

The LWD is intended to reduce water velocity and encourage sediment deposition. The root balls will not be secured to the shore or river bed, which is anticipated to allow natural redistribution in the river. The NRB will utilize a contractor to place the LWD via excavator with a hydrologic thumb. LWD placement with this method would preclude equipment from entering the river. The characterization (water velocity, substrate composition, etc.) of each site will be conducted before and after the project takes place. The initial and subsequent positions of each root ball placed in the river will be monitored using GPS to assess the movement of the root ball and any newly acquired habitat.

2.3 Alternatives Considered but Eliminated from Further Study

Alternative Project Areas: Less desirable, abandoned oxbows exist on Santo Domingo Tribal Lands; however, greater volumes of sediment would need to be removed to create the habitat conditions of the Proposed Action and therefore the study of these abandoned oxbows were not advanced.

Other sites were considered for restoration but were eliminated from further consideration for a number of reasons, including cost, accessibility and rank in priority. Dense stands of exotic vegetation and several rows of jetty-jacks surround several potential project sites, which would increase costs and time to complete a project.

Chapter 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

This section describes the environmental consequences of various resources, including geology and soils, hydrology, water resources and water balance, noxious weeds, threatened and endangered species and special status species, cultural resources, Indian trust assets, socioeconomic considerations, land use, and environmental justice. The description of the affected environment for these resources can be found in the document, Santo Domingo Tribe – Habitat Restoration for the Rio Grande Silvery Minnow and Salt Cedar Removal Project Environmental Assessment, March 2006, and is incorporated by reference in this document.

The affected environment is within the Cochiti Reach of the Middle Rio Grande. The Cochiti Reach extends from Cochiti Dam downstream to the Angostura Dam. This reach has been identified by Reclamation and the FWS, as well as the Collaborative Program, as an area where habitat/ecosystem restoration projects would be highly beneficial to all life stages of the silvery minnow.



3.2 Description of Relevant Affected Resources

3.2.1 Geology and soils

During construction of the backwater and side channel, care will be taken to minimize sediment erosion. Excavated material will be stockpiled at a pre-designated location and transported to a community borrow pit, and silt fencing will be installed when working near the bank of the river. With these mitigating measures, no impacts are anticipated due to the Proposed Action.

Under the No Action Alternative, the regulated hydrograph from Cochiti Dam will continue incision of the main stem of the Rio Grande, which will result in high river banks and continue to prevent inundation of the historic floodplain. Sediment deposition will be minimal; water will run cold. Under the No Action Alternative, geomorphic conditions favorable to silvery minnow egg retention and larvae development will continue to be unfavorable.

3.2.2 Hydrology

Under the Proposed Action, water would flow naturally through the side channel and backwater restoration projects. An increase in desirable habitat conditions suitable for the silvery minnow developmental phases would be available.

Under the No Action alternative, the side channels and backwater areas would continue to be isolated from flows in the Rio Grande.

3.2.3 Water Resources and Water Balance

The intent of the Proposed Action is to increase habitat availability for the silvery minnow. The creation of additional surface area may increase evaporation; however, with the removal of 100+ acres of phreatophytes from the Rio Grande and Rio Galisteo in Phase I of Santo Domingo's silvery minnow habitat restoration efforts in FY 2005 will offset any loss. All projects conducted under the Proposed Action will occur on Santo Domingo Tribal Lands and a permit for any potential water losses will not be necessary. Under the No Action Alternative, there will be no change to surface water and no additional habitat for the silvery minnow. Evapotranspiration losses will increase as non-native vegetation matures and reproduces throughout the Proposed Action areas.

3.2.4 Noxious Weeds

Under the Proposed Action, the removal of saltcedar, Russian olive and Siberian elm will have a positive result by allowing native vegetation to flourish and proliferate.

The No Action Alternative would result in continued growth, expansion and consumption of water by non-native vegetation in and around the project area near the Rio Grande.



3.2.5 Threatened and Endangered Species and Species of Special Status

Three threatened and endangered species: the Rio Grande silvery minnow, the Southwestern willow flycatcher, and Bald Eagle; and the Yellow Billed Cuckoo, a USFWS candidate species, historically occurred on tribal lands.

Rio Grande Silvery Minnow (*Hybognathus amarus*)

No long-term adverse impacts to silvery minnow or habitat are anticipated to occur from short-term construction of new habitat or LWD placement. The anticipated benefits to the silvery minnow and its habitat resulting from habitat development far outweigh any potential negative impacts.

The No Action Alternation would result in continued poor habitat conditions in the Cochiti Reach.

Southwestern willow flycatcher (*Empidonax trailii extimus*)

Because the project site does not contain actual or potential habitat for the species, the Proposed Action and No Action Alternative will have no effect on breeding habitat and no direct effects to the species.

Bald Eagle (*Haliaeetus leucocephalus*)

The Proposed Action may have short-term, minor potential effects to wintering bald eagles during construction, related to temporary noise and other disruptions. Should a bald eagle be observed within 0.25 mile, upstream or downstream of the active project site in the morning before project construction activity starts, or following breaks in project construction activity, the construction crew would be required to suspend all activity until the bird leaves on its own volition, or if the Tribal biologist in consultation with the FWS determines that the potential for harassment is minimal. However, if a bald eagle arrives during project construction activities or if a bald eagle is observed beyond the specified distance, construction would not need to be interrupted. If bald eagles are found consistently in the immediate action area during project construction, Santo Domingo would contact the FWS to determine whether formal consultation under ESA is necessary.

The No Action Alternative will have no effect on this species because the riparian vegetation used by this species will not be disturbed.

Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*, Cuckoo)

The relatively limited amount of potential cuckoo habitat to be removed combined with the mitigation planting ratios that will occur under the Proposed Action may result in minor positive impacts for the cuckoo.



The No Action Alternation will not alter riparian conditions or habitat utilized by this species, and no effects will occur.

3.2.6 Cultural Resources and Traditional Cultural Properties

Cultural Resources include archeological sites, sites eligible for the State Register of Cultural Properties and/or the National Register of Historic Places (NRHP), and properties of traditional religious or cultural importance (Traditional Cultural Properties [TCPs]).

No cultural resources have been identified in the Area of Impact (AOI) of the Proposed Action. In addition, no TCPs or sacred sites were identified in the AOI. The probability of any artifacts that might have once existed in the floodplain of the Rio Grande have a very low probability of still being present (J. Hanson, pers communication). This is due to the nature of the meandering of the Rio Grande and habitat modifications being disrupted by man. Therefore, no impacts to cultural resources or TCPs are anticipated due to the Proposed Action or the No Action Alternative.

3.2.7 Indian Trust Assets

Indian Trust Assets (ITAs) are legal interests in assets held in trust by the United States government for Indian tribes or for Indian individuals. Some examples of ITAs are lands, minerals, water rights, hunting and fishing rights, titles, and money. ITAs cannot be sold, leased, or alienated without the express approval of the United States government. The United States has a trust responsibility to protect and maintain rights reserved by or granted to Indian tribes or individuals by treaties, statues, Executive Orders, and rights further interpreted by the courts. This trust responsibility requires that all Federal agencies take all actions reasonably necessary to protect such trust assets.

Since no ITAs that could potentially be affected have been identified, no impacts due to the Proposed Action or No Action alternative would result.

3.2.8 Socioeconomic Considerations

Short-term positive economic impacts to the Santo Domingo community will be observed through temporary employment of sawyers and laborers while construction occurs.

The No Action Alternation will have no impacts to Santo Domingo Pueblo. The proposed project will have no adverse impacts to the economy of Sandoval County.



3.2.9 Land Use

The Proposed Action and No Action Alternatives will have no effect on current uses of water for agriculture, ranching, residential, or other activities in the area. The Proposed Action will not affect adjacent agricultural land use and will not change current land status or uses.

3.2.10 Environmental Justice

The planning and decision-making process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations, including EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations," which was issued by President Clinton on February 11, 1994 (FR. 1994b). The essential purpose of EO 12898 is to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

The Proposed Action will be constructed entirely on lands of the Santo Domingo Tribe, a minority population. However, there are no anticipated environmental effects that would be adverse to tribal members. The Proposed Action will provide employment opportunities to tribal members, a positive benefit to the Tribe.

The No Action Alternation will not adversely affect the use of the proposed action site and will have no bearing on the Santo Domingo community.

3.2.11 Irretrievable Commitment of Resources of the Proposed Action

The implementation of the project will result in the commitment of resources such as fossil fuels, construction materials, and labor. In addition, Federal funds will be expended for the construction of the proposed project.

3.2.12 Cumulative Impacts

The Proposed Action will have a net positive benefit to the silvery minnow in the Cochiti reach because of the enhanced habitat availability. Future restoration projects on Santo Domingo will be cumulative, increasing habitat for threatened and endangered species and overall biodiversity on Santo Domingo tribal lands.

Restoration efforts from neighboring tribes and pueblos will also benefit from this project because of increased habitat connectivity for the silvery minnow. Reclamation recently classified three priority sites in the Rio Grande corridor of Santo Domingo Tribal lands in which measures will be taken to protect and restore the river's banks and levees. The anticipated methods to be used by Reclamation are expected to have no adverse impacts to any endangered or threatened species. Cumulative impacts from these projects will



benefit the overall recovery efforts of the silvery minnow in the Cochiti reach by increasing the availability and connectedness of habitat in upper reaches of the Middle Rio Grande.

Chapter 4. ENVIRONMENTAL COMMITMENTS

All applicable permits have been obtained prior to implementation of the project, including but not limited to:

- Clean Water Act (CWA), Section 404 as administered by the U.S. Army Corps of Engineers.
- Section 7 of the ESA as administered by the US Fish and Wildlife Service (USFWS). To protect shallow water habitat adjacent to the bank line during construction, a silt curtain will be installed. To protect aquatic habitats from spills or contamination, hydraulic lines will be protected from punctures. Additionally, all fueling will take place outside the active floodplain, and all equipment will undergo cleaning and inspection prior to operation. Equipment will be parked on predetermined locations on high ground away from the project area overnight.
- Should a bald eagle be observed within 0.25 mile, upstream or downstream of the active project site in the morning before project construction activity starts, or following breaks in project construction activity, the construction crew would be required to suspend all activity until the bird leaves on its own volition, or if the Tribal biologist in consultation with the FWS determines that the potential for harassment is minimal. However, if a bald eagle arrives during project construction activities or if a bald eagle is observed beyond the specified distance, construction would not need to be interrupted. If bald eagles are found consistently in the immediate action area during project construction, Santo Domingo would contact the FWS to determine whether formal consultation under ESA is necessary.
- Avoid impacts to birds protected by the Migratory Bird Treaty Act (16 U.S.C. 703) by scheduling construction outside of the normal bird breeding and nesting season (April 15 through August 15) for most avian species or conducting preconstruction breeding surveys and monitoring if construction were to occur during the breeding and nesting season, and consult with FWS if affected species are observed.
- Coyote willow will be collected from Site Two, Four and Five and replanted adjacent to the channel (see page 5, section 2.2.2).
- Compliance with Section 106 of the National Historic Preservation Act (NHPA). Should evidence of possible scientific, prehistorical, historical, or archeological data be discovered during the course of this action, work shall cease at that location and the Area 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 preserve the findings for removal or other disposition by the Government.
- The Pueblo of Santo Domingo is committed to monitoring the habitat restoration projects for changes in site conditions and the presence of various fish species using the habitat.

