

RECLAMATION

Managing Water in the West

Final Environmental Assessment

San Acacia Priority Sites, River Miles 114 and 113

Socorro County, New Mexico



U.S. Department of the Interior
Bureau of Reclamation
Albuquerque Area Office

Prepared by:



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Appendix A – Public and Agency Correspondence

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Acronyms and Abbreviations

ACOE	U.S. Army Corps of Engineers
AQCR	Air Quality Control Region
BMPs	Best Management Practices
CFR	Code of Federal Regulations
Cfs	cubic feet per second
CMP	corrugated metal pipe
cu. yds.	cubic yards
CWA	Clean Water Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ft.	feet
in.	inches
ITAs	Indian Trust Assets
LFCC	Low Flow Conveyance Channel
mi.	miles
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMED	New Mexico Environment Department
NPDES	National Pollution Discharge Elimination System
O & M	Operations and Maintenance
RCP	reinforced concrete pipe
Reclamation	Bureau of Reclamation
RM	river mile
SADD	San Acacia Diversion Dam
Service	U.S. Fish and Wildlife Service
SHPO	State Historic Preservation Officer
U.S.C.	United States Code
USGS	United States Geological Survey

Chapter 1. Purpose of and Need for Action

1.1 Proposed Action

The Bureau of Reclamation (Reclamation) has authority for maintenance of the Rio Grande river-channel between Velarde, New Mexico and Caballo Reservoir under the *Flood Control Acts of 1948 and 1950*. Under this authority, Reclamation monitors locations where there is danger of river erosion causing damage to levees, roads, ditches, and other riverside facilities; these locations are referred to by Reclamation as “priority sites.” Two priority sites that have been identified are called the San Acacia priority sites at River Miles (RM) 114 and 113, hereinafter referred to simply as “San Acacia.”

The Federal action addressed in this Environmental Assessment (EA) would be the funding and execution of levee and Low Flow Conveyance Channel (LFCC) relocation activities at San Acacia by Reclamation. The proposed action would provide space for the river to migrate naturally toward the west in the vicinity of RM 114 and 113. The relocation would prevent severe damage to the levee and LFCC. The lands encumbered by the proposed action are on properties assigned by the Middle Rio Grande Conservancy District (MRGCD) to the United States under the terms of the 1951 Contract between the parties. Assignment of the Receipt and Conveyance numbers relevant to the proposed action are the following: 1353, 1352, 1354, 1367, 1366, 1504, 1330, 1350, 1233, 1503, and 1595. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) [42 United States Code (U.S.C.) 4321, et seq.].

1.2 Need for the Action

At the present time, the Rio Grande is eroding the west-side of the levee downstream of the San Acacia Diversion Dam (SADD). Historically, the river was a wide and braided channel with a sand bed and low banks. The river also experienced larger floods and higher sediment loads. Since the LFCC was built in the 1950s, this section of the river was straightened. In addition, two channel bends were cut off in this section of the river. The river is currently incising, narrowing, coarsening and migrating to the west. The meandering and incising characteristics are causing bank failure and erosion that is threatening the levee at the priority sites previously mentioned.

1.3 Purpose of the Action

The San Acacia project is located in Socorro County, approximately 10 miles (mi.) north of Socorro, New Mexico (Figure 1), and 1.0 mi. south of San Acacia, New Mexico, on the west side of the Rio Grande between the SADD and Escondida Bridge (centered at Lat. 34°13'37", Long. 106°54'03"). The purpose of the San Acacia Project would be to prevent damage to the levee and LFCC and allow the Rio Grande to migrate naturally toward the west. This action would allow the river's natural process of erosion to continue its lateral migration toward the west without breaching the levee and damaging the LFCC. A secondary objective of the project would be to take advantage of opportunities provided by the proposed action to restore, improve, and enhance, to some degree, the habitat and natural condition of the floodplain between the river and the newly aligned LFCC and levee.

1.4 Relevant Statutes, Regulations, and Other Plans

The proposed action does not conflict with any known state or local planning or zoning ordinances. The proposed action would also be required to conform to the provisions of Section 7 of the *Endangered Species Act* (ESA) as administered by the U.S. Fish and Wildlife Service (Service) and Section 106 of the *National Historic Preservation Act* (NHPA) as administered by the New Mexico State Historic Preservation Officer (SHPO).

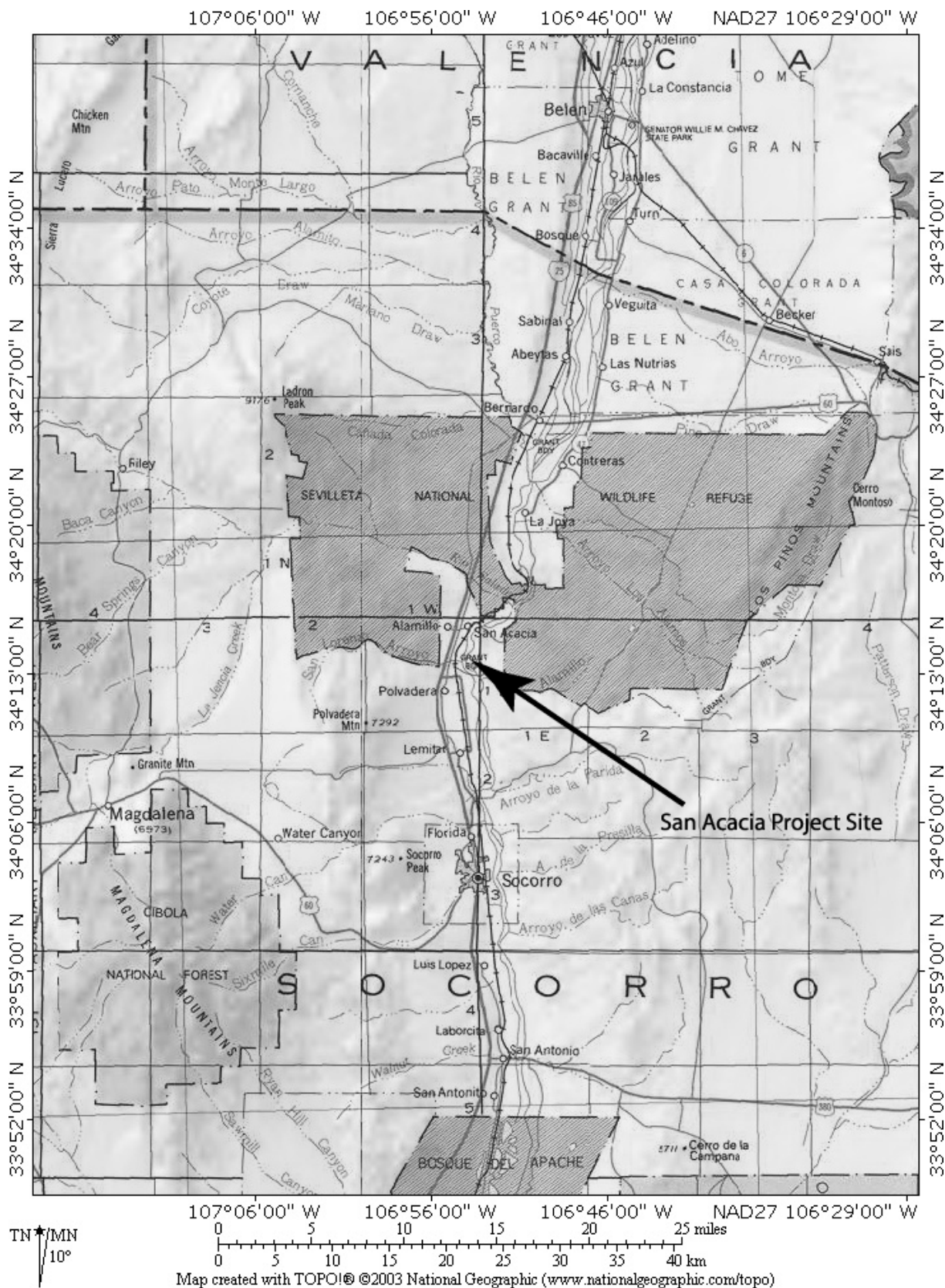


Figure 1. San Acacia project site location map.

The U.S. Army Corps of Engineers (ACOE) has issued an Individual Permit (Section 404 Permit No. 2004-00321) for this project to meet the requirements of the *Clean Water Act* (CWA). Because more than one acre of land would be disturbed by the proposed action, the project would require a *National Pollution Discharge Elimination System* (NPDES) permit.

For the purpose of analyzing cumulative effects, two other planned projects in the region were identified. A second phase of the proposed action, which may or may not be carried out at some time in the future, would increase the capacity of the new alignment of the LFCC. Reclamation is also planning to address another priority site at RM 111 sometime after construction has begun at the RM 114 and 113 priority sites. These projects are discussed further in Chapter 2.

1.5 Agency and Public Scoping Activities in Support of the Environmental Assessment

Prior to the initiation of the NEPA process, Reclamation held four public scoping meetings in the San Acacia area to solicit public comments and concerns and identify issues that would need to be addressed in this EA. The first meeting was held at Reclamation's Socorro Field Division Office on Tuesday, April 8, 2003, from 2:00 to 4:00 pm. The second meeting was held at the Sevilleta National Wildlife Refuge on May 13, 2003. The third meeting was held on Friday, May 21, 2004, from 1:30 to 2:30 pm at the Socorro Field Division Office. The fourth meeting was held on Tuesday, June 1, 2004, at 1:00 pm at the State Forestry Office in Socorro.

The first two public meetings discussed numerous alternatives, including using riprap, to stabilize the bank at RM 114 and 113 to halt the migration of the river to the east. These first two meetings were responsible, in part, for the elimination of some alternatives and for development of the proposed action described in this EA. Copies of the public scoping announcement letters from the meetings are contained in Appendix A.

Reclamation also consulted directly with the Service to identify their issues and concerns. A PowerPoint presentation was given to Service personnel on March 19, 2004 and a field trip was conducted on April 27, 2004. Consultation with the Service consisted of an initial consultation letter to the Service briefly describing the project and location and requesting a species list. Because Reclamation has determined that there would be no effect to any federally protected species by the proposed action, no further consultation is required. A copy of the initial consultation letter and the Service's response letter containing a list of special status species is contained in Appendix A.

Other agencies and groups consulted by Reclamation for this EA included the ACOE, New Mexico Environment Department (NMED), New Mexico Department of Game and Fish (NMDG&F), the New Mexico Rare Plant Technical Council (NMRPTC), the SHPO, the MRGCD, Save Our Bosque Task Force, Sevilleta National Wildlife Refuge, and Native American tribes.

Scoping and consultation resulted in the identification of eight issues, which would need to be addressed by the proposed action. They are:

- 1) The potential for effects to protected species would need to be determined by Reclamation;
- 2) Removal of existing cottonwood trees, willows, and other vegetation within the project area and effects to native wildlife;
- 3) The introduction of state-listed noxious weeds;
- 4) Erosion and water quality during construction and after construction has been completed;

- 5) Air quality from dust generation during construction;
- 6) The avoidance of cultural and archaeological resources, as well as potential sacred sites in the project area;
- 7) The avoidance of Indian Trust Assets, and;
- 8) Any potential for adverse effects to low-income and minority populations.

With regard to federally protected species, three were identified that could potentially occur in the project area: the Bald Eagle (*Haliaeetus leucocephalus*), the Southwestern Willow Flycatcher (*Empidonax traillii extimus*), and the Rio Grande Silvery Minnow (*Hybognathus amarus*). Bald Eagles looking for nesting sites could potentially be disturbed by construction activities at the site. A monitoring plan for Bald Eagles, as described in Chapter 4, would be employed during construction to mitigate this potential.

Surveys in 2004 for the presence of Southwestern Willow Flycatchers did not result in the discovery of any birds or nests in the project area (Doster, per. comm., 2005). Clearing and grubbing operations would take place before the nesting season to further ensure no flycatchers are affected.

Filling activities during the abandonment of the realigned segment could potentially result in a take if Rio Grande Silvery Minnows were present in the LFCC. No Rio Grande Silvery Minnows were located in the LFCC during recent Reclamation fish surveys (Reclamation, 2004a). There would be no in-stream activities in the Rio Grande; therefore, there would be no effects to the Rio Grande Silvery Minnow or its designated critical habitat.

The following issues were not considered relevant to the project in this EA.

- Effects to visual resources are not considered relevant because the project site does not contain any unusual or exceptional visual characteristics and is in an area that receives very little public attention.
- Noise is not considered relevant because the nearest potential receptors are residences that are not close enough to the project site to hear construction activities at levels that would approach or exceed standard noise threshold levels.
- No social or economic effects are expected to occur as a result of this project.
- There are no segments of designated Wild and Scenic Rivers in the vicinity of the project site that could be affected by the proposed action.
- There are no wetlands in the project area.
- No changes in the land use would occur as a result of the proposed action.

Chapter 2. Alternatives Including the Proposed Action

2.1 Introduction

This chapter describes the two alternatives analyzed in this EA. Alternative A is the no action alternative. Alternative B is the proposed action. Following the alternative descriptions section, the decision making process is described.

2.2 Description of the Alternatives

2.2.1 Alternative A: No Action

Under this alternative, the proposed action would not be constructed and no other measures, except routine operations and maintenance (O & M) would be taken to prevent erosion at the RM 114 and 113 priority sites. Other ongoing O & M activities in the area generally consist of mowing the vegetation along the bankline slopes of the LFCC and levee and maintaining the condition of the access roads.

2.2.2 Alternative B: Proposed Action

Reclamation proposes to construct a new levee and LFCC alignment from a point on the levee and LFCC located approximately 1.6 mi. downstream of the SADD to a point approximately 3.4 mi. downstream of the SADD. The new alignment would be constructed approximately 1,500 feet (ft.) west of the existing alignment as shown in Figure 2 below. The total length of the new alignment would be approximately 10,800 ft. Construction would take approximately three years to complete.

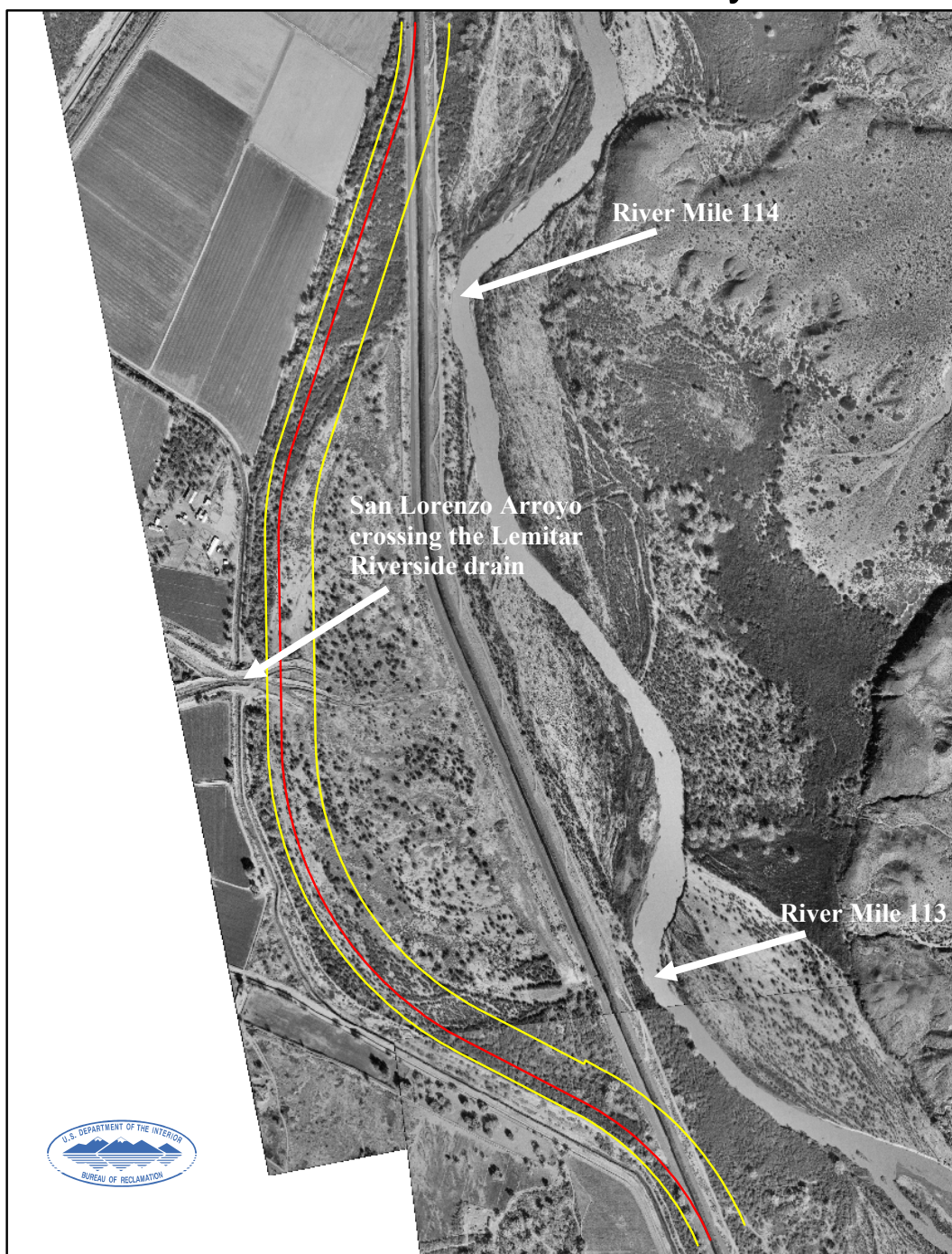
Construction of the new levee and LFCC would be carried out in three segments: a north segment, a central segment, and a south segment. The central segment would consist of a single, 584 ft. long, 9.0 ft. diameter reinforced concrete pipe (RCP), with support earthwork and concrete, riprap placed at the inlet and outlet of the pipe, and a sheetpile drop structure to stop head cutting of the San Lorenzo Arroyo, coming from the direction of the river.

