

5. Environmental Commitments

5.1 Introduction

This chapter outlines the environmental commitments that Reclamation or the Service, or both, would implement as part of the Proposed Action. Specific lead responsibilities are addressed in agreement documents provided in Appendix A. These measures are designed to be applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts.

5.2 Land Use

The Proposed Action would not affect land use, so no further measures to reduce impacts or environmental commitments are required.

5.3 Geology and Soils

In the Phase I project area, portions of the western extent of the historic oxbow channel would be armored with rock vane revetments to decrease the risk to the refuge ponds and other facilities and to Pecos Sunflower habitat.

The lead agencies would ensure the implementation of the USACE's Section 404 Nationwide Permit 27 and the NMED's SWQB Section 401 water quality certification regarding soil, sediments, and debris (see Appendix E).

In summary, appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance..

All actions in the floodplain would be timed to reduce the risk of floods that could wash soil downstream. Depending on the project phase, Reclamation and/or the Service would be responsible for implementing the sediment and erosion control plan for the project site during restoration. Erosion control measures would be implemented for all portions of the project area that drain toward surface water. Excavated trenches must be backfilled and compacted to match the density and elevation of adjacent undisturbed soil. Construction

areas outside the channel that are not otherwise physically protected from erosion would be reseeded or replanted to help stabilize soils (Appendix E). Dust suppression measures would be taken to minimize airborne soil transport. Erosion would be assessed and corrected, if necessary, through the monitoring program outlined in Appendix C.

5.4 Climate/Air Quality

Measures to reduce PM₁₀ from construction-related fugitive dust, in accordance with the Chaves County Natural Events Action Plan (NEAP), would be incorporated into the project plans to avoid nonattainment for this pollutant (NMED 2004, 2008). Burning of woody debris would be conducted under procedures outlined in site-specific Burn Plans based on the Service's New Mexico Programmatic Piles, Ditches, and Debris Prescribed Fire Burn Plan (US Fish and Wildlife Service 2004).

5.5 Water Resources

In summary, the Section 404 Nationwide Permit 27 permit from the USACE requires that:

- “To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities);
- For fills within 100-Year Floodplains, the activity must comply with applicable FEMA-approved state or local floodplain management requirements;
- No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts; and
- If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water and/or restricting its flow must be minimized to the maximum extent practicable”.

The New Mexico Environment Department Section 401 water quality certification (see Appendix E) requires that:

- Erosion control measures for all portions of the project area that drain toward surface water must be properly selected, installed, inspected, repaired, and

maintained. Erosion and sediment control structures (e.g., silt fences and sediment basins) must be inspected after significant storms and repaired as necessary. Sediment must be removed from erosion control structures when the sediment reaches half the height of the structure or when wet storage volume is reduced by half.

- Fuel, oil, hydraulic fluid, lubricants, and other petrochemicals must not be stored within the 100-year floodplain and must have a secondary containment system to prevent spills. Appropriate spill cleanup materials, such as booms and absorbent pads, must be available on-site at all times during construction.
- All heavy equipment used in the project area must be pressure washed or steam cleaned, or both, before the start of the project and must be inspected daily for leaks. A written log of inspections and maintenance must be completed. Leaking equipment must not be used in or near surface water. Equipment must be refueled at least 100 feet from surface water.
- Working within the channel during spring runoff season or summer thunderstorm flows should be avoided. Local weather forecasts must be monitored to avoid working in high water. Releases from dams must be incorporated into the work schedule to avoid working in high water. Work in the stream channel should be limited to periods of no flow when practicable, and must be limited to periods of low flow.
- Temporary protective mats are required for heavy equipment working in wetlands to minimize impacts on soil and vegetation and are to be removed when no longer necessary. Wetland crossings must be restricted to a single location and constructed perpendicular to and at a narrow point of the wetland. Flows to wetlands must not be permanently disrupted. Permeable fills should be designed and installed, when practicable. Fill materials must be clean and consist of coarse material with minimal fines. Ditches or culverts in wetlands must have properly designed, installed and maintained siltation or sedimentation structures at the outfall.
- Excavated trenches must be backfilled and compacted to match the bulk density and elevation of the adjacent undisturbed soil.
- All areas adjacent to the watercourse that are disturbed because of the project, including temporary access roads, stockpiles and staging areas, must be restored to pre-project conditions. Disturbed areas outside the channel that are not otherwise physically protected from erosion must be reseeded or planted with native vegetation.
- A copy of the Section 401 Water Quality Certification must be kept at the project site during all phases of construction. All contractors involved in the project must be provided a copy of this certification and made aware of the conditions prior to starting construction.
- The SWQB must be notified at least five days before starting construction, to allow time to schedule monitoring or inspections.”

If required, the Service would obtain a National Pollution Discharge Elimination System (NPDES) permit for discharges into the waters of the United States and would prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would detail specific sediment and erosion control measures for the project site during restoration. Actions in the floodplain would be timed to reduce the risk of floods. Burning of woody debris would be conducted in compliance with site-specific Burn Plans (US Fish and Wildlife Service 2004) to avoid affecting water quality. If required, the Service will obtain a permit from the Office of the State Engineer for use of water in construction.

The Service would establish a monitoring program to determine the river's response to restoration activities (Appendix B). Cross sections have been surveyed and set to datum points throughout the river reaches and oxbows. The monitoring plan includes annual assessments of surface flows, groundwater levels, and channel morphology, including sediment and bed forms. While Reclamation, the Service, and the New Mexico Interstate Stream Commission anticipate only minor depletions, the water budget will be monitored and the lead agencies will work with the State to quantify and offset any changes to the water budget due to this project. The Service is committed to ensure that any net depletions to the water budget resulting from the project will be compensated for and that there will be no adverse impact on downstream water rights nor interstate compact deliveries (Tashjian 2008).

5.6 Biological Resources

Before implementing the Proposed Action, the Service would define all of the project disturbance areas, including staging zones, access routes, and disposal locations, and would determine the need and protocols for preconstruction surveys for native plants, wetlands, and wildlife. Intra-Service Section 7 Consultation has been completed with the Ecological Services Field Office in Albuquerque on the potential effects of the proposed restoration on special status species (See Appendix E). The Service and the refuge staff would implement the actions described in the consultation and would develop site-specific protocols to avoid affecting native plants, wetlands, and wildlife. These could include conducting the work during certain seasons, procedures to clear areas for nests or to tag avoidance areas, stopping work if a species is present, and controlling sediment..

Anticipated actions to avoid impacts include:

- Three rock vanes will be constructed to protect the sunflower habitat near Oxbow 4. If additional protection is needed to buffer potential erosion of the unit 17 Pecos sunflower critical habitat from the effects of Phase I (Oxbow 4) restoration project, individual sunflower plants will be flagged and avoided during construction.
- The burning of saltcedar brush piles/standing dead trees would be conducted during the winter (November– February), prior to germination of Pecos puzzle sunflowers and after plants have dried and dropped seeds.

- No human activity (including this action) will take place near least tern nesting colonies or populations of Koster's springsnails, Noel's amphipods, Roswell springsnails, and/or Pecos assimineas.
- Personnel will enclose the area of Pecos River that will be filled with sediment, in order to remove Pecos bluntnose shiners from harm by relocating them upstream, outside of the action area. Personnel will search out and seine Pecos bluntnose shiners from river pockets that become isolated due to the Oxbow 4 diversion plug and relocate seined fish upstream of the sediment plug.

Actions taken during construction as conditions of the Section 404 and Section 401 permits are also designed to protect vegetation, wildlife and aquatic species. Equipment washing prior to construction would reduce the potential for introducing additional invasive species to the refuge.

The Service would implement a monitoring program, as described in Appendix B, to determine stream channel, vegetative, and fish community response to restoration activities. The restored areas would be monitored to prevent the reestablishment of saltcedar and other nonnative species.

As the project is implemented, the Service will determine protocols for preconstruction surveys and guidelines for avoiding impacts on birds that may be using the proposed restoration project area. In the long-term, the restored habitats would provide more habitat diversity, which would be beneficial to bird species.

5.7 Cultural Resources

Reclamation and the Service have consulted with the SHPO on the Phase I and Phase II portions of the restoration project. The SHPO has concurred with the finding that no historic properties would be affected (See Appendix E). Future phases of restoration in Reaches 1 through 4 are not fully developed as undertakings, and additional SHPO consultation would be needed for implementation. If additional areas would need to be disturbed additional SHPO consultation would be required. The agencies would also continue contacts with relevant Native American groups on a government-to-government basis to identify any concerns about the potential effects of this action on cultural resources and TCPs.

Prior to construction, workers would be briefed on the importance of immediately reporting findings of any archaeological materials to a designated individual with the authority to suspend construction. Should unforeseen cultural resources be discovered during the course of restoration, provisions for halting work in the vicinity of any unanticipated discoveries have been incorporated into the proposed project. Maps of the restoration footprint and the following stipulations would be included in materials provided to restoration personnel:

- **Archaeological Discoveries.** Should evidence of possible scientific, prehistoric, historic, or archeological data be discovered during the course of this action, work shall cease at that location and the Refuge Manager and Service archaeologist shall be notified by phone immediately, with the location and nature of the findings. Care shall be exercised so as not to disturb or damage artifacts or fossils uncovered during operations, and the proponents shall provide such cooperation and assistance as may be necessary to protect the location and to preserve the findings for removal or other disposition by the Government.
- **Discovery of Human Remains.** Any person who knows or has reason to know that he or she has inadvertently discovered human remains on Federal lands must provide immediate telephone notification of the inadvertent discovery, with written confirmation, to the Refuge Manager and Service archaeologist who will report to the responsible agency official. The requirement is prescribed under the Native American Graves Protection and Repatriation Act (PL 101 601; 104 Stat. 3042) of November 1990 and National Historic Preservation Act, Section 110(a)(2)(E)(iii) (PL 102 575, 106 Stat. 4753) of October 1992. Should evidence of suspected human remains be discovered during the course of this action, work shall cease in the vicinity and the location protected until a decision is made regarding removal or other disposition by the Government.

5.8 Recreation/Visitor Facilities

Dust and noise suppression measures would be taken to minimize disturbance of recreational activities. Access to recreational areas and refuge facilities would continue to be accommodated.

5.9 Visual Resources

Dust suppression measures would be taken to minimize airborne transport and avoid visible impairment due to dust, in accordance with the Chaves County Natural Events Action Plan (NEAP). As funding and staffing permit, the Service would revegetate selected areas with desirable species to help stabilize soils.

5.10 Noise

Noise suppression measures would be taken to minimize disturbance and protect workers. The potential for effects from noise and vibration on particular wildlife species or their nesting behavior would need to be reviewed with refuge staff as the project is implemented. Possible measures to reduce impacts may include avoiding certain areas during nesting periods if special status species are present.

5.11 Socioeconomic Resources

The Proposed Action would not affect socioeconomics, so no environmental commitments are needed.

5.12 Environmental Justice

The Proposed Action would not affect environmental justice, so no measures to reduce impacts or environmental commitments are needed.

5.13 Indian Trust Assets

The Proposed Action would not affect Indian Trust Assets, so no measures to reduce impacts or environmental commitments are needed.

5.14 Summary Comparison of the Environmental Consequences of the Alternatives

The environmental effects of the Proposed Action with environmental commitments and the No Action Alternative are presented in Table 5-1. The Proposed Action would have long-term beneficial effects on geology and soils, water resources, and biological resources. During restoration, there would be short-term adverse effects on geology and soils, air quality, water resources, biological resources, recreation, visual resources, and noise. No effects are expected on land use, cultural resources, socioeconomics, environmental justice, or Indian Trust Assets. No adverse effects are expected under the No Action Alternative, other than continued long-term negative trends in channel morphology, river function, invasive species expansion, and habitat loss.

Table 5-1
Summary of Environmental Effects

Resource	Proposed Action	No Action Alternative
Land use	The Proposed Action is consistent with refuge and surrounding land uses.	No effect.
Geology and soils	Short-term disturbance and erosion of soil and banks; long-term beneficial effects on channel geomorphology.	Continuation of adverse geomorphic trends.

Table 5-1
Summary of Environmental Effects *(continued)*

Resource	Proposed Action	No Action Alternative
Climate/air quality	A short-term increase in dust levels during restoration until vegetative cover is restored. Short-term negligible contributions of greenhouse gases during construction.	No effect.
Water resources	Long-term positive effects on channel morphology, river function, and flood control. Negligible effects on other surface waters. Positive effects on groundwater levels, increased inflows to the Pecos River, and improved water quality. Negligible depletions or no depletions are anticipated. No impairments to water rights are expected. Short-term increase in sedimentation affecting water quality.	Continuation of current adverse trends.
Biological resources	Long-term positive effects on vegetation, wetland habitats, wildlife, and special status species. Extension of instream habitat that would be beneficial to the Pecos bluntnose shiner. Short-term impact during restoration from loss of vegetative cover and harassment and loss of wildlife. Impacts would not be significant with implementation of measures to reduce impacts.	Continued expansion of nonnative riparian species and loss of instream habitat.
Cultural resources	Cultural resources are not anticipated; no impacts are expected.	No effect.
Recreation and visitor facilities	Minor short-term negative effect on wildlife-based recreation during construction.	No effect.
Visual resources	Minor short-term negative effect on visual resources due to dust, equipment use, and land clearing during construction.	No effect.
Noise	Minor short-term increase in noise during construction.	No effect.
Socioeconomics	No adverse effect. Some negligible increase in spending in local communities related to restoration activities.	No effect.
Environmental justice	No effect.	No effect.
Indian Trust Assets	No effect.	No effect.

5.15 Conclusions

Measures to minimize adverse effects have been incorporated into the Proposed Action, and a monitoring program would be conducted to ensure that the restoration is successful. Based on the analysis in this EA, implementing the entire Proposed Action or staging restoration actions would have no potentially significant direct, indirect, or cumulative effects on the quality of the natural or human environment. The project does not require an environmental impact statement, and a finding of no significant impact will be published. The Reclamation and the Service plan to implement the Proposed Action when other necessary approvals, permits, and funding are obtained.