Project proponents will be required to obtain the appropriate permits before restoration work begins.

If sufficient water is diverted or impounded by a project, consultation under the Fish and Wildlife Coordination Act, 16 USC §661 *et seq.*, may be necessary as part of the Section 404 permitting process. This act requires that federal agencies consult with the USFWS and state wildlife agencies to minimize and mitigate the adverse impacts of stream modifications on fish and wildlife habitat and resources.

6.1.2 Vegetation resources

The restoration projects in the preferred alternative would enhance vegetation resources in riparian, floodplain, wetland, and upland habitats. The habitat protection and improvement projects would ensure that protected habitats (riparian and upland) are not at risk from further development; provide opportunities to reduce or eliminate grazing pressure in riparian and some degraded upland habitats; and restore and improve native riparian vegetation by removing invasive species, planting native riparian species, or providing conditions that support the natural regeneration of native species. Erosion control projects would restore hydrologic functions to degraded riparian and wetland habitats, allowing riparian vegetation to become reestablished in incised areas that are currently too dry to support the historical wetland and riparian communities. Riparian, pond, and stock pond restoration projects would also provide opportunities for removing invasive species, and would restore and increase the total area of native riparian and wetland habitats in areas that are currently degraded.

6.1.3 Fish and wildlife resources

The restoration projects in the preferred alternative would enhance fish and wildlife resources in the Gila River, Mimbres River, Bear Creek, surface water sections of the Burro Cienaga, and the Rio Grande River. All projects in the preferred alternative are focused on benefiting wildlife, specifically migratory birds and waterfowl. These projects would increase the area and quality of riparian and wetland habitats used by birds and other wildlife, and would improve or create additional areas of clean surface water that would be used by birds and other wildlife.

Specifically, the Double E Ranch Habitat Protection and Improvement project (see Chapter 4, Section 4.3.4) already provides designated critical habitat for the endangered loach minnow and may also provide habitat for the threatened Chiricahua leopard frog. Preserving this property would not only prevent development and grazing from affecting the existing habitat, but provide opportunities to improve it. The Upper Bear Creek Habitat Protection and Improvement project, the Redrock Property Habitat Protection and Improvement project, and the Mimbres River Wildlife and Habitat Restoration project would also improve or create potential habitat for loach minnow and Chiricahua leopard frog populations. In Chapter 4, Sections 4.3–4.4 present detailed descriptions of each of these projects.

6.1.4 Special status species

State listed species in the project areas include 26 birds, 7 fishes, 3 reptiles, 2 amphibians, 2 springsnails, and 1 mammal (NMDGF, 2013).

Federally listed species found in the area where preferred restoration projects are located include several bird species (e.g., yellow-billed cuckoo and the southwestern willow flycatcher), the endangered loach minnow and spikedace, and the threatened Chiricahua leopard frog. In general, disturbances resulting from construction activities at restoration sites would be short in duration (i.e., likely months to three years). Overall, the projects would improve not only habitat for threatened and endangered species, but would also provide long-term benefits to these species.

The Endangered Species Act (ESA) of 1973, as amended, 16 USC §§ 1531 et seq., was designed to protect species that are threatened with extinction. The preferred restoration projects will require compliance with the ESA through consultation with the USFWS. The ESA provides for the conservation of ecosystems upon which these species depend, and provides a program for the identification and conservation of these species. Federal agencies are required to ensure that no actions are likely to jeopardize the continued existence of federally listed species. Where relevant, project proponents may be required to consult with the Endangered Species Program of the USFWS before project implementation.

The USFS has a list of sensitive species requiring additional management measures (USFS, 2007), and BLM addresses special status species in their resource management plans (BLM, 1993).

6.1.5 Air and noise

The restoration projects in the preferred alternative would be accomplished mostly with low-impact techniques. Heavy equipment may be used for some components of the restoration projects, which may generate local air pollution and noise pollution that could disturb wildlife

temporarily. Because the work would be short-term and occur during daylight in limited locations, wildlife would likely be able to avoid significant noise and air pollution impacts.

6.1.6 Geology and mineral resources

The preferred alternative would have no negative impact on geology or mineral resources. The preferred restoration projects would not result in any changes to mining activity in the area or to the use of mineral resources.

6.1.7 Soil resources

The preferred alternative would have a positive impact on soils because many of the projects would result in decreased erosion and increased soil stability. Specifically, the erosion control projects and riparian revegetation projects would improve soil stability and soil management.

6.2 Cultural and Socioeconomic Impacts of the Preferred Alternative

Overall, the cumulative cultural and socioeconomic impacts of the preferred alternative would be positive because the human population in the area affected by the preferred alternative would benefit from the preferred restoration actions. The impacts on specific categories of cultural and socioeconomic considerations are described below.

6.2.1 Lands and access

The preferred restoration projects that make up the preferred alternative would not conflict with county, state, or federal policies for land management. Habitat protection projects would conform to the policies of the agency accepting the land (e.g., NMDGF). Parcels proposed for habitat protection are expected to be in compliance with existing management plans. Although the preferred alternative would have minimal impact on existing land use, some parcels could change from private land to public land with greater public access.

Some opportunities for public access to and recreation in the Gila and Mimbres River watersheds would be limited during the construction associated with the restoration projects. These impacts would occur directly from the presence of construction equipment, as well as indirectly if temporary increases in noise decrease opportunities for or enjoyment of birding, or if temporary increases in turbidity decrease opportunities for or enjoyment of water-based recreation.

Ultimately, however, public access and recreation would benefit from the implementation of the preferred alternative.

6.2.2 Air, noise, and visual resources

Because most of the restoration work is planned for locations away from residential areas, the air, noise, and visual impacts on human populations would be minimal. During the implementation of the projects, however, some temporary negative impacts would occur. As described in Section 6.1.5 under environmental impacts, the use of heavy equipment to implement some of the projects would generate local air and noise pollution and could disrupt public enjoyment of the area. Over the long term, however, protection of land parcels at risk of development would help to maintain the scenic viewshed of the region.

6.2.3 Cultural and paleontological resources

Under Secretarial Order 3206, DOI agencies must consult with Tribes that might have cultural resources that may be affected by projects initiated through DOI. Before ground-disturbing activities occur, the Tribes with interest in the area will be contacted regarding any concerns about restoration implementation.

The restoration projects included in the preferred alternative would have a cumulative positive cultural impact on the region. The region has significant archeological resources, including archeological sites of the Mimbres people. The Double E Ranch Habitat Protection and Improvement project (see Chapter 4, Section 4.3.4) would conserve historically important cultural resources from the Pithouse and Classic Mimbres periods. In addition, the Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration project (see Chapter 4, Section 4.3.2) on Pitchfork Ranch would stabilize a 2.3-hectare (5.8-acre) severely incised Mimbres archeological site that was occupied from 750 CE to 1130 CE. Restoration of this site would preserve and maintain its historic and cultural integrity.

All projects would be required to comply with the National Historic Preservation Act (NHPA) and the Archaeological Resources Protection Act. The NHPA of 1966, as amended, 16 USC §§ 470 et seq., is intended to preserve historical and archaeological sites. Compliance with the NHPA would be undertaken through consultation with the State Historic Preservation Officer for each project. The Archaeological Resources Protection Act of 1979, as amended, 16 USC §§ 470aa–mm, was enacted to secure the protection of archaeological resources and sites on public lands. A permit is required to excavate or remove any such archaeological resource. If such resources are identified in the areas affected by the preferred restoration projects, a permit will be obtained prior to disturbance.

6.2.4 Socioeconomic impacts

The restoration projects included in the preferred alternative would have cumulative positive socioeconomic impacts on the region. Although there may be short-term negative impacts to public access and recreation during construction work in wetland and riparian habitats, these impacts would be outweighed by the long-term benefits to public access and recreation. These long-term benefits would result from the likely acquisition of land that would provide increased recreational access to birding, hiking, and other nature-based recreational opportunities as a result of improved wildlife habitat.

These projects would not only enhance or protect bird and wildlife habitats, but also help to preserve the natural resource base that is at the heart of the area's ranching, tourism, and recreation-based industries and quality of life. Construction projects would have a positive economic effect on the area through potential employment opportunities, either directly or indirectly through the supply chain for materials. Educational opportunities through outdoor classroom learning on the Pitchfork Ranch and TNC preserves, as well as Bat Conservation International workshops and student field trips to restored sites on the Mimbres River, would provide socioeconomic benefits for the communities surrounding these projects.

6.2.5 Environmental justice

The preferred restoration projects would benefit the residents of communities near the Sites, including minority and low-income populations, through improved recreational opportunities and overall economic benefits to the region.

6.3 Impacts of the No-action Alternative

Under the no-action alternative, no habitats would be preserved, restored, or enhanced beyond what agencies and organizations, and private citizens are already doing in the area with limited existing resources. Riparian and aquatic habitats would continue to be degraded throughout the general vicinity of Silver City. Land on the Ancheta Springs Ranch, Davis property, Double E Ranch, Porter property, Redrock Ranch, River Ranch, and Upper Bear Creek property would continue to be at risk for further development or continued livestock grazing; riparian, wetland, and open-water habitats on these properties would remain degraded. Habitat in the Burro Cienaga would remain incised and degraded. Degraded habitat along the Mimbres River, Gila River, and their tributaries would remain degraded. Old stock ponds would continue to be nonfunctional and would provide little or no benefit as wildlife habitat or as a source of water for wildlife and human use. Local populations would not have the benefits of an improved habitat or increased opportunities for wildlife viewing and recreation. Public access to large areas of land

would remain limited, and future generations would not have access to an improved environment.

6.4 Cumulative Impacts of the Preferred Alternative and the No-action Alternative

The cumulative impacts of the preferred alternative and the no-action alternative are summarized in Table 6.1 and discussed below.

Table 6.1. Comparison of impacts by alternative

Category of impact	No-action alternative	Preferred action/preferred alternative
Habitat impacts	No additional habitats preserved, restored, or enhanced. Continued impairment of riparian, wetland, and aquatic resources.	Riparian, wetland, and aquatic habitats would be preserved, restored, and enhanced.
Biological impacts	Continued ongoing adverse impacts to birds, wildlife, and fish.	Improvements to bird, wildlife, and fish habitats.
Cultural and paleontological resource impacts	Cultural resources at the important historic Mimbres site on Pitchfork Ranch may be lost or degraded without restoration.	No deleterious impacts expected.
Environmental justice impacts	No benefits to residents in Silver City and surrounding areas, including minority and low-income populations.	Benefits to Silver City and area residents, including minority and low-income populations, from improved recreational opportunities.
Socioeconomic impacts	No positive indirect economic impacts on the local economy.	Restoration activities would generate short-term economic benefits. Improved recreational opportunities and habitat protection would generate long-term economic benefits, including benefits to the local ecotourism economy.
Indirect impacts	No indirect impacts.	Indirect beneficial impacts expected through improved habitat for birds, wildlife, and fish in the project areas.
Cumulative impacts	Cumulative impacts would be negative because of continued degradation of riparian, wetland, and aquatic habitats under current conditions.	Cumulative impacts expected to be beneficial through long-term benefits to riparian and wetland habitat quality, water quality, birds, wildlife, and fish in and around the project sites.

The Trustees selected the restoration projects included in the preferred alternative to improve natural resources as compensation for natural resource injuries. Thus the cumulative environmental impacts from implementing the restoration projects are expected to be beneficial. Any impacts to air quality or water quality and any noise associated with implementation of the projects are expected to be minimal and short-term. The projects would result in long-term benefits to water quality, vegetation, fish, and wildlife in and around the project sites. There would also be long-term socioeconomic benefits to Silver City and surrounding areas through protection and improvement of natural resources. Any negative impacts on cultural resources caused by restoration actions would be mitigated according to requirements of the New Mexico Historic Preservation Division.

Under the no-action alternative, there would be no positive changes to habitats or wildlife beyond the actions taken by other agencies, organizations, and private citizens with limited funding. Although there would be no short-term impacts associated with project implementation, there would also be no long-term benefits from implementation of the preferred alternative. In short, the public would not be compensated for the injuries to wildlife and wildlife habitat resulting from the release of hazardous substances at the Sites.

7. Public Comments and Trustee Responses

This chapter summarizes the public comments received on the Draft RP/EA and provides the Trustees' responses to those comments. The public comment period for this document was held from January 16, 2013 through March 4, 2013. After the release of the Draft RP/EA, the Trustees held a public meeting on January 30, 2013 in Silver City, New Mexico, with over 25 people in attendance. Topics covered at the public meeting included questions about administrative costs, timelines, matching funds, project implementation, easements, project evaluation, and submission of new projects. The Trustees received 31 written submittals on the Draft RP/EA, many of which made multiple comments and addressed multiple topics.

Before preparing the Draft RP/EA, the Trustees held a public informational meeting in Silver City, New Mexico on May 30, 2012. The purpose of this meeting was to provide an overview of the NRDAR planning process, describe the selection and evaluation criteria for projects, and solicit project ideas for inclusion in the Draft RP/EA. A notice of the informational meeting was sent to an e-mail list of approximately 70 entries maintained by the New Mexico ONRT, which included all agencies, organizations, and individuals who had expressed interest in the NRDAR process for the Sites during the injury assessment or groundwater restoration phases of the project.

The Trustees acknowledge and thank all individuals, organizations, and agencies who took the time to attend the public meetings or provide comments on the Draft RP/EA. The discussion and questions at the public meeting and in written comments were all taken into consideration in preparing the Final RP/EA.

Commenters included organizations, associations, and nonprofit entities; government agencies; and private citizens with an interest in the RP/EA (Table 7.1). The response summary in this chapter groups similar comments together instead of repeating each comment verbatim. Copies of the original comments are provided in Appendix B.

Overall, the comments fell into two categories:

1. General comments on the Draft RP/EA and the NRDAR process (Section 7.1)

2. Comments specific to individual projects (Section 7.2).

Table 7.1. List of written commenters on the Draft RP/EA

Organizations, associations, and nonprofit entities
Domenici Law Firm on behalf of Grant County Cattle Growers and other concerned citizens
New Mexico Land Conservancy
Quivira Coalition
The Nature Conservancy New Mexico
Upper Burro Cienaga Watershed Association
WildEarth Guardians
Government agencies
Gila National Forest, United States Forest Service
Grant Soil and Water Conservation District
Hildalgo Soil and Water Conservation District
Partners for Fish and Wildlife Program, U.S. Fish and Wildlife Service
State of New Mexico Department of Game and Fish
United States Bureau of Land Management, Las Cruces District
Private citizens
Billings Jr., Gerald W. of Tyrone, NM
Bock, Carl E. of University of Colorado
Crosby, April E. of Gila, NM
Ferris, Clifford of University of Wyoming
Germain, Tris of Cliff, NM
Gould-Martin, Katherine of New York State (owns property along the Gila River)
Helfferich, Merritt R. of Gila, NM
Keith, Kevin of the Gila Valley, NM
Kurinzi, Joe of the Gila Valley, NM
Link, Stefan P. (residence not noted in written comment)
Parry, Donald J. of Silver City, NM
Propst, David L. of Albuquerque, NM
Riseley, Mary Burton of Cliff, NM
Sivinski, Robert of Santa Fe, NM
Wait, David and Charmeine of Grant County, NM
Whiteman, Kathy (residence not noted in written comment)
Wootten, Eleanor of Gila, NM
Zimmerman, Dale of Western New Mexico University
Zummach, Joseph of Cliff, NM

7.1 General Comments on the Draft RP/EA and the NRDAR Process

The Trustees received several general comments and observations on the Draft RP/EA and the NRDAR process.

General Comment 1: Three entities and a private citizen indicated that the transfer of private land to public or nonprofit entities does not provide new habitat or enhance any critical riparian habitat that does not already exist.

> **Response:** The Trustees have evaluated the likely environmental benefits of proposed habitat protection and improvement projects on a site-specific, project-by-project basis. They have not made any general assumptions about the environmental benefits of "generic" land transfer projects, and agree with the commenters that there are specific situations in which a potential land transfer project may not provide environmental benefits. However, the Trustees have carefully evaluated the expected environmental benefits from each of the specific habitat protection and improvement projects described in the Draft RP/EA, and have determined that these projects would provide a net environmental benefit and directly benefit birds that were affected by hazardous substance releases at the Sites. Although all of the proposed habitat protection and improvement projects met the screening criteria, only a few of these projects have been selected for funding in the Final RP/EA.
>
> While the commenters have focused solely on land transfer, the Trustees would like to note that these projects also include important habitat improvement activities that would occur in conjunction with the land transfer. The value of these restoration activities played an important role in the evaluation of these projects. The proposed projects include restoration and management activities that would promote the regeneration of perennial riparian vegetation in areas where riparian habitat is currently degraded (e.g., dominated by early-successional plants or lacking regeneration of woody vegetation) or is used for agricultural purposes, such as alfalfa fields, that provide habitat of lesser value to birds and wildlife. In evaluating the projects, the Trustees considered whether these habitat improvements would be likely to occur under current land ownership and management arrangements or whether land transfer was necessary to enable these improvements.
>
> The Trustees have chosen to fund a "balanced portfolio" of projects that includes habitat restoration projects as well as habitat protection and improvement projects. The improvements associated with the habitat restoration projects are guaranteed for the length of the project contract (typically 10 or 20 years). In contrast, the habitat protection and improvement projects provide benefits in perpetuity, as the risk of future land

fragmentation and associated loss of riparian habitat value is avoided over time. Even if development on the parcels were confined to upland habitat, the changes in hydrology that result from developing uplands would affect the integrity of the associated riparian habitat. Avoiding this development threat (in uplands or riparian habitat) is a key benefit provided by the habitat protection and improvement projects. Out of the group of potential habitat protection and improvement projects, the projects in close proximity to other land that is protected from future development were evaluated more favorably. This is especially important for the parcels that include rare flora and fauna or unique habitat that would be threatened by development and fragmentation. A network of protected land in close proximity also can increase habitat connectivity for birds within a landscape, providing additional benefits especially for migratory birds (Krueper, 2000; Askins and Zickefoose, 2002).

Further discussion of the environmental benefits provided by each of the specific habitat protection and improvement projects is provided in the response to comments for each individual project.

General Comment 2: Two commenters requested scientific information that demonstrates that public lands or lands owned by nonprofit entities are better preserved than privately owned lands.

Response: The Trustees have not made any general determinations about the preservation value of public lands or lands owned by nonprofit entities versus privately owned lands. The management actions for the proposed habitat protection and improvement projects are consistent with scientific studies that have found benefits to migratory birds from projects that protect regeneration of vegetation in riparian areas and protect against land fragmentation (e.g., Bock et al., 1993; Odell and Knight, 2001; Tewksbury et al., 2002; Krueper et al., 2003). The benefits provided in perpetuity by protecting habitat from the threat of development and fragmentation were discussed in the response to General Comment 1.

General Comment 3: Three entities and a private citizen indicated their opposition to land transfer projects because the transfer of private land to public or nonprofit entities decreases the local and state property tax base.

Response: The Trustees understand and are sensitive to this concern; however, multiple studies have documented that there are a variety of economic benefits associated with maintaining open space and land in conservation status. For example:

- Protection of land in conservation status can help support the region's tourism economy, which depends in part on public access to conserved land that can support activities such as hunting, fishing, birdwatching, or other outdoor

recreation. Tourism is the state's second largest industry, bringing in more than $5.5 billion in 2011 (Headwaters Economics and Audubon New Mexico, 2010; Orr, 2012). In Grant County alone, tourism in 2011 brought in $46.8 million (Tourism Economics, 2011). New Mexico's wildlife habitat contributes $3.8 billion to the state's economy through hunting, fishing, and outdoor recreation, and $184 million in yearly sales tax revenue (Headwaters Economics and Audubon New Mexico, 2010).

- Economic benefits of land conservation for property that would otherwise be subdivided into smaller parcels include the avoided cost of additional community services (e.g., new roads, sewer system, schools) that accompany new developments. Based on almost 100 studies, Crompton (2004) finds that for every dollar communities realize from a residential development, they had to deliver $1.16 in services, whereas farms, forests, and open spaces only demanded $0.35 in services for each dollar of economic benefit.

General Comment 4: Three commenters indicated that the proposed land protection and improvement projects are inconsequential given the large amount of land owned by federal agencies and state agencies and the riparian habitat that already exists along the Gila and Mimbres rivers.

Response: The NRDAR process aims to compensate the public, through environmental restoration, for natural resources and the services provided by these resources that have been injured, destroyed, or lost as a result of the release of hazardous substances into the environment. As described in the response to General Comment 1 and more specifically below in the response to comments on each individual project, the Trustees have determined that the specific habitat protection and improvement projects proposed for funding in the Final RP/EA would provide valuable benefits for birds that were affected by hazardous substance from the Sites. These benefits result from habitat management and restoration actions that would improve riparian habitat on the protected land and from the permanent protection against development and habitat fragmentation that these projects provide. The Trustees note that riparian areas are some of the most severely altered landscapes in the United States (Brinson et al., 1981; National Research Council, 2002). An estimated 85–95% of Arizona and New Mexico riparian forests have been lost (Noss et al., 1995; Mac et al., 1998). As such we believe that every remaining piece of riparian habitat is of great value to birds.

General Comment 5: Two entities and a private citizen suggested that the project assessment would benefit from local knowledge. There were a few suggestions as to how to incorporate local knowledge, including (1) input from local elected government officials and local agency personnel; (2) the use of a committee or panel of qualified, experienced, diverse, and local

residents who would review the process and the restoration proposals; and (3) consultation with local organizations, such as the Range Improvement Task Force at New Mexico State University (NMSU), the NRCS, the local Soil and Water Conservation Districts, or the NMSU Cooperative Extension Service. In addition, one commenter suggested that most of the sites were not visited, and some of the proponents were not asked any questions.

> **Response:** The Trustees sought input from the public throughout the restoration planning process, including holding a public scoping meeting in Silver City on May 30, 2012 to introduce the restoration planning process and request project submissions. All of the projects considered in the Draft and Final RP/EAs are projects that were submitted by project proponents. The Trustees did not develop potential project ideas on their own, outside of this public process. The large number of projects submitted (i.e., 21) and the diversity of local project proponents (see Table 8.1) indicate the engagement of the local community in this process. During the restoration planning process, the Trustees consulted with local experts, including local staff at the New Mexico Environment Department (NMED), the Gila National Forest, and the Partners for Fish and Wildlife Program, as well as appropriate staff from Silver City and Grant County. The Trustees implemented a robust public outreach process with the expectation that local interested parties would have the opportunity to participate during the process.
>
> When the Trustees needed additional information to evaluate a project, they conducted follow-up calls and site visits. They conducted follow-up calls with project proponents of 17 of the 21 restoration projects proposed for the Draft RP/EA to ask questions and request additional information. Four of the projects had sufficient information in their submittals to enable Trustee evaluation without the need for a follow-up call or visit (note that these projects did not pass screening criteria, and none of the proponents of these projects submitted comments questioning this evaluation). The Trustees visited five projects before the January 2013 public meeting and three projects after the meeting to obtain site-specific information necessary for project evaluation. Inclusion of a project in the site visits did not give it priority in the evaluation.

General Comment 6: Two commenters suggested that the Trustees should have considered a watershed approach instead of giving preference to several small isolated projects.

> **Response:** The Trustees respectfully disagree that the suite of restoration projects selected for funding in the RP/EA can be properly described as small and isolated. Their objective was to compensate the public for losses of wildlife and wildlife habitat resources at the Sites. These projects benefit habitat on approximately 50,000 hectares (approximately 122,900 acres), all within 64 kilometers (40 miles) of the mine sites where birds were injured by the release of hazardous substances. The Trustees did not choose to spend the full wildlife settlement in a single watershed or sub-watershed. The

injuries occurred in two watersheds (the Gila and Mimbres River watersheds), and focusing efforts solely on one of the watersheds or on a sub-watershed would not adequately compensate the public for wildlife losses in other geographic areas. In addition, a diversity of project types and locations limits the risks that may be faced during project implementation or throughout long-term stewardship, such as a fire, flood, or insect outbreak in one sub-watershed. It also increases the reach of the settlement funding to the public throughout the Gila and Mimbres River watersheds.

The Trustees recognize the value of integrated projects at the watershed scale. In response to this and other similar comments, the Trustees reevaluated the three Upper Burro Cienaga habitat restoration components that were evaluated as separate projects in the Draft RP/EA and recombined them into a single watershed project for evaluation in the Final RP/EA. This revision enabled the Trustees to better evaluate the watershed benefits of this project that were intended by the project proponents.

General Comment 7: One commenter indicated that projects that create and provide waterfowl habitat, and to a lesser degree terrestrial bird habitat, should be given priority. This commenter also indicated that the transfer of property by the mining company to the state for the City of Rocks State Park does not provide additional habitat for terrestrial wildlife.

Response: The Trustees note that one of the high-priority criteria used for project evaluation focuses on whether a project "is likely to directly benefit birds that were affected by hazardous substance releases at the Sites" (Table 3.2). Affected birds include water birds and non-water birds, both resident and migratory (Section 1.2). Thus the Trustees agree with the commenter that projects that benefit habitat for waterfowl should be given priority, but they have also prioritized projects that provide habitat for other categories of injured birds. The Trustees have proposed projects that would benefit habitat for ducks and other waterfowl, as well as migratory birds.

The Trustees respectfully disagree with the commenter and anticipate that terrestrial birds and wildlife will benefit from the inclusion of an additional 289 hectares (714 acres) of grassland habitat into the City of Rocks State Park management regime, as provided in the wildlife consent decree.[8] The average rangeland condition of grassland habitat within the City of Rocks State Park is higher than the average rangeland condition of the acres newly incorporated into the park, according to data analyzed by the Trustees. The Trustees have assumed that the rangeland condition of the newly incorporated acres will increase over time and benefit terrestrial birds and wildlife and be protected in perpetuity from further degradation. Thus because the inclusion of additional habitat within the City of Rocks State Park is considered to provide benefits to terrestrial birds and wildlife, the Trustees have not given priority in this Final RP/EA to proposed restoration projects that focus exclusively on benefiting terrestrial birds.

General Comment 8: Two commenters expressed concern with transferring land to an environmental organization or an NGO affiliated with an environmental cause. One commenter said such deals have never benefited historical endeavors.

Response: The Trustees have evaluated each proposed project in accordance with the evaluation criteria. Their evaluation of the criterion "high potential for long-term success" included consideration of the project proponents' capacity to undertake the project, and whether there are mechanisms in place to ensure that a project would be protected over the long term. The Trustees selected projects for Tier 1 or Tier 2 from a variety of project proponents, and did not evaluate or categorize project proponents according to their affiliation with any particular cause. Because of substantial commitments by the state, the Trustees agreed to select suitable state entities for land ownership of all land acquisitions.

The Trustees are not sure what specific "historical endeavors" are being referred to by the commenter. The Trustees included an analysis of potential impacts of restoration projects on cultural and paleontological resources in Section 6.2.3 of the Final RP/EA.

General Comment 9: One commenter suggested that screening and evaluation criteria were added or changed after the applications were received, and asked if this was to support predetermined project selection.

Response: The Trustees applied the same screening and evaluation criteria to each proposed project and did not predetermine the selection of any individual project. The

[8] A copy of the settlement consent decree can be found at http://www.onrt.state.nm.us/documents/ConsentDecreesignedbyJudge2-21-2012FMIWildlife.pdf.

final selection of projects for funding was not made until this Final RP/EA was prepared and all of the public comments were considered.

The screening and evaluation criteria presented at the May 30, 2012 public scoping meeting in Silver City are the same criteria that were used by the Trustees to screen and evaluate projects, and are the same criteria presented in the Draft RP/EA, in the January 30, 2013 public meeting, and in this Final RP/EA (Tables 3.1 and 3.2). After the May 30, 2012 public scoping meeting, the Trustees realized the need to group the evaluation criteria into three categories (high-priority, medium-priority, or low-priority) to reflect the relative importance of different criteria to the Trustees. Also, a more detailed explanation of how the Trustees interpreted and applied the criteria was provided in the Draft RP/EA and Final RP/EA in an attempt to better communicate to the public the process by which the projects were screened and evaluated. The Trustees do not consider the addition of priority levels or the provision of further explanation about the criteria to constitute a change to the criteria presented in the May 30, 2012 public scoping meeting.

General Comment 10: One commenter emphasized the need for funding projects that have been proven to work.

Response: The Trustees agree with this comment. The explanation of how they interpreted and applied one of the high-priority criteria – "has a high potential for long-term success" – states that projects that use proven technologies or restoration techniques will be evaluated more favorably.

General Comment 11: One commenter stated that NEPA guidelines strongly discourage using predecisional language or making any predeterminations at the Draft RP/EA stage. The initial ranking of proposed projects into different funding tiers at the level of the Draft RP/EA could potentially be perceived as a form of predetermination. The commenter recommended that the evaluation team rank all of the Tier 1 and Tier 2 projects in order of priority in the Final RP/EA so that it will be clear to the remaining project proponents which Tier 2 projects will be next in line for potential funding consideration.

Response: The Trustees emphasized throughout the Draft RP/EA that the proposed grouping of projects into different funding tiers was a draft proposal set forth for public comment and was not a predetermined decision. As can be seen by the revision in project groupings between the Draft RP/EA and the Final RP/EA, the Trustees have thoughtfully considered additional information provided by project proponents and commenters, and have reevaluated projects as appropriate. The Trustees respectfully disagree with the commenter that the draft ranking of proposed projects into different funding tiers in the Draft RP/EA constitutes a form of predecision. The Trustees believe that the presentation

of draft rankings in the Draft RP/EA enhanced transparency and the ability of the public to provide meaningful comments. The selection of a project for funding will depend on the ranking and available funds. A project that has a high ranking but insufficient funds to accomplish could be passed over for a lower-ranking project of lower cost. The ranking alone does not provide sufficient information to determine what will be selected next for funding.

General Comment 12: One commenter stated that land protection, particularly when it combines the absolute permanence of a conservation easement with public ownership, provides much greater and more secure benefits as a conservation tool for wildlife than restoration. With restoration, a sudden change in the subject property's ownership, use, and management, or an unexpected natural disaster (such as a fire or flood), can significantly diminish the conservation benefit and undermine the initial investment in restoration. This is especially true of restoration on private lands that are not permanently protected through a conservation easement.

Response: The Trustees acknowledge that land protection mechanisms, such as a conservation easement, can be a valuable conservation tool that helps to ensure that the habitat benefits resulting from restoration actions or conservation management on a public or private property are maintained over a long time period or in perpetuity. As described in the response to General Comment 1, the Trustees have chosen to fund a "balanced portfolio" of projects that includes habitat restoration projects as well as habitat protection and improvement projects. For habitat restoration projects that would occur on land not permanently protected through a conservation easement, the Trustees have evaluated whether other mechanisms are in place to promote long-term project success, such as commitments to provide appropriate oversight, maintenance, and monitoring.

General Comment 13: One commenter expressed support for the Draft RP/EA Tier 1 projects indicating that these projects will provide habitat for migratory birds and waterfowl. This commenter cited the success of previous restoration projects along the Gila and Mimbres rivers for improving bird and wildlife habitat. According to bird surveys and studies in the region, cattle and vehicle exclusion from river floodplains has increased bird populations. In addition, restoration actions that have created wetlands in floodplain areas and raised water tables have increased the extent of bird and wildlife habitats. This commenter concludes that land management agencies have learned from numerous restoration projects along the Gila and Mimbres rivers, and that quantitative and qualitative data from these areas show that protecting and restoring riparian areas improves water quality and riparian habitat.

Response: The Trustees appreciate the support expressed for the Draft RP/EA Tier 1 projects. The regional bird and wildlife studies mentioned in this comment were incorporated into the Final RP/EA where appropriate.

7.2 Comments on Specific Projects

Numerous comments specific to the proposed restoration projects described in the Draft RP/EA were received during the public review process.[9] The Trustees also received a proposal for a new restoration project to be considered, which is described in Chapter 4. Comments received and the Trustee responses to each comment are outlined below and organized by proposed restoration project, as numbered in the Draft RP/EA. Not all projects received comments.

7.2.1 Comments on Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration (Draft RP/EA Project 4.3.1; Final RP/EA Project 4.3.2)

Comment 1: Letters of support for the Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration project were received from six commenters. Three of these commenters were researchers who stated that they had conducted bird or moth inventories at the site. The researchers commented favorably about the project proponents' previous restoration work at the site, and noted that they observed increases in water birds, land birds, and moths from this previous restoration. The comments also mentioned the importance of cienaga restoration in the arid Southwest for bird and wildlife habitat. In addition, several commenters emphasized the project proponents' long-term commitment to preserving the site's array of habitats and biota.

> **Response:** The Trustees appreciate the support expressed for this project. It was evaluated as a Tier 1 project in the Final RP/EA largely because of its significant benefits to riparian and wetland habitats, as well as the long-term commitment of the project proponents to habitat protection at the site. This commitment includes a history of monitoring the implemented restoration projects and an intent to maintain land in conservation in perpetuity, as evidenced by the conservation easement put in place on the land.

Comment 2: One commenter expressed concern that the project, as described in the Draft RP/EA, does not appear to provide waterfowl habitat or enhancement of degraded riparian habitat. The commenter also noted that the Pitchfork Ranch has already received significant restoration funding in recent years to restore and enhance riparian vegetation. However, the commenter also indicated support of the project if it could be shown that it would reduce downstream impacts on key riparian and wetland areas within the watershed.

[9] Several commenters included multiple topics in their comments.

Response: Through installation of erosion control structures throughout the floodplain and the creation of terraces and upslopes along the sides of the cienaga, this project would raise the groundwater table (by stopping erosive downcutting of the stream channel), thereby maintaining the cienaga as a perennial wetland. In this arid region, the cienaga will provide key habitat for birds and other wildlife. Numerous commenters familiar with the Pitchfork Ranch (through research or living close to it) emphasized the increase in vegetation, birds, and wildlife there as a result of previous restoration work, and suggested that the proposed restoration work would continue to improve wildlife and bird habitats in the region. Erosion control structures should minimize downstream channel alterations and reduce flood erosion effects.

7.2.2 Comments on Double E Ranch Habitat Protection and Improvement (Draft RP/EA Project 4.3.2; Final RP/EA Project 4.3.4)

Comment 1: The Trustees received 13 letters of support for the Double E Ranch Habitat Protection and Improvement project. Many of these commenters emphasized the threat of development of the Double E Ranch. Multiple commenters noted that the riparian habitat lacks younger age-classes and understory vegetation, and that protection and management of the site would improve the riparian habitat for water birds and other wildlife species (including rare, threatened, or endangered species). Others recognized the economic and social benefits associated with recreation at the project site, especially improved access to the area known as "Hell's Half Acre."

Response: The Trustees appreciate the support expressed for this project and have taken note of the additional information provided by the commenters. This project was evaluated highly because it would avoid a high development threat to the current riparian habitat along Bear Creek. Although the Trustees appreciate the public's desire for increased recreational access, the decision to select this project as a Tier 1 project in the Final RP/EA was based solely on the benefits this project would provide for wildlife and wildlife habitat that were affected by hazardous substance releases at the Sites.

Comment 2: One commenter indicated that the Double E Ranch Habitat Protection and Improvement project does nothing for restoring or providing waterfowl or enhanced riparian habitat, and that the location of the ranch is close to bird habitat at the Gila River, making its protection only a minor addition to what already exists in the area.

Response: Protection of the Double E Ranch for conservation purposes would provide a net environmental benefit by maintaining valuable riparian, aquatic, and terrestrial habitats. It would also prevent the ranch from being subdivided into multiple small properties (as has already occurred for several parcels), which the Trustees believe would lead to habitat degradation and fragmentation. This project, as well as the other habitat

protection projects, also includes important habitat improvement activities. Restoration on the Double E Ranch would include the possibility of installing fencing to limit grazing and off-road vehicle use in the riparian areas, allowing riparian vegetation to reestablish naturally. The Trustees feel that this project represents a unique opportunity to benefit wildlife and bird habitat because of the large land area it protects [i.e., 4.8 kilometers (3 miles) of perennial stream, 38 hectares (94 acres) of riparian habitat, and approximately 2,350 hectares (5,800 acres) of upland habitat], the high development threat faced by the property without project implementation, and the restoration actions that will protect and enhance riparian habitat at the ranch.

As described in the response to General Comment 4, the NRDAR process aims to compensate the public, through environmental restoration, for natural resources and the services provided by these resources that have been injured, destroyed, or lost as a result of the release of hazardous substances into the environment. While this project is located close to the Gila River and its existing riparian habitat, it protects and enhances additional wildlife and bird habitats, which benefits the natural resources affected by the release of hazardous substances at the Sites. Current habitat values will likely be lost or diminished if the ranch continues to be subdivided into small parcels.

Comment 3: One commenter supports this land protection project as beneficial to the public and serving to offset the natural resource damages identified in the Draft RP/EA. This commenter recommends that BLM management options be expanded from riparian fencing that eliminates grazing to all potential management actions, including grazing management options. The commenter notes that this could achieve riparian restoration objectives if transferred to the BLM for long-term stewardship.

Response: The Trustees understand that the long-term stewards of this property, would have to evaluate all potential management actions on the property, including a grazing management option. This language has been expanded in the project description to "Restoration actions would include changes to grazing management, including the possibility of construction of exclosure fences to limit grazing and off-road vehicle use in the riparian areas, allowing riparian vegetation to reestablish naturally."

The Trustees believe that the maximum ecological value of the property to birds and wildlife will be achieved through protection of the land from subdivision and fragmentation, as well as through land management practices that result in regeneration of riparian vegetation (see response to General Comment 2).

7.2.3 Comments on Mimbres River Wildlife and Habitat Restoration (Draft RP/EA Project 4.3.3; Final RP/EA Project 4.3.5)

Comment 1: Two commenters offered support for the Mimbres River Wildlife and Habitat Restoration project. One commenter indicated that the improvement of the stock pond in this project will provide new habitat for waterfowl. The second commenter indicated that the project will stabilize stream banks along the Mimbres River and improve and enhance Chihuahua chub habitat above and below the Cooney tract area of the National Forest.

> **Response:** The Trustees appreciate the support offered for this project, which has been categorized as a Tier 1 project in the Final RP/EA.

7.2.4 Comments on Redrock Property Habitat Protection and Improvement (Draft RP/EA Project 4.3.4; Final RP/EA Project 4.3.6)

Comment 1: One commenter supported this land protection project as beneficial to the public and serving to offset the natural resource damages identified in the Draft RP/EA. This commenter recommends the following: (1) funding should include construction of required boundary fences; (2) funding should include at least 10-year annual maintenance costs for the boundary fences; and (3) in developing the stewardship agreement with the BLM (a potential long-term steward), the following items should be considered: the no-grazing clause; identification of the entity with responsibility for maintaining the existing boundary fences; right-of-way needs for remaining private lands; and a plan for inclusion of property in the adjacent Gila Middle Box ACEC.

> **Response:** The project proposal submitted by the project proponent includes $15,000 in funding for initial stewardship costs, which includes perimeter fencing, nonnative vegetation removal, and construction of a small parking area. The budget also estimates long-term stewardship costs of $10,000 per year. In response to this comment, the Trustees have included an additional $100,000 in the project budget for 10 years of stewardship (e.g., maintenance of fences, monitoring for trespass cattle, and management for appropriate public use). The Trustees concur that if this project receives funds, the stewardship agreement for the property should consider such items as including grazing clauses, maintenance responsibility for existing boundary fences, and right-of-way issues that may affect wildlife value.
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> The Trustees believe that the maximum ecological value of the property will be achieved through its protection against land fragmentation and through regeneration of vegetation in the riparian area through appropriate land management.

Comment 2: One commenter indicated that any additional waterfowl or any enhanced riparian habitat that could be developed on the 130 acres of Gila River riparian habitat on the Redrock property is minor compared to what already exists in the area.

> **Response:** Habitat protection and improvement on the Redrock property would provide a net environmental benefit by improving the long-term health of the large area [53 hectares (130 acres)] of riparian habitat along the Gila River that is found on this property. This project, as well as the other habitat protection projects, also includes important habitat improvement activities. Restoration on the Redrock property would include installing fencing to protect riparian areas and allow riparian vegetation to reestablish naturally. Because this parcel is adjacent to the Gila Middle Box ACEC, protection and restoration of this parcel would improve connectivity across the landscape and provide significant benefits to birds and other wildlife.
>
> As described in the response to General Comment 4, the NRDAR process aims to compensate the public, through environmental restoration, for natural resources and the services provided by these resources that have been injured, destroyed, or lost as a result of the release of hazardous substances into the environment. The Trustees have evaluated this project as benefiting birds and wildlife habitat because of the large riparian area it protects and the restoration actions (i.e., fencing to protect the riparian corridor and removal of nonnative vegetation) that will protect and enhance riparian habitat on the property.

Comment 3: One commenter expressed concern about the purchase of the Redrock property (referred to as "Wood's place" in the letter) for three reasons: (1) opposition to taking land out of the tax base, (2) the fact that the transfer of property to the federal government is detrimental to local customs and culture, (3) opposition to any transfer to an NGO affiliated with an environmental cause, because historically this has not created benefits. The commenter also expressed concern about this project jeopardizing the integrity of the community acequia, the Grandpa Harper Ditch, which may traverse the property.

> **Response:** The Trustees have evaluated each proposed project in accordance with the evaluation criteria. In their evaluation regarding the criterion "is consistent with regional planning and federal and state policies," they considered whether projects were consistent with local and regional, as well as state and federal, planning, policies, and strategies. They included an analysis of the potential impacts of restoration projects on cultural and paleontological resources in Section 6.2.3 of the Final RP/EA.
>
> The concern about the loss of land from the tax base is addressed in General Comment 3. The concern about transferring land to an NGO is addressed in General Comment 8.

7.2.5 Comments on Burro Cienaga Watershed Restoration (includes Burro Cienaga Stream Stabilization Restoration, Draft RP/EA Project 4.4.1; Burro Cienaga Pinyon and Juniper Restoration, Draft RP/EA Project 4.5.2; Burro Cienaga Stock Pond Restoration, Draft RP/EA Project 4.5.3; Final RP/EA Project 4.3.3)

Comment 1: Two commenters expressed concern about the Trustees' choice in the Draft RP/EA to split up the three Burro Cienaga Watershed projects for separate evaluation. The commenters note that evaluating the projects separately does not address the landscape- or watershed-scale approach to resource management and restoration that is key to the long-term success of the proposal. These commenters suggest that these projects, when considered together, fulfill the watershed scale planning mission of federal and state land management agencies for this watershed, and have the long-term result of enhancing wetland and riparian conditions across an entire watershed.

> **Response:** The Trustees recognize the value of integrated projects at the watershed scale. In response to this and other similar comments, the Trustees reevaluated the three Burro Cienaga habitat restoration projects that were evaluated as separate projects in the Draft RP/EA, and recombined them into a single watershed project for evaluation in the Final RP/EA. This revision enabled the Trustees to more adequately evaluate the project's watershed benefits that were intended by the project proponents. In considering the benefits of a watershed approach and the additional information provided about the individual projects, the Burro Cienaga Watershed Restoration project has been selected for partial funding in the Final RP/EA.

Comment 2: One commenter indicated that the stock pond restoration projects (e.g., the Burro Cienaga Stock Pond Restoration) were developed to provide immediate benefits for waterfowl and waterfowl habitat, while the upland vegetative (e.g., the Burro Cienaga Pinyon and Juniper Restoration) and watershed enhancement (e.g., the Burro Cienaga Stream Stabilization Restoration) projects were developed to restore critical watershed functions at the watershed scale. The commenters stated that the improved landscape-scale watershed restoration and enhancement will ensure high-quality waterfowl and riparian habitats into the future.

> **Response:** The Trustees recognize the value of integrated projects at the watershed scale. As mentioned in the above response to Comment 1 and General Comment 6, the Trustees have reevaluated the three Burro Cienaga habitat restoration projects that were evaluated as separate projects in the Draft RP/EA, and recombined them into a single watershed project for evaluation in the Final RP/EA. This reevaluation considers the project to provide significant value to waterfowl and riparian habitats into the future, largely because stock ponds provide immediate benefits and the erosion control projects restore critical watershed functions, as stated in this comment. Project components farther away from the cienaga (e.g., Burro Cienaga Pinyon and Juniper Restoration), while potentially

providing watershed benefits, are less directly linked to waterfowl and riparian habitat improvements and are harder to measure as they would occur further off in time.

Comment 3: One commenter indicated that watershed-scale planning will adequately meet the Trustees' intent to "compensate the public for the injuries to wildlife, particularly birds and wildlife habitat resources, that occurred when hazardous substances including copper and other heavy metals were released from three copper mining facilities…" (Draft RP/EA, p. 1-1).

Response: The Trustees agree with the commenter and have reevaluated the three Burro Cienaga habitat restoration projects that were evaluated as separate projects in the Draft RP/EA. In the reevaluation, the separate projects were combined into a single watershed project, and additional project information, provided by proponents, was evaluated in the Final RP/EA. The Trustees believe that the Burro Cienaga Watershed Restoration project will provide compensation to the public for injuries to birds and other wildlife habitat resources that occurred from the release of hazardous substances at the Sites. The Burro Cienaga Watershed Restoration project has been selected for partial funding in the Final RP/EA. The Trustees anticipate that the restoration components funded here will have more immediate benefits and would provide leverage for acquiring funding for the other components from other sources.

Comment 4: One commenter indicated that the UBCWA, the NMED, and Gila National Forest have been instrumental in completing the WRAP for the Headwaters Burro Cienaga Watershed. The WRAP provides the nexus for a multiple-agency watershed-scale approach to restoring resource conditions within the Headwaters Burro Cienaga Watershed, while linking multiple resource restoration measures necessary to achieve enhanced ecosystem and watershed health.

Response: The Trustees appreciate this comment, as it highlights the value of the WRAP. The WRAP, developed by private landowners along with state and federal agencies, includes (1) a steering committee of representatives from land and resource management agencies and from the UBCWA who "oversee project implementation and monitoring," and (2) a stakeholder group of property owners who are "committed to the long-term stewardship of their land and want to see all of the land resources improved and sustained" (Southwest Native Ecosystems Management, 2012). Upon additional review of the WRAP and review of the additional project information provided, it is clear that projects developed in the Burro Cienaga Watershed, following the guidelines outlined in the WRAP, will restore and sustain riparian habitat for birds and other wildlife. The Trustees took into consideration the value of the multi-party WRAP that has been developed for the Headwaters Burro Cienaga Watershed, and reevaluated the Burro Cienaga Watershed restoration projects accordingly. Thus two high-priority criteria ("high potential for long-term success" and "low risk of failure") and one medium-priority criterion ("consistent with regional planning and federal and state policies") with

average ratings in the Draft RP/EA were increased to above-average ratings in the Final RP/EA.

Comment 5: One commenter indicated that there will be more than adequate governmental monitoring and oversight when projects are being carried out under the direction of the WRAP to ensure that investments will be properly implemented, monitored, and maintained. A steering committee oversight process and stakeholder resource-sharing process are clearly spelled out in the WRAP and will be followed when any project work is implemented.

Response: As discussed in Comment 4, the Trustees have reevaluated the Burro Cienaga Watershed restoration projects in light of the WRAP and increased their ratings from average to above-average for the two high-priority criteria ("high potential for long-term success" and "low risk of failure"). These updates are largely due to the oversight process in place for implementing and monitoring restoration projects as described in the WRAP and the descriptions provided for the project implementation.

Comment 6: One commenter stated that the objective of keeping land undeveloped and available as high-quality wildlife habitat is best achieved by investing in the restoration and enhancement of degraded ecosystem health. According to this commenter, keeping land in family ownership creates close ties to the land, which provides strong assurance of limited development and an incentive for future generations to maintain healthy ecosystems, and reduces the dependence on government or other funding sources for protection and management of the land.

Response: The Trustees agree that land in private ownership can provide strong assurance of conservation and long-term stewardship. For example, the Trustees believe that the WRAP for the Headwaters Burro Cienaga Watershed promotes long-term success and that its associated projects have a low risk of failure. The Final RP/EA contains a portfolio of projects with a variety of long-term protection mechanisms (e.g., conservation easements) and short-term protection mechanisms (e.g., contracts to protect restoration investments for defined periods of time). This ensures that significant restoration benefits are protected in perpetuity, while acknowledging the benefits of restoration on private land that do not have long-term land protection mechanisms in place. The Trustees are encouraged by the willingness of private landowners in Burro Cienaga and along the Mimbres River to support habitat improvements for wildlife on their property.

Comment 7: One commenter indicated that it is imperative that all project selection, project administration, and financial management pertaining to this process be conducted with full transparency and the highest degree of professionalism possible. This commenter felt that local elected government officials and local, state, and federal agency personnel (e.g., the NMSU Cooperative Extension Service and NMSU faculty) should be consulted about the selection of projects. This commenter also suggested that project funds should be administered by a fiscal agent who does not hold land ownership or beneficiary interest in the project area and is subject to audits by the New Mexico Office of the State Auditor.

> **Response:** As described more fully in General Comment 5, the Trustees conducted the restoration planning process with full transparency and professionalism. The Trustees agree that project funds need to be administered with a high degree of fiscal control. Both Trustee agencies have significant experience managing projects and grant money, and will ensure that project implementation conforms to rigorous standards.

Comment 8: One commenter indicated that it is unclear if this project involves BLM land. This commenter suggested that if BLM land is involved, an additional NEPA analysis will need to be completed (tiered to this Final RP/EA) and other authorizations will be required before on-the-ground improvements can be implemented on the BLM lands.

> **Response:** The Trustees appreciate this comment. They are committed to working with project proponents to ensure that all projects selected for funding complete all required permitting and NEPA requirements.

7.2.6 Comments on Davis Property Habitat Protection and Improvement (Draft RP/EA Project 4.4.2; Final RP/EA Project 4.4.2) and Comments on the Porter Property Habitat Protection and Improvement (Draft RP/EA Project 4.4.3; Final RP/EA Project 4.4.3)

Comment 1: The following comments apply to both the Davis and Porter properties. One commenter indicated that the Davis and Porter Property Habitat Protection and Improvement project does little to restore waterfowl habitat or compensate local area residents and the citizens of New Mexico for losses of waterfowl and waterfowl habitat that occurred. In addition, this commenter indicated that the location of the ranch is close to bird habitat at the Gila River, making its protection only a minor addition to what already exists in the area. This commenter believes that this land purchase will only serve to take more land out of the tax base and reduce the opportunity for economic activity in Grant and Hidalgo counties.

> **Response:** The proposed habitat protection and improvement projects for the Davis and Porter properties along the Gila River would provide a net environmental benefit by restoring riparian habitat on land currently used for alfalfa production that provides

habitat of lesser value for birds and wildlife. The Trustees feel that habitat protection of these parcels would enable regeneration of structurally diverse riparian habitat, thus providing a net environmental benefit.

As described in the response to General Comment 4, the NRDAR process aims to compensate the public, through environmental restoration, for natural resources and the services provided by these resources that have been injured, destroyed, or lost as a result of the release of hazardous substances into the environment. Although these projects would be located close to the Gila River and its existing riparian habitat, the projects protect and enhance additional wildlife and bird habitats affected by the release of hazardous substances at the mines. Current habitat values would likely be lost or diminished if the property continued in use for alfalfa production, or subdivided for residential development.

The economic benefits associated with maintaining open space and land in conservation status are discussed in General Comment 3.

7.2.7 Comments on River Ranch Habitat Protection and Improvement (Draft RP/EA Project 4.4.4; Final RP/EA Project 4.3.7)

Comment 1: One commenter stated that NMDGF tentatively supports the NMLC proposal requesting funding to secure the purchase of River Ranch property. Before completing acquisition, legal counsel and the director of NMDGF will need to review the project further and present a prospective purchase to the State Game Commission for approval. This commenter indicated that this project presents an excellent opportunity to protect valuable wildlife habitat.

Response: The Trustees appreciate the support offered for this project, which has been categorized as a Tier 1 project in the Final RP/EA.

Comment 2: One commenter indicated that the River Ranch Habitat Protection and Improvement project does little to restore waterfowl habitat or compensate local area residents and the citizens of New Mexico for losses of waterfowl and waterfowl habitat that occurred. In addition, this commenter indicated that the location of the ranch is close to bird habitat at the Mimbres River, making its protection only a minor addition to what already exists in the area. This commenter believes that this land purchase will only serve to take more land out of the tax base and reduce the opportunity for economic activity in Grant and Hidalgo counties.

Response: The proposed habitat protection and improvement project for the River Ranch would provide a net environmental benefit by funding restoration activities that include riparian fence installation, cottonwood and willow plantings, and restoration of one arroyo. This property is already protected from subdivision and development under a

conservation easement. The Trustees feel that this project represents a unique opportunity to benefit wildlife and bird habitats because of the large land area it protects [i.e., 409 hectares (1,010 acres) of deeded land, including approximately 3 kilometers (2 miles) of the Mimbres River and 60 hectares (147 acres) of riparian habitat] and the restoration actions that will enhance riparian habitat at the ranch.

As described in the response to General Comment 4, the NRDAR process aims to compensate the public, through environmental restoration, for natural resources and the services provided by these resources that have been injured, destroyed, or lost as a result of the release of hazardous substances into the environment. While this project is located along the Mimbres River and its existing riparian habitat, it protects and enhances additional wildlife and bird habitats that will benefit natural resources affected by the release of hazardous substances at the Sites.

The economic benefits associated with maintaining open space and land in conservation status are outlined in General Comment 3.

Comment 3: One commenter indicated that the project description states that there are approximately 405 hectares (1,000 acres) of federal leased land and, as such, there will need to be some discussion with the BLM regarding the outcome of the existing BLM grazing lease, especially if it is currently attached to the deeded lands proposed for purchase. This project may include long-term maintenance responsibilities for range improvements on BLM lands associated with the grazing lease.

Response: The Trustees appreciate this comment and are committed to working with project proponents to ensure that appropriate management discussions occur with all agencies potentially affected by this project.

Note: Comments 4–13 on the River Ranch project were submitted by a single commenter who provided a comment for each of the evaluation criteria.

Comment 4: Regarding the high-priority criterion “likely to directly benefit birds,” the commenter indicated that he used a geographic information system analysis and an aerial image of the property to determine that 38% of the entire River Ranch property is comprised of riparian and floodplain habitats [in other words, the riparian area comprises 155 hectares (380 acres) of the property’s total 409 hectares (1,010 acres)]. The commenter noted that in the Draft RP/EA, the Trustees reported using a National Wetlands Inventory (NWI) map to determine the amount of wetland acreage on the property [approximately 60 hectares (147 acres) of such habitat]. The commenter said that he found no other instance in the Draft RP/EA where the Trustees stated that they used an NWI map or a wetland metric to evaluate other proposals. The commenter made three recommendations for the Final RP/EA: (1) all habitat protection and improvement projects should be evaluated using a common metric of total acres of riparian and floodplain

habitats, and the percentage that these particular habitats represent of the entire acreage on each property, (2) describe why the River Ranch project received a below-average rating for cost-effectiveness, and (3) consider using the number of documented bird SGCN as a standardized metric.

> **Response:** In the Draft and Final RP/EAs, all habitat protection and improvement projects were evaluated with common metrics. The NWI map was used as a standard method to determine the area of riparian habitat for all habitat protection and improvement projects (USFWS, 2013). Cost-effectiveness of each of the habitat protection and improvement projects was calculated by dividing the total estimated project cost by the total estimated area of riparian and wetland habitats. The Trustees feel that this is an adequate method for comparing the cost-effectiveness of habitat protection and improvement projects.
>
> Documented numbers of bird SGCN were not readily available to Trustees to use as a reliable comparison across projects. As described in Chapter 3 in the Draft and Final RP/EAs, the high-priority criterion "likely to directly benefit birds" was used to evaluate the projects' expected benefits to birds that were affected by hazardous substance releases at the Sites, i.e., migratory birds and waterfowl, and whether the project would improve high-priority bird habitats, such as riparian and wetland habitats. Quantitative bird information was not available on a site-specific basis. As such, riparian and wetland habitats essential to these species were used as a proxy measure to evaluate cost-effectiveness.

Comment 5: Regarding the high-priority criterion "high potential for long-term success," the commenter stated that the potential of the River Ranch project to be successful is among the highest, in terms of providing significant benefits for birds and wildlife, for a number of reasons, including the existence of a conservation easement. The commenter noted that River Ranch appears to be the only project for which the existence of a conservation easement was considered a negative attribute, and requests that the Final RP/EA explain why this is so.

> **Response:** The Trustees agree that the River Ranch project has a very high potential for success in terms of providing benefits for birds and wildlife. As described in both the Draft and Final RP/EAs, the River Ranch project received above-average ratings for the two high-priority evaluation criteria "high potential for long-term success" and "low risk of failure," largely because of the conservation easement in place that limits the potential for development and provides wildlife and wildlife habitat benefits into the future. In addition, the project received an above-average rating in both the Draft and Final RP/EAs for the high-priority criterion "likely to benefit birds" due in part to the existing conservation easement on the property.

The conservation easement lowered the rating of the medium-priority evaluation criterion "cost-effective compared to other projects that provide similar benefits." This is described in Comment 9.

Comment 6: Regarding the high-priority criterion "low risk of failure," the commenter stated that the River Ranch project has a low risk of failure because of the conservation easement on the property and long-term operations and maintenance by NMDGF. In addition, the commenter felt that the "readiness" factor, in terms of having a commitment from landowners and a recent appraisal, should be considered. This commenter recommends that the Final RP/EA include a comparative discussion of each proposed acquisition's readiness for purchase, including whether there is some form of commitment from the seller/landowner and the buyer/agency or conservation organization. In addition, clearly identifying how each proposal was ranked relative to the others would enhance transparency.

Response: The Trustees agree that the River Ranch project has a low risk of failure. As described in both the Draft and Final RP/EAs, this project received above-average ratings for the high-priority evaluation criterion "low risk of failure," largely due to the conservation easement in place that limits the potential for development and provides wildlife and wildlife habitat benefits into the future. When evaluating land acquisition projects the Trustees looked at these as long-term investments. The Trustees anticipate moving deliberately upon land acquisition and must consider additional details such as cost, sale conditions, etc., before finalizing any acquisition. These other factors might fall in the "readiness" factor described by the commenter but were not evaluated in the project selection for this plan.

Comment 7: Regarding the high-priority criterion "feasible and cost-effective provisions for operations, maintenance, and monitoring" and the low-priority criterion "need for NRDAR funding," the commenter expressed a concern that the inclusion of operations and maintenance costs in the initial proposal resulted in the project ranking lower in the Draft RP/EA relative to other projects with lower costs.

Response: The Trustees requested operations and maintenance costs from all project proponents. As indicated in the Draft and Final RP/EAs, the River Ranch project received an above-average rating for the high-priority criterion "feasible and cost-effective provisions for operations, maintenance, and monitoring," as well as the low-priority criterion "need for NRDAR funding." The Trustees note that the project proponent provided information supporting his ability to significantly reduce the request for funding based on negotiations with State Parks and NMDGF.

Comment 8: Regarding the medium-priority criterion "located close to where the injuries occurred at the sites," the commenter indicated that the River Ranch is located not only close to

where the injuries occurred at the Sites but also in the Mimbres River Watershed, where most of the injuries to birds and wildlife occurred. This commenter also noted that the original guidelines were changed from "*benefits migratory bird habitat and surface waters in the Gila and Mimbres River basins* " to "*[p]roposed projects that are located in areas that have a positive impact on wildlife injured at the Sites (e.g., projects that are in the migratory flyway) will be evaluated more favorably. A secondary geographic priority will be projects located within the Gila or Mimbres River watersheds, which are the watersheds where injuries occurred*." The commenter also states that a broadening of the geographic scope seems unnecessary, especially because there are so many projects within the two target watersheds. This commenter requested that the Final RP/EA explain why it was necessary to expand the geographic scope for project selection and funding.

> **Response:** The Trustees agree with the commenter that the River Ranch property is located close to where the injuries occurred. As described in the Draft and Final RP/EAs, the River Ranch project received an above-average rating for the medium-priority criterion "located close to where the injuries occurred at the sites."
>
> After the initial May 30, 2012 scoping meeting, project proponents explained to Trustees that birds injured at the Sites are located in the migratory flyway that extends beyond the Gila and Mimbres River watersheds. The Trustees felt that it was important for this criterion to include projects that are located in areas that have a positive impact on wildlife near the injury Sites. As such, the Trustees expanded the definition of "located close to where injuries occurred at the sites" to include the migratory flyway. It is important to note, however, that all projects in Tier 1 and 2 of the preferred alternative are located in the Gila and Mimbres River watersheds and located very close to the Sites.

Comment 9: Regarding the medium-priority criterion "cost-effective compared with other projects that provide similar benefits," the commenter stated that River Ranch is one of the most cost-effective projects being proposed. The commenter noted that this is particularly true because of the riparian and floodplain habitats that will be permanently protected and managed, with a priority for wildlife habitat. The commenter also noted that the cost-per-acre benefits are much lower than they would otherwise be because of the existing conservation easement; this easement should be recognized as an in-kind match because additional funding would be required if the easement were not in place.

> **Response:** The cost-effectiveness of each of the habitat protection and improvement projects was calculated by dividing the total project cost by the total estimated area of riparian habitat. In the Draft RP/EA, this project was rated as below-average for the "cost-effectiveness" criterion. This is largely because of the high management costs associated with the project. In the Final RP/EA, this project is rated as average for this criterion because of the significant decrease in project costs.

Comment 10: Regarding the medium-priority criterion "likely to benefit multiple wildlife resources," the commenter indicates that more SGCN and more species diversity have been documented at River Ranch than at any other proposed habitat protection project area. This commenter requests that the species diversity of each proposed habitat protection project be discussed in the Final RP/EA.

> **Response:** As indicated in the Draft and Final RP/EAs, the factors considered in evaluating projects against the medium-priority criterion "likely to benefit multiple wildlife resources" included the rarity or uniqueness of wildlife species that benefit from the project, the extent to which proposed projects directly benefit multiple wildlife resources, and the extent to which projects provide additional services that indirectly benefit wildlife, such as improvements in air and water quality, biodiversity, and open space. Since not all the project proponents nor the Trustees had the resources to provide a list of the SGCN associated with the project, projects were not compared using SGCN.

Comment 11: Regarding the medium-priority criterion "consistent with regional planning and federal and state policies," the commenter suggested that the CWCS (NMDGF, 2006) is perhaps the most relevant and important state policy for conserving and enhancing migratory bird habitat. Metrics used by the CWCS, such as number of SGCN, can be used as a measure of the conservation value of the property. The River Ranch has at least 16 SGCN. In addition, this property functions as an important wildlife migratory corridor, which has been identified in the CWCS as a critically important component of wildlife habitat to protect.

> **Response:** As indicated in the Draft and Final RP/EAs, the factors considered in evaluating projects against the medium-priority criterion "consistent with regional planning and federal and state policies" included consistency with federal, state, and regional planning documents, policies, and strategies; and consistency with national, state, and regional conservation priorities. The CWCS for New Mexico was one of the documents that was taken into consideration. In the Final RP/EA, the River Ranch project received an above-average rating for this criterion because it is adjacent to State Parks and federal land (City of Rocks State Park and BLM, respectively) and contribute to an important wildlife migratory corridor.

Comment 12: Regarding the low-priority criterion "likely to provide benefits quickly after project implementation," the commenter stated that the River Ranch project will immediately continue to provide high-quality bird habitat without any additional restoration efforts. However, any restoration efforts, such as removing invasive plant species and excluding livestock from riparian areas, can provide further benefits after project implementation.

> **Response:** The Trustees believe the benefits associated with the River Ranch Habitat Protection and Improvement project will be realized over time as restoration efforts are

implemented. For example, it will take time for trees to be regenerated in the riparian zone, which will create a denser understory and multi-canopy layers.

Comment 13: Regarding the low-priority criterion "leverages funding," the commenter indicated that this project significantly leverages State Wildlife Grant funding, and that NMDGF would operate and maintain the property over the long term with Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act) funds. The commenter recommends that this criterion be elevated to a high-priority status because maximizing the relatively small amount of NRDAR funding available through the matching of in-kind contributions will ensure the efficient use of this limited funding source.

Response: The Trustees appreciate the recommendation to elevate the low-priority criterion "leverages funding" to a high-priority status. However, the Trustees have chosen to keep priority levels consistent between the Draft and Final RP/EAs.

7.2.8 Comments on Upper Bear Creek Habitat Protection and Improvement (Draft RP/EA Project 4.4.5; Final RP/EA Project 4.4.4)

Comment 1: One commenter indicated that the Upper Bear Creek Habitat Protection and Improvement project does little to restore waterfowl habitat or compensate local area residents and the citizens of New Mexico for losses of waterfowl and waterfowl habitat that occurred. In addition, this commenter indicated that the location of the ranch is close to bird habitat at the Gila River, making its protection only a minor addition to what already exists in the area. This commenter believes that this land purchase will only serve to take more land out of the tax base and reduce the opportunity for economic activity in Grant and Hidalgo counties.

Response: The proposed habitat protection and improvement project for the Upper Bear Creek property would provide a net environmental benefit by preventing future development of riparian habitat along Bear Creek and the Ben Lilly Pond. The Trustees feel that habitat protection of this parcel would provide benefits to birds and wildlife.

As described in the response to General Comment 4, the NRDAR process aims to compensate the public, through environmental restoration, for natural resources and the services provided by these resources that have been injured, destroyed, or lost as a result of the release of hazardous substances into the environment. While this project is located close to the Gila River and its existing riparian habitat, it protects and enhances additional wildlife and bird habitats to benefit natural resources that were affected by the release of hazardous substances at the mines. Current habitat values will likely be lost or diminished if the property is developed.

The economic benefits associated with maintaining open space and land in conservation status are outlined in General Comment 3.

7.2.9 Comments on Burro Cienaga Grassland Restoration (Draft RP/EA Project 4.5.1; Final RP/EA Project 4.5.1) and Comments on Grassland Restoration through Aerial Treatment of Mesquite (Draft RP/EA Project 4.5.4; Final RP/EA Project 4.5.2)

One commenter submitted two identical comments for these two projects. The comments and responses (which apply to both projects) are provided below.

Comment 1: One commenter indicated that the BLM's experience with herbicide applications to mesquite has shown less success than treatment of creosote-invaded grasslands, and that this should be recognized in the project evaluation.

Response: Because the mesquite treatment was far less successful than the creosote treatment, these projects received a below-average rating for the high-priority criterion "low risk of failure" in the Final RP/EA.

Comment 2: One commenter noted that the BLM has found that deferring livestock grazing for five to six months during the growing season following treatment has a significantly higher influence on post-treatment success than simply reducing livestock stocking rates.

Response: The Trustees appreciate this comment.

Comment 3: One commenter indicated that it is unclear if any of the proposed mesquite treatment sites are located on BLM lands. If BLM lands are involved, the BLM would need to conduct site evaluations to determine site potential, require an additional NEPA analysis, and require a minimum two-year deferment of grazing during the growing season following treatment.

Response: Both of these projects have been selected as Tier 3 projects in the Final RP/EA and are unlikely to receive funding. The Trustees will address these issues if funding becomes available for either project.

7.2.10 Comments on Meadow Creek Restoration (Draft RP/EA Project 4.5.5; Final RP/EA Project 4.5.3)

Comment 1: The project proponent indicated that the Meadow Creek Restoration project can be scaled down to fit almost any budget.

Response: The Trustees appreciate the flexibility of the project proponent in updating their project scope based on funding availability. The project proponent did not provide the specific information about this project necessary to adequately evaluate the project. Without more specific information, the Trustees were unable to reevaluate the criteria "cost-effective compared to other projects that provide similar benefits," "likely to directly benefit birds affected by the hazardous substance releases," and "likely to benefit multiple wildlife resources and services."

7.2.11 Comments on Migratory Bird Grassland Restoration (Draft RP/EA Project 4.5.6; Final RP/EA Project 4.5.4)

Comment 1: The project proponent stated that this project proposes to use Tebuthiuron to treat creosote-invaded grasslands. The project description incorrectly states that Tebuthiuron will be used to treat mesquite as well. The appropriate herbicide for mesquite treatment is Reclaim (clopyralid) and Remedy (butoxyethel ester of triclopyr).

Response: The Trustees appreciate this correction. The project description has been revised in the Final RP/EA to reflect the information provided in this comment.

Comment 2: One commenter noted that the BLM has completed the required NEPA analysis for these proposed projects.

Response: The Trustees have incorporated this information into evaluating this project in the Final RP/EA. In the Final RP/EA, this project received an above-average rating for the high-priority criterion "low risk of failure" because the BLM has completed the NEPA analysis for the project, and because of the BLM's significant experience with this type of treatment.

7.2.12 Comments on Swan Pond Habitat Restoration (Draft RP/EA Project 4.5.7; Final RP/EA Project 4.5.5)

Comment 1: One commenter suggested that the Swan Pond Habitat Restoration project would provide a much larger benefit for waterfowl than most of the Tier 1 and Tier 2 projects.

Response: The Trustees believe the Swan Pond Habitat Restoration project will provide a significant benefit for waterfowl and other water birds. Thus this project received above-average ratings for the criteria "likely to benefit birds," "likely to benefit multiple wildlife resources," and "high potential for long-term success." However, as described in the Draft and Final RP/EAs, the project received below-average ratings for other criteria, including "is located close to where the injuries occurred" and "is cost-effective

compared to other projects that provide similar benefits." This project ranked less highly than other proposed projects in Tier 1 and Tier 2, and was therefore selected as a Tier 3 project in the Draft and Final RP/EAs.

7.2.13 Comments on Ancheta Springs Ranch Conservation Easement and Ancheta Springs Ranch Restoration (Final RP/EA Projects 4.3.1 and 4.4.1, respectively)

Comment 1: Letters of support for the Ancheta Springs Ranch Conservation Easement and Restoration projects were received from one commenter. This commenter believes that the proposed project, including placing a conservation easement on the entire property and continuing restoration efforts, will benefit the property and the Mimbres River Watershed as a whole. As this property is a large tract of private land between the Mimbres River and the Gila National Forest, the commenter sees this area as an important wildlife corridor. The commenter also stated that this project can assist in the recovery of federally threatened and endangered species, such as the southwestern willow flycatcher, Chihuahua chub, and Chiricahua leopard frog.

Response: The Trustees appreciate the support for the Ancheta Springs Ranch proposal. This project has been split into two parts: the Ancheta Springs Ranch Conservation Easement portion of the project, which has been selected as a Tier 1 project, and the Ancheta Springs Ranch Restoration project, which has been selected as a Tier 2 project in the Final RP/EA.

8. Agencies, Organizations, and Parties Consulted

The Trustees consulted relevant agencies and government entities as part of an informal scoping process to help identify potential restoration projects (Table 8.1). The Trustees also consulted with nonprofit organizations, stakeholder groups, and private citizens who chose to participate in the initial public meeting on May 30, 2012 in Silver City, New Mexico, or who contacted the Trustees to provide information about potential restoration project opportunities during the informal scoping process (Table 8.2).

Table 8.1. Agencies and government entities consulted during informal scoping

Federal
Bureau of Land Management, Las Cruces District
U.S. Forest Service, Gila National Forest
State
New Mexico Environment Department
New Mexico State Parks Division
Local
Grant County, New Mexico

Table 8.2. Organizations, stakeholder groups, and private citizens consulted during informal scoping

AT Cross Ranch, Bar VK Ranch, Cow Spring Ranch (privately owned and operated)
Audubon New Mexico
Bat Conservation International
Gila Resources Information Project
New Mexico Land Conservancy
Parametrix
Pitchfork Ranch
San Francisco River Association
The Nature Conservancy
Upper Burro Cienaga Watershed Association
WildEarth Guardians

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A. Complete Project List

Complete list of wildlife and wildlife habitat restoration projects identified by the Trustees

Project category	Project title	Project proponent
Habitat protection and improvement	Ancheta Springs Ranch Conservation Easement	New Mexico Land Conservancy
	Davis Property Habitat Protection and Improvement	The Nature Conservancy
	Double E Ranch Habitat Protection and Improvement	Gila Resources Information Project, Center for Biological Diversity, and Upper Gila Watershed Alliance
	Porter Property Habitat Protection and Improvement	The Nature Conservancy
	Redrock Property Habitat Protection and Improvement	The Nature Conservancy
	River Ranch Habitat Protection and Improvement	New Mexico Land Conservancy
	Upper Bear Creek Habitat Protection and Improvement	Gila National Forest
Watershed habitat restoration	Burro Cienaga Side Channel, Floodplain, and Low Terrace Restoration	Pitchfork Ranch
	Burro Cienaga Watershed Restoration	Gila National Forest and Upper Burro Cienaga Watershed Association
Riparian habitat restoration	Ancheta Springs Ranch Restoration	New Mexico Land Conservancy
	Meadow Creek Restoration	WildEarth Guardians
	Mimbres River Wildlife and Habitat Restoration	Bat Conservation International
	Swan Pond Habitat Restoration	Audubon New Mexico
	York Canyon Rehabilitation	San Francisco River Association
Grassland habitat restoration	Burro Cienaga Grassland Restoration	The Nature Conservancy, AT Cross Ranch, and Pitchfork Ranch
	Grassland Restoration through Aerial Treatment of Mesquite	AT Cross Ranch, Bar VK Ranch, and Cow Spring Ranch
	Migratory Bird Grassland Restoration	Bureau of Land Management, Las Cruces District
Model development/ assessment	EcoMetrix Ecosystem Service Model	Parametrix
	Wetland and Beaver Habitat Assessment	WildEarth Guardians
Other	Grant County Reservoir	Grant County
	Solar-Powered Water Pumping Station	AT Cross Ranch, Bar VK Ranch, and Cow Spring Ranch

B. Public Comments on the Draft RP/EA

From: Bryan Bird [redacted]
Sent: Thursday, January 17, 2013 1:50 PM
To: Neri Zagal, Rebecca, NMENV
Subject: Re: Draft Wildlife Restoration Plan & Environmental Assessment for Mine Facilities

Hi Rebecca. Congratulations on getting this done and out to the public! I will no tbe able to make it back down to Silver City for the public meeting. But, I want to make it very clear to you and other decision makers that our Meadow Creek restoration proposal can be scaled down to fit nearly any budget. the reason I am telling you this is that if any funds remained after the first Tier is funded, our project could be completed on a smaller scale .

Thank you,

Bryan Bird
WildEarth Guardians

--
Bryan Bird
Wild Places Program Director
WildEarth Guardians
[redacted]

[redacted]

Office of Natural Resources Trustees

[redacted]

Dear Trustees:

I am writing in support of the Pitchfork Ranch restoration proposal that I see from your draft plan has earned a first tier ranking. I have long known this property from my years of teaching at Western New Mexico University – when I introduced students to the area's birdlife -- and from my own ornithological observations there. The latter continue, and I have been a frequent visitor to the ranch since A. T. and Lucinda Cole purchased it a decade or so ago.

It is apparent that your assessment in section 4.3.1 of the draft plan captures the essence of the importance in supporting the Coles' efforts. As an ornithologist, I was troubled by recent losses attributed to the nearby destructive mining practices, and I was pleased to learn of the settlement and consequent restoration. I am, of course, well aware of the Coles' habitat restoration efforts on the Pitchfork Ranch, and I continue monitoring its birds and keeping track of others' bird observations there. I maintain the property's 'formal' bird list for the Coles. Additions to this list continue to be made -- both 'land birds' and 'water birds'. The area is increasingly attractive to water-dependent species owing to the scarcity of riparian and wetland habitats in the general region. Restoration of the Burro Cienaga on the ranch is of major importance in this regard. The Coles' placement of a conservation easement on this property, their plan to pursue "Area of Critical Environmental Concern" designation from the BLM, and related plans provide assurance that financial support of the Pitchfork Ranch should have long-lasting benefits.

I have been involved in preliminary discussions with the Coles about future use of the ranch upon their deaths, so I am fully aware of their long-term commitment to preserving this important array of habitats and biota. I am therefore wholly supportive of your preliminary decision to fund their proposal.

Please feel free to contact me if I can be of further assistance.

Sincerely,

Dale A. Zimmerman

Dale A. Zimmerman, Ph.D.
Professor Emeritus of Biology,
Western New Mexico University

February 5, 2013

Office of Natural Resources Trustee

[redacted]

Dear Trustees:

This letter is in strong and enthusiastic support of the Freeport-McMoran Wildlife & Habitat Restoration Proposal entitled "Burro Cienaga Side Channel, Floodplain & Low Terrace Restoration Plan for the Pitchfork Ranch."

I have worked intermittently over the past five years conducting bird surveys on various portions of the Pitchfork Ranch, comparing the abundance and variety of species in areas with versus without available surface water. My studies have revealed the importance of such water sources to birds, and therefore testify to the positive impacts of watershed restoration projects already completed at this site. Continuing restoration work, as described in the present proposal, will significantly add to and expand the wildlife enhancement already achieved.

Given the scarcity of riparian and wetland habitats in the region, and their benefits to wildlife, I rate the regional importance of this project as very high. Given the commitment of the landowners to continuing restoration at the site, as well as its long-term security through a conservation easement, the proposed restoration work also has a very high probability of success.

In my opinion, this proposal should be given the highest priority for funding.

Sincerely,

Carl E Bock

Carl E. Bock, Professor Emeritus
Ecology and Evolutionary Biology
University of Colorado

[redacted]

12 February, 2013

Office of Natural Resources Trustees

[redacted]

Dear Trustees,

I have been an annual research visitor to the Pitchfork Ranch starting in 2009, and I am writing in support of the Pitchfork Ranch restoration proposal, which has received a first tier ranking in your draft plan.

During the four years that I have visited the ranch, I have witnessed the environmental improvements resulting from the restoration efforts undertaken by A. T. and Lucinda Cole. My area of interest is in entomology and in particular, the moth fauna associated with the ranch property. To date, I have found over 400 species of moths. Several of the species have yet to be described, and other species collected represent new state records for New Mexico. In 2012, I recorded 107 species not recorded in the previous three years. I attribute this to the environmental improvement and increased vegetation as a consequence thereof.

I have come to know the Coles quite well and they have discussed with me their long-term plans for the ranch property, especially with respect to restoring the Burro Cienaga as much as possible subject to additional financial support. They are clearly committed to preserving this important habitat for many different biota.

I fully support your preliminary decision to fund their proposal, and I hope that a final decision will provide the requested funding.

Sincerely yours,

Clifford D. Ferris, D.Sc.
Professor Emeritus
University of Wyoming

[redacted]

Grant Soil and Water Conservation District
[redacted]

February 13, 2013

Ms. Rebecca de Neri Zagal
NM Office of Natural Resources Trustee (ONRT)
[redacted]

Dear Ms. Zagal:

The Grant Soil and Water Conservation District (GSWCD) would like to thank you for the opportunity to provide comments on the Draft Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre and Tyrone Mine Facilities. As you may or may not be aware, GSWCD is one of 47 soil and water conservation districts located within the state of NM. The GSWCD is an independent subdivision of state government with a mission to protect and enhance watershed resources within the district boundary. This includes the planning and implementation of restoration efforts and securing funding for such projects.

GSWCD's mission is carried out by a board of supervisors made up of local landowners and residents who are elected or appointed by local citizens who own property and live within the district boundary. The GSWCD Board of Supervisors is very committed to the well being of our watersheds as well as to the economy that these watersheds support. GSWCD has a long history of involvement in a variety of resource restoration projects and has successfully collaborated with other state and federal agencies to secure funding for many different types of resource restoration projects which have been successfully implemented. These projects have resulted in benefits not only to the economy but to wildlife resources as well.

The Board has reviewed the Draft Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre and Tyrone Mine Facilities and agrees that your agency did receive a number of diverse and well-crafted proposed restoration projects. It is obvious that some of the proposals included collaboration of several private entities with federal agencies as well as proposals submitted by individuals and a variety of non-governmental organizations (NGOs) that were all aimed at accomplishing the goals of the ONRT to varying degrees.

Following a review of all Tier 1, Tier 2, and Tier 3 projects, the Board wishes to provide the following comments without regard as to whom or what agency proposed the projects:

1) While the Board does not wish to question the intent of the ONRT, it does conclude that the primary goal for this damage assessment and restoration process is to restore and/or provide habitat for waterfowl as retribution for the losses that have occurred at the various mining operations. It is the opinion of the Board, based upon the draft restoration plan and the fact that a wildlife resource was lost, that the fines the mining company paid (the source of this funding) is expected to replace this lost resource. Thus the Board believes that our constituency and other citizens of New Mexico expect a replacement of lost waterfowl and waterfowl habitat. Therefore, the Board believes that projects that create and provide waterfowl habitat and to a lesser degree terrestrial bird habitat should be given priority.

As the draft restoration plan stated, ONRT feels that the losses to terrestrial wildlife have been compensated for by the transfer of property to the state by the mining company. While the transfer of land will benefit the state parks, the Board does not agree that this transaction provided additional habitat for terrestrial wildlife by simply changing the land ownership from private to state. The Board also does not agree that state, federal or NGO ownership of property or a conservation easement automatically provides for better stewardship of land and water resources or provides additional wildlife habitat. In fact, throughout the nation and New Mexico (including lands within the GSWCD boundaries) some of the most valuable and diverse wildlife habitats are located on privately owned properties. The Board feels that it is important for the ONRT to recognize that properly managed private lands not only provide invaluable wildlife habitat but also provide the state with a tax base from which to collect property tax. This is something that state and federally owned lands as well as NGO tax exempt lands do not provide. Also, private lands support a more flexible and economic prosperous producer which when considered statewide adds millions of dollars to state tax revenues.

2) After reviewing the proposed projects the Board has concluded that the Tier 1 projects, as currently presented, do not provide any new habitat or restoration of any critical waterfowl habitat except for the Mimbres River Watershed project where at least one stock pond will be modified.

The purchase of the Double E Ranch does nothing for restoring or providing waterfowl or enhanced riparian habitat that does not already exist. Further, several members of the Board who live nearby and have firsthand knowledge of the Double E Ranch do not believe that the portion of the Bear Creek drainage located on the ranch provides much if any high value waterfowl or riparian habitat. It should also be noted that the Double E Ranch is located not far from the Gila River where thousands of acres of highly recognized and highly valued Neotropical Bird habitats occur. Any waterfowl or riparian habitat found on or that could be developed on the Double E Ranch would be a very minor addition to what already exists in the area.

The Pitchfork Ranch Burro Cienaga Side Channel Project description does not appear to provide any habitat for waterfowl or enhancement of degraded riparian habitat. In recent years thousands of various grant dollars have been spent on the Pitchfork Ranch to restore and enhance riparian vegetation which has been successful. The treatment of side channels sounds like a worthy project and would be something the Board would be a proponent of especially if it could be shown that the project would reduce downstream impacts on key riparian and wetland areas within the watershed.

After reviewing the Redrock property purchase proposal, the Board believes this project is similar to the Double E Ranch purchase except that it does involve approximately 130 acres of Gila River riparian habitat. Again, as with the transfer of mining company land to the State of NM and the purchase of the Double E Ranch, we do not see that the transfer of private land to State, Federal, or tax exempt NGO ownership as restoring or creating habitat. As with all of the other property transfer proposals this transaction will reduce the tax base and take economic potential away from the local area. Also as with the Double E Ranch purchase, any additional waterfowl or riparian habitat that could be developed on the Redrock purchased land would be a very minor addition to what already exists in the area. Spending a large sum of money for this project would be a very inefficient use of scarce habitat restoration oriented funds.

Thus the only project that we see in Tier 1 as a viable project that actually accomplishes the replacement of waterfowl to the citizens of Grant County and the State of NM is the Mimbres River Watershed Wildlife and Habitat Restoration Project.

3) In regards to Tier 2 projects the Board feels that the purchase of the Davis Farm, Porter Farm, River Ranch and Upper Bear Creek Property are similar to projects in Tier 1 where property is purchased. The Board again believes that these projects will do little to restore waterfowl habitat or compensate local area residents and the citizens of NM for the losses of waterfowl and waterfowl habitat that has occurred. These land purchases will only serve to take more land out of the tax base and to reduce the opportunity for economic activity in Grant and Hidalgo Counties.

Again, the GSWCD feels the acres of high quality waterfowl and riparian habitat that could be generated from these land purchases (with even more investment) would be minor to what already exists along the Gila and Mimbres Rivers. It is again the belief of GSWCD that these projects are a very inefficient use of scarce habitat restoration oriented funds.

4) The Burro Cienaga Stream Stabilization Restoration project, when linked with the other 3 restoration projects submitted by the Upper Burro Cienaga Watershed Association, (Burro Cienaga Grassland Restoration, Burro Cienaga Pinyon / Juniper Restoration and Burro Cienaga Stock pond Restoration) is the only landscape or

watershed scale proposal to be submitted. These projects, when considered together, dovetail well into GSWCD's mission and will have the long-term result of enhancing wetland and riparian conditions across an entire watershed. The stock pond restoration would provide immediate benefits for waterfowl and waterfowl habitat while the other watershed enhancement projects would restore critical watershed functions at the landscape scale. The improved landscape scale watershed restoration and enhancement would provide high quality waterfowl and riparian habitat in the long term.

5) The other Tier 3 projects will also accomplish more for waterfowl and other wildlife habitat improvement than would occur in either the Tier 1 or Tier 2 projects in that these projects are using funds to improve habitat for wildlife instead of purchasing existing habitat. The remaining Tier 3 projects are a scattering of proposals which would be more beneficial to waterfowl and riparian habitat if they were linked to an overall watershed scale restoration project. Given that the remaining projects are not landscape scale in scope, GSWCD does believe these projects are a much better use of funds than the purchasing of existing habitat. The point is, GSWCD believes that habitat restoration projects provide much more benefit than acquisition of existing habitat, which in many cases will have to be restored or enhanced later to truly provide additional habitat.

6) GSWCD believes the Burro Cienaga Stock Pond Restoration Project is likely the best project proposed to accomplish the restoration of waterfowl. This project proposes to provide, by a magnitude of ten times, the habitat of all the other proposed projects combined. Thus, we are perplexed as to why this project was placed in the lowest Tier when it apparently provides the most immediate habitat for waterfowl of any of the proposals.

The Swan Pond Habitat Restoration project also appears to have been missed by the evaluators. Even though this is a small project in comparison to the Burro Cienaga Stock Pond Restoration Project, it would provide a much bigger benefit for waterfowl than most of the Tier 2 projects and all but one of the Tier 1 projects.

In conclusion, GSWCD does not think it is within its mission to properly care for the resources of the GSWCD or the wise use of limited funding to support projects that purchase land and transfer them to state, federal or tax exempt NGO ownership. Transfer of land ownership to the agencies will only burden state and federal budgets with the management of these properties. Further, the transfer of land to NGOs and/or the subsequent purchase of conservation easements as proposed will only serve to reduce the tax bases and lower land values in Grant and Hidalgo Counties. Grant and Hidalgo Counties are not wealthy counties and anything that places an additional burden of funding local and state governments on the hard-working landowners and taxpayers cannot be considered compensating the citizens for the resource damage and waterfowl habitat losses that were the focus of this process.

Furthermore, there is no evidence that the ownership of land by government entities or NGOs provides better management or higher quality wildlife habitat than private ownership. The fact is much of the most diverse and high quality wildlife habitat in the U.S. is owned by private landowners. In Grant County the majority of the most critically endangered wildlife species reside on well-managed private land which is managed for production of livestock and/or crops. Thus these lands not only provide important habitat but also help provide jobs and economic benefits that fund government.

We respectfully request that the ONRT re-evaluate its recommendations and avoid taking productive land resources out of production and off the Counties' tax rolls via transfer to federal, state or NGO ownership. Further, projects should be selected that actually provide restoration or newly created habitat instead of the purchase of existing habitat.

Sincerely,

Johnny Reed, Chairman
Grant Soil & Water Conservation District

CC: Governor Susana Martinez
Senator Howie Morales
Representative Dianne Hamilton
Representative Rudy Martinez
Grant County Commissioner Ron Hall
Grant County Commissioner Brett Kasten
Grant County Commissioner Gabriel Ramos

HIDALGO SOIL AND WATER CONSERVATION DISTRICT

[redacted]

February 19, 2013

Ms. Rebecca de Neri Zagal
[redacted]

RE: Purchase of Wood's Property, Redrock Valley, Grant County, New Mexico

Dear Ms. De Neri Zagal:

The Hidalgo Soil and Water Conservation District (HSWCD) thank you for this opportunity to comment on the Draft Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre, and Tyrone Mine facilities.

HSWCD is a branch of state government. The board is charged by statute with the management of water and water resources. That management will conserve not only the natural resources, but the wildlife that inhabit our lands and waters. The District's boundary takes in all of Hidalgo County, except the municipalities of Virden and Lordsburg. It also includes a portion of Grant County where the Redrock Valley lies.

In representing the residents within this District, this board of supervisors is concerned about several things inherent in your pending purchase of 130 acres of private property at the end of Game Department Road known locally as the Wood's Place.

First, we are opposed to any purchase that will take the property off of the county tax rolls. Second, any transfer of this property into the hands of the Federal Government is increasingly detrimental to our local Customs and Cultures. Federal Land agency policy is continuously changing. Long range planning is nonexistent. Thirdly, we stand strongly opposed to any purchase predicated on the transfer of this land to an NGO affiliated with an environmental cause. In no cases, have such deals benefited historical endeavors.

There is a community acequia, the Grandpa Harper Ditch, which may traverse the target property. That ditch has supplied water to several properties since 1884. We cannot jeopardize the integrity of that ditch with any compromise to maintain it in the future. In the event of a catastrophic flood, the ditch will require rebuilding with material adjacent to its course. We see no guarantees that such vital access will be allowed.

The money you intend to spend in this valley poses great risk to the stakeholders within our district. This is not new habitat. It is already irreplaceable habitat because of its location and the privately funded infrastructure already in place. Any alteration of its status exposes risk to the very reasons of your intended purchase. This is a prime example of why private property has become so valuable to the environmental dynamics of lands dominated by federal ownership.

Thank you for your consideration,

Walt Anderson

Walt Anderson
Chairman HSWCD

QUIVIRA COALITION
education, innovation, restoration—
one acre at a time

February 19, 2013

Office of Natural Resources Trustee
[redacted]

RE: Letter of Support for the "**Burro Cienaga Side Channel, Floodplain and Low Terrace Restoration**" project on the Pitchfork Ranch.

Dear Trustees,

On behalf of the Quivira Coalition, a 501(c) 3 conservation nonprofit in Santa Fe, New Mexico, I am writing to express our support for the "Burro Cienaga Side Channel, Floodplain and Low Terrace Restoration" project on the Pitchfork Ranch.

Cienaga habitats, as a unique subset of wetland habitat types, are rapidly disappearing across New Mexico. The object of the restoration work is to raise the water table by addressing erosion concerns on the landscape. Raising the water table will stabilize the Cienega and reverse the downward trending of the condition of this important wildlife habitat in southern New Mexico.

In the arid southwest, any type of wetland habitat is essential for wildlife, but cienaga habitats are special. We believe that this is a unique opportunity to fund a restoration project that restores rare and endangered cienaga habitat and its associated fauna.

The restoration project has a high potential for success. It will be implemented on land that is protected by a conservation easement and will be implemented on a property where the land owner has an impressive record of successful restoration treatments and progressive land stewardship.

Sincerely,

Mollie Walton

Mollie Walton, Ph.D.
Land & Water Program Director
[redacted]

[redacted]

From: Torres, Roman L -FS[redacted]
Sent: Wednesday, February 20, 2013 11:59 AM
To: Dan Taylor
Cc: Telles, Art -FS; Monzingo, Jerry A -FS
Subject: RE: ONRT Address for support letter/email

To: Dan Taylor
Rebecca Neri Zagal

Date: 2/20/2013

Re: Mimbres River Watershed Wildlife and Habitat Restoration

The Gila National Forest, Wilderness Ranger District supports the Mimbres River Watershed Wildlife and Habitat Restoration proposal. This project will stabilize stream banks along the Mimbres River and improve and enhance Chihuahua Chub habitat above and below the Cooney tract area of the National Forest. This is an excellent collaborative effort with the USFS, Nature Conservancy, BCI, and NMED. Should you have any questions please feel free to call me at the number below.

Sincerely,

/s/ Roman L. Torres

Roman L. Torres
District Ranger
Wilderness Ranger District
Gila National Forest
[redacted]

UPPER BURRO CIENAGA WATERSHED ASSOCIATION

February 21, 2013

Ms. Rebecca de Neri Zagal
New Mexico Office of Natural Resources Trustee
[redacted]

RE: Draft ONRT Wildlife and Wildlife Habitat Restoration Plan Comments

Dear Ms. de Neri Zagal:

The Upper Burro Cienaga Watershed Association (UBCWA) would like to thank you for the opportunity to provide comments on the Draft Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre and Tyrone Mine Facilities. As one of the "Resource Conservation" oriented Non-Government Organizations (NGO's) that has proposed a project for funding through the New Mexico Office of Natural Resource Trustee's Natural Resource Damage Assessment and Restoration process, UBCWA comments are being directed toward the project(s) it proposed, along with comments concerning the process used by the Trustee for assessing projects. The UBCWA has recently received a list of questions from the ONRT and will be responding to the project-specific questions in a separate letter. These questions require a great deal of information, particularly GPS locations of all the tanks involved, so the fieldwork will take a few days to complete.

As with the other NGO's who submitted projects for consideration, UBCWA is made up of multiple individuals and business that are involved with the health of natural resources within New Mexico. It is an organization of concerned citizens who are investing their time and personal resources to improve watershed health and related resource conditions within Southwest New Mexico. UBCWA's mission is to protect and enhance watershed resources within not only the Upper Burro Cienaga Watershed, but throughout Southwestern New Mexico. This includes the planning and implementation of restoration efforts and securing funding for such projects wherever their assistance is requested. *(Watershed Restoration Action Plan and Wetland Action Plan, Headwater Burro Cienaga Watershed, Paragraph 6-7, Page 4, Paragraph 1-3 Page 5)* Being that the members of the UBCWA are themselves agricultural producers, they are able to reach out to and engage many other agricultural producers who have, in the past, been the targets of criticism by many in the environmental community.

The members of the UBCWA have a long history of planning and implementing land restoration projects. UBCWA members have successfully engaged the various state and federal land management agencies to secure funding for many different types of resource restoration projects that have accomplished the goals of both the agencies and the landowners. These projects have resulted in benefits not only to watersheds and vegetative communities, but to a large array of wildlife species and their habitats as well.

Members of UBCWA have reviewed the Draft Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre and Tyrone Mine Facilities and wish to provide the following comments:

1 The UBCWA feels that the review of their proposal, which includes what is identified in the Draft Plan as the Burro Cienaga Stream Channel Stabilization Restoration, Burro Cienaga Grassland Restoration, Burro Cienaga Pinyon / Juniper Restoration and Burro Cienaga Stock Pond Restoration projects, does not address the landscape or watershed scale approach to resource management/restoration that is key to the long term success of their proposal. The UBCWA recognizes that watershed or landscape scale planning and management is critical for enhancing and sustaining ecosystem health. The various projects proposed by the UBCWA, when considered together, fulfill the watershed scale planning mission of both federal and state land management agencies for this watershed. When implemented, these projects will restore critical historic conditions within the Headwaters Burro Cienaga Watershed that are necessary for natural wetland and riparian habitats to exist across the entire watershed.

2 When considering the UBCWA proposal, it should be noted that the stock pond restoration projects were developed to provide immediate benefits for waterfowl and waterfowl habitat, while the other upland vegetative and watershed enhancement projects were developed to restore critical watershed functions at the watershed scale, which will lead to long term wetland and riparian habitat enhancement. The improved landscape scale watershed restoration and enhancement will ensure high quality waterfowl and riparian habitat long into the future.

3 It should also be noted that by implementing the UBCWA proposal, watershed scale planning and linking project actions will more than adequately meet the intent of the ONRT *"to compensate the public for injuries to wildlife, particularly birds, and wildlife habitat resources that occurred when hazardous substances including copper and other heavy*

metals, were released from three copper mining facilities...". Wildlife and wildlife habitat will be better served by addressing an entire watershed and all of the degraded conditions that hamper the ability to sustain healthy ecosystems within the watershed. This will also serve to address the public's interest in healthy ecosystems. A consolidated planning and project implementation effort will be much more efficient and effective than completing a mix of unconnected, unrelated projects across Grant County.

4 The UBCWA, along with the NMED and the GNF, have been instrumental in recently completing the Headwaters Burro Cienaga Watershed, Watershed Restoration Action Plan and Wetland Action Plan (WRAP). This joint planning effort is the foundation for the UBCWA proposal and provides the background information, purpose, need, and rationale for what has been proposed by the UBCWA.

The WRAP provides the nexus for a multiple-agency watershed scale approach to restoring resource conditions within the Headwaters Burro Cienaga Watershed, while also linking multiple resource restoration needs that are necessary to achieve enhanced ecosystem and watershed health. The WRAP not only displays historic and current ecosystem, habitat and watershed conditions for the watershed, but also links the interactions between upland watershed and vegetative conditions with the potential to restore and sustain riparian/wetland habitats; thus the important waterfowl and waterfowl habitat that is the focus of this ONRT process.

5 The UBCWA believes that by operating under the direction spelled out in the WRAP there will be more than adequate governmental monitoring and oversight to ensure that any investments in projects will be properly implemented, monitored and maintained. A steering committee, oversight process, and stakeholder resource sharing process is clearly spelled out in the WRAP and will be followed when implementing any project work. *(Watershed Restoration Action Plan and Wetland Action Plan, Headwater Burro Cienaga Watershed, § d. Partnership Involvement, Pages 20-21)*

6 It is obvious that the ONRT places much emphasis on the project lands being managed under either a conservation easement or the auspices of a government agency or an NGO which supports a specific preservation-oriented agenda. While it is clear that the intent of this requirement is to maintain the project lands in an undeveloped state, the UBCWA has taken a different approach to achieve the same objective. The UBCWA believes that the objective of

keeping land undeveloped and available as high quality wildlife habitat is best achieved by investing in the restoration and enhancement of degraded ecosystem health. The UBCWA believes that by restoring land back to its potential natural condition (PNC) and returning the intrinsic value of the land through investing in proven restoration practices, the current landowners and their families will be able to remain connected to and engaged in caring for the land. The UBCWA believes that the close ties to the land that are developed through families living on and caring for the land for generations provides a strong assurance of not only limited development of the land, but also provides a tremendous incentive for future generations to maintain healthy ecosystems. Keeping land in family ownership and agricultural production greatly reduces the dependence upon government or other funding sources for the on-going protection and on-going management responsibilities of the land.

7 The final comment that the members of the UBCWA would like to offer deals with the administration of the funds and implementation of the selected projects. Members of the UBCWA feel it is imperative that all project selection, project administration, and financial management pertaining to this process be conducted with full transparency and the highest degree of professionalism possible.

Members of the UBCWA feel that it is in the best interest of the public (who are being compensated for their loss) that local elected government officials and local state and federal agency personnel be included in or consulted concerning the selection of the projects. As an unbiased group of subject matter professional, the NMSU Cooperative Extension Service along with members of the faculty at NMSU should be engaged to monitor the selected projects to ensure they are being adequately and efficiently implemented and are meeting the objectives of enhancing and/or providing high quality wildlife habitat. Local government participation in the compensation of the public is the most efficient and inclusive way to ensure the public is aware and made part of the ONRT process. To select, fund and implement wildlife injury compensation projects without local involvement and oversight would deny the public the opportunity to be involved in something that is being carried out for their benefit.

The UBCWA members feel that all project funds should be administered by a fiscal agent, which does not hold any land ownership or other beneficiary interest in the project area or lands. The fiscal agent should be an entity of state or local government and subject to audits

carried out or approved by The New Mexico Office of the State Auditor. Every effort should be made to spend project funds as efficiently as possible and to follow all New Mexico State procurement laws. Benefits derived from the implementation of the selected projects must clearly be related to wildlife, wildlife habitat and ecosystem health as it relates to the general public and not be targeted towards one select group or organization.

In conclusion, the UBCWA respectfully requests that the ONRT will consider having local professional involvement in not only the project selection process, but also in the future monitoring and review of the selected projects. It is also requested that consideration be given to landscape or watershed scale planning and project development that not only provides an immediate source of water related habitat, but also addresses the relationship between degraded watershed and upland conditions, and downstream wetland and riparian habitat. The need for all project funds to be administered by a state or local government-affiliated fiscal agent should be considered as a key requirement in order to ensure full transparency and the highest level of professionalism possible in conducting this process of compensating the public.

Again, the UBCWA wishes to thank the ONRT for the opportunity to comment on the Draft Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre and Tyrone Mine Facilities and hopes to continue an open and cooperative relationship with the ONRT.

Sincerely,

C.R. Evans
Principal Contact
Upper Burro Cienaga Watershed Association

Martinez, Elysia, NMENV

From: [redacted]
Sent: Thursday, February 21, 2013 3:43 PM
To: NMENV-onrtinfo
Subject: public comment on Draft Restoration Plan and Environmental Assessment

RE: Draft RP/EA for 21 wildlife habitat restoration proposals

As long time residents of Grant County, living within 10 miles of Freeport-McMoRan's Tyrone mine, my wife and I would like to express strong support for your 1st tier ranking of the Pitchfork Ranch Burro Cienaga Side Channel, Floodplain and Low Terrace Restoration Proposal. We have seen first hand the amazing restoration results already accomplished on the Pitchfork Ranch, and know that the Cole's commitment to maintaining and expanding upon that work is without parallel. We have spent years observing the beneficial effect that conservation of riparian habitats in the Burro Mountain region has on wildlife. We cannot think of a better use of the Freeport-McMoRan settlement funds than in preserving and improving this important cienaga on the Pitchfork.
Thank you for your work in helping to conserve New Mexico's natural environment.

Sincerely,
David Wait
Charmeine Wait

GOVERNOR
Susana Martinez

DIRECTOR AND SECRETARY
TO THE COMMISSION
James S. Lane, Jr.

Daniel E. Brooks, Deputy Director

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

[redacted]

STATE GAME COMMISSION

JIM McCLINTIC
Chairman
Albuquerque, NM

THOMAS "DICK" SALOPEK
Vice-Chairman
Las Cruces, NM

DR. TOM ARVAS
Albuquerque, NM

SCOTT BIDEGAIN
Tucumcari, NM

ROBERT ESPINOZA, SR.
Farmington, NM

PAUL M. KIENZLE III
Albuquerque, NM

BILL MONTOYA
Alto, NM

21 February 2013

Rebecca Neri Zagal
NM Office of Natural Resource Trustee
[redacted]

George Dennis
U.S. Fish & Wildlife Service
[redacted]

Dear Rebecca and George:

The Department of Game and Fish tentatively supports the New Mexico Land Conservancy's revised proposal requesting funding to secure the purchase of the River Ranch property in Grant and Luna Counties.

Prior to completing an acquisition, our legal counsel and the Director will need to review the project further and present the prospective purchase to the State Game Commission for its approval to complete the purchase. While I cannot guarantee, prior to their review and consideration, that the Director and subsequently the Commission will approve the purchase, I have discussed the property and the potential purchase with the Directorate and we believe this presents an excellent opportunity for the Department and the Commission to protect some valuable wildlife habitat.

Thank you for your consideration of this proposal.

Sincerely,

Matthew Wunder, Ph.D., Chief
Conservation Services Division

Cc; James S. Lane, Jr. – Director
RJ Kirkpatrick; Assistant Director

Martinez, Elysia, NMENV

From: [redacted]
Sent: Tuesday, February 26, 2013 7:36 PM
To: NMENV-onrtinfo
Cc: [redacted]
Subject: Double E Ranch Purchase

New Mexico Office of Natural Resources Trustee Feb. 26, 2013

[redacted]

Dear Sir or Madam:

I am writing to voice my strong support for the purchase of the Double E Ranch, which lies along Bear Creek in the Gila Valley. The purchase of this property would have many important benefits. The purchase would transfer more than 6000 deeded acres from private ownership to the BLM, where it would be protected from further grazing and fenced to insure there is no intrusion of cattle or ATVs. The protected area would include more than three miles along perennial Bear Creek, an important riparian area that supports a population of the endangered loach minnow. In addition, the property surrounds a BLM Area of Critical Environmental Concern that is managed for its high conservation value. Transfer of the Double E Ranch to the BLM would provide an opportunity for the BLM to enlarge the ACEC. Acquisition of this property would also benefit the public, since it would be allowed access to this environmental treasure. Finally, the water rights associated with this property would be used for in-stream flows to benefit the wildlife. As I am sure you are aware, riparian areas throughout the Southwest are seriously endangered even though they provide the richest habitat for wildlife. The opportunity to purchase and preserve an important riparian area like the Double E ranch should not be missed!

Yours Truly,

Ronald J. Parry

[redacted]

Martinez, Elysia, NMENV

From: Joseph Zummach [redacted]
Sent: Tuesday, February 26, 2013 8:10 PM
To: NMENV-onrtinfo
Subject: Double E Ranch land purchase

NM Office of Natural Resources Trustee
[redacted]

I am writing in support of the proposal to purchase the Double E ranch along Bear Creek in the Gila watershed. As a resident of the gila valley I have felt great frustration and a loss in the private ownership of this key riparian area. By preventing public access and by preventing efforts at preservation of this unique habitat of immense scenic and environmental value. Having hiked and explored the areas around this reach of the Bear creek drainage, I can vouch for the above attributes. In any context the above mentioned area would be worthy of National Monument status so with the funds available from the Freeport McMoRan settlement the perfect opportunity has presented itself.

Thank you for listening to my concerns.
Joseph Zummach
[redacted]

Martinez, Elysia, NMENV

From: Katherine Gould-Martin [redacted]
Sent: Wednesday, February 27, 2013 1:51 PM
To: [redacted]
Cc: Joseph Zummach; [redacted]
Subject: Save the Double E for all of creation

Dear Office of Natural Resources,

It has come to my attention that you have a great opportunity offered to you and the means to take advantage of it. The opportunity is the sale of the EE Ranch, a wonderful property in the hills above the village of Gila, located along Bear Creek, which flows into the Gila River. The means are the funds you received from the penalty Freeport McMoRan paid for endangering wildlife with pollution. What a perfect fit!

Although I am writing you from New York State, I own and am building on property along the Gila River. It is, as I'm sure you know, one of the loveliest rivers around. Its protection is very near to my heart. Bear Creek is an important tributary of the Gila. The EE area, which has had cattle run on it, has degraded and needs restoration. If it is subdivided and privately sold, it will continue to degrade. If it is protected, so that young trees can once again get a start, it will become an even more valuable contributor to wildlife habitat. Further, it would become open to biologists to continue their important research on how native New Mexico is coping with continued drought.

I urge you to take advantage of this rare opportunity.

Thank you,

Katherine Gould-Martin

Martinez, Elysia, NMENV

From: Kevin Keith [redacted]
Sent: Wednesday, February 27, 2013 12:50 PM
To: [redacted]
Cc:
Subject: Double E Ranch

To Whom It May Concern:
I would like to encourage the NM Office of Natural Resources Trustee to purchase the Double E Ranch in the upper Gila Valley of New Mexico. This is a unique opportunity to acquire and protect some rare habitat of high ecological value: six thousand acres of private land (and associated public land leases) which includes a three-mile perennial segment of Bear Creek with its tributaries and adjacent uplands. This riparian area is also critical habitat for the endangered loach minnow as well as prime habitat for a wide spectrum of other aquatic, semi-aquatic and terrestrial species.
Please give this area the highest consideration for acquisition.
Sincerely,
Kevin Keith
Gila Valley resident

Martinez, Elysia, NMENV

From: Eleanor Wootten[redacted]
Sent: Wednesday, February 27, 2013 11:10 AM
To: [redacted]
Cc: Donna Stevens
Subject: Double E Ranch

New Mexico Office of Natural Resources Trustee
[redacted]

This is to support the purchase of the Double E Ranch in Grant County with the hope it will be made a National Monument in the near future. It is an ideal area for a monument as it offers a prime example of what New Mexico habitat is like, with desert views, canyon views, and sudden oases of riparian habitat. There are places to hike with lovely views and places to enjoy wildlife.
I believe there are funds available for this purchase from the Freeport McMoRan settlement and this would be a perfect opportunity to use them to help the wildlife that was effected by their faux pas.

I am a resident of the area and care deeply about this issue.

Best regards,

Eleanor Wootten
[redacted]

February 28, 2013

New Mexico Office of Natural Resources Trustee

[redacted]

Dear Ms. Zagal:

Thank you for convening the January 30 meeting in Silver City regarding proposals for use of the FreeportMcMoRan mitigation funds – which I attended. Apologies for not getting my comments to you sooner but I want to register considerable support for the proposal for purchase of the Double E Ranch on Bear Creek in the Cliff-Gila area. We were delighted to learn at the meeting that the Double E proposal had received high ranking for its many merits.

We've been in Gila for much of almost 14 years. Since this time we have watched the Double E area being carved into small acreages and sold off, totally changing the nature of the road approach from Gila. It would definitely be in the common, public interest for this dismemberment of this huge undeveloped area to stop. The considerable riparian area and stream miles along Bear Creek are invaluable in such arid territory; the birds and fish, including the endangered loach minnow, need protection of this area. In more private hands with ever-increasing motorized access, the wildlife values would be severely compromised.

It would be wonderful if BLM could conservatively manage this large tract of land (and related lease) for the benefit of the wildlife of all kinds that rely on it. This particular proposal seems especially true to the mission of the ONRT and the objectives of this particular mitigation assignment. I hope you will forward a "yes" recommendation for this project and we'll soon hear you are working with Gila Resources Information Project to implement this significant and beneficial plan.

Thank you for your service to the natural values of New Mexico.

Sincerely,

April E. Crosby

[redacted]

DOMENICI LAW FIRM, P.C.
ATTORNEYS AT LAW

February 28, 2013

Dave Martin - Trustee
NM Office of Natural Resources Trustee

Ms. Rebecca de Neri Zagal - Director
NM Office of Natural Resources Trustee

NM Ecological Services Field Office
US Fish and Wildlife Service

RE: Comments to Draft Dated January 2013 on behalf of Grant County Cattle Growers and other concerned citizens.

Dear All:

The Grant County Cattle Growers (GCCG) represents about 100 agricultural and rural minded families and individuals in the Grant County area. While some members of (GCCG) participated in proposals that are subject to the above proposed report dated January 2013, it was landowners outside of the Cattle Growers who petitioned the organization to address their concerns. The proposals were generated in response to a request for proposal that also announced criteria for reviewing and ranking the proposals.

The report of this comment provides a response to both concerns about the procedure that has been followed to date and the substantive review and recommendations as a result of that procedure.

EXECUTIVE SUMMARY

The procedure that has been followed in this matter has failed to establish an appropriate objective review process in which the identified criteria are matched against proposals in a way that is transparent, identifiable and reviewable. Further, the methodology appears to build upon longstanding biased information, desires and goals that are not set forth in the public documents, not available for proposers who have not been engaged prior to issuance of the proposal in this matter, and attempts to accomplish a goal which will not have the results that meet the criteria originally established; but rather will implement a preferred land use pattern that penalize efforts to maintain private sector activities on private property and multiple use activities on public land in favor of establishing or increasing restrictions on public lands and attempting to acquire and remove private lands from productive use. The net result of this

action is directly contrary to the economic and social wellbeing of the communities and attempts to narrowly focus habitat improvement efforts in a manner contrary to enhancing the existing and future land use activities and economic sustainability in a way that provides habitat preservation, restoration and enhancement.

I. Background

The New Mexico Office of Natural Resources Trustee and the US Fish and Wildlife Service (collectively, the Trustees) have engaged in a cooperative Natural Resource Damage Assessment and Restoration (NRDAR) process dealing with wildlife and wildlife habitat injuries/damage due to hazardous substances released from three copper mining facilities owned by Freeport-McMoRan Copper & Gold Inc. (FMI). The intent of the process is to compensate the public for injuries to wildlife and wildlife habitat resources that resulted from the release of hazardous substances from the three mines.

The NRDAR process was focused on wildlife and wildlife habitat damage within Grant County, New Mexico near the communities of Silver City, Santa Clara, Bayard, and Hurley. As a result of the Trustee's NRDAR process they were able to successfully get FMI to pay [redacted] and to transfer 714 acres of FMI land to the City of Rocks State Park to settle the allegations dealing with wildlife damages made against the company.

Currently the 714 acres of what was once FMI land has been deeded over to NM State Parks which is a division of the New Mexico Energy, Minerals, & Natural Resources Department. In addition to the above land transfer the Trustees have solicited *"local, state, and federal agencies; nonprofit organizations; stakeholder groups; and private citizens'* for potential restoration proposals that *"would best compensate the public for injuries to wildlife and wildlife habitat resources..."*. Implementation of the selected highest priority projects will be funded using the [redacted] paid by FMI. As a result of the solicitation for potential restoration projects the Trustees received 21 proposals, which have been screened and rated by the Trustees for potential funding and implementation.

The initial Draft Wildlife and Wildlife Habitat Restoration Plan and Environment Assessment for the Chino, Cobre, and Tyrone Mine Facilities (draft restoration plan) has recently been released that identifies 17 proposed projects that passed the Trustees initial screening criteria. These 17 projects have then been further rated using additional criteria developed by the Trustees to establish a priority for funding of project.

Also the draft restoration plan is being released to serve as a Draft Environment Assessment for the project in order for the Trustees to be in compliance with the National Environment Policy Act (NEPA). The trustees have established a comment period lasting until March 4, 2013, in which the public and potential project proponents can send written comments to the Trustees for their consideration.

II. Objections to Procedure

A. The narrow preservation oriented ideology and lack of knowledge of local conditions is represented by the two individuals who conducted the assessment of the proposed projects. A panel of individuals with a much broader background and knowledge base (including local representation) should have been used to conduct the project assessments and the process itself. Potential projects needed to meet specific criteria that dealt with a specific suite of wildlife species and wildlife habitat suitable for the species

injured by FMI actions. With these project needs known up front, the assessment of potential projects could have benefited from input by individuals with knowledge of current conditions in Grant, Hidalgo, and Luna Counties. Also the assessment and rating process could have benefited greatly from someone being part of the process with experience in implementing wildlife/riparian habitat enhancement projects in the ecosystems similar to those found in Southwest New Mexico.

Enhancing wildlife/riparian habitat, and the species that depend on this unique habitat, is nothing new in Southwest New Mexico. The Range Improvement Task Force at New Mexico State University is an interdisciplinary team of ecologists, wildlife experts, range scientists, economists, and other specialists who provide research-based scientific information to help land managers and policy makers with decisions about natural resources management on public and private lands. The Natural Resources Conservation Service has financial and human resources with extensive experience which qualifies them to advise and monitor conservation efforts, including improving water and soil quality, and wildlife habitat. NRCS offices are located in Grant, Luna and Hidalgo Counties. The local Soil and Water Conservation Districts have been working with conservation minded land owners for decades to conserve and improve habitat. These local Conservation District Boards are diverse, experienced, and uniquely qualified to act as fiscal agent and monitoring authority on environmental restoration projects.

There is no lack of agency personnel, retired state and federal employees, and other experienced individuals that could have been (and still could be) included on an assessment panel to review and rate the proposed projects or to evaluate the process itself. Involvement of qualified individuals with experience dealing with local conditions and issues involving local needs would have aided in the selection of projects that best meet the need to compensate the public for injuries to wildlife and wildlife habitat resources. If this process was directed by a panel or committee with qualified, experienced, diverse, and local input, this would have greatly improved the perception of fairness, honesty and transparency when establishing the project assessment and selection process.

B. The random selection of small, isolated projects across the impacted area and the failure to recognize or consider the current condition and amount of efforts already invested in the proposed project areas.

The basic principal of addressing the improvement of wetland and riparian habitats by planning and developing projects at the watershed scale is totally lost in the draft restoration plan. It is a basic principal in watershed management that to be successful, restoration practices are best done starting at the upper end of the watershed and then working downstream from there. Without following this basic principal work done in the lower watershed is always prone to being destroyed by flooding and high yields of sediment. The Trustees have stressed the need for the projects they invest in to have "a high potential for long-term success", but gave preference to several small isolated projects without knowledge or regard for the condition of the watershed they

are located in or where the projects are located within the watershed. A wiser decision for the Trustees would be to address multiple projects in one watershed where conditions in the entire area are being addressed and where projects in the upper end of a watershed will reduce the risk to projects further downstream. If upstream restoration can't be guaranteed, the project will not have "a high potential for long-term success".

III. Objections to Application Criteria

A. The idea presented in the Trustees criteria that the potential to sustain future wildlife and wildlife habitat needs to be achieved through land management and/or ownership by a nonprofit environmental organization or certain government agencies is flawed. The original criteria presented by the Trustees did not include this requirement. At the admission of the Executive Director of ONRT at the January 30th public meeting in Silver City, the criteria were changed after the proposals were reviewed. The Trustees now clearly state that a higher rating for funding will be achieved if a conservation easement that restricts the use of the land in question is in place. Most conservation easements are held by nonprofit environmental organizations, even when many are purchased with tax dollars. It is disingenuous and erroneous to assume that habitat can't be protected while being in production and owned by individual citizens. Nearly 75% of land in the United States is privately owned. If we require that ownership of the land be transferred out of private ownership to be preserved, we forfeit preservation of all land that remains in private ownership. Please present any scientific information to show that public land or lands owned by non-profit entities are better preserved than privately owned lands.

B. In New Mexico, 47% of the land base is already held by either the state or federal government and there are an ever increasing number of acres being taken out of the tax base due to acquisition by nonprofit organizations. This reduction of taxable land and the reduction in the generation of taxable income supported by the use of these lands are making it increasingly difficult for local governments to provide the basic public safety services that they are responsible for providing. The local governments are more and more depending on grants from the federal government and/or increased tax rates to provide public safety and other necessary services that are the responsibility of local government.

   What has not been made clear in the assessment of the proposed projects is that due to the tax base being chipped away by things such as land being taken out of production under the guise of wildlife and wildlife habitat restoration, tax rates over time will ultimately need to be increased to cover the loss of taxable land and taxable commerce. The unknowing, hard working local citizen will be made responsible for funding the hidden cost of these questionable, emotion driven land purchases.

C. When looking at the land purchase proposals in the draft restoration plan it is obvious that the Trustees either didn't know or failed to recognized the magnitude of high quality, excellent condition, riparian wildlife habitat that exist in Grant, Luna, and Hidalgo Counties. Over the past 20 years the three Soil and Water Conservation Districts, Natural Resources Conservation

Service, NMSU Range Improvement Task Force, U S Forest Service, Bureau of Land Management, State Land Office, State Forester, and an untold number of private individuals and entities have worked together to enhance thousands of acres of riparian, wetland and upland wildlife habitat. There currently are well over 80 miles of improved high quality riparian habitat along the Gila River and its tributaries in Grant and Hidalgo Counties alone. This equates to thousands of acres of recently improved high quality riparian/wildlife habitat that is due to these agencies' and individuals' efforts on both private and public lands.

It is disingenuous for the Trustees to imply that the purchase of a few hundred acres of marginal riparian habitat for [redacted] is somehow necessary in order to compensate the public for injuries to wildlife and wildlife habitat resources. This is not cost effective use of the money. More habitat restoration would take place by selecting projects that actually restore habitat as opposed to transferring title of the land. The wildlife and public would be much better served if the Trustees focused their efforts on helping the local private sector land managers improve riparian/wildlife habitat and doing the same on public lands that already exist and could remain open to the public for multiple uses. The proposal to purchase additional lands associated with riverine vegetation and make it available for only a select few activities will only serve to benefit a few nonprofit environmental organizations, allowing them to increase their base of operations in the area, not exclusively for the purpose of conservation but also as they look for more opportunities to take more private property under the guise of the protecting the environment.

The idea that the public will realize a substantial benefit from opening these purchased lands to a very restricted suite of recreation activities does not guarantee habitat restoration nor does it fit with the current culture of Southwest New Mexico, which is oriented towards the traditional and multiple uses of the land. Use of easily accessible spots along the Gila River for a weekend afternoon picnic was once something enjoyed by many local residents, but this activity is almost unheard of today due to unnecessary restrictions and liabilities now associated with threatened, endangered and sensitive wildlife species and their riparian habitats. We know through science-based research that nature and man can co-exist and thrive together.

D. Other considerations that the Trustees have failed to adequately recognize are; the current location and condition of the areas being proposed for treatment. It would be very advantageous for the Trustees to have information from qualified (unbiased) persons who had visited the proposed project sites and had a firsthand look at the current conditions and the potential for their investment to actually make a difference in habitat quality. No visits were made to most sites, no questions were asked of some proponents, and the Trustees made assumptions. All of this could have been avoided if utilization of a local panel of qualified individuals with a much broader background and knowledge base would have been utilized to conduct the project assessments and the process itself. The Soil and Water Conservation Districts and the Natural Resources Conservation Service, are familiar with the lands in question. These organizations operate under established rules for conservation, preservation and enhancing habitat for wildlife, and are experienced in writing and enforcing contracts, monitoring projects and acting as fiscal agent to guarantee performance.

IV. Request for Reprioritization

Based on the above comments, the proposals should be re-prioritized.

The bias towards conservation easements and expensive purchases of private property should be removed.

On behalf of the Grant County Cattle Growers and other concerned citizens, We appeal to the Trustee himself, Mr. David Martin, that in order to avoid biases and to improve the perception of fairness, honesty and transparency, he appoint a committee or panel of qualified, experienced, diverse, and local persons to review the process and the restoration proposals, and that this committee be charged with the re-prioritization of the proposals.

We contend that if the projects were properly assessed using objective criteria all of the properties involving purchase of either fee or conservation easement interest would be moved to Tier two or three with the corresponding re-ranking of remaining projects to provide for the selection of projects that best meet the need to compensate the public for injuries to wildlife and wildlife habitat resources.

Thank you for your attention. We look forward to a revised report. I suggest the background of this project as set forth below be incorporated into the decision making.

Thank you for your attention, we look forward to a revised report that more accurately and appropriate reflects the objective and applies the criteria for the projects at issue.

Sincerely,

Pete V. Domenici, Jr., Esq.

PVD/srr/3001

cc: [redacted]

Martinez, Elysia, NMENV

From: Tris Germain [redacted]
Sent: Thursday, February 28, 2013 12:52 PM
To: NMENV-onrtinfo
Subject: Freeport McMoran Mitigation

NM Office of Natural Resources Trustee
[redacted]
2/28/2013
Dear Sir:
I live in Cliff, NM, not far from the Double E Ranch. I know this ranch and surrounding lands well. Purchasing the Double E as part of the mitigation for the Freeport McMoran spill is a great proposal. I have been on Horseback or hiking through most of Bear Canyon including the Double E and am always amazed at the wide variety of wildlife and fauna. This includes a beautiful canopy of mature Sycamore and Cottonwood trees. I have see everything from the endangered Southwest Fly Catchers to Mountain Lion and Bear. Unfortunately, like a lot of ranch riparian areas, you don't see many young trees or saplings and there is little dense cover for the wildlife because of the grazing. Right now the access to all this beautiful country on and behind the ranch is very difficult or impossible because it's blocked by private land. Opening this land up with your purchase would make a lot of folks around here very happy.
These type of riparian areas are becoming rarer and rarer and believe this opportunity to protect an area important to migratory birds, endangered birds and fish should not be missed.
Yours Truly
Tris Germain
[redacted]

Martinez, Elysia, NMENV

From: Merritt Helfferich [redacted]
Sent: [redacted]
To: NMENV-onrtinfo
Subject: Freeport-McMoRan mitigation

Greetings:

I urge the Office of Natural Resources Trustee to purchase the Double E Ranch that includes a significant part of the Bear Creek riparian habitat as compensation for the damage caused on other streams by Freeport-McMoRan, et al by the release of hazardous substances into the watersheds.

This property is eminently suitable and valuable for compensation because it surrounds a BLM Area of Critical Environment Concern and because it would benefit the public, who would thus be allowed access to this area including Hell's Half Acre.

The Bear Creek is a precious water source for wildlife and This is critical habitat, with water, in a very dry region, that should be in public hands. Its change of ownership and management for the public good will protect wildlife as desired by the settlement.

--

Merritt R. Helfferich
[redacted]

Martinez, Elysia, NMENV

From: JOSEPH KURINZI-DSL [redacted]
Sent: Thursday, February 28, 2013 6:30 AM
To: NMENV-onrtinfo
Subject: Double E Ranch

To whom it may concern:

I am writing to support the purchase of the Double E Ranch with Freeport McMoRan's Natural Resource Damage funding. I am a Gila Valley resident, and I know firsthand how important it is to preserve riparian habitat for migrating birds, threatened and endangered species, and all wildlife.

As you know, Bear Creek is a perennial tributary of the Gila River, and supports an increasingly rare mature sycamore-cottonwood bosque. However, this stream is currently in a degraded condition, with little recruitment of young trees, because of grazing and other historic land uses.

The Double E, currently privately owned, has no conservation easement or other protective covenants. If it is not purchased and turned over to a federal land management agency, it will doubtlessly be subdivided into many parcels, resulting in degradation and certain diminishment of the riparian area along Bear Creek.

Because funding for land acquisition comes along so seldom, and the Double E is such an ecological jewel, I encourage you to seize the opportunity to purchase this land.

Thank you for your consideration of this worthy project.

Sincerely,

Joe Kurinzi

NEW MEXICO LAND CONSERVANCY

Honoring New Mexico's Land Heritage

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Honoring New Mexico's land heritage by helping people conserve the places they love

March 1, 2013

Rebecca de Neri Zagal
[redacted]

Dear Rebecca,

Please find attached our comments on the "Draft Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre and Tyrone Mine Facilities" (DEA) which was issued by the New Mexico Office of Natural Resource Trustee (ONRT) and U. S. Fish & Wildlife Service (USFWS) (collectively, the "Trustees") in January 2013. We are also submitting a revised version of our *River Ranch Acquisition, Restoration and Management Project* proposal, which we originally submitted on July 13, 2012, along with a letter of interest from our partner, the New Mexico Department of Game & Fish (NMDGF)

As part of your planning process, you and your colleagues have developed evaluation and selection criteria to help guide your initial recommendations regarding acquisition and restoration project selections, and the final decisions to be made by the Trustees later this year. As an advocate for our project and as a member of the larger conservation community and public, we are providing detailed comments on the application of your evaluation and selection criteria to ensure that they are applied as objectively and uniformly as possible throughout this process.

At the time we submitted our initial proposal last July, we requested up to [redacted] in funding through the Natural Resources Damages Assessment and Restoration (NRDAR) process associated with the settlement with Freeport McMoran to implement this exciting wildlife habitat conservation project. While the River Ranch project received a favorable review with regard to the anticipated benefits to birds and other wildlife, it was placed into the second of the three funding tiers identified in the DEA, presumably due to its high costs (particularly for long-term operations and maintenance) relative to other competing projects.

After six months of negotiating with the two potential state agency partners that we identified in our original proposal – NM State Parks and NM Dept. of Game & Fish (NMDGF) – NMLC has determined that the NMDGF is the most appropriate public agency to ultimately own the River Ranch. This decision was based not only upon the agency's mission and ability to deliver the type of on-the-ground management that would be most beneficial to birds

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and wildlife, but also on its current interest in and capacity for acquiring and managing new land for wildlife management purposes. Please see the attached letter of interest from NMDGF. The NMDGF has both the internal resources to manage properties that it acquires, but also has access to external funds (State Wildlife grants) to assist with their actual acquisition. The emergence of the NMDGF as a willing partner and the availability of these resources have enabled us to significantly reduce our funding request from ONRT and USFWS from [redacted] to [redacted] without diminishing the wildlife management results and benefits identified in our original proposal.

We appreciate the amount of work that you and your colleagues have invested into this planning process. While many of the projects that have been presented are worthy of funding, we all recognize that there are not sufficient resources available through the NRDAR to fund all of the projects currently identified in the DEA.

We believe the River Ranch provides the kinds of significant bird, wildlife and public benefits that you are seeking to achieve through your planning process. In fact, having the benefit of knowing what other projects are being considered for funding now, we strongly believe that, the River Ranch is unrivaled in terms of its habitat quantity, quality and documented bird diversity. Our hope is that, after further review and consideration of major factors such as environmental benefits, readiness, cost-effectiveness and likelihood of success, you will agree with us that the River Ranch is one of the projects that will best serve the Trustees wildlife mitigation goals and, therefore, merits NRDAR funding.

Please let us know if you have any questions or require any additional information. We appreciate the opportunity to present our comments on the DEA and our revised proposal, and look forward to a final decision by the Trustees later this spring. Thank you for your time and consideration.

Sincerely,

J. Scott Wilber
Executive Director

c.c. George Dennis, U.S. Fish & Wildlife Service
Matt Wunder, NMDGF
Mark Watson, NMDGF

New Mexico Land Conservancy

Comments on the Draft Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre and Tyrone Mine Facilities in Southwestern New Mexico

The following comments relate to how the screening and evaluation criteria developed by the New Mexico Office of Natural Resource Trustee (ONRT) and the U.S. Fish & Wildlife Service (USFWS)(collectively, "the Trustees") were developed and applied in the Draft Wildlife Habitat Restoration Plan and Environmental Assessment (DEA) issued in January 2013.

1. High-Priority Criteria

Evaluation Criterion #1: *Is likely to directly benefit birds that were affected by hazardous substance releases at and from the Sites. Factors to be considered include how the proposed project will benefit birds, particularly migratory birds and waterfowl, and whether the project specifically improves high-priority bird habitats,* ***such as riparian and floodplain habitats.***

Comment: In our proposal, we indicated that, of the approximately 1,010 acres comprising the River Ranch, at least 380 acres (38%) of are riparian and floodplain areas. This estimate was based on a GIS analysis that we performed for the property and the aerial image that we provided of the property supports this. However, in the DEA, the National Wetlands Inventory (NWI) map was used to determine the amount of actual wetland acreage occurring on the property, concluding that only 147 acres of such habitat occurs. Using only wetland habitat as a metric, which, as defined by the U.S. Army Corp of Engineers, requires specific hydrology, soils and vegetation components, significantly underestimates the total riparian and floodplain acreage on the River Ranch as identified in the criteria. We found no other instance in the DEA where the NWI map or a wetland metric was applied to another proposal.

Recommendation: We request that the final Wildlife Habitat Restoration Plan and Environmental Assessment (EA) evaluate all property acquisition proposals in a comparative fashion, using the common metric of total acres of riparian and floodplain habitat and the percentage that this particular habitat represents of the entire acreage on each property. This will provide: 1) an objective comparison of how much high priority/high quality riparian and floodplain habitat for birds and other wildlife actually occurs on each property; and 2) an objective comparison of the ratio of high quality riparian and floodplain habitat to upland habitat for each proposed acquisition. As indicated in evaluation criterion #1 above, riparian and floodplain habitat should be the common metric, not wetlands.

Recommendation: We request that the final EA document how the analysis was conducted in the DEA which resulted in the River Ranch receiving a below-average rating for cost-effectiveness for protecting high priority/high quality riparian and floodplain habitat. We believe that the use of the NWI map instead of riparian and floodplain acreage - as was used for the other proposed acquisitions – may have resulted in the River Ranch receiving a lower rating under this particular criterion. We request that a new analysis in the final EA clearly compare all the different proposed acquisition projects and their associated high priority/high quality riparian and floodplain habitat. We request that the combined riparian and floodplain acreage be the common metric to compare proposals, not wetlands, as identified in Criterion 1.

Recommendation: Another standardized metric that could be used to evaluate the comparative value of each proposed acquisition for high priority/high quality bird habitat would be to quantify the number of documented bird Species of Greatest Conservation Need (SGCN), as identified in the Comprehensive Wildlife Conservation Strategy for New Mexico (CWCS) (NM Dept. of Game & Fish, 2006), for each property. We have documented 8 bird SGCN on the River Ranch, including yellow-billed cuckoo, mourning dove, band-tailed pigeon, Botteri's sparrow, Bell's vireo, Lucy's warbler, thick-billed kingbird, and common black hawk. All but the band-tailed pigeon and thick-billed kingbird have been documented nesting on the River Ranch. Although not a SGCN, Mexican ducks (a subspecies of mallard) have been documented nesting on the River Ranch, which relates to the waterfowl component of this criterion.

Evaluation Criterion #2: *Has a high potential for long-term success*

Comment: Of all the projects presented, the River Ranch has one of the highest potentials for success in terms of providing significant benefits for birds and other wildlife due to a variety of factors, most notably: 1) the existence of the conservation easement which ensures maximum protection from future subdivision and development of the property; 2) the collective strength and benefits of having at least three different entities – NM Department of Game & Fish (NMDGF), NM State Forestry and NMLC - involved with the long-term management and stewardship of the property; 3) the existence of a prior agreement with the landowner for the work that has already been done makes this project "ready to go" along with the added benefit of a lot of useful information from the conservation easement transaction - most importantly, the purchase price - that will directly contribute to and facilitate the proposed acquisition; and 4) the presence of healthy, mature native riparian habitat on the property that will respond rapidly with a few minor interventions (riparian fencing and/or complete removal of livestock) to provide even greater ecological benefits.

As a more general comment, land protection, particularly when it combines the absolute permanence of a conservation easement with public ownership, provides much greater and more secure benefits as a conservation tool for wildlife than restoration, where a sudden change in the subject property's ownership, use and management, or an unexpected natural disaster (such as a fire or flood), can significantly diminish the

conservation benefit and undermine the initial investment in restoration. This is especially true of restoration on private lands that are not permanently protected through a conservation easement.

We noted that the River Ranch appears to be the only project were the existence of a conservation easement was considered a negative attribute. For example, in the case of the Burro Cienaga projects on the Pitchfork Ranch, the existing conservation easement was viewed favorably and it was frequently noted throughout the DEA that conservation easements would add value and, therefore, might be recommended and, perhaps, even required for all restoration projects. The existing conservation easement on the River Ranch has several important benefits. First, in terms of cost-effectiveness, the conservation easement has reduced the value of the property/purchase price for acquisition purposes by nearly 50%. Second, the conservation easement ensures that, regardless of who owns the property in the future, the property can never be subdivided or developed (TNC and other conservation organizations routinely sell and trade properties they own, and, occasionally, even government agencies). Third, through the process of placing the conservation easement, NMLC already has a demonstrated and established history of securing an agreement and successfully working with the landowners to protect the property. We have already conducted and gathered a substantial amount of due diligence and useful baseline and appraisal information that will directly support and facilitate the proposed acquisition of the property by NMLC for the NMDGF.

In your analysis of the River Ranch, you note that the conservation easement allows grazing and, if acquired by a private landowner, the high value riparian habitat could be significantly degraded by continued grazing. However, on P. 4-28, you conclude that *"the degree of benefits associated with the River Ranch project is less than other proposed habitat protection and improvement projects because the existing conservation easement provides many of the benefits of land protection."* This conclusion contradicts your earlier acknowledgment of the vulnerability of the riparian habitat on the River Ranch due to the grazing provision in the easement, and fails to recognize and appreciate the more substantial benefits of this project that will come from this property going into public ownership. This conclusion also implies that because the River Ranch already has a conservation easement, it is less threatened than the other properties that have been proposed for acquisition and, therefore, it should have a lower priority than other projects that have no current protection/conservation mechanisms in place. If the levels of threat or urgency were actually identified as part of the screening and evaluation criteria, this might be a valid point. However, the levels of threat and urgency are not referenced within the current screening and evaluation criteria, nor is there any comparative analysis in the DEA of the relative degrees of threat/urgency for the different properties proposed for protection and/or restoration. So, while the degree of threat and urgency might be worth noting, they are not really relevant in terms of what the evaluation criteria and the DEA define as being most important for final project selection - namely, that the proposed project's potential benefit to birds and riparian habitat in the most cost-efficient manner and with the highest potential for long-term success.

Finally, NMDGF ownership will ensure that the property is appropriately managed for its wildlife and other conservation values. NMDGF ownership will also allow for controlled public access and compatible uses such as hiking, hunting, wildlife viewing and photography on levels that are consistent with the varying and seasonal needs of the different species of birds and other wildlife. In the case of the other acquisitions proposed for BLM ownership, will BLM actually manage those properties for wildlife and conservation purposes (i.e. as an Area of Critical Environmental Concern), and do they intend to remove grazing from those properties to allow for the anticipated natural regeneration of those properties and the riparian areas, the protection and restoration of which are presumably the primary goals of these proposed land protection and restoration projects?

Recommendation: We request that the final EA document explain why the conservation easement was viewed as a negative factor on the River Ranch, in light of evaluation criteria #2 and #3. These criteria both specifically indicate that proposed projects will be given a more favorable evaluation if they use proven technologies and have mechanisms in place to ensure long-term success (factors to be considered include whether the project includes provisions for land protection, such as a conservation easement or management by a public agency or conservation organization).

Recommendation: We recommend that there be some analysis and consideration of the potential implications for birds and wildlife of the different forms of use and management that will be allowed and applied by the various public agencies and conservation organizations that have been proposed as prospective owners for the different acquisition projects.

Evaluation Criterion #3: *Has a low risk of failure*

Comment: The River Ranch project has a very low risk of failure. The need for long-term protection is already addressed through the conservation easement, co-held by NMLC and State Forestry, and will be further ensured through the proposed acquisition and management of the property by NMDGF, which has the necessary resources to operate and maintain the property for the long-term. Another important aspect of this criterion, that should be relevant to all of the proposed projects, is the "readiness" factor. Because of the work that has already been done to complete the conservation easement in 2011, the River Ranch is "ready to go" in terms of having a commitment from the landowners, and fairly recent due diligence and appraisal information that will facilitate the proposed acquisition of the property by NMDGF.

Recommendation: We request that the final EA include a comparative discussion of each proposed acquisition's readiness for purchase. At a minimum, this should include whether there is some form of commitment from the seller/landowner and the buyer/agency or conservation organization. Additional supporting evidence such as due diligence, availability of current appraisal information, phase 1 environmental, and/or mineral survey, etc. would provide an even stronger demonstration of project readiness.

In addition, clearly identifying how each proposal was ranked relative to the others would enhance transparency. We are aware that some of the proposed acquisition projects currently have no commitment with or agreement in place from the landowner that would provide some indication of their willingness to sell the subject property for a specified price. This is perhaps even more important than having a commitment from the public agency or conservation organization that plans to buy the property. How long will ONRT and USFWS be willing to wait to fund a project that has a low readiness factor? We believe that "readiness" - if not elevated to a stand-alone, high priority criterion - should be an important element used in assessing each project's potential "risk of failure."

Evaluation criterion #4: *Has feasible and cost-effective provisions for operations, maintenance, and monitoring. Proposed projects that have sufficient provisions or less need for operations, maintenance, and monitoring will be evaluated more favorably.*

Comment: We and some other project proponents have the perception that we were encouraged to include operations and maintenance costs in our initial proposals only to have our projects ranked lower in the DEA relative to other projects with lower costs. In our case, a large part of our request in our initial proposal was for operations and maintenance funding because one of our potential partners at that time – State Parks – strongly indicated to us that, due to budget and staff cuts, they would only consider acquiring the River Ranch if they had sufficient resources with which to operate and maintain it. It is our belief that the River Ranch was ranked lower than other acquisition projects, in part, due to the large part of our request that was for operations and maintenance costs.

Based on our negotiations with State Parks and NMDGF over the past six months, we have now concluded that NMDGF is really the agency best suited to own and manage the River Ranch, particularly for wildlife purposes. NMDGF has also demonstrated a strong interest in acquiring the property (see attached letter of interest/support) and the capacity to appropriately manage it. The fact that NMDGF has access to internal and external resources to support this project now permits us to reduce our original request for funding from [redacted] More specific details are provided in our revised proposal (which we have submitted separately).

Evaluation criterion #5: *Need for Natural Resources Damages Assessment and Restoration (NRDAR) funding*

Comment: While we have significantly lowered our funding request, the need for NRDAR funding is even greater now because the State Wildlife Grant (SWG) that NMDGF is proposing to utilize for the acquisition requires a minimum 1:1 non-federal match. The total estimated cost for the River Ranch project as currently proposed is [redacted] of which we are proposing that NMDGF contribute [redacted] using a SWG, and ONRT/USFWS contribute [redacted]

2. Medium-Priority Criteria

Evaluation criterion #1: *is located close to where the injuries occurred at the sites*

Comment: The River Ranch is situated directly southeast of the Chino Mine Permit Area and is located in the Mimbres Watershed, where most of the injuries to birds and wildlife occurred. We noted that you have currently only identified one Tier 1 project for potential funding in the Mimbres Watershed. We also noted that one of the other projects currently ranked in Tier 1 is not even located in either the Mimbres or Gila watersheds.

We also note that in the original *"Wildlife and Habitat Restoration Project Information Guidelines"* (provided at the beginning of this process), under #5 - *Wildlife and wildlife habitat benefits,* it states "*Benefit migratory bird habitat and surface waters in the Gila and Mimbres River basins."* However, the *"Screening and Evaluation Criteria for Proposed Restoration Projects"* handed out at the January 30th public meeting presents a modified geographic scope: *"Proposed projects that are located in areas that have a positive impact on wildlife injured at the Sites (e.g., projects that are in the same migratory flyway) will be evaluated more favorably. A secondary geographic priority will be projects located within the Mimbres or Gila watersheds, which are the watersheds where the injuries occurred."*

It is not clear to us why or when the geographic scope for project selection was expanded, and the Gila and Mimbres watersheds relegated to secondary priority. This is especially confusing since these watersheds were the original focus for project consideration and that is where the damages actually occurred. Expanding the geographic scope of the evaluation criteria to "within the same migratory flyway" extends the potential project scope to the west coast for the Pacific Flyway, which extends westward from the Continental Divide, and into the Great Plains states for the Central Flyway, which extends eastward from the Continental Divide. A broadening of the geographic scope seems unnecessary, especially since there are so many good projects within the two target watersheds to consider.

Recommendation: We request that the final EA document why it was necessary to expand the geographic scope for project selection and funding.

Evaluation criterion #2: *Is cost-effective compared with other projects that provide similar benefits.*

Comment: On P. 4-28, the DEA states "*this project received a below average rating for cost-effectiveness compared to other projects that provide similar benefits. Due to the large amount of land associated with the property, this project is very cost-effective when compared to other land protection and improvement projects on a total acreage basis. However, if cost-effectiveness is calculated solely for riparian habitat, then this project is not considered as cost-effective as other similar projects"*. We are not aware of the property acquisition costs for competing projects, but if you simply look at the ratio of riparian/floodplain compared to upland acreage, the River Ranch has an almost 1:2 (380: 630 ratio of riparian/floodplain to upland acreage whereas the Double E Ranch, for

example, has a 1:65 (94 acres: 6100 acres) ratio of riparian/floodplain to upland acreage. Even if you only attribute 147 acres of "wetland" habitat to the River Ranch, the ratio of "wetland" to upland acreage would still be 1:6 The River Ranch contains and protects more acres of riparian and floodplain habitat than any other acquisition proposal. Moreover, based on the number of documented bird occurrences (including two recent field surveys within the past six months), the River Ranch is equal or superior to all of the other acquisition projects in terms of the quantity and quality of riparian habitat for birds.

Given the reduced funding request from [redacted] to [redacted] the amount of matching funds being provided, and the potential for NMDGF to bring additional resources to the property through management, the River Ranch project is one of the most cost-effective projects being proposed. This is especially true considering the riparian/floodplain habitat that will be permanently protected and managed primarily for wildlife habitat (not livestock production, recreation or any other form of land/public use) on a cost per acre basis. It is also important to note that, when determining the cost per acre benefits of the River Ranch, they are actually much lower because the existing conservation value has already reduced the per acre value of the property by almost 50% of its value before the easement. The property value reduction associated with the conservation easement should really be recognized as a form of in-kind match because only half the funding that would otherwise have been required if the easement were not already in place will be needed for its acquisition.

Evaluation criterion #3: *Is likely to benefit multiple wildlife resources and services*

Comment: We have documented 16 SGCN, as identified in the CWCS (NMDGF, 2006), as occurring on the River Ranch. In addition to the 8 bird SGCN mentioned above that have been documented on River Ranch, we have documented 4 mammal SGCN, including Arizona myotis bat, mule deer, black bear, and a newly discovered population of Arizona gray squirrel (a new Luna County record); one amphibian SGCN (Arizona toad; a new Luna County record) and one reptile SGCN (ornate box turtle), and two of four dragonfly SGCN in the state, dashed ringtail and arroyo darner, both Luna County records (dashed ringtail is one of the rarest dragonflies in New Mexico). Three additional bat species, 9 additional mammal species, 6 additional reptile species, and 102 additional bird species (all non-SGCN) have been documented at the River Ranch.

Recommendation: To our knowledge, more SGCN and general animal (primarily vertebrate) species diversity has been documented at the River Ranch than any other proposed acquisition property. We request that the Final EA comprehensively discuss the known species diversity of each proposed acquisition property to allow for comparison between properties, and identify how properties were scored relative to this criterion. More specifically, was just a yes or no value assigned to each property for meeting this criterion, or was each property scored relative to the actual species diversity documented for each property?

Evaluation criterion #4: *Is consistent with regional planning and federal and state policies*

Comment: The CWCS (NMDGF, 2006) is perhaps the most relative and important "state policy" with regard to the goal of conserving/enhancing migratory bird habitat. The discussion above, identifying at least 16 SGCN occurring on the River Ranch, is a measure of the importance of the property to conserving SGCN identified in the CWCS. The River Ranch functions as an important wildlife migratory corridor (primarily for neotropical migrant songbirds), which have been identified in the CWCS as a critically important component of wildlife habitat to protect.

3. Low-Priority Criteria

Evaluation criterion #1: *Is likely to provide benefits quickly after project implementation. Proposed projects that provide benefits sooner will be evaluated more favorably.*

Comment: The River Ranch will immediately continue to provide high quality bird habitat without any additional restoration efforts. Because of the unique old growth velvet ash/Fremont cottonwood stand, the River Ranch may provide more high quality nesting habitat for migratory birds and migratory bird species than any of the other Tier 1 and 2 acquisition proposals; only nesting bird surveys could determine this. It is worth noting that only a few non-native Russian olive trees were detected, and these could be removed quickly and easily; and no tamarisk were detected. NMDGF would likely remove livestock from the property, unless needed as a periodic management tool to keep the giant Sacaton stands from becoming decadent and providing fuels that could permit wildfire to endanger the riparian gallery forest stands. Excluding livestock from the riparian gallery forest and woodlands would facilitate broadleaf tree regeneration, creating a denser understory and multi-canopy layers, which will increase bird species diversity and reduce stream water temperatures, reducing evaporation and increasing wetland soils, hydrology and vegetation. If livestock were completely removed from the property after purchase by NMDGF, no additional fencing would be needed, as the property boundary fence would exclude livestock from the entire property and enable the same restoration results.

If NRDAR money is not awarded to this project, NMDGF will not be able to use State Wildlife Grant funds to purchase the River Ranch because of the non-federal match requirement (which would be fulfilled by the NRDAR funding). The property might sell to a buyer interested in maintaining or increasing livestock grazing on the property, which could preclude riparian broadleaf tree regeneration, development of an understory and bank shading. Continued burning of the widespread giant Sacaton grasslands to benefit livestock could endanger the old growth ash/cottonwood stand.

Evaluation criterion #3: *Leverages funding*

Comment: The requested NRDAR funding [redacted] would leverage SWG funding [redacted] for the acquisition of the River Ranch by NMDGF, and also cover acquisition and stewardship

fees. NMDGF would operate and maintain the property over the long-term with Federal Aid in Wildlife Restoration Act (Pittman Robertson) funds.

Recommendation: We recommend that this criterion be elevated to high-priority status. Maximizing the relatively small amount of NRDAR funding available through matching and in-kind contributions should be one of the highest priorities for the efficient use of this valuable, but limited resource.

4. Final Comments and Recommendations

Comment: National Environmental Policy Act (NEPA) guidelines strongly discourage using any pre-decisional language or making any pre-determinations at the draft environmental assessment stage. The initial ranking of proposed projects into different funding tiers at the level of the DEA, although preliminary, could potentially be perceived as a form of pre-determination. At the very least, it has likely created some level of expectation among those proponents who have currently been ranked in Tier 1, and some frustration or disappointment for those in Tiers 2 and 3. To ensure a more objective and equitable initial assessment process, we feel that it might have been more appropriate and effective, at the level of the DEA, to simply use the screening and evaluation criteria to describe and assess the strengths and weaknesses of each project, then allow for the public comment period prior to any actual ranking of the projects for final funding consideration.

Having said that, we acknowledge that we were told all along that we would have an opportunity to submit revised proposals based on changing conditions, partners and funding, and we do appreciate the opportunity to submit our revised proposal, which we have attached separately. As represented at the meeting in Silver City on January 30th and subsequent conversations with the ONRT/USFWS evaluation team, we also appreciate the willingness of the team to consider a potential re-ranking of all project proposals for final funding consideration by "the Trustees" based upon their further, collective analysis of public comments and revised proposals.

Recommendation: We would like to request that the ONRT/USFWS evaluation team rank all of the Tier 1 and Tier 2 projects in order of priority in the final EA so that, if there is any funding leftover after all Tier 1 projects have been approved for funding, it will be clear to the remaining project proponents which Tier 2 projects will be next in line for potential funding consideration and they can then determine how best to proceed with their landowners and partners without having to keep them on hold for an indefinite period of time.

To put this into perspective, in the case of the River Ranch project, we have the current advantage of being able to work with a willing, enthusiastic and cooperative landowner. However, she will turn 95 later this month and, if her health suddenly declined or she passed away, project negotiations and agreements would then have to be conducted solely with the beneficiaries of the estate, which could prove to be much more challenging.

Martinez, Elysia, NMENV

From: mary burton riseley [redacted]
Sent: Saturday, March 02, 2013 8:26 AM
To: NMENV-onrtinfo
Subject: Purchase of Double E Ranch in Grant County

Dear NM Natural Resources Trustee,

I am so grateful for the opportunity to recommend to you an historic use of funds made available because of the past environmental mistakes incurred by Phelps Dodge, now Freeport MacMoRan in its Grant County mining operations.

The purchase of the Double E Ranch and the transfer of its lands to the BLM would accomplish many sustainability goals of our area. The riparian corridor along the three miles of Bear Creek included within the boundaries of the Ranch is quite degraded, with few if any new stands of sycamore and cottonwood trees. This riparian corridor has the potential to provide habitat to several endangered or threatened species, including the willow flycatcher and the loach minnow. Downstream reaches of the creek can only benefit as well from the protection of the riparian area along this three miles.

I have hiked to Hell's Half Acre from above, which is a difficult access to its spectacular rock formations. Providing public access from downhill will be a great benefit to our area, attracting the economic values of increased environmental tourism.

Funds to purchase large tracts of land like this beautiful ranch are rarely available, and I fervently hope that you will decide to use some of this money to buy this 6000 plus acre ranch to enhance the fine environmental values of the Gila River drainage. It would be an investment in the healthier future we all desire.

Thank you for your attention.

Sincerely,

mary burton riseley
[redacted]

Martinez, Elysia, NMENV

From: Bob Sivinski [redacted]
Sent: Saturday, March 02, 2013 5:07 PM
To: NMENV-onrtinfo
Subject: Burro Cienega
Attachments: image002.jpg

Dear Natural Resource Trustee,

I am writing to comment on your choices of habitat restoration projects with the settlement from Freeport-McMoRan.

I am personally familiar with Burro Ciénega on the Pitchfork Ranch. The side channel, floodplain, and low terrace restoration project is worthy of your support. Ciénega Spring (on the west edge of the ranch) is a very rare remnant of an aridland spring and spring run in the Chihuahuan desert of southwestern New Mexico. Many aridland springs in this part of the state have long been captured and destroyed by the copper mill at Hurley (including Apache Tejo spring, Kennecott Warm Spring, and Cold Spring). The few remaining spring are oases in the desert and important wetland habitats for wildlife. The owners of Pitchfork Ranch, A.T. and Cinda Cole, have made sacrifices and done a wonderful job restoring the spring run and riparian woodland for the endangered Gila topminnow, Chiricahua leopard frog and a great variety of birds. Their proposed project will enhance and expand the progress already made.

I speak from 27 years of experience as a biologist and conservation specialist for the State of New Mexico, Energy, Minerals and Natural Resources Department. I worked with the Coles during the establishment of a conservation easement on their ranch and have also studied Burro Ciénega during a state-wide botanical assessment of aridland springs. The spring and spring run at Burro Ciénega comprise rare and special wildlife habitat worthy of restoration and protection.

Sincerely,

Robert Sivinski

[redacted]

Martinez, Elysia, NMENV

From: [redacted]
Sent: Sunday, March 03, 2013 7:06 PM
To: NMENV-onrtinfo
Cc: Dutch Salmon
Subject: Double E Ranch

To whom it may concern,

Please accept this email in support of acquisition of the Double E Ranch on Bear Creek for ultimate management by the U.S. Bureau of Land Management. As you are no doubt aware, Bear Creek supports a recently discovered population of loach minnow *Tiaroga cobitis,* a federally and state protected fish species. This population is separated from it nearest neighbor population in the Gila River by several miles of normally dry stream channel. Although no investigations have occurred to date, it is possible, if not likely, this population is genetically distinct from that in the Gila River. Conservation of this population is important to survival of the species. Its recent uplisting by US Fish & Wildlife Service from 'threatened' to 'endangered' and the same action by New Mexico Department of Game & Fish several years ago are grim testaments to its imperiled status and the need to afford it every degree of security possible.

In my 25+ years as the native fish biologist for the New Mexico Department of Game & Fish, a substantial part of my career was devoted to efforts to conserve native fishes of the Gila River drainage. In that time, few opportunities to accomplish so much for this increasingly rare fauna were offered as purchase of the Double E Ranch will do for loach minnow, as well as other rare native fauna.

Thank you.

David L. Propst
[redacted]

Ms. Rebecca de Neri Zegal
New Mexico ONRT
[redacted]

March 4TH, 2013

RE: Comments to Draft Wildlife and Wildlife Habitat Restoration Plan

Dear Ms. Neri Zegal,

Please consider these comments on the both the Process and Draft Wildlife and Wildlife Habitat Restoration Plan developed by ONRT and the US Fish and Wildlife Service (Trustees) concerning the appropriation of [redacted] received from a settlement reached with Freeport-McMoRan Copper & Gold Inc., (FMI), after the release of hazardous substances from three copper mining facilities owned by FMI.

1) The plan overall does not provide for the prudent use of the money for wildlife and habitat restoration.

The plan to spend [redacted] to purchase a few thousand acres (the EE ranch) and convert it to BLM land when the BLM already administers 13.5 million acres in New Mexico will do little for wildlife and wildlife habitat resources or to compensate the public for injuries to such. The proposed purchase of the EE ranch would do little more than convert 6000 acres of private land to public land in an area where several million acres of US Forest, Wilderness, BLM and State Lands already exist.

The costs associated with taking private grazing land out of production and off of the tax roles are prohibitive on several fronts. More habitat restoration would take place by selecting projects that actually restore habitat as opposed to merely transferring title of the land. This applies to other ideas in the Draft to spend large amounts to purchase even much smaller parcels of land and turn them over to the ownership or control of non-profits or govt. agencies. (89 acres Davis Property – 63 acres Porter Property – 1010 acres Red Rock Property).

2) The plan to purchase land is not in the best interest of the citizens of Grant County or the State of New Mexico.

In New Mexico, 47% of the land base is already held by either the state or federal government and there are an ever increasing number of acres being taken out of the tax base. The reduction of taxable land and the reduction in the generation of taxable income supported by the use of these lands make increasingly difficult the ability of local governments to provide the basic public services they are responsible for providing. What has not been considered in the assessment of the proposed projects is that due to the tax base being chipped away, ultimately the need will arise for increased taxes elsewhere to cover the loss of taxable land and commerce, and the unknowing, hard working local citizen will be made responsible for funding the hidden cost of these questionable, emotion driven land purchases.

3) Consulting was sought from outside the State of New Mexico when adequate resources are within the state and even within the local area. Why?

Enhancing wildlife/riparian habitat, and the species that depend on this unique habitat, is nothing new in Southwest New Mexico. There is no lack of agency personnel, retired state and federal employees, and other experienced individuals that could have been (and still could be) included on an assessment panel to review and rate the proposed projects or to evaluate the process itself. Involvement of qualified individuals with experience dealing with local conditions and issues involving local needs would have aided in the selection of projects that best meet the need to compensate the public for injuries to wildlife and wildlife habitat resources. Please consider just these three examples of local human resources:

The Range Improvement Task Force at New Mexico State University is an interdisciplinary team of ecologists, wildlife experts, range scientists, economists, and other specialists who provide research-based scientific information to help land managers and policy makers with decisions about natural resources management on public and private lands.

The Natural Resources Conservation Service has extensive experience which qualifies them to advise and monitor conservation efforts, including improving water and soil quality, and wildlife habitat. NRCS offices are located in Grant, Luna and Hidalgo Counties, and several retired NRCS employees provide consulting in the area.

The local Soil and Water Conservation Districts have been working with conservation minded land owners for decades to conserve and improve soil and water conditions and thus to restore habitat. These local Conservation District Boards are diverse, experienced, and uniquely qualified to act as fiscal agent and monitoring authority on environmental restoration projects.

4) The process was directed by only two individuals. If a larger more diverse panel or committee with qualified, experienced, and local people would have directed the process, this would have greatly improved the perception of fairness, honesty and transparency when establishing the project assessment and selection process.

There is no shortage of such people in the local area, as we point out in (3) above. The Trustee of ONRT or the Goernor should appoint a committee to review the process and Draft Plan or better the committee could direct the process and make the selections under the ONRT – Trustee's supervision.

5) The plan was developed without talking to all of the proponents or seeing most of the proposed restoration sites.

If a local panel or committee could direct the process all of the proponents could have been interviewed and the sites visited – rather than just a select few. This would give a much better idea about what was being proposed and would have improved the perception of fairness, honesty and transparency.

6) The random selection of small, isolated projects across the impacted area, and the failure to recognize or consider current conditions, will limit long term success of the projects.

The basic principal of addressing the improvement of wetland and riparian habitats by planning and developing projects at the watershed scale is totally lost in the draft restoration plan. It is a basic principal in watershed management that to be successful, restoration practices are best done starting at the upper end of the watershed and then working downstream from there. Without following this basic principal work done in the lower watershed is always prone to being destroyed by flooding and high yields of sediment. The Trustees have stressed the need for the projects they invest in to have "a high potential for long-term success", but gave preference to several small isolated projects without knowledge or regard for the condition of the watershed they are located in or where the projects are located within the watershed. A wiser decision would be to address multiple projects in one watershed or even a larger area where conditions in the entire area can be addressed and where projects in the upper end of a watershed will reduce the risk to projects further downstream. If upstream restoration can't be guaranteed, the project will not have "a high potential for long-term success".

7) There is evidence that the land purchase decisions were made before the selection process began.

8) Criteria were added/changed after the applications were received, was this to support pre-determined project selection?

9) The draft shows unfounded biases against private property owners as environmental stewards of the land.

Again, a diverse committee could work through these prejudeses and other problems in the process and draft.

10) The need for the trustees to select projects that have been proven to work.

Again, enhancing wildlife/riparian habitat, and the species that depend on this unique habitat, is nothing new in Southwest New Mexico. Some ideas work and some don't. There is no lack of agency personnel, retired state and federal employees, land owner conservationists, and other experienced individuals that could be called upon to serve on an assessment panel to review and rate proposed projects. Projects should be selected that have been proven to work and have stood up to the test of time in other locations.

Summary –

Transfer of title to land does not translate into restoration/conservation. Plenty of land already exists on which to restore habitat. Land purchases for this purpose are a waste of money.

The Trustee or the Governor should apoint a local committee or panel to carry out or at least review the entire process and project selection. All of the above concerns (1-10) could have been addressed/avoided in short order and with little cost by having such a committee in place.

Thank You,

Gerald W. Billings Jr., [redacted]

Martinez, Elysia, NMENV

From: Stefan Link [redacted]
Sent: Monday, March 04, 2013 8:09 AM
To: NMENV-onrtinfo
Subject: Purchase of the EE Ranch

Greetings,

I am writing in regards to the utilization of funds received by Freeport-Mcmoran as payment for their gross environmental impact. I am in favor of the purchase of the EE Ranch. To preserve and create public access to this land and surrounding areas would be of great benefit both for the biological diversity as well as for recreational purposes. Significant pieces of land such as this and other parcels such those around the Kneeling Nun are of great importance to the local community. Open access to such lands should be a priority.
Thank you. Sincerely Stefan P. Link

From: Lister, Raymond [redacted]
Sent: Monday, March 04, 2013 2:37 PM
To: Neri Zagal, Rebecca, NMENV
Cc: William Childress; Jim McCormick Jr.; Jennifer Montoya; Kendrah Penn
Subject: Re: Draft Wildlife Restoration Plan & Environmental Assessment for Mine Facilities

Hello Rebecca,
Thank you for the opportunity to provide comments to the **Draft Wildlife Restoration Plan and Environmental Assessment for the Chino, Cobre and Tyrone Mine Facilities.** The BLM Las Cruces District is submitting the attached comments for consideration. If you should have any questions or concerns regarding these comments, please don't hesitate to contact me. The BLM Las Cruces District has been in communication with various proponents for Tier One acquisition proposals involving BLM lands. We fully support these acquisitions as beneficial to the public and serving as part of the off-set to natural resource damages identified in the NRDA.
Ray Lister

Bureau of Land Management – Las Cruces District
Comments to Draft Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre, and Tyrone Mine Facilities

February 25, 2013

Section	Comment
Section 4.3.2 (Double E Ranch)	There is no mention of state grazing leases within the ranch boundary and what their disposition might be. The proposed project describes that riparian fences would be constructed on Bear Creek to achieve riparian restoration objectives. However, recent discussions with BLM Las Cruces District have considered other management alternatives. We recommend that the discussion of proposed BLM actions should be expanded/reworded to include that BLM would evaluate all potential management actions, including grazing management options, to achieve riparian restoration objectives if transferred to BLM stewardship. This would be accomplished via subsequent required NEPA documentation prepared by BLM upon transfer. Recommend rewording last sentence of paragraph 2 under Project Description as follows: Restoration actions would include changes to grazing management, including but not limited to construction of exclosure fences, to limit grazing and off-road vehicle use in the riparian areas, allowing riparian vegetation to reestablish naturally. Last paragraph of section 4.3.2 makes it sound like the only change in management, thus protection or habitat improvement benefits, would be due to riparian habitat exclusion. Again, other management options may be available that could negate the need for construction and thus long-term maintenance of riparian exclosures. For example, other options could include closure of the grazing lease and acquired lands to grazing. Implementation of these options could involve stipulated agreement at time of transfer of ownership and would require subsequent evaluation by BLM in a Resource Management Plan Amendment and required NEPA.
Section 4.3.4 (Red Rock Property)	Items discussed with TNC regarding transfer and long-term stewardship to BLM: -initial NRDA cost should include construction of required boundary fences. -initial NRDA cost should also include at least 10-year annual maintenance costs for boundary fences. Other items to investigate would be development of stewardship agreement (MOA) with BLM regarding no grazing clause, investigation of who has maintenance responsibility for any portion of existing boundary fences, recognition of any necessary rights-of-way for access to remaining private lands, follow-up BLM plan amendment/NEPA for inclusion into adjacent ACEC.

	Under expected benefits, improved access for public is important benefit, since access is currently limited.
Section 4.4.1 (Upper Burro Cienega Project)	We can't tell from the project description if BLM lands are involved. If they are, there may need to be additional NEPA completed (tiered to this EA) and other authorizations required before on the ground improvements can be implemented on BLM lands.
Section 4.4.4 (River Ranch Purchase)	Description states there are approx. 1,000 ac of Federal lease. There will need to be some discussion with BLM as to the outcome of the existing BLM grazing lease, especially if it is currently attached to the deeded lands proposed for purchase. Whoever purchases the lands will/may be responsible for maintenance of range improvements on BLM lands associated with the grazing lease.
Projects 4.5.1 (Pitchfork Ranch Mesquite treatment) and Project 4..5.4 (Burro Ciennega Mesquite treatment)	BLM's experience with herbicide applications to mesquite have demonstrated a far much less success than treatment of creosote invaded grasslands. This should be recognized in the project evaluation (note: a low potential for success is recognized in last paragraph/section of project 4.5.4). For project 4.5.4, it states that livestock stocking rates will be "reduced" (as opposed to deferred) during the growing seasons following treatment. BLM's experience has shown that deferment for 5-6 months during the growing seasons following treatment has significantly higher influence on post treatment success. It is unclear whether any of the proposed mesquite treatment sites are located on BLM lands. If so, there has been no communication/coordination with BLM on these projects. If BLM lands are involved, BLM would conduct site evaluations to determine site potential, require additional NEPA analysis and require minimum 2 year deferment of grazing during the growing season following treatment. Monitoring would determine if additional growing season grazing deferment would be required.
Project 4.5.6 (Migratory Bird Grassland Restoration)	This is a BLM proposal for restoration of creosote and mesquite invaded Chihuahuan Desert grasslands. The BLM proposes to use of Tebuthiuron to treat creosote invaded grasslands. Second to last sentence under Project Description states that Tebuthiuron would be used to treat mesquite as well. The appropriate herbicide for treatment of mesquite is Reclaim (clopyralid) and Remedy (butoxyethel ester of triclopyr). It is worthy to note that BLM has completed the required NEPA for these proposed projects. Especially since section 6. states that analysis of Tier 3 projects would be done at a later date (this NEPA basically covers Tier 1 and 2 projects, which are assumed to be mostly funded).
Section 5.2	There is no mention of NM State Land Office as part of the land ownership within the restoration area.

Section 6.1.4	This section for Special Status Species does not make an affect determination for Federally listed species. Even if a project is expected to have a beneficial effect, there needs to be some reference to required Section 7 consultation for the proposed actions. Formal consultation is referenced under project 4.5.7 if needed. This is the only place in the document that makes reference for the need to consult with USFWS under ESA.
Table 7.1	This should state Las Cruces District (not Las Cruces Division)

United States Department of the Interior

FISH AND WILDLIFE SERVICE

[redacted]

March 1, 2013

Ms. Rebecca de Neri Zagal
Executive Director
[redacted]

RE: Ancheta Creek Project Proposal to New Mexico Office of Natural Resources Trustee

Dear Ms. de Neri Zagal:

The U.S. Fish and Wildlife Service (Service) Partners for Fish and Wildlife Program (Partners Program) is pleased to support the New Mexico Land Conservancy (NMLC) in their application for funds from New Mexico's Office of Natural Resources Trustee. These funds would be designated for conservation and restoration activities on the Ancheta Creek property owned by Johnnye Lewis and Verner Westerberg. Ancheta Creek is a tributary to the Mimbres River near San Lorenzo, New Mexico. This property, which is 910 acres, is important in terms of hydrologic function and wildlife habitat value.

The Service's Partners Program supports the landowner's goals of placing a conservation easement and continuing restoration efforts on their Ancheta Creek property. The Partners Program agrees with both NMLC and the landowners that this two pronged approach would benefit their property and the Mimbres watershed as a whole. The proposed conservation and restoration efforts are important because Ancheta Creek drains into the Mimbres watershed, which has been identified as a "key watershed" by the State of New Mexico's Comprehensive Wildlife Conservation Strategy plan. In the past, the Partners Program funded some riparian restoration along Ancheta Creek which included deflector and grade control structures. Currently, the Partners Program is working with the U.S.D.A. Natural Resource Conservation Service Office and Stream Dynamics Inc. to develop future restoration projects on this property.

The merits of the NMLC proposal are: their proven track record, the achievable outcomes, the cost-effectiveness of the project, and the clear benefits to species of concern in the Mimbres Basin. The Partners Program agrees with NMLC and the landowners that restoration of the Ancheta Creek can assist recovery for federally threatened and endangered species like the southwestern willow flycatcher, Chihuahua chub, and Chiricahua leopard frog. Recovery of these species is of high importance to the Service. The Service also sees this area as an important

wildlife corridor, as it is a large tract of private land between the Mimbres River and the Gila National Forest.

The Partners Program fully supports the efforts of NMLC and the landowners in their goal to conserve and restore this Ancheta Creek property. Thank you for the opportunity to express our support for your continued watershed, ecosystem, and wildlife habitat restoration efforts. Please contact me, Nancy Baczek, at [redacted] if you have any questions.

Sincerely,

Nancy Baczek

Nancy Baczek, State Coordinator
Partners for Fish and Wildlife Program

From: [redacted]
To:
Subject: Bear Creek, Gila, NM
Date: Monday, March 04, 2013 4:03:12 PM

To Whom It May Concern:

I fully support the proposal to purchase the Double E Ranch in the Gila Valley and transfer management to the BLM. Acquisition of this large tract of land will ensure that this ecological treasure is protected from further degradation and subdivision.

As you may know, perennial Bear Creek supports a relatively healthy sycamore/cottonwood bosque, an increasingly rare find along our Southwestern streams. With climate change predictions of a hotter, drier Southwest, this plant community may vanish from many semi-arid stream corridors.

It is important to preserve perennial streams, as they provide habitat for many species of migrating birds and other wildlife including the endangered loach minnow. Chiricahua Leopard Frogs may occur in Bear Creek, and the riparian area is suitable habitat for Southwest Willow Flycatcher. Perennial streams also provide ecosystem services including flood mitigation, and groundwater recharge.

Funding for land acquisition doesn't come along often; I encourage you to take advantage of this rare opportunity to purchase the Double E Ranch.

Thank you.

Sincerely,

Dr. Kathy Whiteman

[redacted]

The Nature Conservancy
Protecting nature. Preserving life.™

[redacted]

March 4, 2013

Ms. Rebecca de Neri Zagal

[redacted]

Thank you for the opportunity to submit comments to the Office of the Natural Resources Trustee regarding the Wildlife and Wildlife Habitat Restoration Alternatives (Draft, January, 2013) and Tier I proposed restoration projects. The Nature Conservancy has over twenty-five years of experience of partnering and implementing conservation projects in Southwestern New Mexico. Land acquisition, restoration, and ecological management have proven to be an effective means of creating and restoring habitat along the Mimbres and Gila Rivers.

During the last 100 years, New Mexico has lost an estimated 90% of its original riparian habitat (Krzysik 1990). Portions of the riparian forest community would have contained wetlands such as marshes, wet meadows, and oxbow sloughs (NMDGF 2006). The Tier I proposed restoration projects will protect and restore these under-represented habitats, thereby providing habitat for migratory birds and waterfowl.

Five sites along the Gila and Mimbres Rivers illustrate the benefits of the proposed restoration projects. The diverse multi-aged floodplain forest of the Cliff-Gila Valley and Bird Area provide habitat for one of the highest densities of breeding neotropical migrant birds in the United States (Stoleson & Finch 1997), providing a stopover for over 250 migratory bird species (Zimmerman 2006). Over the past twenty years, the river corridor in the Cliff-Gila Valley has begun to recover. Cattle and vehicles use were excluded from much of the floodplain, enabling riparian vegetation to dramatically recover. Vegetation adjacent to the river creates resiliency that reduces flood scour and fosters conditions for more extensive wetlands to develop.

Floodplain-wide surveyed cross-sections depict numerous wetland features along the river (Soles 2011). Information provided by Roland Shook and Mike Fugagli, both of whom have conducted bird surveys and studies in the Cliff-Gila Valley describe numerous Common black hawk (a nest every ½ mile) and numerous Western wood peewee, Lucy's warbler, Bullock's oriole, and Bewick's wren. They note increases in Yellow-billed cuckoo, Bell's vireo, Yellow warbler, Common yellowthroat, Yellow-breasted chat, and Gila woodpecker. A more recent example occurs in the Iron Bridge Conservation Area, jointly owned by the Conservancy and NMDGF. In just six years, surveys show that Southwestern willow flycatcher territories have become established in the recently restored habitat (Shook 2011).

In 2002 the Nature Conservancy constructed an irrigated wetland at the Gila River Farm. This project illustrates the effectiveness of this technique for creating riparian and wetland habitat through acquisition, grazing management and improved access to water. The past restoration at Burro Cienega on the Pitchfork Ranch has had similar impacts by raising the water table. The additional proposed restoration will increase the extent of habitat. Water in an arid region is a magnet for birds and other wildlife, observed at the Gila River Farm (Attachment B) and recorded through monitoring at the Pitchfork Ranch.

From 1995-1999, the Gila National Forest created 4 floodplain wetlands and 4 upland terrace pits at the Bird Area. Fences were constructed to control vehicles and cows. Dr. Roland Shook completed a long term (2000-2007) study of changes in bird populations, documenting an increase in Western wood pewee, Brown crested flycatcher, Bell's Vireo, Yellow warbler, Yellow-breasted chat, and Northern cardinal (BLM 2003). While habitat changes over time with subsequent floods and variable flows, it is clear that restoration and grazing management has significantly increased bird habitat in this reach of the river.

The Bureau of Land Management conducted monitoring in the Gila Lower Box where cattle were excluded in 1990 after a Nature Conservancy acquisition and transfer. The total number of adult Southwestern willow flycatchers increased from 5 in 1993 to 93 in 2003. Similarly, restricting grazing along a perennial reach of Bear Creek, a tributary to the Gila, will over time enable high-quality riparian habitat to develop for flycatchers and numerous other bird and aquatic species.

As in the Gila, the Conservancy's conservation strategy in the Mimbres is to protect and restore aquatic and riparian communities by eliminating threats such as inappropriate grazing, off-road vehicle damage, inappropriate development in flood prone areas, levee building or bank stabilization. At the Conservancy's Mimbres River Preserve this has been by far the most successful and cost-effective means to recruit multi-aged stands of riparian trees and shrubs and create structurally diverse riparian habitat. The development of an extensive beaver complex on the Lower Mimbres Preserve is currently providing habitat for waterfowl. Some of the work proposed by Bat Conservation International in their Mimbres River Watershed Wildlife and Habitat Restoration will remove non-native trees along the Mimbres River corridor, maintaining high quality riparian floodplain habitat and reducing non-native seed sources.

In conclusion, land management agencies and the Conservancy have both learned from numerous restoration projects that have been implemented along the Gila and Mimbres Rivers. Quantitative and qualitative data from these areas show that protecting and restoring riparian areas improves water quality and riparian habitat. Robust riparian vegetation and hydrologically connected floodplains can increase shading and reduce stream velocities, which in turn help reduce erosion and decrease water temperatures, all of which may help support and sustain native riparian, wetland, and aquatic species (Beschta, 1997; Tabacchi et al., 1998). The four Tier I proposed restoration projects selected will directly benefit birds and have a high potential for success.

Sincerely,

Martha S. Cooper

Martha S. Cooper

Attachment A

Literature Cited

Beschta, R.L. 1997. Riparian shade and stream temperature: An alternative perspective. *Rangelands* 19(23):25–28.

Boucher, P.F., S.H. Stoleson, R.S. Shook, J. Monzingo, and R.D. Pope. 2003. Riparian restoration on the Gila River, New Mexico, creates breeding habitat for Southwestern Willow Flycatchers. *Studies in Avian Biology* 26:135-142.

Bureau of Land Management – New Mexico, Las Cruces District Office. 2003. 2003 Summary Report. Annual population number and nesting success data for the Gila Lower Box.

Krzysik, A.J. 1990. Biodiversity in riparian communities and watershed management. *In* R.E. Riggins, E.B. Jones, R. Singh, and P.A. Rechard (eds.), Watershed planning and analysis in action. Proceedings of the symposium held at Durango, Colorado, July 9-11, 1990. American Society of Civil Engineers, New York, New York.

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Soles, E, 2011. Long-term hydrological and geomorphological monitoring, Gila River, New Mexico. Final Report for the Nature Conservancy and New Mexico Department of Game & Fish.

Stoleson, S. H. and D. M. Finch. 1997. Reproductive success of the Southwestern Willow Flycatcher in the Cliff-Gila Valley, New Mexico. Summary report for the 1997 field season. U.S. Forest Service, Rocky Mountain Research Station. Albuquerque, NM.

Tabacchi, E., D.L. Correll, R. Hauer, G. Pinay, A. Planty-Tabacchi, and R.C. Wissmar. 1998. Development, maintenance, and role of riparian vegetation in the river landscape. *Freshwater Biology* 40:497–516.

Zimmerman, D. 2006. Birds of the Gila National Forest: A checklist. Prepared by Forest Service, Southwestern Region MR-R3-06-01

Attachment B

List of birds commonly observed at The Nature Conservancy's Gila River Farm restored wetland. List compiled by Carol Fugagli; the list is not exhaustive and focuses on birds that use the wetland during the winter.

Pied-billed grebe
Great blue heron
Canada goose
Gadwall
American wigeon
Mallard
Northern shoveler
Northern pintail
Green-winged teal
Canvasback
Lesser scaup
Bufflehead
Hooded merganser
Common merganser
Ruddy duck
Osprey
Northern harrier
American coot
Sandhill crane
Killdeer
Yellow-billed cuckoo
Western sandpiper
Least sandpiper
Common snipe
Belted kingfisher
Black phoebe
Say's phoebe
Southwestern willow flycatcher
Vermilion flycatcher
Ash-throated flycatcher
Cassin's kingbird
Western kingbird
Bell's vireo
Cassin's vireo
Loggerhead shrike
Tree swallow
Violet-green swallow
American pipit
Yellow-rumped warbler
Lark bunting
Savanna sparrow
Song sparrow
Lincoln's sparrow
Dark-eyed junco
Northern cardinal
Red-winged blackbird
Cassin's finch
House finch
American goldfinch
Bewick's wren
Wilson's warbler
Curve-billed thrasher
Phainopepla

C. Signature Pages

New Mexico Office of Natural Resources Trustee Approval of the Final Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre, and Tyrone Mine Facilities

In accordance with Trustee protocol regarding documentation for Natural Resource Damage Assessment and Restoration (NRDAR) projects, the New Mexico Office of Natural Resources Trustee is providing its approval for the final Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre, and Tyrone Mine Facilities.

Approved:

Ryan Flynn
Trustee
New Mexico Office of Natural Resources Trustee

11/8/2013
Date

U.S. Department of the Interior Approval of the Final Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre, and Tyrone Mine Facilities

In accordance with the U.S. Department of Interior policy regarding documentation for natural resource damage assessment and restoration projects (521 DM 3), the Authorized Official for the Department must demonstrate approval of draft and final Restoration Plans with their associated National Environmental Policy Act documentation, with concurrence for the Department's Office of the Solicitor.

The Authorized Official for the Chino, Cobre, and Tyrone Mine Facilities is the Regional Director for the U.S. Fish and Wildlife Service's Southwest region.

By the signature below, the final Restoration Plan and Environmental Assessment is hereby approved.

Approved:

Regional Director
Southwest Region
U.S. Fish and Wildlife Service

NOV. 15, 2013
Date

DEPARTMENT OF INTERIOR
U.S. FISH AND WILDLIFE SERVICE
500 GOLD AVE SW
ALBUQUERQUE, NM 87102

FINDING OF NO SIGNIFICANT IMPACT

ISSUANCE OF A RESTORATION PLAN FOR THE WILDLIFE AND WILDLIFE HABITAT FOR THE CHINO, COBRE, AND TYRONE MINE FACILITIES

Pursuant to the National Environmental Policy Act of 1969 (NEPA), we prepared an Environmental Assessment (EA) for the issuance of the Restoration Plan (RP) for injuries that occurred to wildlife and wildlife habitat by the Chino, Cobre, and Tyrone Mine facilities (Mines) under the Natural Resources Damage Assessment and Restoration claims. The Trustees, the U.S Fish and Wildlife Service (Service) and State of New Mexico Office of Natural Resource Trustees (ONRT) (collectively Trustees), solicited, reviewed, evaluated and selected a suite of restoration projects that more than offset the injury estimated at the Mines.

Preferred Alternative

The preferred alternative consists of a suite of restoration projects that cumulatively aim to compensate for injuries to wildlife and wildlife habitat resources that occurred when hazardous substances were released from the Mines. Potential projects were identified through outreach to local, State, and Federal agencies; nonprofit organizations; stakeholder groups; and private citizens. Through these efforts, the Trustees identified 21 potential restoration projects.

Potential restoration projects were evaluated against the screening criteria to determine whether each project met minimum standards of acceptability. Projects that met the screening criteria were evaluated using evaluation criteria to differentiate the wildlife value as related to the Mines injuries among the projects. Comments and additional information received during the public comment period were used to reevaluate the projects described in the draft RP/EA, and also evaluated additional projects that were submitted during the public comment period. Settlement funding is insufficient to fund all of the proposed projects within the preferred alternative. Therefore, the Trustees grouped projects into three priority tiers for funding. These tiers are based on how well each project met the Trustees evaluation criteria and the total costs of different combinations of projects. Projects in the first tier have the top priority for funding.

Alternatives Considered

No Action Alternative

Evaluation of a no-action alternative is required under NEPA [40 CFR § 1502.14(d)]. The selection of this alternative by the Trustees would mean that no actions would be taken by the Trustees to restore injured wildlife and wildlife habitat resources, and that the public would not receive compensation for losses from the Mines that occurred in the past or are ongoing. This

alternative may be used as a benchmark to evaluate the comparative benefit of other actions. Because no action is taken, this alternative also has no cost.

Public Comment

The Trustees held a public informational meeting in Silver City, New Mexico on May 30, 2012. The purpose of this meeting was to provide an overview of the NRDAR planning process, describe the selection and evaluation criteria for projects, and solicit project ideas for inclusion in the draft RP/EA. A notice of the informational meeting was sent to a list of approximately 70 entries maintained by the New Mexico ONRT, which included all agencies, organizations, and individuals who had expressed interest in the NRDAR process for the Mines, posted in the local paper, and on the ONRT website. The Trustees received 21 proposed projects from local proponents. Following review and evaluation of these projects the Trustees released the draft RP/EA on January 16, 2013 with a public comment period held through March 4, 2013. During the public comment period, the Trustees held a public meeting on January 30, 2013 in Silver City, New Mexico. Topics covered at the public meeting included questions about administrative costs, time lines, matching funds, project implementation, easements, project evaluation, and submission of new projects. The Trustees received 31 written submittals on the Draft RP/EA. All comments were addressed in the Final RP/EA and used to make the final selection of projects for the Restoration Plan.

Determination

Based upon information contained within the final RP/EA, we have determined that this action is not a major Federal action that would significantly affect the quality of the human environment within the meaning of section 102(2)(c) of NEPA. Specifically, although effects to vegetation, wildlife, listed, proposed, or candidate species, soils/geologic formations, land use and socioeconomic environment, water resources and quality, air quality, and cultural resources are identified in the RP/EA, all are beneficial. This action is not an action that would typically require the development of an Environmental Impact Statement (EIS). Accordingly, preparation of an EIS on the proposed action is not warranted.

It is my decision to issue the Restoration Plan and begin implementation.

Nov. 15, 2013

Regional Director Date

United States Fish & Wildlife Service
Environmental Action Statement

Within the spirit and intent of the Council of Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA) and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and have determined that the action of Wildlife and Wildlife Habitat Restoration, as described in the *Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre, and Tyrone Mine Facilities*:

_____ is a categorical exclusion as provide by 516 DM 6 Appendix 1 and 516 DM 6, Appendix 1. No further documentation with therefore be made.

__X__ is found not to have significant environmental effects as determined by the attached Environmental Assessment and Finding of No Significant Impact.

_____ is found to have significant effects, and therefore further consideration of this action will require a notice of intent to be published in the Federal Register announcing the decision to prepare an EIS.

_____ is not approved because of unacceptable environmental damage, or violation of Fish and Wildlife Service mandates, policy, regulations, or procedures.

_____ is an emergency action with the context of 40 CFR 1506.11. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents (list):

__X__ Wildlife and Wildlife Habitat Restoration Plan and Environmental Assessment for the Chino, Cobre, and Tyrone Mine Facilities.

Regional Director/DOI Authorized Official

November 15, 2013
Date