The sheetpile drop structure would consist of four rows of sheetpiles driven to a depth of 25 ft. and spaced 30 ft. apart. There would be a 6.0 ft. drop in elevation between each row and the sides of the structure would be enclosed by sheetpiles. Riprap and earthen fill material would be placed between the rows of sheetpiles. Local groundwater would be removed and discharged into either the Lemitar Riverside Drain, the existing LFCC, or into a temporary holding pond to allow the water to be used for construction. The maximum size of the holding pond would be 1.0 acre and 5.0 ft. deep. An overflow pipe would be installed to protect the pond from overflow damage.

The north and south segments would consist of the new LFCC and levee from their connection with the existing LFCC and levee, up to the point where they each would connect to the pipe in the central segment. The bottom width of the new LFCC would be 28.1± ft. and would have 2:1 side slopes up to the original ground level. The riprap protection would be to a depth of 6.0 ft. with a thickness of 11 inches (in.).

During the first two months of construction, the construction limits of the existing LFCC and the centerline of the new LFCC alignment would be surveyed and staked. Following the new centerline, the construction easement for the new alignment would be surveyed and staked. The construction easement would extend 100 ft. from the centerline on the west side of the new LFCC and 250 to 275 ft. from the centerline on the east side. Haul roads for each segment would be surveyed and staked 25 ft. on each side of their centerlines.

River Miles 114 and 113 Priority Sites



Legend

- 2000 cfs LFCC Centerline
- Levee Setback Borders

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1,000 500 0 1,000 Feet

Figure 2. Aerial view of the project area and proposed new alignment of the levee and LFCC.

A staging area would be surveyed and staked out near each haul road. Two stockpiling areas, one on each side (east and west) of the central haul road would also be surveyed and staked out. Existing jetty jacks along a 1,000 ft. segment of the existing LFCC and levee on the east side would be removed. The jetty jacks would be removed in order to allow the existing levee to be used as fill material for the existing LFCC. Table 1 below presents more specific details of the new LFCC alignment, haul roads, staging and stockpiling, and jetty jack removal areas. Figure 3 below shows their proposed locations.

Table 1. Easement details of the new LFCC alignment, haul roads, staging, stockpiling, and jetty jack removal areas.

Alignment	Offset Distance From Centerline Looking Upstream	
	Left	Right
Realigned LFCC	100.0 ft. 100.0 ft.	275.0 ft. 250.0 ft.
Existing LFCC	215.0 ft.	215.0 ft.*
Feature	Easement Description	
North Haul Road	25.0 ft. left & right of centerline	
Central Haul Road	25.0 ft. left & right of centerline	
South Haul Road	25.0 ft. left & right of centerline	
Staging Area #1**	475.0 ft. by 315.0 ft. in size Located at east entrance of the South Haul Road	
Staging Area #2**	400.0 ft. by 325.0 ft. in size Located at west entrance of the Central Haul Road	
Staging Area #3**	400.0 ft. by 265.0 ft. in size Located at east entrance of the North Haul Road	
Stockpile Area #1	300.0 ft. by 250.0 ft. in size Located at east entrance of the Central Haul Road	
Stockpile Area #2	300.0 ft. by 325.0 ft. in size Located at west entrance of the Central Haul Road	
Jetty Jack Removal Area	All jetty jack tie back lines within 50.0 ft. of the east levee embankment toe will be removed. The estimated length = (65.0×24.0) 1,560 ft.. The complete jetty jack tie back and double main lines located up to 360.0 ft. east of the existing LFCC alignment from a point 2.1 mi. south of the SADD to a point 2.3 mi. south of the SADD shall be removed. The estimated length = $((175 \times 6) + (785 \times 2))$ 2,620 ft.. The removal will required a construction easement of 30.0 ft. left and right of centerline of each jetty jack tie back or main lines.	

* The construction easement will be which ever is greater between 215 ft. from existing LFCC centerline or 50.0 ft. from existing east levee embankment toe.

** Staging areas may be used for storing or stockpiling construction materials.

All vegetation would be removed and chipped within the construction easement of the new LFCC alignment. Chipped vegetation and roots would be spread out along the existing ground surface and not piled higher than 12 in. The removal of existing Rio Grande cottonwood trees (*Populus deltoides* ssp. *wislizeni*) would be minimized during vegetation removal from the existing LFCC alignment, jetty jack removal area, staging areas, haul roads, and stockpile areas as required to perform construction operations.

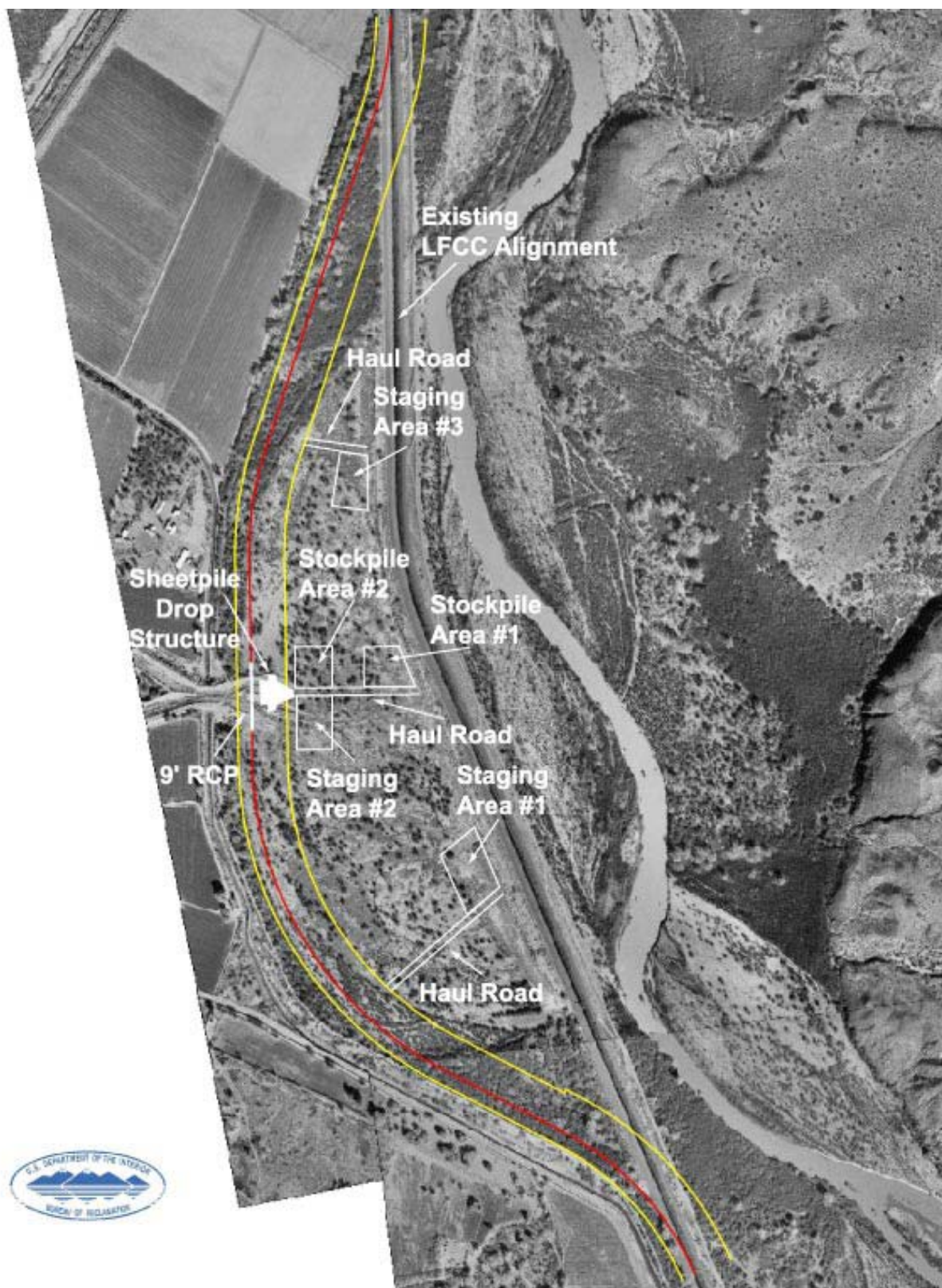


Figure 3. Aerial view showing the locations of the proposed new LFCC alignment, haul roads, staging, and stockpiling areas, sheetpile drop structure and the RCP.

The grubbing of vegetation along the existing LFCC alignment, jetty jack removal area, staging areas, haul roads, and stockpile areas would be performed to limit interference with construction operations and protect equipment tires.

The existing LFCC would be mowed in accordance with regular operations and maintenance activities. Fish barriers would be placed just outside the project limits in the LFCC to prevent any fish from moving into the project area during construction. After mowing, the riprap that currently lines the channel of the LFCC would be removed and stockpiled for use at the base of the new levee and at the sheetpile drop structure. Any remaining riprap would be used either along the east slope of the new levee or in the channel of the new LFCC alignment.

Additional riprap would be hauled in from three existing Reclamation stockpiles. One stockpile is located just north of the project area between Interstate 25 and the Socorro Main Canal. Approximately 1,050 truck loads of riprap would be transported to the site by following the canal road north to the railroad crossing over the LFCC, then following the LFCC access road south into the project area. Another stockpile is located just south of the project area on the west side of the LFCC near Rio Grande RM 111. This stockpile, known as the "Polvadera" stockpile, would supply approximately 150 truck loads of riprap for the proposed project. The LFCC access road would be followed from the stockpile to the project area. A third stockpile is located at the Red Canyon Mine, south of Socorro. Approximately 1,800 truck loads of riprap would be brought in from this stockpile using a route that takes I-25 north to Escondido, then follows the Socorro Ditch over to the LFCC and turns north on the LFCC access road to the project area. The riprap hauling would require approximately 15 months, spread out over the estimated three year construction period.

Up to four temporary road crossings may be constructed on the existing LFCC. These crossings would be used by equipment to access both sides of the channel. Each crossing would have a minimum top width of 24 ft. and be constructed with a 36 in. diameter metal culvert in the bottom of the channel to allow water to flow past. One crossing would have a top width of 36 ft. and would be used as a location for water pumping. A rock embankment would be placed downstream of the crossing to allow the water in the channel to pond to a depth required for pumping.

Water required for construction activities would preferably come from the LFCC and dewatering operations. Additional water could be acquired from the Middle Rio Grande Conservation District or other sources. The estimated volume of water that would be required for construction is 32 acre-ft. per year [0.2 cubic feet per second (cfs) per 10 hour day].

Access roads would be constructed on both sides of the new LFCC and would be 24.0 ft. wide. Drainage ditches would be located adjacent to the access roads. Twelve inch diameter culvert drain inlets would be located approximately every 1,000 ft. along the drainage ditches. The drainage ditches would be shaped with 2:1 side slopes, a bottom width between 2.0 and 10 ft., an average depth of 2 ft., and would be sloped toward the corrugated metal pipe (CMP) drain inlets.

A low-water crossing would be constructed across the San Lorenzo Arroyo to allow low-boy trailers to move equipment upstream and downstream along the realigned LFCC. The low-water crossing would be 24 ft. wide with 10:1 side slopes. Compacted road base material with a thickness of 12 in. would be placed on the road surface of the low water crossing. Figure 4 below shows where work would take place in the San Lorenzo Arroyo.

The new levee would be constructed from material excavated from the new alignment of the LFCC. The levee would be constructed on the east side of the realigned LFCC. The new levee would be approximately 16 ft. high from the original ground surface with 2:1 side slopes on the west and 3:1 side

slopes on the east side. Permanent levee ramps would be constructed on the west side of the new levee at a maximum of 500 ft. intervals. Temporary levee ramps (to be removed after construction) would be located on the east side of the existing and new levees at a maximum of 500 ft. intervals.

Prior to construction of the central segment, the San Lorenzo Arroyo would be diverted around the south side of the construction area. To accomplish this, the culvert in the Lemitar Riverside Drain that passes under the San Lorenzo Arroyo would be extended an additional 80 ft. southward and covered with earthen fill material (Figure 5, below). A temporary channel and an earthen berm would be constructed to redirect flows in the arroyo away from the construction area.

After construction of both the RCP crossing and sheet pile drop structure, the San Lorenzo Arroyo channel flows would be directed through the sheet pile drop structure. The added pipe and earth fill in the Lemitar Riverside Drain would be removed after construction is complete.



Figure 4. View of the San Lorenzo Arroyo where the low-water crossing and the new RCP would be placed.

The USGS cableway over the existing LFCC alignment may be removed and stored by Reclamation. Two metal culverts that drain into the existing LFCC would be removed and backfilled. One of these culverts is a 60 in. diameter pipe that drains the San Lorenzo Arroyo. Once construction of the new LFCC and levee alignment is completed, water flow in the existing LFCC would be redirected into the new LFCC by backfilling the existing LFCC with material from the existing levee. Table 2 below presents the estimated areas of disturbance and construction quantities for the proposed action.



Figure 5. View of the Lemitar Riverside Drain where the culvert would be temporarily extended during construction.

Table 2. Estimated Areas of Disturbance and Construction Quantities.

DESCRIPTION	QUANTITY	UNITS
Vegetation Removal (New Areas):		
New LFCC Alignment (10,800 ft. by 375 ft.)	93.0	acres
Staging Area One (475 ft. by 315 ft.)	3.4	acres
Staging Area Two (400 ft. by 325 ft.)	3.0	acres
Staging Area Three (400 ft. by 265 ft.)	2.4	acres
Stockpile Area One (300 ft. by 250 ft.)	1.7	acres
Stockpile Area Two (300 ft. by 325 ft.)	2.2	acres
Haul Road "North" (455 ft. by 50 ft.)	0.5	acres
Haul Road "Center" (956 ft. by 50 ft.)	1.1	acres
Haul Road "South" (802 ft. by 50 ft.)	0.9	acres
Total Vegetation Removal	108.2	acres
Vegetation Removal (Existing Areas):		
Existing LFCC Alignment (9,650 ft. by 282 ft.)	62.5	acres
Jetty Jack Tie Back Removal (9,650 ft. by 15 ft.)	3.3	acres
Jetty Jack Tie Back & Main Lines Removal (1,841 ft. by 60 ft.)	2.5	acres
Vegetation Removal (Mowing Existing LFCC)		
Existing LFCC Alignment (9,650 ft. by 148 ft.)	32.8	acres

Table 2. Estimated Areas of Disturbance and Construction Quantities, continued.

DESCRIPTION	QUANTITY	UNITS
Excavation:		
Removal of Topsoil New LFCC.	130,000.0	cu. yds.
New LFCC 2,000 cfs channel.	535,000.0	cu. yds.
9.0 ft. diameter RCP at San Lorenzo Arroyo*.	1,500.0	cu. yds.
Sheetpile Drop Structure.	45,000.0	cu. yds.
Estimated Total Excavation	711,500.0	cu. yds.
Removal of existing Rio Grande levee.	242,000.0	cu. yds.
Removal of existing San Lorenzo Arroyo embankment	60,000.0	cu. yds.
Temporary Road Crossing(s)		
Earth Fill	1,800.0	cu. yds.
Riprap Fill	1,250.0	cu. yds.
Diversion and Care of San Lorenzo Arroyo:		
Volume of earth to be moved (temporary fill)	46,000.0	cu. yds.
New Riprap:		
2,000 cfs Channel to 6.0 ft.	16,000.0	cu. yds.
Inlet & Outlet of RCP.	1,200.0	cu. yds.
Drop Structure.	4,250.0	cu. yds.
Salvage Riprap from existing LFCC	30,100.0	cu. yds.
Backfill:		
Existing LFCC.	356,000.0	cu. yds.
Reshaping of San Lorenzo Arroyo.	112,000.0	cu. yds.
New spoil levee.	451,000.0	cu. yds.
Compacted Backfill:		
CMP Drain Inlets.	500.0	cu. yds.
9.0 ft. diameter RCP at San Lorenzo Arroyo.	24,000.0	cu. yds.
Fill into existing LFCC at alignment change.	21,000.0	cu. yds.
Road Base:		
O&M access roads.	24,000.0	cu. yds.
San Lorenzo Arroyo embankments.	1,500.0	cu. yds.
San Lorenzo Arroyo low water crossing.	500.0	cu. yds.

* Excavation does not include channel excavation through structure.

2.3 Post Construction Site Restoration Activities

A key project objective is to restore the Rio Grande's active floodplain to a more natural condition by moving the LFCC and levee to the west, thus allowing the river to migrate laterally over time without being confined by the man-made structures. This in itself is expected to result in improved riverine and riparian conditions within this river reach.

To provide for more immediate habitat replacement, Reclamation has developed the following mitigation plan to offset the effects associated with the clearing of native vegetation within the project area. The proposed action would result in the removal of approximately 286 cottonwoods and 76 Goodding's willow trees (*Salix gooddingii*) that are in various age classes and conditions and located outside of the river's floodplain. Figure 6 below shows a portion of the LFCC in the foreground and provides some idea of the vegetative appearance of the settling basin.

To offset the effects of this vegetation removal, Reclamation proposes to plant both species listed above within the river floodplain at an elevation conducive to establishment and survivability and within two wetland habitat enhancement features. Replacement ratios would be consistent with general Service recommendations based on habitat value. In addition, habitat enhancement features would be developed within the existing LFCC that would provide riparian and wetland habitat components. Project related soil disturbance areas (staging areas, temporary access routes, stockpile sites, etc.) would be reseeded with native grasses and shrubs.



Figure 6. View to the west of the LFCC (foreground) and the San Lorenzo Arroyo settling basin beyond.

Mitigation ratios were derived from general Service recommendations not specific to this project. Regarding impacts to riparian vegetation (ex. coyote willow), the Service recommends a 2:1 replacement. The replacement ratio for mature trees is a minimum 10:1, i.e., 10 saplings planted for each mature tree. The Service provides no specific guidance for replacement ratios of less healthy trees or younger trees. So, to reflect the relatively lower value of less healthy and/or younger trees a ratio of 2:1 and 5:1 was used, respectively. Tables 3 and 4 below present the recommended replacement values for cottonwood and Goodding's willow trees affected by the proposed project.

Table 3. Cottonwood replacement quantities.

Tree Condition	Number of Trees Removed		Replacement Ratio		Number of Replacement Trees
Mature healthy	86	@	10:1	=	860
Mature unhealthy	47	@	5:1	=	235
Young healthy	116	@	5:1	=	580
Young unhealthy	37	@	2:1	=	93
Total trees removed:	286		Total trees planted:		1,768

Table 4. Goodding's willow replacement quantities.

Tree Condition	Number of Trees Removed		Replacement Ratio		Number of Replacement Trees
Mature healthy	23	@	10:1	=	230
Mature unhealthy	24	@	5:1	=	120
Young healthy	10	@	5:1	=	50
Young unhealthy	19	@	2:1	=	48
Total trees removed:	76		Total trees planted:		448

Mitigation for removal of vegetation on this project would take place in two forms (Figure 7). First, the remaining unfilled portions of the LFCC would be converted into two wetland habitat enhancement features. These features, which are designed to take advantage of groundwater in the present LFCC, would be 500 and 1,000 ft. long and approximately 120 ft. wide at ground surface (Figures 8 and 9) for a total area of approximately 4.0 acres. These depressions would have gradually-sloping transitions (12:1) on the north and south ends and steeper slopes along their sides (3:1). Existing coyote willows and young cottonwoods found at the lower elevations of the LFCC would be left in place for continued growth to provide habitat within these newly developed features. Figure 9 below shows what the existing LFCC looks like.

The second vegetation mitigation feature would consist of two areas of cottonwood and Goodding's willow pole plantings on floodplain terraces adjacent to the Rio Grande (Figure 7) where conditions are good for their establishment and survivability. The northern site is approximately 16 acres and the southern site covers 11 acres.

As shown in Tables 3 and 4, a total of 1,768 cottonwoods and 448 Goodding's willows would be planted in the mitigation areas. Because the density and mix of these plantings would depend upon conditions in the field and the location of existing vegetation, the exact densities of trees would be determined at the time of planting. It is expected that the development of the planted cottonwood stands would add to the extent and value of the native cottonwood gallery forest while the vegetated wetland depressions (former LFCC sections) would provide unique wildlife habitat, particularly for wetland-obligate organisms.

After completion of earthwork and general soil disturbance in the project area, a mix of native grass seeds and shrubs would be applied to these disturbed-soil areas. Depending upon availability, the species would consist of blue grama (*Bouteloua gracilis*), sideoats grama (*Bouteloua curtipendula*), Indian ricegrass (*Achnatherum hymenoides*), streambank wheatgrass (*Elymus lanceolatus*), galleta grass (*Pleuraphis jamesii*), alkali sacaton (*Sporobolus airoides*), sheep fescue (*Festuca ovina*), little bluestem (*Schizachyrium scoparium*), and fourwing saltbush (*Atriplex canescens*).

San Acacia RM 113 and 114 Mitigation Plan



Figure 7. Location of vegetation mitigation features at San Acacia.

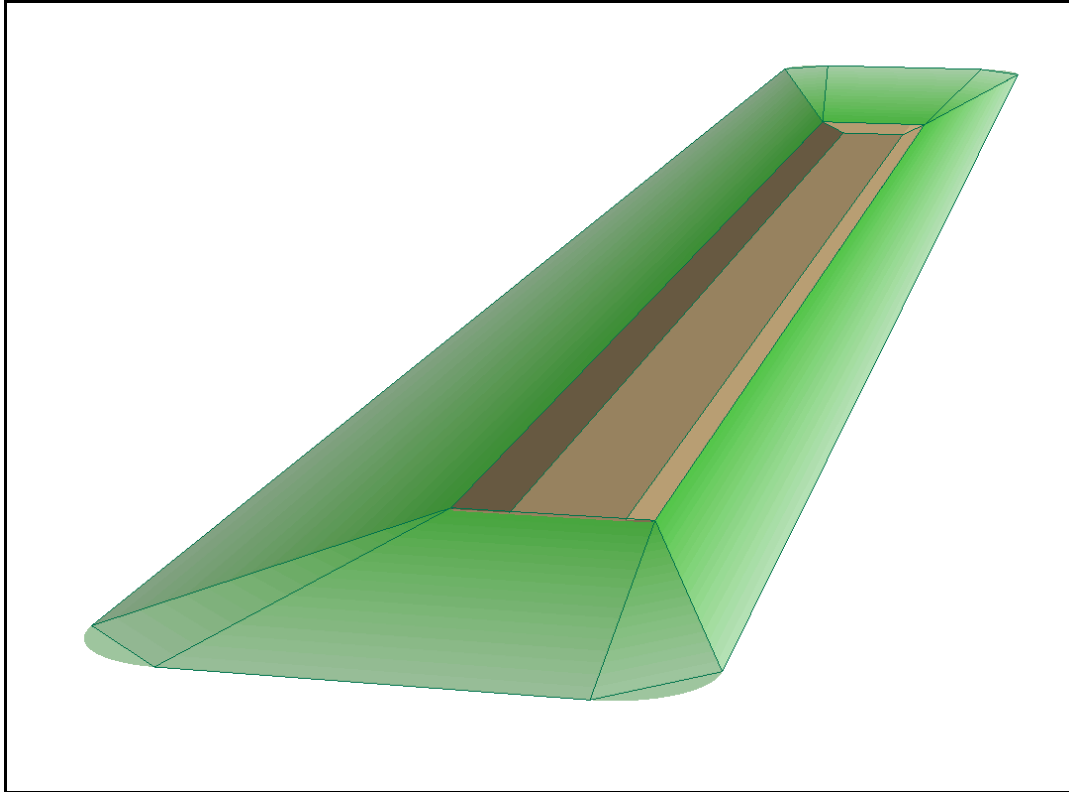


Figure 8. Schematic of habitat enhancement feature.



Figure 9. Photograph of the LFCC looking north. Young willows and cottonwoods are already present.

Monitoring would be a critical component to the success of the vegetation mitigation by providing information for future management activities. Examining the success of plantings, concurrent with natural vegetation recruitment and community succession, would take place annually for a period of five years. Reclamation biologists would inspect the sites to assess the success of the vegetation plantings and their utilization by wildlife. Should a large number of the pole plantings die, consideration would be given to replacing the dead trees in order to achieve the original mitigation objectives.

2.4 Alternatives Considered but Eliminated From Further Study

Several alternatives for protecting riverside facilities at San Acacia were considered (Reclamation, 2004b). During the alternative selection process, three different alternatives were analyzed, Levee Setback, Riprap Revetment, and River Realignment. It was shown that all three were acceptable options based on engineering principles and each had a comparable equivalent annual cost.

A meeting was held with the project team to determine the preferred alternative. Each of the team members provided input as related to their field of expertise. Rio Grand Silvery Minnow, Southwestern Willow Flycatcher, Lands Interest, Cultural Resources, Reliability, Feasibility, Construction Cost, Future Maintenance, and NEPA were established as the criteria for ranking the alternatives listed in Table 5, below. The matrix shown as Table 5 was created by ranking each of the alternatives from one to three, one representing the best alternative, and three representing the least attractive alternative for each criterion. Based on the lowest composite score and other factors Alternative 1, Levee Setback had the highest rank and was later determined to be the best alternative.

Table 5. Alternative Matrix used for selecting the preferred alternative.

	Levee Setback Alternative 1	River Realignment Alternative 2	Riprap Revetment Alternative 3
Rio Grande Silvery Minnow	1	2	3
Southwestern Willow Flycatcher	1	2	3
Lands Interest	2	1	2
Cultural Resources	2	1	3
Reliability	1	2	3
Feasibility	1	2	2
Construction Cost	3	1	2
Future Maintenance	1	2	3
NEPA	1	3	3
Total	13	16	24

Based on the ranking criteria, the preferred alternative was the Levee Setback. In this alternative there are no effects to existing riverine habitat, and habitat is expected to improve as the river migrates laterally. This alternative is favorable for endangered species based on these considerations. Levee Setback was only acceptable in this reach because Reclamation would not need to acquire any adjacent land. If Reclamation had to acquire land, the Levee Setback alternative would not be practical.

None of the alternatives were excluded or changed based on Cultural Resources. Each of the alternatives had varying requirements of environmental compliance and potential future maintenance. The channel realignment alternative had the highest maintenance cost.

In terms of the permitting process, the levee setback alternative was considered the easiest alternative to permit. Because this alternative did not disturb existing habitat for endangered species, environmental compliance would be easier allowing for timely completion of construction permits.

Levee setback was chosen as the preferred alternative for several reasons. This alternative had the lowest composite score in the alternative matrix. It won't require any maintenance for at least 40 years as opposed to the other alternatives that could require maintenance work in as little as five years. It is a long term fix. No construction would be required in the active channel of the Rio Grande or the adjacent riparian area which is advantageous for the endangered species, while at the same time allowing the permitting and compliance process to be smoother and less time consuming.

2.5 Other Planned Projects in the Area

LFCC Realignment – Phase Two

The second phase of the proposed action would only be carried out at some time in the future if the new LFCC alignment discharge capacity needs to be increased to 2,000 cfs from the currently planned discharge capacity of 500 cfs. This would involve raising the riprap lining along the side slopes of the channel to a height that would provide protection during a 2,000 cfs discharge and installing two additional 9.0 ft. diameter RCPs through the San Lorenzo Arroyo at the center of the new LFCC alignment.

The new LFCC alignment would be mowed to allow for the placement of additional riprap in the channel. Riprap would be placed on the side slopes from a 6.0 ft. depth (500 cfs design) to a 12.5 ft. depth (2,000 cfs design) for approximately 10,216 feet of channel. This would be followed by construction in the central segment to increase the discharge capacity across the San Lorenzo Arroyo.

Prior to construction in the central segment, the San Lorenzo Arroyo would be diverted around the south side of the construction area. To accomplish this, the culvert in the Lemitar Riverside Drain that passes under the San Lorenzo Arroyo would be extended an additional 80 ft. southward and covered with earthen fill material. A temporary channel and an earthen berm would be constructed to redirect flows in the arroyo away from the construction area.

Installation of the two RCPs would require dewatering to remove local groundwater for the construction of the RCP crossing as well as groundwater intercepted by the LFCC upstream of the RCP crossing. Dewatering would also be required for the construction of both the inlets and outlets. The groundwater would be discharged into the existing Lemitar Riverside Drain, LFCC, or a holding pond to allow the water to be used for construction activities. The holding pond's maximum size would be one acre with a depth of 5.0 ft. An overflow pipe would be installed in the pond to protect it from overfilling and damage.

After installation of the two RCPs, the San Lorenzo Arroyo channel flows would be redirected through the sheet pile drop structure. The added pipe and earth fill in the Lemitar Riverside Drain would be removed after construction is complete. All disturbed areas would be reseeded and monitored in a manner similar to the previously described revegetation plan for the proposed action. Table 6 below presents the estimated areas of disturbance and construction quantities for the second phase.

Table 6. Estimated Areas of Disturbance and Construction Quantities – Second Phase.

DESCRIPTION	QUANTITY	UNITS
Excavation: 9.0 ft. diameter RCP at San Lorenzo Arroyo.	25,500.0	cu. yds.
Diversion and Care of San Lorenzo Arroyo. Volume of earth to be moved	51,000.0	cu. yds.
New Riprap: 2,000 cfs channel: 12.5 ft.	25,500.0	cu. yds.
Salvage riprap from inlet and outlet of the RCP crossing.	1,600.0	cu. yds.
Backfill: Reshaping of San Lorenzo Arroyo.	29,850.0	cu. yds.
9.0 ft. diameter RCP at San Lorenzo Arroyo.	24,750.0	cu. yds.
Compacted Backfill: 9.0 ft. diameter RCP at San Lorenzo Arroyo.	24,750.0	cu. yds.
Reinforced Concrete (Inlets & Outlets) Inlet	245.0	cu. yds.
Outlet	245.0	cu. yds.
Road Base: O&M access roads.	5,500.0	cu. yds.
San Lorenzo Arroyo embankments.	1,000.0	cu. yds.

River Mile 111 Priority Site

Reclamation is also planning to address another priority site at RM 111 sometime after construction has begun at the RM 114 and 113 priority sites. Reclamation has identified the levee setback method as the preferred action to address the RM 111 priority site through a decision making process that drew upon the experience gained from the process described in the previous section of this EA. Realignment of the levee and LFCC at the RM 111 priority site would be very similar to the proposed action in this EA. The effects of such an activity would be expected to be very similar in nature to those described in Chapter 4 of this document.

2.6 Environmental Issues Addressed by the Proposed Action

The following issues correspond to the issues identified in Section 1.5. These issues are discussed in greater detail in Chapters 3 and 4 of this EA.

- 1) No Southwestern Willow Flycatchers were detected during surveys in 2004. Potential effects to other nesting birds would be addressed by performing clearing and grubbing operations in the winter months before nesting season begins. A monitoring plan for wintering Bald Eagles, as described in Chapter 4, would be implemented during construction. No Rio Grande Silvery Minnows were found in the LFCC near the project area during surveys. Fish barriers would be installed in the LFCC just outside the project limits to prevent Rio Grande Silvery Minnows from moving into the project area during construction. The LFCC would be resurveyed following installation of the fish barriers and prior to construction to document the absence of Rio Grande Silvery Minnows in the project area. These procedures would ensure that no effects to this species would occur.

- 2) The 286 cottonwood trees and 76 Goodding's willow trees removed at the beginning of construction would be replaced by pole plantings of 1,768 new cottonwoods and 448 Goodding's willows in selected areas near the river bank in the project area and in the habitat enhancement areas in the LFCC. These new trees would be spaced irregularly in the habitat enhancement areas and along the bank in openings to improve their potential for survival and to create a more natural condition. All pole plantings would be caged with chicken wire initially to prevent beaver damage.
- 3) Native grasses and shrubs would be seeded in areas disturbed by construction to reestablish vegetation. Only the amount of the proposed staging and stockpiling areas needed would be used or disturbed. Upon completion of stabilization activities, all work areas would be cleaned up and all materials and equipment removed. The area would be reseeded with native grasses and shrubs using the species presented in Section 2.3, above. The reestablishment of vegetation would be monitored by Reclamation and irrigation water would be brought in by truck, if necessary, to ensure the successful establishment of seeded areas.
- 4) The introduction of state-listed noxious weeds would be avoided to the extent possible by using equipment that has been thoroughly pressure washed prior to arrival at the project area. The reseeding activities would contribute to a more rapid establishment of native species, thus minimizing the opportunity for noxious weeds on disturbed ground. Most, if not all, of the riprap used for the project would be obtained from the existing LFCC.
- 5) Standard Best Management Practices (BMPs) would be used to manage water runoff during construction activities to prevent runoff during rainstorms from causing an unnaturally high level of sediment loading in the river. The contractor would utilize straw bails and silt fences placed at strategic locations to manage water runoff in the construction areas. One strategic location would be the entrance of the 60 in. diameter metal culvert located in the San Lorenzo Arroyo containment berm.
- 6) The generation of dust by earthmoving equipment would be minimized by spreading water onto disturbed areas daily to suppress the generation of dust.
- 7) Because the project is located in the original meandering path of the Rio Grande, any cultural or archaeological artifacts that might have once existed there have a very low probability of still being present. No sacred sites were identified by any native American tribes during tribal consultation by Reclamation.
- 8) None of the project area is located on any native American tribal land nor is any of the project area claimed by any tribes. No Indian Trust Assets were identified in the project area.
- 9) The project is not located in an area where it could have any effect on low-income or minority populations. The project is in compliance with Executive Order 12898.

2.7 Environmental Commitments

- 1) Clearing and grubbing activities would occur prior to the nesting season for migrant birds, including the Southwestern Willow Flycatcher.
- 2) Should a Bald Eagle be observed within 0.25 mi. 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 Reclamation biologist, in consultation with the Service, 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 project area during the construction period, Reclamation would contact the Service to determine whether formal consultation under the ESA is necessary.

- 3) Fish barriers would be installed in the LFCC just outside the project limits to prevent Rio Grande Silvery Minnows from moving into the project area during construction. The LFCC would be resurveyed following installation of the fish barriers and prior to construction to document the absence of silvery minnows in the project area.
- 4) The 286 cottonwood trees and 76 Goodding's willow trees removed at the beginning of construction would be replaced by pole plantings of 1,768 new cottonwoods and 448 Goodding's willows in selected areas near the riverbank and in the existing LFCC. These new trees would be spaced irregularly in the LFCC habitat enhancement areas and along the bank in openings to improve their potential for survival and to create a more natural condition. All pole plantings would be caged with chicken wire initially to prevent beaver damage.
- 5) Native grass and shrub seeds would be used to reestablish vegetation in areas disturbed by construction. Only the amount of the proposed staging and stockpiling areas needed would be used or disturbed. Upon completion of stabilization activities, the project area and the staging and stockpiling areas would be cleaned up and all materials and equipment removed. Disturbed areas would be reseeded with native grasses and shrubs using the species presented in Section 2.3, above. The reestablishment of vegetation would be monitored by Reclamation and irrigation water would be brought in by truck, if necessary, to ensure the successful establishment of the seeded areas.
- 6) To minimize the potential for the establishment of state-listed and other noxious weeds, an aggressive revegetation plan would be implemented. Reclamation would monitor the project area during construction (3-5 years) for noxious weeds and would treat them as necessary.
- 7) In addition to reseeding and planting, the introduction of noxious weed seeds would be minimized by a requirement that all equipment used on the project be pressure washed before arriving and leaving the site.
- 8) To minimize soil erosion and increased turbidity in the Rio Grande during rain storms, standard construction BMPs would be used to minimize runoff during construction.
- 9) Fugitive dust would be suppressed by spreading water over disturbed areas where heavy equipment is working during dry conditions.
- 10) Boulders would be placed between the adjacent landowner's property and the Lemitar Riverside Drain to prevent trespassing on the landowner's property after construction has been completed. Placement of the boulders would be carried out under the supervision of the adjacent landowner to ensure the landowner's satisfaction.

Chapter 3. Affected Issues and Environmental Resources

3.1 Introduction

A review of the two alternatives resulted in the identification of eight issues and environmental resources that either must be reviewed by law or could be affected by the proposed project or by taking no action. The eight issues and environmental resources identified correspond to those identified in Chapter 1, Section 1.5. This chapter describes the existing conditions for each issue and environmental resource.

3.2 Description of Relevant Affected Issues and Resources

3.2.1 Federal and State Listed Species

Initial consultation with the Service resulted in a list of federally protected species, candidate species and species of concern that are known to occur in Socorro County. Three federally protected species were identified that could potentially occur in the project area, the Bald Eagle, the Southwestern Willow Flycatcher, and the Rio Grande Silvery Minnow. Correspondence with the Service is contained in Appendix A. No known or potentially present state-listed protected species were identified in consultation with the NMDG&F (2004), and the NMRPTC (1999). Lists of rare plant and wildlife species known to occur in Socorro County are contained in Appendix B.

Although Bald Eagles are known to use the Rio Grande corridor during the winter, no eagles have been observed and no nests have been located in the project area. The project area is located in proposed critical habitat for the Southwestern Willow Flycatcher. Surveys following Service protocols for the flycatcher were conducted by Reclamation biologists on May 26, June 16, and July 13, 2004. No flycatchers were found in the project area and the habitat in the project area is not suitable for nesting. No Rio Grande Silvery Minnows were found during fish surveys performed in March and October 2004 by Reclamation fisheries biologists in the LFCC (Reclamation, 2004a). There are no known occurrences of any other federal or state-listed protected species of plants or animals in the project area.

3.2.2 Native Vegetation (Cottonwood & Goodding's Willow Trees) & Wildlife

Native vegetation in the project area is dominated by Rio Grande cottonwoods, Goodding's willows, New Mexico Olive (*Forestiera neomexicana*) and saltcedar (*Tamarix* spp.). Understory vegetation is typical of the southern floodplains portion of the Floodplain-Plains Riparian vegetation type described by Dick-Peddie (1993). This habitat is relatively common along the Rio Grande in the southern half of New Mexico, although acknowledged to be in decline as a result of human activities over the past two centuries. The primary human activities that have been identified as causing this decline are tree cutting and the impoundment of stream and river surface waters.

Mammal species common to the area include: coyotes, raccoons, bobcats, skunks, beavers, and various species of mice, rats, bats, rabbits and other small mammals. Birds that can be found in the region at different times of the year include: herons, ducks, turkey vultures, hawks, doves, hummingbirds, crows and numerous other species. A more complete list of animal species known to occur in the general area, obtained from the NMDG&F BISON-M database along with their scientific names, is located in Appendix B.

3.2.3 Noxious Weeds

No populations of state-listed noxious weeds have been observed in the project area during site visits or surveys. There are no known, documented occurrences of state-listed noxious weeds in the project area. A copy of the current state list of noxious weeds is in Appendix B.

3.2.4 Erosion Control and Water Quality

Turbidity, from erosion in the reach of the Rio Grande that flows through the project area, is greatest during periods of high runoff. High flow events from rainstorms or rapid snow melts in the mountains cause scouring of the banks and bottom of the Rio Grande as well as the streams and arroyos that empty into the river. This scouring results in high sediment loading and gradual erosion of the river's banks. Over time, this erosion leads to a natural tendency of the river to meander back and forth from side to side. Surface runoff adds to sediment loading and turbidity in the river.

Any activities that reduce or eliminate vegetation have the potential to result in erosion until new vegetation has become reestablished. The project area is surrounded by a region of rural farming and ranching. Farming activities such as plowing and tilling, and ranching activities such as livestock grazing often eliminate or reduce vegetation, even if only temporarily, and thus become a potential cause of sediment loading in the river during periods of high runoff.

The San Lorenzo Arroyo is a large runoff conveyance channel that passes directly through the center of the project area. The lack of vegetation in the bottom of the arroyo suggests relatively frequent scouring by high runoff events. The project area acts as a settling basin for sediment transported by the San Lorenzo Arroyo. The Lemitar Drain that parallels the western boundary of the project area protects the project area from surface runoff flowing downhill from the west. The water in this drain ultimately empties into the ponds at the Bosque del Apache National Wildlife Refuge, well to the south.

3.2.5 Air Quality

The Clean Air Act of 1970, as amended, established National Ambient Air Quality Standards (NAAQS; 40 CFR 1 § 81.332) to protect the public from exposure to dangerous levels of several air pollutants. Socorro County is in Air Quality Control Region (AQCR) 156. AQCR 156 has been classified as an attainment area for all air pollutants identified in the NAAQS (eCFR, 2004). Because of this classification for Socorro County, the proposed project is not subject to Environmental Protection Agency (EPA) requirements for ambient monitoring. The project area is occasionally used by people driving recreational and utility vehicles, which results in the generation of a small amount of exhaust and fugitive dust in dry conditions.

3.2.6 Cultural and Archaeological Resources, and Sacred Sites

Reclamation consulted with the SHPO regarding the eligibility of the LFCC for the National Register of Historic Places. This consultation occurred in 2001 in a technical report prepared for Reclamation and the SHPO (Bischoff, 2001, Appendix A) that was intended to serve as mitigation for any adverse effects that may result from modifications to the LFCC. The SHPO responded with a letter of concurrence, a copy of which is contained in Appendix A.

There are no known sacred sites or traditional cultural properties in the project area. Tribal consultation is ongoing regarding the potential presence of any sacred sites or traditional cultural properties in the project area. A sample copy of the letter that was sent to the tribes is included in Appendix A.

3.2.7 Indian Trust Assets

Indian Trust Assets (ITAs) or resources are defined as legal interests in assets held in trust by the U.S. Government for native American Indian tribes or individual tribal members. Examples of ITAs are lands, minerals, water rights, other natural resources, money, or claims. An ITA cannot be sold, leased, or otherwise alienated without approval of the federal government. There are no native American Indian Trust lands or assets in the vicinity of the proposed project site.

3.2.8 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that the effects on minority and low-income populations within a project area be given special consideration to determine if the proposed action would result in disproportionate adverse effects to their communities.

According to the most recent data from the Bureau of Economic Analysis (2004), the annual per capita income for the state of New Mexico in 2002 was \$24,823. The 2002 annual per capita income for Socorro County was \$18,577. According to the most recent data from the U.S. Census Bureau (2004), approximately 48 percent of the residents of Socorro County were Hispanic or Latino in 2000.

Chapter 4. Environmental Consequences

4.1 Introduction

The anticipated potential effects of each alternative to the previously described environmental issues and resources are presented below. The analysis of the secondary and cumulative effects of other planned projects near the San Acacia area, as discussed in Chapter 1, Section 1.4, and in Chapter 2, Section 2.5, is presented here under each issue/resource section under the heading, “Secondary and Cumulative Effects”.

4.2 Predicted Attainment of Project Objectives for Each Alternative

No Action

The project objectives would not be attained. The river would continue to migrate toward the LFCC and levee until they are breached. Severe damage to these structures would not be avoided and the river’s natural tendency to meander would be impaired.

Proposed Action

The project objectives of allowing the river to migrate naturally to the west and maintaining the integrity of the LFCC and levee would be achieved. Over time, the river would be expected to continue its westward movement at RM 114 and 113. By relocating the LFCC and levee at the historical western limit of the river’s channel, damage to these structures would be effectively avoided for the foreseeable future.

The secondary objective of restoring, improving, and enhancing the habitat and natural condition of the floodplain between the river and the newly aligned LFCC and levee would be attained to the extent possible by human action with available resources. The short-term disturbance of vegetation followed by an aggressive revegetation plan would ultimately lead to a long-term improvement in the productivity of available terrestrial habitat.

There would be a few small, irreversible and irretrievable commitments of resources. Fuel and lubricants for the heavy equipment would be permanently expended during the project. Concrete and metal would be used as materials for construction of the central segment of the project. Some old metal culverts would be removed and disposed of off site in an appropriate manner.

4.3 Predicted Effects on Each Relevant Issue and Resource

4.3.1 Federal and State Listed Species

No Action

There would be no change to the existing condition and no effects to federally listed species.

Proposed Action

Since there are no known federal or state-listed protected species presently in the project area, there would be no adverse effects to legally protected species, with the possible exception of the Bald Eagle. Clearing and grubbing activities would occur prior to the nesting season for neotropical migrant birds, including the Southwestern Willow Flycatcher.

Bald Eagle

Should a Bald Eagle be observed within 0.25 mi. 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 Reclamation biologist, in consultation with the Service, 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 project area during the construction period, Reclamation would contact the Service to determine whether formal consultation under the ESA is necessary.

Southwestern Willow Flycatcher

Although the project area is located in proposed critical habitat for the Southwestern Willow Flycatcher, the habitat in the area is not suitable for nesting and no flycatchers are known to nest in the area. The results of flycatcher surveys conducted using Service protocols in the project area in 2004 were negative (Doster, pers. comm., 2005). Areas to be cleared of vegetation do not contribute to any primary constituent elements of the proposed critical habitat. Additionally, clearing and grubbing activities would occur prior to the flycatcher nesting season; therefore, Reclamation has determined that no effects to this species would occur and the proposed action would not adversely modify proposed critical habitat.

Rio Grande Silvery Minnow

Critical habitat was designated by the Service as the reach of the Rio Grande from Cochiti Dam to the upper pool for Elephant Butte Reservoir, approximately 163 miles (U.S. Fish and Wildlife Service, 2003). No in-stream activities are planned for the Rio Grande; therefore, no critical habitat would be affected. Though Rio Grande Silvery Minnows have previously been collected in the LFCC, none have been collected in the LFCC during surveys since 2002.

Fish barriers would be installed in the LFCC just outside the project limits to prevent Rio Grande Silvery Minnows from moving into the project area during construction. The LFCC would be resurveyed following installation of the fish barriers and prior to construction to document the absence of silvery minnows in the project area. These procedures would ensure that no effects to this species would occur. This project is in compliance with the ESA and no further consultation with the Service is required.

Secondary and Cumulative Effects

There would be no secondary effects as a result of the proposed action. Because there would be no effects to the Southwestern Willow Flycatcher or the Rio Grande Silvery Minnow from the proposed action, there would be no cumulative effect when combined with other planned projects in the area. Monitoring for Bald Eagles during this project and others would minimize any potential effect on this species. This project, in combination with other planned projects in the area, would not be expected to result in any adverse effects to Bald Eagles.

4.3.2 Native Vegetation (Cottonwood & Goodding's Willow Trees) & Wildlife

No Action

Existing vegetation, including saltcedar, would remain in place. Because of the altered hydrologic regime of the Rio Grande, mature cottonwood trees and Goodding's willows would continue to decline without being replaced by younger trees. The abundance of saltcedar would be expected to increase over time.

Proposed Action

The 286 cottonwood trees and 76 Goodding's willow trees removed at the beginning of construction would be replaced by pole plantings of 1,768 new cottonwoods and 448 Goodding's willows in selected areas near the riverbank and in the LFCC habitat enhancement areas within the project area. These new trees would be spaced irregularly in the LFCC habitat enhancement areas and along the bank in openings to improve their potential for survival and to create a more natural condition. All pole plantings would be caged with chicken wire initially to prevent beaver damage.

Native grass seeds would be used to reestablish vegetation in areas disturbed by construction. Only the amount of the proposed staging and stockpiling areas needed would be used or disturbed. Upon completion of stabilization activities, the project area and the staging and stockpiling areas would be cleaned up and all materials and equipment removed. Disturbed areas would be reseeded with native grasses and shrubs using the species presented at the bottom of page 14, Section 2.3, Post Construction Site Restoration Activities, of this EA. The reestablishment of seeded areas would be monitored by Reclamation and irrigation water would be brought in by truck, if necessary, to ensure the successful revegetation of those areas.

Although construction activities may scare existing wildlife away temporarily, most animal species in the project area would be able to return after the project completion. Some mortality of less mobile species would be expected, but not in quantities that would damage local populations. The improved quality of the habitat after new vegetation becomes established would offset these losses over time.

Secondary and Cumulative Effects

There would be no secondary effects as a result of the proposed action. The effects of the proposed action in combination with work at the RM 111 priority site would, over time, likely result in an overall improvement in the quality of the local floral and faunal health. The short term cumulative effects of construction would be small in the overall regional context and temporary in nature. The installation of additional riprap in the new LFCC channel to increase its discharge capacity to 2,000 cfs and the addition of two more 9.0 ft. RCPs would have no cumulative effect because of the different period of time in which these activities would occur.

4.3.3 Noxious Weeds**No Action**

No ground disturbing activities would be undertaken to provide the opportunity for noxious weeds to become established. There would be no effect.

Proposed Action

Whenever land is disturbed, the potential exists for the intrusion and establishment of noxious weeds. This project could disturb up to 176.5 acres, depending upon how much space is ultimately needed for the staging and stockpiling areas. To minimize the potential for the establishment of state-listed and other noxious weeds, an aggressive revegetation plan would be implemented. This plan, as described in Section 2.3 of this EA, would allow native species to become reestablished more rapidly than they otherwise might. Past experience has shown that over time, any noxious weeds that manage to gain a foothold in the project area would mostly be crowded out by the more competitive native vegetation.

Most, if not all, of the riprap used for the project would be obtained from the existing LFCC. In addition to reseeding and planting, the introduction of noxious weed seeds would be minimized by a requirement that all equipment used on the project be pressure washed before arriving and leaving the site.

Reclamation would monitor the project area during construction (3-5 years) for noxious weeds and would treat them as necessary. By preventing the introduction of noxious weed seeds and by pursuing an aggressive revegetation plan, the potential for noxious weeds becoming established in the project area over time would be minimal.

Secondary and Cumulative Effects

Addressing the RM 111 priority site would also require some ground disturbing activities. At this time, how much ground disturbance would occur is not known. The placement of additional riprap in the new LFCC alignment channel to increase its discharge capacity to 2,000 cfs would not require ground disturbing activities, although the installation of two additional RCPs in the central segment would. Noxious weed seeds could be imported with the riprap.

In either case, through sound and aggressive revegetation planning and ensuring all equipment is pressure washed to prevent weed transmission, the opportunity for noxious weed establishment would be minimized. Also, since the additional riprap would be installed well after native vegetation has become thoroughly established in the LFCC, there would be little chance of weeds being able to compete.

There would be no secondary effects as a result of the proposed action.

4.3.4 Erosion Control and Water Quality

No Action

Erosion of the levee and LFCC in the project area would continue to add a small amount of turbidity to the river downstream; however, when the levee and LFCC ultimately fail, a large amount of soil would be deposited into the river and contribute adversely to the turbidity of the river for a brief period. Emergency measures to repair the levee and the LFCC would likely be carried out under less than desirable conditions, which could temporarily contribute further to turbidity in the river.

Proposed Action

During construction, the removal of vegetation in the project area could potentially result in erosion and contribute to additional turbidity in the river downstream of the project area; however, standard construction BMPs would be used to minimize runoff during this period. Consequently, most runoff would be contained within the San Lorenzo Basin. The reestablishment of native riparian vegetation in the project area following construction would ultimately reduce the project area's contribution to turbidity in the river. The ACOE has specified project requirements for compliance with Section 404 of the CWA in Permit No. 200400321. The specific requirements of the permit can be found in Appendix A. The NMED has specified project requirements for certification and compliance with Section 401 of the CWA. Also, because this project would result in the disturbance of more than one acre of land, an NPDES permit would be required.

Secondary and Cumulative Effects

The effects of the proposed action on erosion and water quality would be minor and temporary in nature; therefore, there would be no cumulative effects resulting from the combination of the proposed action and the other anticipated projects. There would be no secondary effects as a result of the proposed action.

4.3.5 Air Quality

No Action

There would be no effects to air quality.

Proposed Action

Fugitive dust generation from excavating and grading activities in the project area along with exhaust emissions from heavy equipment and vehicles working on the project are the only anticipated effects to air quality during construction. These effects would not be expected to be adverse. There would be no effects to air quality following completion of construction activities and reestablishment of vegetation in disturbed areas.

Fugitive dust would be suppressed by spreading water over disturbed areas where heavy equipment is working during dry conditions. The nearest residence is far enough away from the project area that most of any dust that does escape from the immediate project area would be able to dissipate before reaching it and the prevailing wind direction is away from the residence. Dust levels resulting from the proposed action would be expected to be lower than those generated by plowing and tilling activities on nearby farms. Exhaust emissions from heavy equipment and vehicles working on the project would dissipate rapidly before leaving the project area.

Secondary and Cumulative Effects

The effects of the proposed action on air quality would be minor in the context of the local setting and temporary in nature; therefore, there would be no cumulative effects resulting from the combination of the proposed action and the other anticipated projects. There would be no secondary effects as a result of the proposed action.

4.3.6 Cultural and Archaeological Resources, and Sacred Sites**No Action**

There would be no effects to cultural resources or sacred sites.

Proposed Action

Sections of the LFCC and associated levee would be affected by the proposed action. Although these structures are eligible for the National Register of Historic Places, the SHPO has concurred (see Appendix A) with Reclamation that the report by Bischoff (2001) does, in fact, serve as mitigation for any adverse effects that may occur as a result of modification of the LFCC.

No sacred sites or traditional cultural properties are expected in the project area; however, should consultation with the tribes result in the identification of any such sites or properties, then Reclamation would consult with tribe(s) concerned to ensure no adverse effects result from the proposed action.

Secondary and Cumulative Effects

There would be no secondary effects as a result of the proposed action. Because no effects to cultural or archaeological resources or to sacred sites or traditional cultural properties are anticipated as a result of the proposed action, there would be no cumulative effect.

4.3.7 Indian Trust Assets**No Action**

There would be no effects to ITAs.

Proposed Action

There would be no effects to ITAs.

Secondary and Cumulative Effects

There would be no secondary effects as a result of the proposed action. Because no effects to ITAs are anticipated as a result of the proposed action, there would be no cumulative effect.

4.3.8 Environmental Justice

No Action

No effects of any kind to the local population are expected. No adverse effects to low-income or minority populations are anticipated.

Proposed Action

No effects of any kind to the local population are expected. No adverse effects to low-income or minority populations are anticipated.

Secondary and Cumulative Effects

There would be no secondary effects as a result of the proposed action. Because no effects to the local population, either adverse or beneficial, are anticipated as a result of the proposed action, there would be no cumulative effect.

Chapter 5. List of Preparers

This list presents the individuals who contributed to the technical content of this EA. Contract oversight for preparation of the EA was provided by Mr. Robert Maxwell of Reclamation in Albuquerque, New Mexico. Preparation of the EA was managed by Mr. Devin Kennemore of C Squared Environmental Consulting, LLC. The document was produced by C Squared Environmental Consulting, LLC, in Rowe, New Mexico.

Some of the individuals below prepared specific sections in accordance with their technical qualifications. Other technical experts provided input to those sections through in-depth review and data verification. Still others provided overall technical or management reviews for their respective disciplines.

NAME:	Mr. Robert Maxwell
AFFILIATION:	Bureau of Reclamation
EDUCATION:	B.S., Botany and Range Management, Brigham Young University, 1975 Graduate Studies: Hazardous Waste Management, Arizona State University
TECHNICAL EXPERIENCE:	Environmental Protection Specialist with over 30 years of experience in environmental resource management in the private sector and at several government agencies.
EA RESPONSIBILITY:	NEPA Contract Supervision. Provided overall contract oversight and NPDES permitting.

NAME:	Ms. Nancy Umbreit
AFFILIATION:	Bureau of Reclamation
EDUCATION:	B.S., Biology, Fort Lewis College, 1978
TECHNICAL EXPERIENCE:	Environmental Protection Specialist with over 26 years experience working for the Colorado Division of Wildlife, Bureau of Land Management, U.S. Fish and Wildlife Service, and the Bureau of Reclamation in varying capacities relating to wildlife, land, and water issues.
EA RESPONSIBILITY:	NEPA Team Lead, Section 404/401 Compliance

NAME: Mr. Devin Kennemore

AFFILIATION: C Squared Environmental Consulting, LLC

EDUCATION: M.S., Biology, University of South Carolina, 1995
B.S., Biology, University of South Carolina, 1991

TECHNICAL EXPERIENCE: The President and owner of C² Environmental Consulting, LLC, Mr. Kennemore, has over 14 years of experience as a botanist, ecologist, environmental scientist, environmental project manager, division director, and consultant, working for private, state, federal, and non-profit natural resource management organizations and agencies. He has managed and been the principal author of numerous complex EAs. He has been an interdisciplinary team member on numerous Environmental Impact Statements for a wide range of federal agencies.

EA RESPONSIBILITY: NEPA Project Manager and principal author.

NAME: Mr. Art Coykendall

AFFILIATION: Bureau of Reclamation

EDUCATION: B.S., Wildlife Management, Sul Ross State University, 1987
M.S., Wildlife Management, Sul Ross State University, 1990

TECHNICAL EXPERIENCE: Environmental Protection Specialist with 14 years of experience in the Federal government as a Wildlife Biologist and Environmental Protection Specialist. He has extensive experience in ESA, NEPA, and related environmental compliance.

EA RESPONSIBILITY: ESA Compliance

NAME: Dr. Robert Doster

AFFILIATION: Bureau of Reclamation

EDUCATION: Ph.D, Biology, University of Arkansas, 2005
M.S., Zoology, University of Arkansas, 1991
B.A., Biology, Hendrix College, 1989

TECHNICAL EXPERIENCE: Wildlife Biologist with over 15 years of experience in natural resource management at State and Federal agencies.

EA RESPONSIBILITY: ESA review and vegetation mitigation planning.

NAME: Dr. Jeffery Hanson

AFFILIATION: Bureau of Reclamation

EDUCATION: Ph.D, Sociology and Anthropology, University of Missouri, 1983
M.A., Anthropology, Northern Illinois University, 1977
B.S., Anthropology, University of Wisconsin, 1973

TECHNICAL EXPERIENCE: Archeologist and Anthropologist with over 20 years of experience in archaeology and cultural anthropology.

EA RESPONSIBILITY: Cultural Resources and Section 106 compliance.

NAME: Mr. Tyler Smith

AFFILIATION: Bureau of Reclamation

EDUCATION: B.S. Civil Engineering, Utah State University, 1999
M.S. Hydraulic Engineering, Utah State University, 2001

TECHNICAL EXPERIENCE: Design Engineer with two years of experience working on the Rio Grande for the Bureau of Reclamation. During this period he has been the Design Engineer on two other priority site projects.

EA RESPONSIBILITY: Alternative analysis, technical details, site maps.

NAME: Mr. Rudy Bernal

AFFILIATION: Bureau of Reclamation

EDUCATION: B.S., Civil Engineering, New Mexico State University, 1979

TECHNICAL EXPERIENCE: Senior Civil Engineer with over 25 years of experience in Engineering Design, Construction Management & Inspection, and Contract Administration within the Albuquerque Area Office.

EA RESPONSIBILITY: Reviewed Construction Scope of Work (CSOW) before submitting to Reclamation Environmental Staff for processing.

NAME: Mr. Cord R. Everetts

AFFILIATION: Bureau of Reclamation

EDUCATION: A.S., Forestry Science, North Dakota State University, 1982

TECHNICAL EXPERIENCE: Civil Engineering Technician with over 15 years of experience in Engineering Design, Construction Management & Inspection, and Contract Administration within the Albuquerque Area Office.

EA RESPONSIBILITY: Authored original Construction Scope of Work (CSOW) before submitting to Reclamation Environmental Staff for processing.

Chapter 6. Consultation and Coordination

The Service was notified regarding the proposed action and protected species potentially present in the project area were identified. The NMED was consulted regarding CWA Section 401 compliance. The ACOE was consulted regarding CWA Section 404 permitting and compliance. The NMDG&F *New Mexico Species of Concern* website (NMDG&F, 2004) was consulted to determine if any state protected animal species could potentially occur in the project area. The New Mexico Rare Plants website (NMRPTC, 1999) was consulted to determine if any state protected plant species might occur in the project area. The SHPO was consulted by Reclamation to determine project compliance with state and federal laws (Section 106 of the NHPA) pertaining to cultural and archaeological resources in the project area. Native American tribes were consulted with by Reclamation regarding sacred sites and traditional cultural properties. A copy of one of the letters is included in Appendix A. The tribes consulted were: Sandia Pueblo, Isleta Pueblo, Hopi Tribe of Arizona, and the Mescalero Apache. Reclamation consulted with MRGCD during two public scoping meetings, two other meetings, and through correspondence. Reclamation is committed to coordinating with the MRGCD throughout construction to ensure that the proposed action does not affect MRGCD activities.

This EA was distributed for public review and comment for 15 days. Written comments on the Draft EA by MRGCD and Reclamation's response are contained in Appendix A. Oral comments were received from the adjacent landowner. Discussions were held with the landowner and the following commitments were made by Reclamation:

1. Boulders would be placed between the landowner's property and the Lemitar Riverside Drain to prevent trespassing on the landowner's property after construction has been completed.
2. Placement of the boulders would be carried out under the supervision of the landowner to ensure the landowner's satisfaction.

The landowner agreed to monitor the use of the arroyo as an access point by the public after construction has been completed. If the landowner determines that there has been an increase in traffic through this area, then the landowner would identify ways to mitigate this activity and make recommendations to Reclamation. Reclamation would take those recommendations under consideration and implement measures to reduce traffic in the arroyo.

Chapter 7. References

- Bischoff, Matt C., 2001.** *Reclamation and Water Conveyance in the Middle Rio Grande Valley, 1888-1998*, Prepared for the Bureau of Reclamation Upper Colorado Region, Albuquerque Area Office, Albuquerque, New Mexico. Technical Report 00-58 Statistical Research, Inc., Tucson, Arizona, 2001.
- Dick-Peddie, William A., 1993.** *New Mexico Vegetation, past, present, and future*, with contributions by W.H. Moir and Richard Spellenberg, published by the University of New Mexico Press, Albuquerque, NM.
- Doster, Robert H., Personal Email Communication, 2005.** Email message from Dr. Robert H. Doster, Wildlife Biologist, Bureau of Reclamation, to Devin Kennemore on January 4, 2005.
- eCFR, 2004.** Data obtained from the electronic Code of Federal Regulations website: <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=b487330ed7117ff3c3e58f74885f9eac&rgn=div8&view=text&node=40:16.0.1.1.1.3.1.33&idno=40>, December 2, 2004.
- Fish and Wildlife Service, 2003.** Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Rio Grande Silvery Minnow; Final Rule. Federal Register 68: 8087-8135.
- NMDG&F, 2004.** New Mexico Department of Game and Fish, *New Mexico Species of Concern*, website: http://www.wildlife.state.nm.us/conservation/share_with_wildlife/documents/speciesofconcern.pdf
- NMRPTC, 1999.** New Mexico Rare Plant Technical Council. 1999. New Mexico Rare Plants. Albuquerque, NM: New Mexico Rare Plants Home Page. <http://nmrareplants.unm.edu> (Version 15 March 2002). <http://nmrareplants.unm.edu/nmrptc/county.htm#Section29>
- Reclamation, 2004a.** U.S. Bureau of Reclamation, *Reclamation: Managing Water in the West – Annual Report 2004, Rio Grande Fish Community Surveys*, Albuquerque Area Office, Environment Division, October.
- Reclamation, 2004b.** U.S. Bureau of Reclamation, *San Acacia River Mile 114 and 113 Priority Sites – Alternative Analysis*, Albuquerque Area Office, Albuquerque, NM, December 2004.
- U.S. Bureau of Economic Accounts, 2004.** Data obtained from the Bureau of Economic Accounts website at: <http://www.bea.doc.gov/bea/regional/reis/drill.cfm>, May 2004.
- U.S. Census Bureau, 2004.** Data obtained from the Census Bureau website at: http://factfinder.census.gov/servlet/QTTable?_bm=y&-context=qt&-qr_name=DEC_2000_SF1_U_QTP9&-ds_name=DEC_2000_SF1_U&-CONTEXT=qt&-tree_id=4001&-all_geo_types=N&-redoLog=true&-caller=geoselect&-geo_id=05000US35053&-search_results=01000US&-format=&-lang=en, 2002.

Appendix A

Public and Agency Correspondence

MAR 21 2003

ALB-155
ENV-1.10

Mr. Willie Lucero, District Manager
NM State Land Office
New Mexico Tech Campus Station
Physical Plant, Room 210
Socorro, NM 87801

Subject: Informational Meeting on the San Acacia Escondida Habitat Restoration Project

Dear Mr. Lucero:

As an individual or agency that may own land or have a land interest within the Bureau of Reclamation's (Reclamation) proposed San Acacia to Escondida Habitat Restoration Project (Project) area, you are invited to attend a Project informational meeting. The meeting will be held on **Tuesday, April 8, from 2:00-4:00 pm at Reclamation's Socorro Field Division Office located at 2401 State Road 1** (just north of the Socorro Airport). If you need additional directions, please contact our Socorro office at (505) 835-1202.

Reclamation will describe the purpose and need for the Project, discuss alternatives, and solicit issues and/or concerns about the Project.

If you are aware of any other person or entity (not on the mailing list below) that should be present at this meeting, or have any questions, please contact Ms. Nancy Umbreit at (505) 248-5331. Thank you in advance for your participation. We look forward to meeting with you.

Sincerely,

Kenneth G. Maxey

Kenneth G. Maxey
Area Manager

Identical Letter Sent To:

Mr. Terry Tadano
Sevilleta National Wildlife Refuge
P.O. Box 1248
Socorro, NM 87801

Continued on next page

Ms. Yasmeen Najmi
Middle Rio Grande Conservancy District
P.O. Box 581
1931 2nd Street NW
Albuquerque, NM 87103

Mr. Sterling Grogan
Middle Rio Grande Conservancy District
P.O. Box 581
1931 2nd Street NW
Albuquerque, NM 87103

Mr. Wes Anderson
Bureau of Land Management
198 Neel Avenue NW
Socorro, NM 87801-4648

Ms. Lois Bell
Bureau of Land Management
198 Neel Avenue NW
Socorro, NM 87801-4648

Mr. Dick Epstein and Ms. Carolyn Kernberger
P.O. Box 217
Socorro, NM 87801

Mr. Matt Mitchell
P.O. Box 338
San Antonio, NM 87832

Ms. Cecilia Rosacker-McCord
Rt. 31 Box 63
Lemitar, NM 87823

Nyleen Stowe
SSWCD
103 Neel Ave
Socorro, NM 87801

Mr. Charles Muncy
P.O. Box 1212
Socorro, NM 87801

bc: ALB-150, ALB-240, ALB-241, ALB-242

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IN REPLY REFER TO:

United States Department of the Interior

BUREAU OF RECLAMATION

Albuquerque Area Office
555 Broadway Blvd., NE Suite 100
Albuquerque, New Mexico 87102-2352

ALB-155
ENV-1.10

MAY 13 2004

Ms. Julie Hall
Chief, Environmental Resources Section
Albuquerque District, Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, NM 87109-3435

Subject: Informational Meetings Scheduled for the San Acacia River Miles 114 and 113
Priority Sites Project

Dear Ms. Hall:

The Bureau of Reclamation would like to invite you to attend a public informational meeting on the proposed river maintenance work below San Acacia Diversion Dam. The project work, as originally proposed and described at three earlier public meetings, has been considerably modified. We would like to update you on these proposed changes which would better benefit the river and address our river priority site concerns. Reclamation will describe the purpose and need for the project, discuss alternatives, and solicit issues and/or concerns about the project.

The two public presentations are scheduled as follows:

May 21 from 1:30 to 2:30 pm at Reclamation's Socorro Field Division Office located at **2401 State Road 1** (just north of the Socorro Airport). If you need additional directions, please contact our Socorro office at **505-835-1202**.

June 1 at 1:00 pm which will be a part of the Save Our Bosque (SOB) Task Force Meeting. The meeting will be held at the State Forestry Office (take Highway 60 west, go past the hospital, look on the right for the Ark of Socorro Vet Clinic - the office is directly behind the clinic). This presentation will not be as comprehensive as that given on May 21.

If you are aware of any other person or entity (not on the mailing list below) that should be present at this meeting, or have any questions, please contact Ms. Nancy Umbreit at 505-462-3599 or Mr. Robert Maxwell at 505-462-3597. Thank you in advance for your participation. We look forward to meeting with you.

Sincerely,

A. Jack Garner
Area Manager

A

Identical Letter Sent To:

Mr. Terry Tadano
Sevilleta National Wildlife Refuge
P.O. Box 1248
Socorro, NM 87801

Mr. Willie Lucero
District Manager, NM State Land Office
New Mexico Tech Campus Station
Physical Plant, Room 210
Socorro, NM 87801

Ms. Yasmeen Najmi
Middle Rio Grande Conservancy District
P.O. Box 581
Albuquerque, NM 87103

Mr. Sterling Grogan
Middle Rio Grande Conservancy District
P.O. Box 581
Albuquerque, NM 87103

Ms. Gina Dello Russo
P.O. Box 1246
Socorro, NM 87801

Ms. Lois Bell
Bureau of Land Management
198 Neel Avenue NW
Socorro, NM 87801-4648

Mr. Dick Epstein and Ms. Carolyn Kernberger
P.O. Box 217
Socorro, NM 87801

Mr. Matt Mitchell
P.O. Box 338
San Antonio, NM 87832

Ms. Cecilia Rosacker-McCord
Rt. 31 Box 63
Lemitar, NM 87823

Ms. Nyleen Stowe
SSWCD
103 Neel Ave
Socorro, NM 87801

Mr. Charles Muncy
P.O. Box 1212
Socorro, NM 87801

bc: ALB-150, -153, -240, - 242, S-10

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G:/secfiles/envi/Umbreit/InfoMtg-SanAcacia114&113Prj-IntrstdPrts-May04.doc

Questions about the project from Gordon Herkenhoff

What is date of photo-map?

Can you document the erosion in the two most threatened areas over the last 10 or 15 yrs.?

What is the cost of the project?

It appears on the ground that there are two places on the levy that are close to the river. These are each less than 500 feet long. Why can't you put large rip-rap in just those areas?

The river flow out of the San Acacia Diversion dam is nearly perpendicular to the railroad berm and it has not been breached in the last 70 years. Why can't you treat the threatened areas with similar erosion control?

Why not move the river to the East? The cost would be fractional?

With the exception of the two threatened areas, the majority of the rest of the levy is protected by jetty poles and jacks. Why do you focus only on this stretch when just upstream and just downstream there are similar areas close to the water?

From the top of the levy to the surface of the water looks to be 20 to 30 feet in the two areas. If there has been no noticeable erosion in the past 10 years, why would you invest millions of tax dollars in this project?

We can sometimes capture the water from rainstorms coming down the San Lorenzo arroyo in the settling basin and the put that "clean" water into the LFCC and use it for irrigation further downstream. Won't this water be unavailable in you scheme?

Remembering when the Rio Salado flooded into the LFCC as a result of poor maintainance in the flumed area, aren't you creating a greater chance of downstream flooding by moving the LFCC to the west?

What about the alluvial fan which could be created in the river in the more distant future? Could this be another Calabsias Arroyo type problem?

Won't there be a major loss of habitat? Currently the San Lorenzo water is spread out through the settling basin and is wets the area two or three times a year. When the San Lorenzo goes directly into the river that area will no longer be flooded. Isn't this contrary to habitat creation policies?

Wouldn't the levy rehabilitation project proposed by the COE remedy these and the other "threatened" areas of the levy? Isn't this a duplication of effort?



November 3, 2004

Ms. Susan MacMullin
Field Supervisor
U.S. Fish and Wildlife Service
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113

Dear Ms. MacMullin:

The Bureau of Reclamation is proposing to relocate a portion of the Low Flow Conveyance Channel (LFCC) and adjacent levee along the Rio Grande. The project area is located in Socorro County downstream of San Acacia Diversion Dam at river miles 114 and 113. Enclosed is a summary description of the proposed action and a site location map showing the proposed alignment.

Reclamation has contracted with C Squared Environmental Consulting LLC, to prepare an environmental assessment for this project as required by the National Environmental Policy Act.

This letter will serve to initiate informal consultation with the Fish and Wildlife Service regarding any federally protected species under the Endangered Species Act associated with the proposed action. Please provide Reclamation (attention: Art Coykendall, Bureau of Reclamation, 555 Broadway NE, Suite 100, Albuquerque, New Mexico, 87102) and C Squared Environmental Consulting, LLC (see contact information printed at the bottom of this page) with any comments and concerns regarding the federally protected species that may potentially be affected by the project.

If you would like additional information about the proposed action, please feel free to contact me.

Sincerely,
C Squared Environmental Consulting, LLC

A handwritten signature in dark ink, appearing to read 'Devin Kennemore'.

Devin Kennemore
President

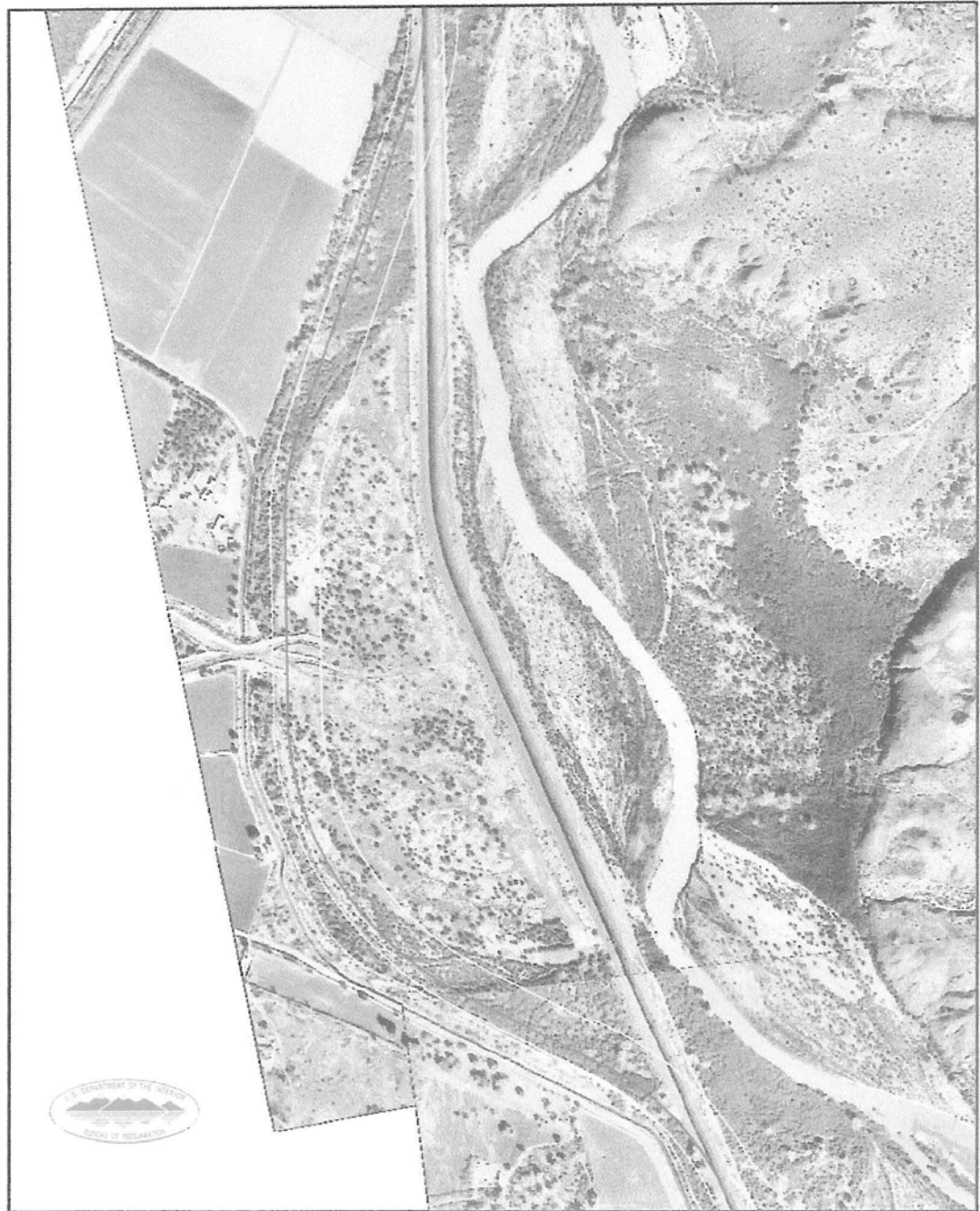
Attachments: (1)

San Acacia, NM, Levee and Low-Flow Conveyance Channel Project Description

The Bureau of Reclamation has authority for maintenance of the Rio Grande river-channel between Velarde, New Mexico and Caballo Reservoir under the *Flood Control Acts of 1948 and 1950*. Under this authority, Reclamation monitors locations where there is danger of river erosion causing damage to levees, roads, ditches, and other riverside facilities; these locations are referred to by Reclamation as “priority sites.” Two priority sites have been identified within one mile of each other at river miles 114 and 113. Presently, the Rio Grande is eroding the bank on the west side of the river at these locations. Continued erosion will ultimately result in the undercutting of the levee and the low-flow conveyance channel (LFCC) located on that side of the river. Eventually, if no action is taken, the levee and LFCC will be washed out at these locations. Reclamation is proposing to address both of these sites with one project.

To address these priority sites in the reach between the San Acacia Diversion Dam and Escondida Bridge, Reclamation proposes to realign the existing levee and LFCC from Station 1962+31 to 1865+85, a total of 9,646 feet. A new levee and LFCC alignment will be constructed approximately 1,500 feet to the west of the existing levee and LFCC alignment as shown in Figure 1 below. The proposed new levee and LFCC alignment would be approximately 10,800 feet in length. Once the new alignment has been completed, the existing LFCC would be filled in with the material from the existing levee. Removal of the levee would allow the Rio Grande to naturally continue its westward meandering. This project would require no in-river activity.

River Miles 114 and 113 Priority Sites



Legend

— 2000 cfs LFCC Centerline
Levee Setback Borders

Prepared by: Tyler Smith
November 1, 2004

RECLAMATION
Managing Water in the West

1,000 500 0 1,000 Feet

Figure 1. Proposed new levee and LFCC alignment.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New Mexico Ecological Services Field Office

2105 Osuna NE

Albuquerque, New Mexico 87113

Phone: (505) 346-2525 Fax: (505) 346-2542

December 20, 2004

Cons. #2-22-05-I-0122

Devin Kennemore, President
C² Environmental Consulting, LLC
P.O. Box 231
Rowe, New Mexico 87562

Dear Mr. Kennemore:

Thank you for your November 3, 2004, letter requesting information on threatened or endangered species or important wildlife habitats that could be affected by the proposed relocation of a portion of the Low Flow Conveyance Channel (LFCC) and adjacent levee. The proposed action is to realign the existing levee and LFCC from Station 1962+31 to 1865+85. A new levee and LFCC alignment will be constructed approximately 1,500 feet to the west of the existing levee and LFCC alignment. The proposed new levee and LFCC alignment would be approximately 10,800 feet in length. The proposed project is located downstream of San Acacia Diversion Dam at river miles 114 and 113 in Socorro County, in New Mexico.

We have enclosed a current list of federally endangered, threatened, proposed, and candidate species, and species of concern that may be found in Socorro, New Mexico.¹ Under the Endangered Species Act, as amended (Act), it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with us further. If your action area has suitable habitat for any of these species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts. Please keep in mind that the scope of federally listed species compliance also includes any interrelated or interdependent project activities (*e.g.*, equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects.

Candidates and species of concern have no legal protection under the Act and are included in this document for planning purposes only. We monitor the status of these species. If significant declines are detected, these species could potentially be listed as endangered or threatened.

¹ Additional information about these species is available on the Internet at <http://nmrareplants.unm.edu>, <http://nmnhp.unm.edu/bisonm/bisonquery.php>, and <http://ifw2es.fws.gov/endangeredspecies>.

Therefore, actions that may contribute to their decline should be avoided. We recommend that candidates and species of concern be included in your surveys.

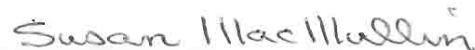
Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. We recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands. These habitats should be conserved through avoidance, or mitigated to ensure no net loss of wetlands function and value. For the construction of any new bridges, we would ask that you pay special attention to the effects of this type of structure in wetland areas.

The Migratory Bird Treaty Act (MBTA) prohibits the taking of migratory birds, nests, and eggs, except as permitted by the U.S. Fish and Wildlife Service. To minimize the likelihood of adverse impacts to all birds protected under the MBTA, we recommend construction activities occur outside the general migratory bird nesting season of March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until nesting is complete.

We suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding fish, wildlife, and plants of State concern.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. In future correspondence regarding this project, please refer to consultation # 2-22-05-I-0122. If you have any questions about the information in this letter, please contact Rawles Williams at the letterhead address or at (505) 761-4704.

Sincerely,



Susan MacMullin
Field Supervisor

Enclosure

cc: (w/o enc)

Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Energy, Minerals, and Natural Resources Department, Forestry
Division, Santa Fe, New Mexico



BILL RICHARDSON
Governor

STATE OF NEW MEXICO
OFFICE OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION ALBUQUERQUE AREA OFFICE

LA VILLA RIVERA BUILDING
228 EAST PALACE AVENUE
SANTA FE, NEW MEXICO 87501
(505) 827-6320

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4 February 2003

Lori Robertson
Manager – Environment and Lands Division
Bureau of Reclamation
Albuquerque Area Office
505 Marquette, N.W.
Suite 1313
Albuquerque, NM 87105-2162

Re: Documentation of the Bureau of Reclamation's Low Flow Conveyance Channel,
Middle Rio Grande, New Mexico: BOR/Albuquerque Office
IIPD Log # 66762

Dear Ms. Robertson:

Thank you for providing our office with a copy of Reclamation and Water Conveyance in the Middle Rio Grande Valley, 1888-1998, by Matt C. Bischoff, which was completed in support of a proposed modification of the Rio Grande floodway and Low Flow Conveyance Channel (LFCC) system and intended to serve as mitigation for any adverse effects that may result from modifications to the LFCC.

We concur with Mr. Bischoff's recommendation that the Low Flow Conveyance Channel is eligible for listing on the National Register of Historic Places under criterion A, at the local level of significance.

Thank you for providing our office with the opportunity to consult with you on this matter.

Best regards,

James Hare
Architectural Historian
505-827-7411

ALB-189
ENV-3.00

CERTIFIED MAIL

Governor Alvino Lucero
Pueblo of Isleta
P.O. Box 1270
Isleta Pueblo, NM 87022

Subject: River Mile 114 To 113 Priority Site "Levee Setback" Project.

Dear Governor Lucero:

In accordance with Sections 106 of the National Historic Preservation Act, the U.S. Bureau of Reclamation, Albuquerque Office, requests your views on a proposed undertaking to re-align a segment of the Low Flow Conveyance Channel (LFCC) approximately 10,000 feet, from River Mile 114 to River Mile 113 (See map and photos). This project has been proposed because the river is beginning to threaten the integrity of the east-side levee road of the LFCC. The proposed project would accommodate the natural tendency of the river and involve the construction of a new segment of the LFCC to the west of the existing one along with the construction of new levee roads. The abandoned section of the LFCC would be filled in and the associated levees would be graded.

The only known historic property within the project footprint is the LFCC. We request your review to see if you have any concerns regarding any sacred sites or traditional cultural properties that might be adversely affected by the proposed work.

If you have any questions, feel free to contact Reclamation archaeologist Jeffery Hanson, at 462-3607.

Sincerely,

Jack Garner
Area Manager

Enclosures: map and photos.

ORIGINAL



DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
4101 JEFFERSON PLAZA NE
ALBUQUERQUE NM 87109-3435

January 25, 2005

Operations Division
Regulatory Branch

Mr. A. Jack Garner
Area Manager
Bureau of Reclamation,
Albuquerque Area Office
555 Broadway NE, Suite 100
Albuquerque, New Mexico 87102-2352

Dear Mr. Garner:

Your final Department of the Army Permit No. 2004 00321, for your Low Flow Conveyance Channel (LFCC) realignment project (San Acacia River Miles 114 and 113 Priority Sites Project), located in the LFCC and San Lorenzo Arroyo near San Acacia, Socorro County, New Mexico, is enclosed. Please notify us when you propose to start construction.

I draw your attention to the general conditions of this permit, which specifically address requests for extension, modification and revocation, authorized maintenance, abandonment, permit transfer, and archeological discoveries. Also, the permit contains disclaimers regarding the need for other permits, property rights and limits of the Government's liability for this work. Please also note the special conditions.

Enclosed is a self-certification letter. Upon completion of the project, please sign and date the letter and return it to this office. Also, to help us improve our service, please complete and return the attached Customer Service Survey at your convenience.

If you have any questions regarding Permit No. 200400321, please contact Mr. James Wood at (505) 342-3280 or by e-mail at james.a.wood@usace.army.mil.

Sincerely,

Daniel Malanchuk
Chief, Regulatory Branch

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Fldr #	39096
Date	1/25/05
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02/02 CW 185

3 Enclosures

1. Permit No. 2004 00321
2. Self-certification letter
3. Customer Service Survey

Copies Furnished:

Ms. Nancy Umbreit
Bureau of Reclamation,
Albuquerque Area Office
555 Broadway NE, Suite 100
Albuquerque, NM 87102-2352

Mr. David Menzie
NMED-Surface Water
Quality Bureau
910 E. 32nd Street
Silver City, NM 88061

DEPARTMENT OF THE ARMY PERMIT

Permittee Bureau of Reclamation, Albuquerque Area Office

Permit No. 2004 00321

Issuing Office Albuquerque District Corps of Engineers

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The project will involve the realignment of approximately 9,646 feet of the low flow conveyance channel (LFCC) to the west. A new LFCC channel will be constructed approximately 1,500 feet to the west of the existing alignment. This new channel will be approximately 10,800 feet in length, 90 feet to 105 feet wide at the top, and have a bottom width of 24 feet. A levee will be constructed along the east side of the new LFCC alignment.

The project will be done in two phases, depending on funding. Phase One will involve the construction of a new LFCC alignment, with riprap protection on the sides of the channel to a height of six feet. This phase will also involve the placement of a single, 9-foot diameter reinforced concrete pipe (RCP) under San Lorenzo Arroyo to convey LFCC flows under the arroyo. This phase will allow conveyance of up to 500 cubic feet per second (cfs) in the LFCC and through the RCP under San Lorenzo Arroyo. Phase Two will increase the height of the riprap on the new LFCC alignment to a height of 12.5 feet and will involve the placement of two additional, 9-foot diameter RCP's under San Lorenzo Arroyo. The additional riprap and RCP's will increase the flow conveyance in the LFCC channel and under San Lorenzo Arroyo to 2000 cfs.

Once the new channel has been constructed under Phase One, the existing LFCC channel will be filled, using material from the levee along the existing LFCC (approximately 356,000 cubic yards (cys)). Work will also be performed within the San Lorenzo Arroyo. Flows from this arroyo presently flow into the LFCC through a culvert. A sheet pile drop structure and up to three 9-foot diameter, reinforced concrete pipes (RCP's) (providing 2000 cfs capacity flow for the LFCC under San Lorenzo Arroyo, as stated above) will be constructed in San Lorenzo Arroyo. The sheet pile drop structure will protect the LFCC from a possible head cut starting at the Rio Grande and traveling up San Lorenzo Arroyo (since the arroyo will be re-connected to the Rio Grande floodplain). The first four rows of sheet pile will be perpendicular to the arroyo channel and start at the mouth of San Lorenzo Arroyo. The fifth and sixth rows will start at the first sheet pile row approximately 50 feet from each end and travel downward at 19° from the first sheet pile row

and travel to the fourth sheet pile row. The sheet pile will have a concrete sill cap. Temporary berms will be built in San Lorenzo Arroyo (using approximately 46,000 cys of fill) to redirect any flows coming down San Lorenzo during construction. Additional work will include the construction of temporary road crossings of the existing and new LFCC during construction; a spoil levee (with access ramps) along the east side of the new LFCC alignment (16-feet high, with 2H:1V side slopes on the west and 3H:1V side slopes on the east); construction of operation and maintenance (O&M) access roads; a low water O&M crossing of San Lorenzo Arroyo (24-feet wide with 10H:1V side slopes, consisting of compacted road base material); and the extension of the existing pipe carrying the Lemitar Riverside Drain under San Lorenzo Arroyo by 80 feet.

A dewatering operation will be necessary to remove local groundwater for the construction of the RCP crossings, including the inlet and outlet concrete transitions. Collected groundwater will be discharged into the Lemitar Riverside Drain, the LFCC, or a constructed holding pond. If a holding pond is constructed, the pond will be a maximum size of one acre, with a depth of five feet, and the ponded water will be used for construction activities. During the extension of the Lemitar Riverside Drain pipe, earth fill will be placed over the existing pipe to construct a temporary channel. Temporary containment berms will be constructed to redirect any San Lorenzo Arroyo flows away from the construction areas. Also, a silt fence will be installed in front of the existing outlet of the San Lorenzo Arroyo into the existing LFCC until this channel is backfilled.

The project will involve the use of up to 1,042,050 cys of permanent fill (earth fill and riprap) and will permanently affect 9.0 acres of waters of the U.S. (8.0 acres of the existing LFCC and 1.0 acre in San Lorenzo Arroyo). The project will be constructed in accordance with the attached drawings, entitled, "Low Flow Conveyance Channel Realignment near San Acacia, Socorro County, NM, Appl. by Bureau of Reclamation, Appl. No. 2004 00321, sheets 1 through 9, dated December 2004".

Project Location: The proposed project is located within the LFCC and San Lorenzo arroyo, on the west side of the Rio Grande, south of San Acacia, Socorro County, New Mexico. The project is located within the W1/2 of the W1/2 of Section 19 and a portion of the NW1/4 of the NW1/4 of Section 30, Township 1 South, Range 1 East; and a portion of the E1/2 of the E1/2 of Section 24 and the NE1/4 of the NE1/4 of Section 25, Township 1 South, Range 1 West (34° 13.983' N Latitude, 106° 53.966' W Longitude).

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2012. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

After a detailed and careful review of all of the conditions contained in this permit, the permittee acknowledges that, although said conditions were required by the Corps of Engineers, nonetheless the permittee agreed to those conditions voluntarily to facilitate issuance of the permit; the permittee will comply fully with all the terms of all the permit conditions.

1. Temporary staging areas and other areas disturbed during construction should be reclaimed with native vegetation.
2. Construction activities in the Rio Grande bosque should be avoided during the migratory bird nesting season of March through August. Areas proposed for construction during the nesting season should be surveyed and, when occupied nests are found, the nesting areas should be avoided until nesting is complete.
3. Silt curtains, cofferdams, dikes, straw bales or other suitable erosion control measures should be used to minimize sedimentation in the project area.
4. Poured concrete should be contained in forms and/or behind cofferdams to prevent discharge into waterways. Wastewater from concrete batching, vehicle wash-down, and aggregate processing should be contained and treated or removed for off-site disposal.
5. Existing maintenance yards should be used to store and service construction equipment. Construction equipment should be cleaned and inspected daily prior to construction to ensure that no leaks or discharges of lubricants, hydraulic fluids or fuels occur in the aquatic or riparian ecosystem. Fuels, lubricants, hydraulic fluids, and other

petrochemicals should be stored and dispensed outside of the floodplain. Any petrochemical spills, including contaminated soil, should be contained, removed, and disposed at an approved upland site.

Further Information:

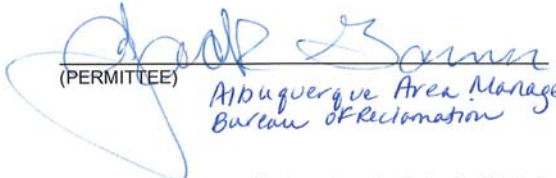
1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 - (x) Section 404 of the Clean Water Act (33 U.S.C. 1344).
 - () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
 - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.
 - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
 - a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The

referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.


(PERMITTEE)
Albuquerque Area Manager
Bureau of Reclamation


(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.


Daniel Malanchuk
Chief, Regulatory Branch
(for the DISTRICT ENGINEER)


(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFERREE)

(DATE)



BILL RICHARDSON
GOVERNOR

**State of New Mexico
ENVIRONMENT DEPARTMENT**

Office of the Secretary
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502-6110
Telephone (505) 827-2855
Fax (505) 827-2836



RECEIVED RON CURRY	
ALBUQUERQUE AREA OFFICE	
OFFICIAL FILE COPY	
DERRITH WATCHMAN MOORE	
DEC 23 04	
Class #	ENV-9.000
Proj	GP
Contract #	4003059
Fid #	39007
Date	12/27
12/27	166
12/27	105
12/27	107
12/27	150

December 21, 2004

A. Jack Garner, Area Manager
U. S. Bureau of Reclamation, Albuquerque Area Office
555 Broadway Blvd., NE Suite 100
Albuquerque, New Mexico 87102-2352

Subject: Clean Water Act Section 401 Water Quality Certification for **SWQB File 2004-SC023**:
San Acacia River Miles 114 and 113 Priority Sites Project

Dear Mr. Garner:

The Surface Water Quality Bureau (SWQB) of the New Mexico Environment Department has reviewed your application for authorization of the project indicated above under Sections 404 and 401 of the federal Clean Water Act. The project plan requires realignment of an existing levee, the realignment of the Low Flow Conveyance Channel (LFCC), and the construction of a new levee between the San Acacia Diversion Dam and Escondida Bridge in Socorro County, New Mexico. The proposed new levee and LFCC alignment would be approximately 10,800 feet in length.

The U.S. Army Corps of Engineers (USACE) will regulate this project under Individual Permit (USACE Action #2004-00321). In addition, a State Water Quality Certification is required by Section 401 of the Federal Clean Water Act in order to ensure that your project will comply with the state water quality standards (*Standards for Interstate & Intrastate Surface Waters*, New Mexico Water Quality Control Commission, 20.6.4 NMAC: 10/11/2002). According to these standards, the Rio Grande in the project area is designated for the following uses:

- Irrigation
- Limited Warmwater Fishery
- Livestock Watering
- Secondary Contact
- Wildlife Habitat

The standards for the Rio Grande that are relevant to your project include the following:

1. Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the normal growth, function, or reproduction of aquatic life is impaired or that will cause substantial visible contrast with the natural appearance of the water.
2. pH shall be within the range of 6.6 to 9.0
3. Temperature shall not exceed 32.2°C (90°F)
4. Toxic Pollutants: Surface waters of the state shall be free of toxic pollutants attributable to discharges in amounts, concentrations or combinations which affect the propagation of fish or which are toxic to fish or other aquatic organisms; wildlife using aquatic environments for habitat or aquatic organisms for food; or to livestock or other animals.

This is only a partial list of standards for your project area. For a complete list of the water quality standards that apply to your project, refer to the following sections of the *Standards for Interstate & Intrastate Surface Waters*, New Mexico Water Quality Control Commission, 20.6.4 NMAC: 10/11/2002.

- 20.6.4.8 Antidegradation Policy and Implementation Plan
- 20.6.4.12 General Standards
- 20.6.4.900 Standards Applicable to Attainable or Designated Uses
- 20.6.4.105 Rio Grande Basin - The main stem of the Rio Grande from the headwaters of Elephant Butte Reservoir upstream to Alameda bridge

These standards are available on the web at:

www.nmenv.state.nm.us/NMED_regs/swqb/20_6_4_nmac.html

401 Water Quality Certification with Conditions:

Pursuant to Section 401 of the Clean Water Act and 40 Code of Federal Regulations Part 121, the SWQB hereby issues a 401 Water Quality Certification for USACE Action #2004-00321: San Acacia River Miles 114 and 113 Priority Sites Project. This certification is subject to conditions to ensure that the project will comply with state water quality standards and the Antidegradation Policy.

Therefore, this Certification is not valid unless the following conditions are adhered to:

Flow Conditions:

1. Any work in a channel below the ordinary high water mark must be limited to low flow periods. Avoid working in these channels during the spring runoff and summer monsoon season.
2. When working in a stream channel, flowing water must be temporarily diverted around the work area to minimize sedimentation and turbidity problems. Acceptable diversion structures are non-erosive and include water bladders, concrete barriers lined with plastic, and flumes.

Wetlands:

3. Impacts to wetlands must be mitigated by increasing wetland habitat on an area as large as the area impacted. Wetland mitigation areas shall be planted with native wetland species and these areas shall be monitored and maintained through at least one growing season to ensure successful establishment of wetland habitat.

Erosion Control:

4. Prior to beginning construction, erosion control measures such as silt fences and straw bales must be installed to prevent the movement of disturbed soil or other contaminants into surface water. The erosion control measures must be inspected and maintained on a regular basis to ensure they are working properly. These erosion control measures must be maintained until the disturbed areas are permanently vegetated.
5. Temporary protective mats are required for heavy equipment working in wetlands, to minimize impacts to soil and vegetation. Protective mats are also recommended for use on stream banks and riparian areas.
6. Temporary access roads must be restored to pre-project conditions.
7. All areas that are disturbed as a result of the project must be replanted with native vegetation and protected until the area is no longer subject to erosion into surface water. The native plant species must be appropriate for the moisture conditions of the affected area, whether it be wetland, riparian, or upland.

Construction Materials:

8. All asphalt, concrete, and other construction materials must be properly handled and contained to prevent releases to the stream channels. Dumping of materials in the vicinity of watercourses is strictly prohibited.

Use of Heavy Equipment:

9. Heavy equipment will be operated from the bank and not enter the stream.
10. All heavy equipment used in the project area must be cleaned before the start of the project and inspected daily for leaks. Equipment must be steam cleaned before working in the water. Leaking equipment must not be used in or near any watercourse. Park equipment outside of channel when not in use.
11. Spill clean-up materials such as booms and absorbent pads must be available on-site at all times during construction. Report all spills immediately to the SWQB as required by the New Mexico Water Quality Control Commission regulations (20.6.2.1203 NMAC).
12. Fuel, oil, hydraulic fluid, or substances of this nature must not be stored within the normal floodplain, and must have secondary containment systems to prevent spills if the primary storage container leaks. Refuel equipment at least 100 feet from surface water.

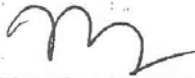
General Conditions:

13. A copy of this 401 certification must be kept at the project site during all phases of construction. All contractors involved in your project must be provided a copy of this certification and made aware of the conditions prior to starting construction.
14. The SWQB must be notified at least five days before starting construction, to allow time to schedule monitoring or inspections.

Violations of State water quality standards could lead to penalties under the New Mexico Water Quality Act. Section 74-6-10.1 B of the Act states, "Any person who violates any provision of the New Mexico Water Quality Act other than Section 74-6-5 NMSA 1978 or any person who violates any regulation, water quality standard, or compliance order adopted pursuant to that act shall be assessed civil penalties up to the amount of ten thousand dollars (\$10,000) per day for each violation."

The SWQB specifically reserves the right to amend or revoke this 401 Certification at any time to ensure compliance with water quality standards. If you have any questions regarding this 401 Water Quality Certification please feel free to contact David Menzie of my staff at (505) 388-0599. Thank you for your cooperation.

Sincerely,



Marcy Leavitt, Chief
Surface Water Quality Bureau

ML: dm

cc: NMED District I Manager, Albuquerque
Dan Malanchuk, U.S. Army Corps of Engineers
Jim Herrington, Wetlands, Region 6, USEPA
Lisa Kirkpatrick, NM Department of Game and Fish
Joy Nicholopoulos, U.S. Fish and Wildlife Service
Mike Matush, NMED Surface Water Quality Bureau, Silver City
401 Certification File #2004-SC023



United States Department of the Interior

BUREAU OF RECLAMATION

Albuquerque Area Office
555 Broadway Blvd., NE Suite 100
Albuquerque, New Mexico 87102-2352

IN REPLY REFER TO:

ALB-189
ENV-3.00

FEB 03 2005

073469



Lisa Meyer
New Mexico State Historic Preservation Office
New Mexico Historic Preservation Department
228 E. Palace Ave
Santa Fe, NM 87501

Subject: River Mile 114 To 113 Priority Site "Levee Setback" Project

Dear Ms. Meyer:

The Bureau of Reclamation, Albuquerque Office, proposes to re-align a segment of the Low Flow Conveyance Channel (LFCC), which extends from the San Acacia Diversion Dam to just below Fort Craig. One segment, approximately 10,000 feet, extends from River Mile 114 to River Mile 113 (see map and photos). Levee roads will be removed and the LFCC filled. This project has been proposed because the river is beginning to threaten the integrity of the east-side levee road of the LFCC. The proposed project would accommodate the natural tendency of the river and involve the construction of a new segment of the LFCC to the west of the existing one along with the construction of new levee roads. The abandoned section of the LFCC would be filled in and the associated levees would be graded. Existing riprap along the abandoned section of the LFCC will be reclaimed and used on the new section.

The only known historic property within the project footprint is the LFCC.

In February of 2003, SHPO concurred with a mitigation report submitted by Statistical Research Inc, entitled *Reclamation and Water Conveyance in the Middle Rio Grande Valley, 1888-1998*, by Matt C. Bischoff. This report was to cover any adverse effects on future modifications of the LFCC. Please find enclosed a copy of this report.

Please feel free to contact Reclamation archaeologist Jeffery Hanson at 505-462-3607 if you have any questions or comments.

Sincerely,

COMMENTS

*No Survey Required, you
for NM State Historic Preservation Officer
may want to consider*

Enclosures

*monitoring road
removal
Lmeyer
2/16/05*

A. Jack Garner
A. Jack Garner
Area Manager



Ms. Nancy Umbreit, Biologist
U.S. Bureau of Reclamation
Albuquerque Area Office
555 Broadway NE, Suite 100
Albuquerque, NM 87102

February 2, 2005

RE: Comments on the U.S. Bureau of Reclamation's Draft Environmental Assessment for San Acacia Priority Sites, river miles 114 and 113, Socorro County, New Mexico.

Dear Ms. Umbreit:

Thank you for the opportunity to comment on the Draft Environmental Assessment (EA). The Middle Rio Grande Conservancy District was not listed in the Coordination and Consultation Section of this EA but has lands and facilities that are clearly affected by this project. The EA does not provide an analysis on how the project may effect the District's right-of-ways, ability to maintain its facilities, irrigation water delivery or newly planted vegetation. Additionally, several figures and sections are missing from the copy of the EA provided to the District, which makes it difficult to determine all the potential issues or conflicts with the proposed action. Given these factors, the District provides the following specific comments:

1. Construction activities affecting District lands and facilities require coordination with, and a license from, the District prior to commencing work.
2. Please provide a more detailed map of the Bureau's easement for the LFCC so that the District can examine the proposed realignment in relation to the District's existing right-of-ways.
3. A proposed construction schedule was not provided. This is imperative so that affected parties such as the District can identify potential conflicts and coordinate management activities with construction.
4. Any revegetation plan must be coordinated with the MRGCD and Save our Bosque Task Force. Some of the water tables in the current Rio Grande floodway within the project area may not support the types of pole plantings proposed as mitigation. Revegetation should not occur south of river mile 113 to avoid conflicts with the Goat Vegetation Management Study, led by the MRGCD and the Jornada del Muerto Experimental Range.

P.O. Box 581

87103-0581

1931 Second St. SW

Albuquerque, NM

87102-4515

505-247-0234

Fax # 505-243-7308

We look forward to receiving a final EA and coordinating with the Bureau on this project. If you have any questions, please contact me at (505) 247-0234.

Sincerely,

Subhas K. Shah
Chief Engineer and Chief Executive Officer

ALB-185
ENV-1.10

FEB 1 8 2005

Mr. Subhas K. Shah
Chief Engineer and Chief Executive Officer
Middle Rio Grande Conservancy District
P.O. Box 581
Albuquerque, NM 87103-0581

Subject: Your Letter Dated February 2, 2005 Regarding Comments on the Draft
Environmental Assessment (DEA) for the San Acacia Priority River Miles 114
and 113 Priority Sites Project (Project)

Dear Mr. Shah:

Thank you for your comments regarding our subject draft document. As a follow up to your letter, we have provided additional information and comments below.

The lands encumbered by the proposed Project are on properties assigned by the Middle Rio Grande Conservancy District (District) to the United States under the terms of the 1951 Contract between the parties. Assignment of the Receipt and Conveyance numbers relevant to the proposed Project are the following: 1353, 1352, 1354, 1367, 1366, 1504, 1330, 1350, 1233, 1503, and 1595.

Copies of the construction schedule and Scope of Work were provided to you during a meeting with Mr. Karl Martin and Mr. Frank Montoya, of my engineering staff, on October 26, 2004. We have enclosed copies of previous letters sent to your organization related to this project as well as handouts provided during meetings (construction schedule, Scope of Work, notification letters, etc.) for your convenience.

In an effort to further coordinate our construction activities with your operation and maintenance work, we refer you to our letter dated December 21, 2004. In the letter, we outlined the proposed Low Flow Conveyance Channel (LFCC) realignment from Station 1865+85 to Station 1959+39. The letter also discussed the construction of a single barrel 9-foot diameter reinforced concrete pipe along the LFCC under the San Lorenzo Arroyo. Flows in the San Lorenzo Arroyo could then be conveyed above the pipe and eventually into the Rio Grande. The letter further described the modification of the 48-inch diameter corrugated metal pipe for Lemitar Drain underneath San Lorenzo Arroyo. The modification would facilitate diversion and care of arroyo flows during construction of the crossing structure. The Bureau of Reclamation drawing numbers 163-518-6700 and 163-518-6711 were enclosed with the letter showing the Lemitar Drain pipe extension along with a plan and profile of the proposed work.

A

A meeting, held on January 13, 2005, focused on the proposed modification to the Lemitar Drain culvert crossing at San Lorenzo Arroyo. Reclamation staff, along with the District's Socorro Division manager, Mr. Johnny Mounyo, and his staff were present at the meeting. It was agreed that Reclamation could proceed with the modifications and that Reclamation would keep the District informed of any problems that might arise as work progressed. Mr. Mounyo expressed concern about the contractor potentially impeding the District's work within the area. Reclamation explained that it did not believe the Lemitar Drain extension work would impact the District's work; Reclamation's work activities would occur approximately 200 feet away from the District's work areas.

Lastly, the proposed revegetation efforts are detailed within the DEA and were made available to all parties, including the Save Our Bosque Task Force, during the public review period. The areas being proposed for pole planting are located where we believe the poles would have the best chance for long term success. No revegetation efforts, associated with this project, would occur south of river mile 113.

We might also mention that, through the National Environment Policy Act (NEPA) process pertaining to the project, a total of four public scoping meetings (April 8 and April 13, 2003; May 21 and June 1, 2004) in the San Acacia area were held to solicit public comments and concerns and identify issues that would need to be addressed within the Environmental Assessment (EA). Ms. Yasmeen Najmi, of your office, attended the May 13, 2003 and June 1, 2004 presentations. Obviously, this office has coordinated numerous times with the District and we will make sure the District is listed within the 'Coordination and Consultation' section of the EA. Ms. Najmi was notified of the DEA availability, and a CD containing the entire document, was made available to your organization. We are uncertain why you did not have a complete document to review as stated within your letter's first paragraph.

Reclamation will continue to coordinate project activities with the District as it relates to the District's operation and maintenance work. If you should have additional questions pertaining to this work, do not hesitate to contact me.

Sincerely,

A. JACK GARNER

A. Jack Garner
Area Manager

Enclosures

bc: ALB-150, ALB-180, ALB-200, ALB-210, ALB-211, ALB-240, ALB-420
S-10 (w/o enclosures)

WBR:NUMbreit:JKuhn:5054623599:021405
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Appendix B

Plant and Wildlife Species Lists

FEDERAL ENDANGERED, THREATENED,
PROPOSED, AND CANDIDATE SPECIES
AND SPECIES OF CONCERN WITHIN COUNTIES IN NEW MEXICO

Consultation Number 2-22-05-I-0122

December 20, 2004

Socorro County

ENDANGERED

Black-footed ferret (*Mustela nigripes*) *
Interior least tern (*Sterna antillarum*)
Northern aplomado falcon (*Falco femoralis septentrionalis*)
Southwestern willow flycatcher (*Empidonax traillii extimus*)
Rio Grande silvery minnow (*Hybognathus amarus*) with critical habitat
Socorro isopod (*Thermosphaeroma thermophilus*)
Alamosa springsnail (*Psuedotryonia alamosae*)
Socorro pyrg (springsnail) (*Pyrgulopsis neomexicana*)

THREATENED

Bald eagle (*Haliaeetus leucocephalus*)
Mexican spotted owl (*Strix occidentalis lucida*) with critical habitat
Piping plover (*Charadrius melodus*)
Chiricahua leopard frog (*Rana chiricahuensis*)

CANDIDATE

Yellow-billed cuckoo (*Coccyzus americanus*)
Chupadera pyrg (springsnail) (*Pyrgulopsis chupaderae*)

SPECIES OF CONCERN

Allen's big-eared bat (*Idionycteris phyllotis*)
Black-tailed prairie dog (*Cynomys ludovicianus*)
Desert pocket gopher (*Geomys bursarius arenarius*)
New Mexican meadow jumping mouse (*Zapus hudsonius luteus*)
Organ Mountains Colorado chipmunk (*Eutamias quadrivittatus australis*)
Townsend's big-eared bat (*Corynorhinus townsendii*)
Pecos River muskrat (*Ondatra zibethicus ripensis*)
American peregrine falcon (*Falco peregrinus anatum*)
Arctic peregrine falcon (*Falco peregrinus tundrius*)
Baird's sparrow (*Ammodramus bairdii*)
Bell's vireo (*Vireo bellii*)
Black tern (*Chlidonias niger*)
Mountain plover (*Charadrius montanus*)
Northern goshawk (*Accipiter gentilis*)

Western burrowing owl (*Athene cunicularia hypugea*)
 Rio Grande sucker (*Catostomus plebeius*)
 Desert viceroy butterfly (*Limenitis archippus obsoleta*)
 Fugate's blue-star (*Amsonia fugatei*)
 Sandhill goosefoot (*Chenopodium cycloides*)

Index

Endangered	=	Any species which is in danger of extinction throughout all or a significant portion of its range.
Threatened	=	Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.
Candidate	=	Candidate Species (taxa for which the Service has sufficient information to propose that they be added to list of endangered and threatened species, but the listing action has been precluded by other higher priority listing activities).
Proposed	=	any species of fish, wildlife or plant that is proposed in the Federal Register to be listed under section 4 of the Act.
Species of Concern	=	Taxa for which further biological research and field study are needed to resolve their conservation status <u>OR</u> are considered sensitive, rare, or declining on lists maintained by Natural Heritage Programs, State wildlife agencies, other Federal agencies, or professional/academic scientific societies. Species of Concern are included for planning purposes only.
*	=	Survey should be conducted if project involves impacts to prairie dog towns or complexes of 200-acres or more for the Gunnison's prairie dog (<i>Cynomys gunnisoni</i>) and/or 80-acres or more for any subspecies of Black-tailed prairie dog (<i>Cynomys ludovicianus</i>). A complex consists of two or more neighboring prairie dog towns within 4.3 miles (7 kilometers) of each other.

Socorro County Rare Plant Species List

Socorro County	
<i>Amsonia fugatei</i>	Socorro
<i>Dalea scariosa</i>	Bernalillo, Sandoval, Socorro, Valencia
<i>Draba mogollonica</i>	Catron, Grant, Sierra, Socorro
<i>Draba standleyi</i>	Doña Ana, Otero, Sierra, Socorro
<i>Ephedra coryi</i>	Socorro
<i>Erigeron scopulinus</i>	Catron, Sierra, Socorro
<i>Hymenoxys brachyactis</i>	Lincoln, Socorro, Torrance
<i>Opuntia arenaria</i>	Doña Ana, Luna, Socorro
<i>Panicum mohavense</i>	Socorro
<i>Penstemon deaveri</i>	Catron, Cibola, Socorro
<i>Penstemon pseudoparvus</i>	Socorro
<i>Perityle staurophylla</i> var. <i>homoflora</i>	Sierra, Socorro
<i>Silene plankii</i>	Bernalillo, Doña Ana, Sandoval, Sierra, Socorro, Torrance
<i>Silene wrightii</i>	Catron, Grant, Luna, Sierra, Socorro
<i>Talinum brachypodium</i>	Cibola, Socorro, Valencia

Adapted from: <http://nmrareplants.unm.edu/nmrptc/county.htm#Section29>

New Mexico Species of Concern - Socorro County

Page 1 of 2

Common Name.....	SCIENTIFIC NAME.....	FWS... ESA	NM... WCA	FS... R3	BLM... NM	NM... Sen	FWS SOC
Rio Grande Chub	Gila pandora	-	-	-	-	S	-
Rio Grande Silvery Minnow	Hybognathus amarus	E ghm	E	S	-	-	-
Rio Grande Shiner	Notropis jamezianus	-	-	-	S	S	S
Flathead Chub	Platypharodon gracilis	-	-	-	S	-	-
Rio Grande Sucker	Catostomus plebeius	-	-	S	-	-	S
Arizona Toad	Bufo microscaphus microscaphus	-	-	S	S	S	S
Chiricahua Leopard Frog	Rana chiricahuensis	T	-	S	-	S	-
Northern Leopard Frog	Rana pipiens	-	-	S	-	-	-
Big Bend Slider	Trachemys gaigeae	-	-	-	-	S	-
Texas Horned Lizard	Phrynosoma cornutum	-	-	S	S	-	-
Desert Kingsnake	Lampropeltis getula splendida	-	-	S	-	-	-
Clark's Grebe	Aechmophorus clarkii	-	-	S	-	-	-
Neotropical Cormorant	Phalacrocorax brasilianus	-	T	S	-	-	-
American Bittern	Botsaurus lentiginosus	-	-	S	-	-	-
Least Bittern	Ixobrychus exilis exilis	-	-	S	-	-	-
Great Egret	Ardea alba egretta	-	-	S	-	-	-
Snowy Egret	Egretta thula brewsteri	-	-	S	-	-	-
Green Heron	Butorides virescens	-	-	S	-	-	-
Black-crowned Night-Heron	Nycticorax nycticorax boactli	-	-	S	-	-	-
White-faced Ibis	Fregata ahihi	-	-	S	S	-	-
Osprey	Pandion haliaetus carolinensis	-	-	S	-	-	-
White-tailed Kite	Elanus caeruleus majusculus	-	-	S	-	-	-
Mississippi Kite	Ictinia mississippiensis	-	-	S	-	-	-
Bald Eagle	Haliaeetus leucocephalus	AD,T mg	T	S	-	-	-
Northern Goshawk	Accipiter gentilis	-	-	S	S	S	S
Common Black-Hawk	Buteogallus anthracinus anthracinus	-	T	S	-	-	S
Swainson's Hawk	Buteo swainsoni	-	-	S	-	-	-
Screech-tailed Hawk	Buteo albonotatus	-	-	S	-	-	-
Ferruginous Hawk	Buteo regalis	-	-	S	S	-	-
Aplomado Falcon	Falco femoralis septentrionalis	E mg	E	S	-	-	-
American Peregrine Falcon	Falco peregrinus anatum	DM m	T	S	-	-	S
Sora	Forsena carolina	-	-	S	-	-	-
Whooping Crane	Grus americana	EXPN,E mg	E	S	-	-	-
Western Snowy Plover	Charadrius alexandrinus nivosus	-	-	S	-	-	-
Piping Plover	Charadrius melodus circumcinctus	T g	E	-	-	-	-
Mountain Plover	Charadrius montanus	PT	-	S	-	S	-
Black-necked Stilt	Himantopus mexicanus	-	-	S	-	-	-
Upland Sandpiper	Bartramia longicauda	-	-	S	-	-	-
Long-billed Curlew	Numenius americanus americanus	-	-	S	-	-	-
Interior Least Tern	Sterna antillarum athalassos	E mg	E	S	-	-	-
Black Tern	Chlidonias niger surinamensis	-	-	-	S	-	S
Common Ground-dove	Columbina passerina pallescens	-	E	S	-	-	-
Yellow-billed Cuckoo	Coccyzus americanus occidentalis	C	-	S	-	S	-
Flammulated Owl	Otus flammeolus	-	-	S	-	-	-
Elf Owl	Micrathene whitneyi whitneyi	-	-	S	-	-	-
Burrowing Owl	Athene cunicularia hypugaea	-	-	-	S	-	S
Mexican Spotted Owl	Strix occidentalis lucida	T hmg	-	S	-	S	-
Violet-crowned Hummingbird	Amazilia violiceps ellioti	-	T	S	-	-	-
Belted Kingfisher	Ceryle alcyon	-	-	S	-	-	-

New Mexico Species of Concern - Socorro County

Page 2 of 2

Common Name.....	SCIENTIFIC NAME.....	FWS... ESA	NM... WCA	FWS... R3	BLM... NM	NM... Sen	FWS... SOC
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E h	E	s	-	-	-
Loggerhead Shrike	<i>Lanius ludovicianus</i>	-	-	-	s	s	-
Bell's Vireo	<i>Vireo bellii</i>	-	T	s	-	-	s
Gray Vireo	<i>Vireo vicinior</i>	-	T	s	-	-	-
Gray Catbird	<i>Dumetella carolinensis ruficrissa</i>	-	-	s	-	-	-
American Redstart	<i>Setophaga ruticilla tricolora</i>	-	-	s	-	-	-
Baird's Sparrow	<i>Ammodramus bairdii</i>	-	T	s	s	-	s
McCown's Longspur	<i>Calcarius mccownii</i>	-	-	s	-	-	-
Western Small-footed Myotis Bat	<i>Myotis ciliolabrum melanorhinus</i>	-	-	-	s	s	-
Yuma Myotis Bat	<i>Myotis yumanensis yumanensis</i>	-	-	-	s	s	-
Occult Little Brown Myotis Bat	<i>Myotis lucifugus occultus</i>	-	-	s	s	s	-
Long-legged Myotis Bat	<i>Myotis volans interior</i>	-	-	-	s	s	-
Fringed Myotis Bat	<i>Myotis thysanodes thysanodes</i>	-	-	-	s	s	-
Long-eared Myotis Bat	<i>Myotis evotis evotis</i>	-	-	-	s	s	-
Spotted Bat	<i>Eidolon maculatum</i>	-	T	s	s	-	-
Allen's Big-eared Bat	<i>Idionycteris phyllotis</i>	-	-	-	s	s	s
Pale Townsend's Big-eared Bat	<i>Plecotus townsendii pallascens</i>	-	-	s	s	s	s
Ogura Mountains Colorado Chipmunk	<i>Tamias quadrivittatus australis</i>	-	T	-	s	-	s
Ogura Mountains Colorado Chipmunk	<i>Tamias quadrivittatus oscuraensis</i>	-	T	-	s	-	-
White-Mountains Ground Squirrel	<i>Spermophilus tridecemlineatus monticola (AZ,NM)</i>	-	-	s	-	-	-
Gunnison's Prairie Dog	<i>Cynomys gunnisoni</i>	-	-	-	-	s	-
Desert Pocket Gopher	<i>Geomys arenarius brevirostris</i>	-	-	-	-	s h	-
Pecos River Muskrat	<i>Ondatra zibethicus ripensis</i>	-	-	-	s	s	s
New Mexican Jumping Mouse	<i>Zapus hudsonius luteus</i>	-	T	s	s	-	s
Red Fox	<i>Vulpes vulpes</i>	-	-	-	-	s	-
Ringtail	<i>Bassariscus astutus</i>	-	-	s	-	s	-
Western Spotted Skunk	<i>Spilogale gracilis</i>	-	-	-	-	s	-
Common Hog-nosed Skunk	<i>Conopatus nasoleucus</i>	-	-	-	-	s	-
Desert Bighorn Sheep	<i>Ovis canadensis mexicana (endangered pops)</i>	-	E	s	-	s	-
Chupadera Springsnail	<i>Pyrgulopsis chupaderae</i>	C	E	-	-	n	-
Socorro Springsnail	<i>Pyrgulopsis neomexicana</i>	E mg	E	s	-	n	-
Alamosa Springsnail	<i>Tryonia alamosae</i>	E mg	E	s	-	-	-
Ovate Vertigo Snail	<i>Vertigo ovata</i>	-	T	-	-	-	s
Socorro Mountainsnail	<i>Oreohelix neomexicana</i>	-	-	-	-	s n	-
Socorro Isopod	<i>Thermophaeroma thermophilum</i>	E mg	E	s	-	n	-
SN Pearly Checkerspot Butterfly	<i>Charidryas acaustus sabina</i>	-	-	-	-	-	s
Obsolete Viceroy Butterfly	<i>Basilarchia archippus obsoleta</i>	-	-	s	-	-	s

NATIVE SPECIES APPARENTLY NO LONGER OCCURRING IN SOCORRO COUNTY

Longnose Gar	<i>Lepisosteus osseus</i>	
American Eel	<i>Anguilla rostrata</i>	(extirpated from NM)
Speckled Chub	<i>Macrhybopsis aestivalis aestivalis</i>	
Blue Sucker	<i>Cyprinostomus elongatus</i>	
Phantom Shiner	<i>Notropis orca</i>	(extinct)
Rio Grande Bluntnose Shiner	<i>Notropis sinuatus sinuatus</i>	(extinct)
Gray Redhorse	<i>Moxostoma valenciennesi</i>	
Arizona Black-tailed Prairie Dog	<i>Cynomys ludovicianus arizonensis</i>	
Mexican Gray Wolf	<i>Canis lupus baileyi</i>	
Grizzly Bear	<i>Ursus arctos</i>	(extirpated from NM)
Black-footed Ferret	<i>Mastela nigripes</i>	(extirpated from NM)
Mink	<i>Mastela vison eremicus</i>	(extirpated from NM)
Jaguar	<i>Panthera onca arizonensis</i>	
Merriam's Elk	<i>Cervus elaphus merriami</i>	(extinct)

Biota Information System Of New Mexico (BISON-M) April 2003- Dept. of Game & Fish,
Conservation Services Div.

New Mexico Game & Fish - Animals in BISON-M



Search on:

Category = 'All'

County = 'NM-Socorro'

GAP Veg = 'RIPARIAN: LOWLAND RIPARIAN cottonwood/sycamore'

Current Date: January 4, 2005

Number of Record(s) Found: 328

Records Last Updated on: January 06, 2000

Click on species name to see species report.

Category: Amphibians

[Back to top](#)

Salamander, Tiger	<i>Ambystoma tigrinum</i>
Toad, Great Plains	<i>Bufo cognatus</i>
Toad, Arizona	<i>Bufo microscaphus microscaphus</i> (NM,AZ)
Toad, Woodhouse's	<i>Bufo woodhousii</i>
Frog, Tree, Canyon	<i>Hyla arenicolor</i>
Frog, Chorus, Western	<i>Pseudacris triseriata</i>
Frog, Leopard, Chiricahua	<i>Rana chiricahuensis</i>

Category: Birds

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Thrasher, Brown	<i>Toxostoma rufum longicauda</i> (NM)
Thrasher, Curve-billed	<i>Toxostoma curvirostre celsum</i> (NM)
Thrasher, Crissal	<i>Toxostoma crissale crissale</i> (NM)
Starling, European	<i>Sturnus vulgaris</i>
Pipit, American	<i>Anthus rubescens</i>
Waxwing, Cedar	<i>Bombycilla cedrorum</i>
Phainopepla	<i>Phainopepla nitens lepida</i> (NM)
Warbler, Tennessee	<i>Vermivora peregrina</i>
Warbler, Orange-crowned	<i>Vermivora celata</i>
Warbler, Nashville	<i>Vermivora ruficapilla ridgwayi</i> (NM)
Warbler, