

**FINAL**

**Natural Resources Restoration Plan and Environmental  
Assessment for the AT&SF (Clovis) New Mexico  
Superfund Site, Clovis, New Mexico**

**April 2007**

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## TABLE OF CONTENTS

|            |  |           |
|------------|--|-----------|
| <b>1.0</b> | <b>INTRODUCTION AND BACKGROUND</b>   | <b>4</b>  |
| 1.1        | Natural Resource Damage Determination  |           |
| <b>2.0</b> | <b>PURPOSE AND NEED FOR RESTORATION</b>  | <b>6</b>  |
| 2.1        | The Clovis Site – Summary of Release History   |           |
| 2.2        | Authority and Legal Requirements   |           |
| 2.3        | Overview of Damage Determination   |           |
| <b>3.0</b> | <b>RESTORATION ALTERNATIVES</b>  | <b>8</b>  |
| 3.1        | Goals of the Restoration Project   |           |
| 3.2        | Specific Alternatives Considered   |           |
| 3.3        | Alternatives Considered, But Not Carried Forward for Detailed Analysis               |           |
| 3.3.1      | <i>Priebe Playa Restoration Project</i>  |           |
| 3.3.2      | <i>Gouker Playa Restoration Project</i>  |           |
| 3.3.3      | <i>Sorgen Playa Restoration Project</i>  |           |
| 3.3.4      | <i>New Pond Playa Restoration Project</i>  |           |
| 3.3.5      | <i>Johnson Playa Restoration Project</i>   |           |
| 3.3.6      | <i>Goodwin Playa Restoration Project</i>   |           |
| 3.3.7      | <i>Williams Lake Restoration Project</i>   |           |
| 3.3.8      | <i>Ingram Lake Project</i>   |           |
| 3.4        | Alternatives Carried Forward for Detailed Analysis                                   |           |
| 3.4.1      | <u>Alternative A: No Action</u>  |           |
| 3.4.2      | <u>Natural Resource Restoration Within the Vicinity of the Injury Site</u>           |           |
| 3.4.2.1    | <b>Alternative B: Curry County Playa Restoration Project (Preferred Alternative)</b> |           |
| 3.4.3      | <u>Natural Resource Restoration Beyond the Vicinity of the Injury Site</u>           |           |
| 3.4.3.1    | <i>Alternative C: Wetland Habitat Restoration at Bottomless Lakes State Park</i>     |           |
| <b>4.0</b> | <b>AFFECTED ENVIRONMENT</b>  | <b>18</b> |
| 4.1        | <i>Alternative B: Curry County Playa Restoration Project</i>                         |           |
| 4.2        | <i>Alternative C: Wetland Habitat Restoration at Bottomless Lakes State Park</i>     |           |
| <b>5.0</b> | <b>ENVIRONMENTAL CONSEQUENCES</b>  | <b>22</b> |
| 5.1        | Alternative A: No Action   |           |
| 5.2        | Natural Resource Restoration Within the Vicinity of the Injury Site (Alternative B)  |           |
| 5.3        | Natural Resource Restoration Beyond the Vicinity of the Injury Site (Alternative C)  |           |

- 5.4 Summary of Environmental Consequences by Alternative
- 5.5 Preferred Restoration Alternative

|             |   |           |
|-------------|---|-----------|
| <b>6.0</b>  | <b>COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT</b>  | <b>29</b> |
| <b>7.0</b>  | <b>PUBLIC NOTIFICATION</b>                                    | <b>30</b> |
| <b>8.0</b>  | <b>SIGNATORY</b>  | <b>31</b> |
| <b>9.0</b>  | <b>RESPONSE TO COMMENTS</b>                                   | <b>32</b> |
| <b>10.0</b> | <b>PERSONS CONSULTED</b>                                      | <b>32</b> |
| <b>11.0</b> | <b>ENDANGERED SPECIES DETERMINATION</b>                       | <b>32</b> |
| <b>12.0</b> | <b>REFERENCES</b>   | <b>33</b> |
|             | <b>FIGURE 1 - Location of AT&amp;SF Clovis Superfund Site</b> | <b>34</b> |

**Final Natural Resources Restoration Plan and Environmental Assessment  
for the AT&SF (Clovis) New Mexico Superfund Site, Clovis, New Mexico**

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**1.0 Introduction and Background**

In January, 2004, the Department of the Interior and The New Mexico Natural Resources Trustee, acting through the New Mexico Office of Natural Resources Trustee, as natural resource trustees ("Trustees"), received money for a settlement of a natural resource damage claim with the responsible parties for the AT&SF Clovis (New Mexico) Superfund Site ("Clovis Site"). The Trustees sought this settlement because contamination at this site had injured trust resources under the Trustees' authority. The Trustees are required to use the settlement money to compensate for those losses. The Comprehensive Environmental Compensation and Liability Act ("CERCLA", commonly known as the federal "Superfund" law), which designates natural resource trustees, requires that before the settlement monies can be used for restoration activities a restoration plan must be developed and adopted, and that in doing so, there must be adequate public notice and consideration of all public comment.

The Trustees prepared a Revised Draft Wildlife Habitat Restoration Plan and Environmental Assessment ("Revised Draft RP/EA", dated March 2007) to address natural resources injured and ecological services lost, injured, or destroyed as a result of releases of hazardous substances from the Clovis Site.

A Notice of Availability of the Revised Draft RP/EA was published in the Clovis News Journal and the Roswell Daily Record. The Revised Draft RP/EA was also available for review during office hours at the Clovis-Carver Public Library and the Roswell Public Library. The public comment period was open from March 16 to April 16, 2007, and no dissenting public comments or alternative restoration possibilities were received on the Revised Draft RP/EA. Therefore, there were no substantive changes made to the Revised Draft RP/EA and the Trustees are issuing this Final Restoration Plan and Environmental Assessment ("Final RP/EA").

## **1.1 Natural Resource Damage Settlement**

The New Mexico Natural Resources Trustee, acting through the New Mexico Office of Natural Resources Trustee ("ONRT") and the U.S. Department of Interior ("DOI"), acting through the United States Fish and Wildlife Service ("Service") as a Federal Natural Resource Trustee and Lead Administrative Trustee for this settlement, (collectively referred to in this Final RP/EA as "Trustees") have worked together, in a cooperative process, to determine what is necessary to address natural resource injuries caused by past releases of hazardous substances at the Clovis Site.

The State of New Mexico and the United States entered into a negotiated settlement with the Burlington Northern and Santa Fe Railway Company ("BNSF") in the amount of \$489,000 for natural resource damages to the Clovis Site. As mandated by the Consent Decree (Civil Action No. 03-1105), \$30,000 was paid to DOI and ONRT for costs previously incurred to assess the injuries and loss of natural resources and \$459,000 of the settlement was placed by the Department of Justice into a court registry trust account for use by the Trustees to jointly plan and implement a wetland acquisition and enhancement project designed to restore, replace and/or acquire the equivalent of natural resources injured, destroyed or lost as a result of the release of hazardous substances at or from the Clovis Site.

The Federal Water Pollution Control Act, 33 U.S.C. § 1251, *et seq.* ("CWA", commonly known as the Clean Water Act) and CERCLA, 42 U.S.C. § 9601, *et seq.*, authorize States, Indian Tribes, and certain federal agencies that have authority to manage or control natural resources, to act as "trustees" on behalf of the public, to restore, rehabilitate, replace, and/or acquire natural resources equivalent to those injured by hazardous substance releases. The DOI's Natural Resources Damage Assessment and Restoration ("NRDAR") regulations are set forth at 43 Code of Federal Regulations ("C.F.R.") Part 11. Additionally, CERCLA requires that before the settlement monies can be used for restoration activities, a restoration plan must be developed and adopted, and in doing so, there must be adequate public notice and consideration of all public comments.

## **2.0 Purpose and Need for Restoration**

### **2.1 The Clovis Site – Summary of Release History**

The AT&SF Clovis Superfund Site is a 140 acre site located approximately one (1) mile south of the BNSF railroad yard in Clovis, Curry County, New Mexico (Figure 1). Santa Fe Lake, a 40 acre playa on BNSF property, was used for wastewater discharge from the yard beginning in the early 1900's when the yard was first constructed. Before the Clovis Site was listed on the National Priority List ("NPL"), the U.S. Environmental Protection Agency ("EPA") conducted an environmental site investigation in the late 1970's. Preliminary reports from that investigation indicated that heavy metals, total petroleum hydrocarbons and cyanide were present on the Clovis Site. Santa Fe Lake was consequently added to the NPL in 1983 as "AT&SF Clovis Superfund Site."

Injuries to migratory birds, waterfowl, and other wildlife dependent on Santa Fe Lake occurred through direct adverse physiological effects of the contaminants, or indirectly via loss of useable habitat and through subsequent remediation.

### **2.2 Authority and Legal Requirements**

This Final RP/EA has been prepared jointly by ONRT and the Service. The ONRT and the Service are designated natural resources trustees under Section 107(f) of CERCLA, 42 U.S.C. § 9607(f), Section 311 of the CWA, 33 U.S.C. § 1321, and other applicable law, including Subpart G of the National Contingency Plan ("NCP"), 40 C.F.R. §§ 300.600- 300.615. The ONRT derives additional authority from the New Mexico Natural Resources Trustee Act, NMSA 1978, §§ 75-7-1 to -5 (1993). Each Trustee is authorized to act on behalf of the public to assess natural resource injuries and recover damages to natural resources and losses of natural resource services attributed to releases of hazardous substances. The federal Authorized Official ("AO") is the DOI official delegated the authority to act on behalf of the Secretary of the DOI to conduct a natural resource damage assessment and restoration plan. The AO is the Region 2 Regional Director for the Service, and represents the interests of the DOI, including all affected Bureaus.

The primary goal for the restoration alternative is to compensate the public for natural resources that were lost. This document serves as the environmental assessment ("EA"). The purpose of the EA is to consider alternative actions to restore, rehabilitate, replace, and/or acquire the equivalent of any natural resource injuries and service losses caused by the release of hazardous substances into the Clovis Site, pursuant to applicable State and Federal laws and regulations. This document serves as the restoration plan ("RP") for implementing the selected preferred alternative as required under NRDAR regulations. As stated in the NRDAR regulations, the alternative(s) selected in

the RP must be consistent with statutory mandates and regulatory procedures that specify that recovered damages are used to undertake feasible, safe, and cost-effective projects that address injured natural resources, consider actual and anticipated conditions, have a reasonable likelihood of success, and are consistent with applicable laws and policies.

### **2.3 Overview of Damage Determination**

Damages recovered by the Trustees for natural resource injuries or service losses due to hazardous substances releases must be used to restore, replace or acquire natural resources or services equivalent to those injured or lost.

The DOI has adopted regulations under CERCLA and the CWA establishing procedures for assessing natural resource damages. The NRDAR regulations are codified at 43 C.F.R. Part 11. These regulations recognize that such "damages" are to be based on the cost to restore injured resources.

As defined in the NRDAR regulations, injury is an adverse biological, chemical, or physical effect on natural resources, such as death, decreased population, or lost services (*i.e.*, hunting opportunities, ecosystem functions). Damages are the estimated dollar value of the injured resources. The objective of the NRDAR process is to compensate the public through environmental restoration for injuries to natural resources that have been caused by releases of hazardous substances into the environment. Under Section 107(f)(1) of CERCLA, damage settlements can only be used to restore, rehabilitate, replace, or acquire the equivalent of trust resources injured, destroyed, or lost as a result of the release of hazardous substances, including agency costs accrued in these activities.

As per the Consent Decree, the selected alternative must be a wetland acquisition and/or enhancement project designed to restore, replace and/or acquire the equivalent of natural resources injured, destroyed or lost as a result of the release of hazardous substances at or from the Clovis Site. Accordingly, this Final RP/EA has been developed to evaluate and, ultimately, select restoration projects designed to compensate the public for injuries that occurred to natural resources at the Clovis Site. Implementation of selected restoration projects will occur over a period of time, depending upon the project type.

The NRDAR regulations provide that restoration plans should consider ten factors when evaluating and selecting projects to restore or replace injured natural resources. The following factors will be used to select an Alternative and to compare projects within an Alternative. (See 43 C.F.R. § 11.82)

1. Technical feasibility
2. The relationship of the expected costs of the alternative to the expected benefits (project must show a net overall environmental benefit)

3. Cost-effectiveness
4. The results of any actual or planned response action
5. The potential for additional injury resulting from the proposed actions
6. The natural recovery period
7. Ability of the resources to recover with or without alternative actions
8. Potential effects of the action on human health and safety
9. Consistency with relevant federal, state, and tribal policies
10. Compliance with applicable federal, state, and tribal laws

Based on the recommendations of the Trustees and input from the public, the AO will select one of the alternatives and will determine, based on the facts and recommendations contained herein and public comment, whether this EA is adequate to support a Finding of No Significant Impact ("FONSI"), or whether an Environmental Impact Statement ("EIS") will need to be prepared.

### **3.0 Restoration Alternatives**

#### **3.1 Goals of the Restoration Project**

The overall objective of the restoration planning process is to identify restoration alternatives that are appropriate to restore, rehabilitate, replace, or acquire natural resources and their services equivalent to natural resources injured or lost as a result of releases of hazardous substances. The restoration actions make the public whole by providing compensation for injuries and losses to natural resources. No restoration activities will be conducted by the trustees that would incur ongoing expenses in excess of those that can be funded by settlement monies or the interest there from, unless such additional monies are allocated through the normal budgeting process.

The primary goal of the restoration project is to compensate for natural resources, which were lost. Since the settlement resulted from injury to wetlands and their inhabitants, the restoration plan is focused on wetland habitat. General guidelines dictate consideration of potential restoration projects in the following priority order:

1. Restoration of in-kind natural resources at the same location, if cleanup or remediation will be sufficient to prevent future contaminant problems for an on-site restoration;
2. Restoration or replacement of in-kind natural resources within the vicinity of the loss;
3. Acquisition of similar resources in the vicinity of the loss;
4. Restoration or replacement of in-kind natural resources beyond the vicinity of the loss.



Two broad categories of restoration are in-kind and out-of-kind restoration. In-kind means that the benefit focuses on resources comparable to those that were lost. Out-of-kind means that the benefit focuses on resources different than those that were lost. Out-of-kind restoration projects are given lower priority than in-kind restoration projects. Out-of-kind projects are usually considered if in-kind projects are not available or feasible. Acquisition entails substituting an injured resource with another resource that provides the same or substantially similar services. We will not select a project that requires acquisition of land for federal management unless we determine that other restoration options are not possible.

Once a reasonable range of restoration alternatives is developed, the Trustees will identify preferred restoration alternatives based on the factors outlined in Section 2.3. In accordance with NRDAR regulations, the Trustees developed appropriate restoration alternatives and selected a preferred alternative to address resource injuries and losses of services. Based on a thorough evaluation of a number of factors, including those listed above, the Trustees have selected a preferred restoration alternative for compensatory restoration of injured natural resources and services.

### **3.2 Specific Alternatives Considered**

The Trustees are obligated to assess a "reasonable number" of possible restoration projects. A project may consist of a single action or a set of actions that may be undertaken. The Trustees evaluated each of the restoration projects based on all relevant considerations including, but not limited to, the factors listed below and in Sections 2.3 and 3.1:

- nexus to the injured resource(s);
- regional planning and local needs;
- proximity to the site of injury;
- leveraging of funds and partnerships;
- long-term management/maintenance of restoration site;
- implementation timeframe;
- ecological benefits can be measured for success from the baseline (monitoring);

Approximately \$459,000 has been allocated for restoration planning and implementation of a restoration project(s). Because this sum is not sufficient to cover all the restoration alternatives that were suggested, the list of alternatives was narrowed down to those alternatives that carry out the intent of the NRDAR regulations, are consistent with restoration goals outlined in this plan and with the Consent Decree, and are cost-effective.

The Trustees considered a variety of different projects during the alternatives development stage. Several were expected to be beneficial but were rejected for various reasons. Some were rejected because no specific proposals were submitted or they did not meet one or more of the selection and evaluation

factors including: technical feasibility; the relationship of the expected costs of the proposed actions to the expected benefits; avoidance or minimization of additional natural resource injury, service loss or environmental degradation; cost-effectiveness.

### **3.3 Alternatives Considered, But Not Carried Forward for Detailed Analysis**

#### **3.3.1 *Priebe Playa Restoration Project***

Owned by the City of Clovis, this playa is used as a storm water retention basin. Priebe Playa appears to be functioning at an adequate level and requires no restoration only protection. It is situated next to a main road (Llano Estacado) and currently has a sufficient buffer around it to maintain its function. The playa is located just northwest of urban development. Maintenance of this playa as it currently exists would retain its functions of groundwater recharge, wetland habitat and inundated water habitat. The playa would benefit, however, from acquisition of the surrounding land to maintain an adequate buffer. Acquisition of the surrounding land would need to be either by fee-title or a conservation easement. Adequate funding is not available for either the fee-title or conservation easement option. Additionally the playa is located in an urban area and therefore, due to the issues that go along with urban development, will never be able to function completely as a natural playa. Therefore, for the reasons cited above, this project was eliminated from further consideration.

#### **3.3.2 *Gouker Playa Restoration Project***

Gouker Playa is owned by the City of Clovis and used as a storm water retention basin. It currently functions as a playa although it has been degraded somewhat by sediment accumulation and mowing. Use of this playa as a storm water retention facility will, however, add contaminants and sediment. The northeast one-fourth of the playa is owned by a private landowner. The south side of the playa is bounded by East Llano Estacado Blvd., and the east side by Humphrey Road. Encroaching urban development is to the west of the playa and to the east are agricultural fields. The playa would benefit from no mowing and from seeding of millet and smartweed to provide natural feed areas. Additionally, the playa would benefit from acquisition of surrounding land for adequate buffer; although because part of the playa is incorporated into a residential yard, this might be impossible. The project was eliminated from further consideration as it could not be adequately protected with the funds available.

#### **3.3.3 *Sorgen Playa Restoration Project***

Sorgen Playa is owned by the City of Clovis and currently serves as a storm water retention basin. It appears to be hayed and may have been excavated in the past in order to accept significant storm water run-off events. Drainage culverts to the playa are located under an adjacent road to the south (Llano Estacado) indicating the playa's importance as a storm water retention basin. The Playa cannot be adequately restored as it requires acquisition of an

adequate buffer and this is prevented by encroachment of roads and commercial/industrial properties. Additionally, the playa is located within a heavily commercialized area which prevents it from functioning naturally. For the reasons stated, this project was eliminated from further consideration.

#### ***3.3.4 New Pond Playa Restoration Project***

The functions of this City of Clovis-owned storm water retention basin playa have been significantly compromised with mowing and land contouring/grading to control the flow of storm water. The playa is bisected by a road to the east; however a culvert does connect the two halves and allows for flow of water. Although currently surrounded by agricultural fields and some residential homes, urban development is encroaching upon the playa to the east. Acquisition of an adequate buffer on the north side of the playa is prevented by Llano Estacado Blvd. Power lines run through the playa, thereby creating the potential for bird–power line collisions. This project was eliminated from further consideration as it was deemed that little could be done to improve the functions of the playa and with increasing urban development, will never function naturally.

#### ***3.3.5 Johnson Playa Restoration Project***

Johnson Playa is owned by the City of Clovis and is used as a storm water retention basin. The playa's east side appears to be functioning somewhat, but the west side is compromised by past farming. Residential development has encroached upon the north, west and southwest sides of the playa. Use of this playa as a storm water retention facility will add contaminants and sediment. The most beneficial protection for this playa would be the acquisition of an upland buffer; however, only the east side (currently an agricultural field) has potential for a buffer as the west side of the playa appears to be destined for residential development. This playa cannot be protected adequately nor can it function naturally. It would be technically unfeasible and expensive and therefore impractical to protect this playa. As a result, this project was eliminated from further analysis.

#### ***3.3.6 Goodwin Playa Restoration Project***

Goodwin Playa is owned by the City of Clovis and is used as a storm water retention basin. It is completely surrounded by residential and commercial development. The playa may have been excavated (pitted) in the past to accommodate more storm water run-off, thereby compromising its integrity. Use of this playa as a storm water retention facility will add contaminants and sediment. A residence to the northeast of the playa would prevent acquisition of an adequate buffer on that side (a dirt road providing access to this residence runs along the south and east side of the playa). The playa appears to be functioning currently at a fairly good level. However, due to the surrounding land use and encroaching urban development, there is little potential for adequate protection of this playa; therefore it was eliminated from further consideration.

### **3.3.7 Williams Lake Restoration Project**

This playa is located approximately 3 miles southeast of Clovis and currently functions as a playa, including aquifer recharge, support of moist soil vegetation, and periodic inundation, although it has been degraded by the accumulation of sediment from the surrounding uplands. The playa is surrounded by agricultural fields with center pivot irrigation some of which also support cattle grazing. It should be noted that this playa accepted effluent from the City's wastewater treatment plant in the late '80s and early '90s. The most beneficial enhancement at Williams Lake would be removal of sediments and acquisition of an upland buffer; both exceeding the funding ability of this settlement. Therefore, this alternative was removed from further consideration.

### **3.3.8 Ingram Lake Project**

Ingram Lake is owned by the City of Clovis and serves as a main storm water retention basin for the City. This former playa is located on the southeast portion of Clovis within the city landfill. It contains water year-round and is frequented by numerous species and numbers of migratory birds, as stated by City officials. The City of Clovis is interested in enhancing habitat for migratory birds and wildlife. The Lake was visited on November 29, 2006 by the Trustees, the Game Bird Program Manager from the New Mexico Department of Game and Fish ("NMDGF") as well as Habitat Specialists from the Conservation Services Division of the NMDGF. During the site visit, numerous ducks were seen using the Lake.

Ingram Lake is located adjacent to closed and active landfill cells (containing construction and household wastes) and in the past it received effluent from the City's wastewater plant. A closed landfill cell, located immediately north of the lake, is unlined and no leachate collection system is in place. Because of its past and current uses, sediment and soil samples would need to be collected from the Lake and shore line and analyzed for metals, organic compounds and pesticides/herbicides in order to determine any possible contamination and potential impacts to birds and wildlife.

Currently sediment enters the Lake from the three inflows and along the existing agricultural land located west and southwest of the lake. The north inlet of the Lake could be modified to catch sediment that washes into the Lake. Sediment retention might be accomplished by planting grasses the full length of the inlet from the parking lot south to the Lake, and by the construction of several check dams along its length.

The current slope of the Lake has drastically altered this former playa. Currently, the Lake's underwater terrain is too steep and too deep in the middle to allow development of more than a narrow strip of potential wetland habitat a few feet wide around the perimeter of the Lake. In order to enhance habitat to benefit wading and shore birds and to be more likely to support aquatic vegetation, shallow areas would need to be created. Construction of gentler slopes around

the perimeter of the Lake would be required in order to create moist soil conditions that could support the growth of marsh vegetation.

Ingram Lake currently has habitat value for birds and to enhance its habitat value by modifying upland slopes to create wetlands and constructing gentler slopes around portions of the perimeter would most likely exceed settlement funding and would result in minimal net environmental benefit. Additionally, any improvements to Ingram Lake would not necessarily attract more birds or provide longer resident time to current flocks. There also exists the potential of contaminants to be present in soils and sediments in the Lake from historical and current practices/uses and before any project could be initiated, these unknowns would need to be resolved. The potential for additional injury resulting from the proposed actions exists if contaminant issues are found to pose a threat to birds and wildlife. Due to these reasons, this alternative was not carried forward for detailed analysis.

### **3.4 Alternatives Carried Forward for Detailed Analysis**

Alternatives carried forward for detailed analysis include A) No Action; B) Restoration of natural resources and services within the vicinity of the loss; and C) Restoration of natural resources and services beyond the vicinity of the loss. These alternatives and specific projects are summarized below.

#### **3.4.1 Alternative A: No Action**

This alternative is addressed to fulfill requirements under National Environmental Policy Act ("NEPA"), and is consistent with the damage assessment process under the Assessment and Restoration regulations. Under Alternative A, no action would be taken to restore resources injured due to contamination at the Clovis Site or to replace or acquire additional natural resources to restore ecological and human services provided by the injured resources. The funds recovered for the natural resource damages claim for the site would not be spent. This alternative is technically feasible, has no cost, but also would result in no benefit from the funds specifically recovered from the responsible party for restoration, and for that reason is not considered a cost-effective alternative to the extent cost-effectiveness can be analyzed.

#### **3.4.2 Natural Resource Restoration Within the Vicinity of the Injury Site**

##### **3.4.2.1 Alternative B: *Curry County Playa Restoration Project (Preferred Alternative)***

This proposed project focuses on the restoration and protection of playas and their habitats within Curry County through long term restricted use agreements with private landowners.

The playa lakes of Curry County present a unique opportunity to offer conservation alternatives to private landowners which focus on improving resources for wildlife and protecting water quality rather than strictly utilizing playas as a source of forage production for livestock. Active playa management is essential for restoring and sustaining populations of many wildlife species and associated playa plant species as well. The primary objective of the Curry County Playa Restoration Project is to protect playas as well as the buffer recharge zone and upland rangeland acres by offering incentives in the form of long-term (minimum of 10 year) conservation or rental agreements to private landowners.

Curry County encompasses approximately 1,007,370 acres of cropland and native grazing land. Approximately 524 playas ranging from less than 1 acre to larger than 120 acres are found in this region of eastern New Mexico. A portion of these playas have been in agriculture production for many years, are located adjacent to agricultural fields, or have been pitted to provide a prolonged source of water for grazing livestock. In some instances, playas have been absorbed into urban development. Playa lakes are declining in numbers as well as being compromised in terms of functionality as many landowners simply underestimate their importance and do not take measures to protect them. *Playas, along with saline lakes, are virtually the only natural features that are considered wetland areas in Curry County.* Healthy playas are considered keystone ecosystems that serve as critical sites of biodiversity in an area otherwise characterized by semi-arid rangeland and intensive agriculture.

One of the common identified problems with playas is they are characteristically over-grazed due to the increased productivity and presence of palatable forage species within the playas for livestock. This creates a resource concern associated with decreased food, cover, and nesting habitat for wildlife species such as migratory birds, short grass prairie birds, mammals, amphibians and invertebrates. Below is a list of species that typically utilize these areas.

| <b>Birds</b>          | <b>Mammals</b>           | <b>Amphibians</b>       |
|-----------------------|--------------------------|-------------------------|
| Northern Pintail      | Swift Fox                | Woodhouse Toad          |
| Mallard               | Plains Pocket Gopher     | Great Plains Toad       |
| Canada Goose          | Black-tailed Prairie Dog | Green Toad              |
| Sandhill Crane        | Coyote                   | Tiger Salamander        |
| American Widgeon      | American Badger          | Couch's Spadefoot       |
| Northern Shoveler     | Bobcat                   | Great Plain's Spadefoot |
| Blue-winged Teal      | Mule Deer                | New Mexico Spadefoot    |
| Gadwell               | White-tailed Deer        |                         |
| Green-winged Teal     | Pronghorn                |                         |
| Cinnamon Teal         |                          |                         |
| Long-billed Dowitcher |                          |                         |
| Forrester's Tern      |                          |                         |

| <b>Birds</b>               | <b>Mammals</b> | <b>Amphibians</b> |
|----------------------------|----------------|-------------------|
| Black Tern                 |                |                   |
| Great Blue Heron           |                |                   |
| American Avocet            |                |                   |
| Long-billed Curlew         |                |                   |
| Wilson's Phalarope         |                |                   |
| Red-necked Phalarope       |                |                   |
| Baird's Sandpiper          |                |                   |
| Least Sandpiper            |                |                   |
| White-rumped Sandpiper     |                |                   |
| Western Sandpiper          |                |                   |
| Semipalmated Sandpiper     |                |                   |
| Solitary Sandpiper         |                |                   |
| Long-billed Curlew         |                |                   |
| Short-eared Owl            |                |                   |
| Marsh Wren                 |                |                   |
| American Pipit             |                |                   |
| McCown's Longspur          |                |                   |
| Chestnut-collared Longspur |                |                   |
| Killdeer                   |                |                   |
| Mountain Plover            |                |                   |
| Greater Yellowlegs         |                |                   |
| Black-crowned Night Heron  |                |                   |
| Northern Harrier           |                |                   |

Although not all these species are specific to playa lakes, they are all part of the prairie ecosystem in which playas play an important role, and their presence and protection contributes to an entire realm of species that are interdependently related.

An additional negative impact of heavily grazed playas is the loss of the vegetation in the buffer zone which affects water quality. The buffer zone has been identified as a *primary point of recharge* for the rapidly declining Ogallala Aquifer. The Ogallala is the **sole** source of all domestic water as well as agricultural and livestock water for eastern New Mexico and neighboring West Texas. With the loss of vegetation in the buffer zone, pollutants and sediment easily enter the playa. As water filters into the aquifer, there is a much greater potential for water quality being compromised in the absence of a vegetative buffer.

As part of the requirement for participation in the Curry County Playa Restoration Projects program, livestock would be excluded from the playa for at least three years or possibly the life of the agreement. Cost share assistance to restrict use by cattle to protect sensitive playas would be offered to landowners. Annual contract review would be conducted by the Central Curry Soil and Water

Conservation District ("SWCD"), and with input from the U.S. Department of Agriculture Natural Resources Conservation Service ("NRCS"), the Service, The Nature Conservancy ("TNC"), and Playa Lakes Joint Venture ("PLJV"). During these reviews, the landowner would be provided technical assistance in the development of a management plan to allow limited grazing if vegetation became so dense it was determined that wildlife would be negatively impacted. Proper livestock management will allow rangeland grass and playa wetland plant species to recover thus creating habitat, food, and cover for birds and wildlife while providing a more definitive buffer zone which would trap sediment and pollutants.

Sedimentation which originates from adjacent cropland fields is one of the primary issues threatening and degrading the manner in which playas function. In some instances, as part of this project, technical and cost share assistance will be provided to landowners to remove sediment or eliminate the presence of pitting in the playa bottom in order to regain the functionality of the playa and associated ecosystem.

The Curry County Playa Project would be structured much like the NRCS Environmental Quality Incentives Program ("EQIP"). The Central Curry SWCD has assisted the NRCS and partnered with other agencies such as the State Land Office, FWS, NMDGF, and TNC in identification local resource concerns, development of the EQIP ranking criteria, and the allocation of EQIP funds for identified resource concerns since 1997. Through the EQIP, the NRCS and Central Curry SWCD have ranked 42 applicants, written contracts on 15 playa lakes, and allocated \$243,784 to address wildlife resource concerns and water quality issues associated with playas. The Curry County Playa Restoration Project, much like EQIP, will be announced to the public with a specified timeline for accepting applications, ranking applications, and writing contractual agreements. If any ground disturbing practices such as sediment removal or fencing were planned, the local NRCS office would assume the role of conducting the required archeological clearances through the State Historic Preservation Office.

Since the Central Curry SWCD partners with the NRCS Clovis Field Office in administering EQIP, local landowners are familiar with contractual agreements and associated cost share practices to accomplish the objectives of addressing the resource concerns. It is anticipated that several playas could be enrolled for long term conservation easements or rental agreement across Curry County. It becomes difficult to predict the actual number of playas or acres that would be enrolled as the project guidelines and easement amounts are yet to be determined. It is important to note the monetary amount of each contract would be determined individually, based on the size of the playa and buffer area, and would increase greatly if the life of the easement was extended over 20 years as opposed to 10 years. The contract amount would vary if restoration and protection were determined to be needed rather than protection only. As with all



conservation programs, the Trustees anticipate that landowners will be educated with regard to their role in the realm of environmental stewardship, in particular playa lakes, and will realize and visually see the positive effects of protecting these sensitive areas and will continue to do so in perpetuity following the expiration of rental agreements.

The scope of this project is consistent with the Trustees directive to restore, replace and/or acquire the equivalent of wetland habitat resources injured, destroyed or lost at the Clovis Site. Conservation and restoration activities are not expected to create any potential for causing additional injury to natural resources and will compensate for injuries at the Clovis Site. The project is technically feasible and is in close proximity to the injury site. The partnerships involved in the project make this project cost-effective. The project will not adversely affect endangered species or sensitive areas. In addition, conservation and restoration activities are not expected to have any adverse impact on human health and safety and it is consistent with relevant federal and state laws and policies.

### **3.4.3 Natural Resource Restoration Beyond the Vicinity of the Injury Site**

#### **3.4.3.1 Alternative C: *Wetland Habitat Restoration at Bottomless Lakes State Park***

This restoration alternative was introduced and selected as the preferred alternative in the original Draft RP/EA dated October 10, 2006. As explained in the beginning of the Revised Draft RP/EA, this alternative, as well as others, has been further studied as result of public comments received during the public comment period of the original Draft RP/EA. The scope and goal of this proposed restoration project has not changed from its introduction in the original Draft RP/EA and it is being included again in this revised document because of the environmental benefits it could offer.

This alternative would restore approximately 43 acres of wetland habitat at Bottomless Lakes State Park ("Park") located approximately 12 miles east of Roswell, Chaves County, New Mexico. Specifically, restoration would involve the Lea Lake marsh area. The outflow from Lea Lake sustains approximately 43 acres of wetlands within the State Park and contributes to sustaining hundreds of acres of wetlands to the south of the Park on DOI Bureau of Land Management ("BLM") and private property.

Lea Lake marsh has been degraded by salt cedar (*Tamarix chinensis*), placement of debris, and alteration of surface water hydrology. Outflow from Lea Lake, which is spring-fed, has increased dramatically over the past 30 years. The increase has exceeded the capacity of the outlet channel, and overflow on the northwest side of the Park began approximately six years ago. Overflow continues to be a problem, flooding camping areas and damaging roads. An

opportunity exists to redirect overflows from Lea Lake through the degraded Park wetlands thereby restoring and potentially increasing the size of the wetlands.

The wetlands in the project area support a diverse assemblage of animals, including some endemic or otherwise rare species. Wetlands and aquatic habitats in the Park provide habitat for 41 species of dragonflies and 22 species of damselflies. This level of diversity is among the highest in the continental United States. Fishes known to occur in the project area include the red shiner (*Cyprinella lutrensis*), Pecos pupfish (*Cyrpinodon pecosensis*), plains killifish (*Fundulus zebrinus*), and rainwater killifish (*Lucania parva*), all native to the area. Eighty-one species of birds have been recorded from the Park. One federally threatened species, five federal species of concern and five State endangered or threatened species occur in the project area.

Restoration of the wetland habitat at the Park is consistent with the criteria used by the Trustees to evaluate restoration alternatives. It will provide an increased outflow of water to the wetlands and will restore native wetland plant communities benefiting a wide range of resources including benthic invertebrate species that inhabit wetlands and the bird and fish species that feed on them. By providing critical nursery habitat for aquatic species, and nesting and foraging habitat for birds and other wildlife, the restored wetlands will benefit the area by supporting increased populations of these species. Restoration activities are not expected to create any potential for causing additional injury to natural resource. In addition, restoration is not expected to have any adverse impact on human health and safety. Settlement monies will be augmented with additional funding coming from the U.S. Army Corp of Engineers ("USCOE") and from in-kind work and funding from the New Mexico Energy, Minerals and Natural Resources Department - State Parks Division.

#### **4.0 Affected Environment**

This section provides an overview of the geological, ecological, cultural, and local socioeconomic characteristics of the proposed restoration ecoregion for Alternatives B and C. The Alternatives are discussed separately because Alternative C occurs over 90 miles away from the Clovis Site and has differing characteristics.

##### **4.1 Alternative B: Curry County Playa Restoration Project**

Proposed project 3.4.2.1 is located in Curry County, in eastern New Mexico. Curry County is situated in the eastern third of New Mexico and borders Texas. Elevation within the proposed restoration area is approximately 4,280 feet above sea level. The restoration area has a mild, arid to semiarid continental climate with a mean temperature of 57.10<sup>0</sup> F. Average annual precipitation ranges from about 12 to 16 inches in the restoration area.

The proposed restoration area is within the Great Plains ecoregion. This area is primarily used for sheep and cattle ranches. In the southern area of the Great Plains, dry farming and irrigated agriculture is possible. South of the Canadian River, along the eastern edge of New Mexico, the land is referred to as the High Plains or Staked Plains (Llano Estacado). These High Plains run along the Texas border in New Mexico (Guru, 2000).

### **Geological**

The High Plains aquifer (also known as the Ogallala Aquifer) lies beneath the proposed restoration area. The Ogallala Aquifer covers approximately 10,000 square miles from Texas to the Dakotas and is the principal source of water for the area (USGS, 2005). Unfortunately, the aquifer is being used faster than it is being replenished, and the result is predicted by many to be serious eco-centric pressure on the area in the not so distant future (USGS, 2005).

The Ogallala Formation is the primary geologic unit in the Ogallala Aquifer in eastern New Mexico (USGS, 2005). The Ogallala generally consists of an unconsolidated and poorly sorted sequence of gravel, sand, silt, and clay. Water in the Ogallala Aquifer of eastern New Mexico primarily is derived from infiltration of precipitation or seepage from intermittent surface flow in streams. The rate of recharge varies from area to area in response to changes in climatic, soil, and topographic conditions. Water levels in the Ogallala Aquifer have declined in most places since irrigation withdrawal became widespread. Predevelopment to 1980 water-level declines exceeded 100 feet in parts of eastern New Mexico (USGS, 2005).

### **Ecological**

The proposed restoration area is dotted with a type of wetlands known as playa lakes. Playa lakes are large, shallow, circular, natural depressions where water collects and seeps slowly down into the Ogallala Aquifer. They have clay-lined basins and naturally fill with water periodically from rainfall and its associated runoff. Precipitation is inconsistent in the proposed project area and drought is a common occurrence. The resulting wet-dry cycle of playas produces a highly diverse plant community. These plants produce large quantities of nutritious seeds, crucial for waterfowl and other birds which migrate and winter in the proposed restoration area. Playa lakes may be the most important wetland habitat type for birds in the area and are the exclusive source of recharge for the Ogallala Aquifer (PLJV, 2006).

Endangered, threatened, or federal species of concern occurring in Curry County include:

- Lesser prairie-chicken (*Tympanuchus pallidicinctus*, federal candidate species);
- Least Tern (*Sterna antillarum*, federal endangered);

- Black-footed ferret (*Mustela nigripes*, federal endangered)
- Bald Eagle (*Haliaeetus leucocephalus*, federal threatened)
- American Peregrine Falcon (*Falco peregrinus anatum*, Federal species of concern)
- Arctic Peregrine Falcon (*Falco peregrinus tundrius*, Federal species of concern)
- Baird's sparrow (*Ammodramus bairdii*, Federal species of concern)
- Mountain Plover (*Charadrius montanus*, Federal species of concern)
- Western burrowing owl (*Athene cunicularia hypugaea*, Federal species of concern)
- Yellow-billed cuckoo (*Coccyzus americanus*, Federal species of concern)
- Black-tailed prairie dog (*Cynomys ludovicianus*, Federal species of concern)
- Swift Fox (*Vulpes velox*, Federal species of concern)

Resources located in the proposed restoration area are essential to migratory birds that depend on these resources during migration. More than 200 species of birds - such as Sandhill Cranes, Northern Pintails and Mountain Plovers - use playas in the project area during the breeding, wintering or migrating seasons. With such a diversity of wildlife found on playas, these wetlands offer valuable experiences for wildlife-watchers, photographers, hunters and other nature enthusiasts (PLJV, 2007).

The most important land use in one-third of the proposed restoration area is predominantly agricultural. Curry County grows more wheat and sorghum than any other county in the state. Land use of the other two-thirds of the county can roughly be equally divided between dry land farming and grassland.

### **Cultural**

Blackwater Draw, an extinct riverbed in Clovis, contains two separate sites of great archeological significance (ENMU, 2004). These sites have yielded information about the nature of humans and their environment at the end of the last period of glaciation. Blackwater Draw is the type site of the Clovis Culture. Both it and Anderson Basin were discovered when wind erosion exposed remains of extinct Pleistocene animals. A hand-dug well at Blackwater Draw represents one of man's earliest known attempts in the New World to control water (ENMU, 2004).

The National Historic Preservation Act establishes a requirement for consideration of potential impacts to historic properties. Results of surveys must receive concurrence from The New Mexico State Historic Preservation Officer. If historical or archaeological resources are present within a specific project area considered under this preferred restoration alternative, a different site would be selected to avoid any effects. Therefore, no historical or archaeological resource sites would be affected by any of the proposed alternatives. Information concerning the locations and nature of cultural resource sites is protected from

public disclosure by the National Historic Preservation Act, the Archeological Resources Protection Act, and is exempt from information requests under the Freedom of Information Act.

### **Socioeconomic**

Clovis is the largest city in Curry County with a population of 32,667 (2000 census data). The sites for the proposed Curry County Playa Restoration Projects (3.4.2.1) are located in rural Curry County. The population of Curry County, including Clovis, is 45,730. The 2005 census data shows that the population of Curry County has relatively the same percentage of racial composition as found in the State of New Mexico.

## **4.2 Alternative C: *Wetland Habitat Restoration at Bottomless Lakes State Park***

A detailed description of the affected environment for alternative 3.4.3.1 can be found in the U.S. Army Corps of Engineer's Detailed Project Report and Environmental Assessment for Bottomless Lakes State Park, Roswell, New Mexico, dated June 2006 (USCOE, 2006).

The proposed project area is located in Chaves County at the base of an escarpment along the east side of the Pecos River valley. Elevation in the area ranges from about 3,440 feet to 3,477 feet above mean sea level. The land surface slopes gradually to the west and south. The project area has a mild, arid to semiarid continental climate. Average total annual precipitation at nearby Bitter Lake National Wildlife Refuge is 12.44 inches; and average annual snowfall is about 7.3 inches. Average total annual precipitation at the Roswell Airport is 12.31 inches; average annual snowfall there is about 10.5 inches.

### **Geological**

The primary feature of the Bottomless Lakes area is the chain of lakes that, with other nearby features, forms karst topography. This type of topography occurs in areas of carbonate rocks and evaporites due to weathering and solution of the rocks. Land forms associated with karst topography include blind valleys, caves, and other solution features.

### **Ecological**

Vegetation in the study area can be classified as alkali sink riparian and is characterized by few dominants and relatively low species diversity. About 33.92 acres of the study area, or 79%, is jurisdictional wetland. Excluding the non-native salt cedar, Lea Lake Marsh is characterized by a dominance of native herbaceous plants. Most of the dominant plant species in the wetland (8%) can be classified as facultative, facultative wetland, or obligate wetland plants.

Wetlands in the study area support a rich assemblage of vertebrate and invertebrate animals, including some endemic or otherwise rare species. Eighty-one species of birds have been recorded from Bottomless Lakes State Park. Endangered, threatened, or federal species of concern considered to occur in the study area include:

- Pecos sunflower (*Helianthus paradoxus*, federal threatened, state endangered);
- Mexican tetra (*Astyanax mexicanus*, state threatened, federal species of concern);
- Pecos pupfish (*Cyprinodon pecosensis*, state threatened, federal species of concern);
- Arid land ribbon snake (*Thamnophis proximus diabolicus*, state threatened, federal species of concern);
- Wright's marsh thistle (*Cirsium wrightii*, federal species of concern); and
- Pecos River muskrat (*Ondatra zibethicus ripensis*, federal species of concern).

The proposed project area is entirely within the boundaries of the Park and abuts the southern boundary of the park south of Lea Lake. Land adjacent to the park boundary at the study area is either public land managed by the BLM or is private ranch land. The Park consists of about 1,600 acres emphasizing a chain of sinkhole lakes. Although some land within the Park boundaries is leased State Trust land under the jurisdiction of the New Mexico State Land Office and some is privately-owned, all land within the study area is owned by State Parks.

### **Cultural**

A cultural resource survey was conducted for the study area and several associated areas adjacent to Lea Lake. A pedestrian survey of 55-acres, including the study area, was conducted in February 2004. Three archaeological sites and two isolated occurrences were located during the pedestrian survey. Only one of these, site LA 142878, was located in the study area. This site consisted of two drainage ditches south of Lea Lake that were both full and active at the time of survey. Site LA 142879 was a single ditch that drained into a natural basin to the northwest of the lake. All of the ditches were most likely built when the park was constructed between 1933 and 1938.

### **Socioeconomic**

The Park is located in rural Chaves County. The closest community is Dexter, population 1,235 (in 2003), located approximately seven miles to the southwest. The closest full-service community is Roswell (population 45,293), approximately 12 miles northwest of the park. No homes, businesses, or community services are located in the study area.

## **5.0 Environmental Consequences**

This section evaluates the consequences to the environment that result from implementing projects identified under each restoration alternative. The consequences are based on standards and considerations presented in the NEPA regulations (40 CFR § 1508.27) which direct Federal agencies to evaluate the consequences of proposed alternatives on the environment and humans. The following aspects were considered by the Trustees in evaluating the impact of each alternative:

- Beneficial and adverse impacts to the biological environment, including habitat; listed, proposed and candidate endangered or threatened species or its critical habitat; and other wildlife species.
- Effects of the alternative on National Historic Places or likely impacts to scientific, cultural, or historical resources.
- Beneficial and adverse impacts to the social or economic human environment.
- Cumulative impacts on the environment that may result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts may result from individually minor but collectively significant actions taking place over a period of time.
- Disproportionately high and adverse environmental effects of the alternatives on minority or low income populations in the region.
- Likely effects of the proposed alternative on public health or safety.

### **5.1 Alternative A: No Action**

By implementing this alternative the Trustees would take no action to restore injured natural resources or compensate for lost services pending environmental recovery. This alternative has no direct environmental consequences because, by definition, no manipulations to the environment would take place. This alternative would have no effect on human health and safety.

This alternative would do nothing to offset injuries resulting from the contamination and results of response actions. No additional natural resource injuries would be caused by this alternative, but injuries resulting from the Clovis Site would go unaddressed. It is, however, inconsistent with both Federal and State policies to restore natural resources injured by hazardous substances, and is inconsistent with CERCLA's requirement that funds recovered by Trustees for natural resource injuries be spent on restoration or replacement of those resources. Based on the aforementioned facts, the Trustees rejected the No Action alternative.

## **5.2 Natural Resource Restoration Within the Vicinity of the Injury Site (Alternative B)**

Under Natural Resource Restoration Within the Vicinity of the Injury, actions would be taken to ensure existing conditions at a location, or locations, different from the injury site are maintained to continue providing comparable resources and services to those injured at the Clovis Site. Implementing Alternative B would protect natural resources and ecological services from being lost or diminished due to anticipated or likely land use changes and/or other factors. The effects associated with implementing this Alternative are described below.

### **Geological Impacts**

Implementation of the project would have no long-term negative effect on the surrounding geologic features. The protection and conservation of playas would guarantee the continuing infiltration of water to the Ogallala Aquifer and, likewise, the restoration of compromised playas would increase infiltration of water and would therefore further benefit the Ogallala Aquifer.

### **Ecological Impacts**

Implementation of the project proposed under this alternative is unlikely to cause adverse effects to wildlife or habitat. This project is anticipated to consist mostly of protection of playas requiring little to no land disturbance; however, it is possible that construction activities (i.e. restoration) may cause some temporary negative impacts through soil disturbance; effects would be short-term and not significant. Because this alternative involves the preservation and/or enhancement of existing habitat that would provide comparable resources and services to those injured, implementing this alternative would positively impact habitat and benefit wildlife species.

### **Cultural Resources**

Implementation of Alternative B would have little effect on archeological or historical resources. If historical or archaeological resources are present within the project site considered under this restoration alternative, a different project would be considered to avoid any effects. In compliance with Section 106 of the Historic Preservation Act, consultation with the State Historic Preservation Officer regarding potential effects to cultural resources from any proposed project involving construction will be initiated and completed prior to construction.

### **Socioeconomic Impacts and Environmental Justice**

The project would preserve wetland habitat and therefore would reduce and diminish development of these locations. Such actions may help maintain the aesthetic and recreational appeal of the region that many people find attractive. Therefore, implementation of this alternative would have positive socioeconomic impacts.



Conversely, implementation of this project may also result in negative socioeconomic impacts as habitat considered under Alternative B would be preserved through restrictions of future land development for economic benefit.

The project is expected to have minimal impact on human activities in the surrounding areas. Some construction activities may increase airborne dust within the vicinity of the project area. Appropriate dust abatement measures will be incorporated to minimize any effects. This alternative would not disproportionately affect low-income and/or minority groups. No minority or low-income populations would be displaced or negatively affected in any other way by any alternative receiving further analysis.

#### **Public Health and Safety**

It is unlikely that implementation of Alternative B would have adverse impacts on public health and safety.

#### **Cost**

Based on analysis of the relevant factors, the Trustees have determined that the estimated costs associated with Alternative B are reasonable.

#### **Cumulative Impacts**

Cumulative effects are defined as those effects that result from incremental impacts of the proposed action when added to other past, present, and future activities that are reasonably certain to occur within the project area. The federal agency must determine whether impacts of the proposed action, when taken together with other actions, would result in a significant environmental impact.

Implementation of the project will not result in negative cumulative impacts. Initially, construction activities, if any, may result in minor, unavoidable impacts such as increased noise, and emissions from construction vehicles. The Trustees consider these impacts to be short-term and incidental and pose no significant impacts to the public and/or the environment either individually or cumulatively. Any short-term impacts will be limited in magnitude and extent and will be more than offset by the environmental benefits of these projects.

Land in Curry County is increasingly being converted to commercial dairies and feedlots. The Ogallala aquifer is rapidly depleting due to withdrawals from expanding agriculture operations and a decrease in recharge, partly stemming from the conversion of playas to storm water retention basins and subsequent compromise of their clay-layer. Impacts from the proposed project, when combined with other activities in the area, would not result in significant detrimental cumulative environmental impacts, but would instead present a positive impact.

### **5.3 Natural Resource Restoration Beyond the Vicinity of the Injury Site (Alternative C)**

#### **Geological Impacts**

Implementation of the management measures within the proposed project area would have no impact on the surrounding geologic features. Soils in the project area would be impacted by operation of the tree extractor equipment to remove salt cedar, removal of solid waste debris, and excavation of open water habitats. Implementation of the recommended plan may affect water quality by disturbance of soils in or adjacent to areas with surface water during modification of the outlet channel, salt cedar removal, solid waste debris removal, and excavation of the open water habitats. Direct effects of these activities would consist of short term increases in suspended sediment loads and turbidity. Indirect effects could include increased turbidity and suspended sediment levels downstream and off-site (e.g. in the BLM Overflow Wetlands).

#### **Ecological Impacts**

The proposed project would result in changes in areal extent of each community type in the study area. Most notably, the salt cedar thicket community type would be converted to saltgrass wet meadow vegetation by implementing the recommended plan. Coverage of bare ground would be markedly reduced by supplemental planting in the study area. Cattail marsh vegetation would decrease slightly from excavation of open water habitats, solid waste debris removal, and supplemental planting. The areal extent and character of the study area wetland are likely to change with implementation of the recommended plan. Continued increases in outflow from Lea Lake, coupled with the recommended plan of directing the entire outflow to Lea Lake Marsh by modifying the outlet channel, are likely to increase the areal extent of wetland in the study area.

Operation of tree-extractor and excavation equipment for removing salt cedar and solid waste debris and excavating open water habitats would cause direct impacts to fauna. There would be an unknown amount of direct mortality of relatively immobile organisms such as aquatic invertebrates. Other more mobile organisms such as birds and fish would be disturbed and flushed from work areas. Another direct impact of the proposed project would be removal of salt cedar trees from the marsh, which may serve as nesting sites for birds. In order to avoid destruction of active nests and mortality of young birds, salt cedar removal would be conducted outside of the breeding season (*i.e., breeding season is April through September*). The proposed project is unlikely to have negative impacts on federally threatened or endangered species within the project area.

#### **Cultural Resources**

No prehistoric archaeological sites or traditional cultural properties would be affected by the proposed facility development as none occur in the project area. One historic site, the Lea Lake outlet channel, would be altered by widening the

channel bottom from approximately 3 feet to 6 feet to accommodate greater flow volumes. No other historic sites occur in the project area. In compliance with Section 106 of the Historic Preservation Act, consultation with the State Historic Preservation Officer regarding potential effects to cultural resources from the proposed project has been initiated by USCOE and would be completed prior to construction.

#### **Socioeconomic Impacts and Environmental Justice**

Implementation of the recommended plan would not directly affect residences, businesses, community facilities or services, churches, or other community resources as none are located in the project area. These social and economic resources would not be indirectly affected, either, as they are removed in space or time from the proposed project. No jobs would be created or lost as a direct result of the recommended plan. There would be a small economic advantage to local area businesses (e.g. Roswell) generated by expenditures for construction materials, fuel, and possibly some local labor and equipment, needed to implement the recommended plan. These potentially-beneficial effects would be temporary in nature, ceasing when the project construction is completed. Since there would be no adverse effects from the proposed project in regards to socioeconomic factors or environmental justice issues, there would be no adverse cumulative effects on these elements.

#### **Public Health and Safety**

It is unlikely that implementation of the Natural Resource Restoration Beyond the Vicinity of the Injury Alternative would have adverse impacts on public health and safety.

#### **Cost**

Based on analysis of the relevant factors, the Trustees have determined that the estimated costs associated with the Natural Resource Restoration Beyond the Vicinity of the Injury Alternative are reasonable.

#### **Cumulative Impacts**

Cumulative effects are defined as those effects that result from incremental impacts of the proposed action when added to other past, present, and future activities that are reasonably certain to occur within the project area. The federal agency must determine whether impacts of the proposed action, when taken together with other actions, would result in a significant environmental impact.

The proposed project would contribute to a net loss of salt cedar in the project area, which would have a cumulative impact on nesting birds that use salt cedar. However, it is unlikely that this cumulative impact would reach a biologically meaningful threshold of any of the bird species known to occur at Lea Lake Marsh that may nest in salt cedar.

Initially, construction activities may result in minor, unavoidable impacts such as increased noise, and emissions from construction vehicles. The Trustees consider these impacts to be short-term and incidental and pose no significant impacts to the public and/or the environment either individually or cumulatively. Any short-term impacts from the project will be limited in magnitude and extent and will be more than offset by the environmental benefits of the project. Other activities which may occur in the project area would be beneficial to the State Park and the environment in general; therefore, no negative cumulative effects from this project are anticipated.

#### 5.4 Summary of Environmental Consequences by Alternative

This section summarizes and compares the effects associated with each alternative based on NEPA guidance. Table 1 provides a summary of the effects considered by Trustees under each alternative.

Table 1. Summary of environmental consequences by alternative

| Categories   | Alternative A –<br>No Action | Natural Resource<br>Restoration<br>Within the<br>Vicinity of the<br>Injury Site<br>(Alternative B) | Natural Resource<br>Restoration<br>Beyond the<br>Vicinity of the<br>Injury Site<br>(Alternative C) |
|--|------------------------------|--|--|
| Geological<br>Impacts                                    | No impact                    | Positive   | Positive   |
| Ecological<br>Impacts                                    | Negative                     | Positive   | Positive   |
| Cultural resources                                       | No Impact                    | No Impact  | No Impact  |
| Socioeconomic<br>Impacts and<br>Environmental<br>Justice | Negative                     | Positive   | Positive   |
| Public Health and<br>Safety                              | No impact                    | No impact  | No impact  |
| Cost   | Not Applicable               | Cost efficient<br>project identified   | Cost efficient<br>project identified   |

The Trustees utilized the analysis of each alternative and the above table to select the preferred alternative and ultimately the preferred restoration project(s). While it is obvious that the No Action Alternative is not sufficient to achieve the Trustee's goal to make the environment and public whole for injuries to natural resources and services resulting from the release of hazardous materials at the

Clovis Site, implementation of either the Within Vicinity Restoration or Beyond Vicinity Restoration Alternative has the potential to achieve that goal.

The extent of cultural, socioeconomic, and low income/minority group impacts resulting from either the Natural Resource Restoration Within the Vicinity of the Injury or Natural Resource Restoration Beyond the Vicinity of the Injury Alternative does not clearly indicate a preference for either alternative. Implementation of either alternative provides no impacts to cultural resources, positive socioeconomic impacts and minimal impact to human activities that does not disproportionately affect low-income and/or minority groups. Both alternatives would prevent future injury as a result of the incident, and avoid collateral injury as a result of implementing the alternative. Implementing either alternative would not result in an impact to public health and safety. Both the Natural Resource Restoration Within the Vicinity of the Injury and Natural Resource Restoration Beyond the Vicinity of the Injury Alternatives consist of projects that can be implemented for reasonable cost.

However, upon comparison of the remaining NEPA standards and considerations, the project under the Natural Resource Restoration Within the Vicinity of the Injury section surfaces as the preferred Alternative. While both Alternatives result in positive impacts to ecological resources, Alternative B has the greatest potential to result in wildlife habitat and ecological services of the same type and quality as those provided by the affected playa at baseline (i.e., Santa Fe Lake).

Both the Alternative projects have a high probability of success. However, included in the definition of success is the capability of an alternative to achieve *Trustee restoration goals*. The project (Alternative B) proposed under Natural Resource Restoration Within the Vicinity of the Injury has the greatest potential to restore the structure and services provided by playas, thereby restoring the same type and quality ecological services provided by the affected playa at baseline.

## **5.5 Preferred Restoration Alternative**

Based on the above comparison of the alternatives, the Trustees have selected Alternative B: Curry County Playa Restoration Project – Natural Resource Restoration Within the Vicinity of the Injury Site as the preferred alternative. This alternative achieves the Trustee's restoration goals, has a high probability of success as the proposed technology is readily available and well understood, does not result in any collateral injury or adverse health or safety impacts, provides the greatest resource benefit for the costs incurred, and will provide for restoration of natural resources within close proximity to the injury site.

## **6.0 Compliance with the National Environmental Policy Act**

This Final RP/EA has integrated NEPA requirements by: summarizing the affected environment; describing the purpose and need for the restoration; identifying alternative restoration projects; assessing each alternative's applicability and environmental consequences; and, summarizing opportunities for public participation in the decision process.

Actions undertaken by a federal Trustee to restore natural resources or services under CERCLA and other federal laws are subject to NEPA, 42 U.S.C. 4321 *et seq.*, and the regulations guiding its implementation at 40 C.F.R. Parts 1500 through 1517. The NEPA and its implementing regulations outline the responsibilities of federal agencies under NEPA, including preparing environmental documentation. In general, federal agencies contemplating implementation of a major federal action must produce an EIS if the action is expected to have significant impacts on the quality of the human environment. When it is uncertain whether a contemplated action is likely to have significant impacts, federal agencies prepare an EA to evaluate the need for an EIS. If the EA demonstrates that the proposed action will not significantly impact the quality of the human environment, the agency issues a FONSI, which satisfies the requirements of NEPA, and no EIS is required.

As stated in Section 9.0 below, no public comments were received that indicated that the preferred restoration alternative would significantly affect the quality of the human environment. Based on the EA integrated into this plan, it was determined that the proposed restoration alternative does not meet the threshold requiring an EIS. Based on the evaluation of the preferred alternative, a FONSI determination was made by the federal Trustee agency.

## **7.0 Public Notification**

Public review of the Revised Draft RP/EA was an integral component of the assessment and restoration planning process. Through the public review process, the Trustees sought public comment on the actions proposed to restore injured natural resources or replace lost resource services. The Revised Draft RP/EA was available for review and comment by the public for thirty days.

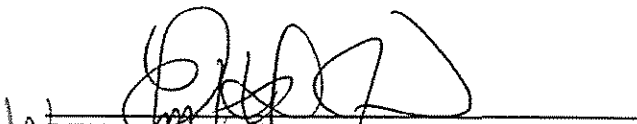
## 8.0 Signatory

FOR THE NEW MEXICO OFFICE OF NATURAL RESOURCES TRUSTEE:



JIM BACA, Interim State Trustee  
New Mexico Office of Natural Resources Trustee  
610 Gold Avenue, SW, Suite 236  
Albuquerque, New Mexico 87102  
(505) 243-8087

FOR THE U.S. DEPARTMENT OF THE INTERIOR:



BENJAMIN TUGGLE, Authorized Official  
U.S. Department of the Interior  
500 Gold Avenue, SW, Room 8100  
Albuquerque, New Mexico 87102  
(505) 248-6282

## **9.0 Response to Comments**

In the Revised Draft RP/EA released on March 16, 2007, the Trustees identified a playa restoration project in Curry County, New Mexico, as the preferred restoration alternative to compensate the public for natural resource injuries and ecological service losses. The Trustees sought public review and comment on the Draft RP/EA from March 16 to April 16, 2007.

The Trustees received a number of comments on the Revised Draft RP/EA, all in support of the preferred restoration alternative proposed herein. No comments in opposition to the preferred alternative or suggestions of other possible restoration alternatives were received. Therefore no response to comments was necessary.

## **10.0 Persons Consulted**

The following people were consulted and provided technical support in the development of this document.

Patricia McDaniel (TNC)  
Rachel Armstrong (NRCS)  
Randy Floyd (NMDGF)  
George Farmer (NMDGF)  
Tim Mitchusson (NMDGF)  
Dave Haukos (Service)  
Christopher Rustay (PLJV)

## **11. Endangered Species Determination**

There are no federally endangered or threatened species within preferred alternative project area. Additionally no species proposed for listing or critical habitat occurs within the project area. Therefore a No-Effect determination is made for the preferred alternative.



## 12.0 References

Eastern New Mexico University (ENMU). 2004. Special programs: Blackwater Draw Site. <http://www.enmu.edu/academics/excellence/museums/blackwater-draw/site/index.shtml>. Updated: April 29, 04.

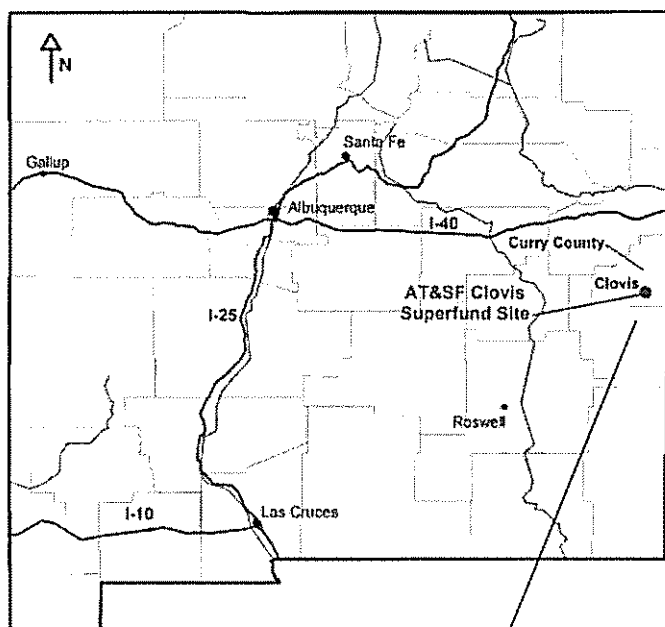
Guru, M.V. 2000. The Ogallala Aquifer. July, 2000.

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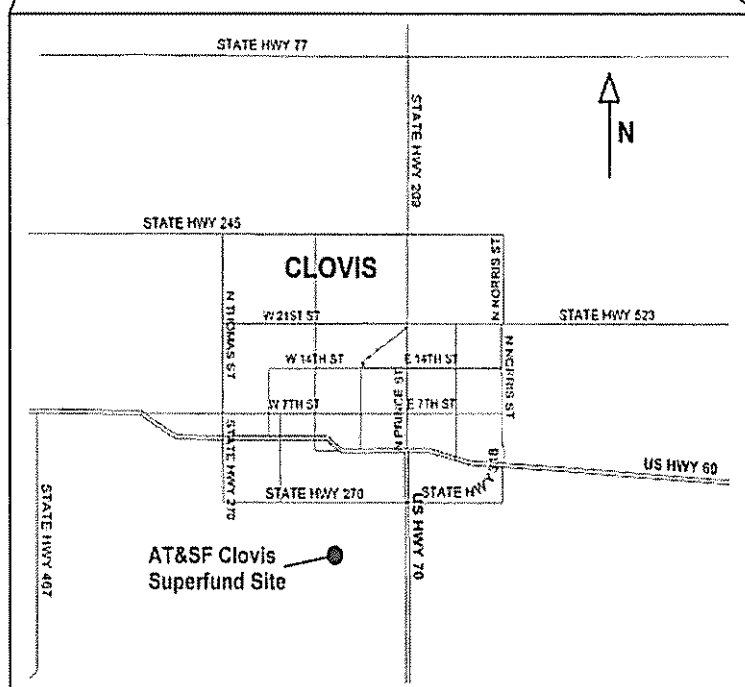
United States Army Corps of Engineers (USCOE). 2006. Draft Detailed Project Report and Environmental Assessment for Bottomless Lakes State Park, Roswell, New Mexico. June 3, 2006.

United States Geological Survey (USGS). 2005. Ground Water Atlas of the United States. <http://capp.water.usgs.gov/gwa/index.html>, May 25, 2005.

**Figure 1 - Location of AT&SF Clovis Superfund Site**



New Mexico State Map



Detailed Map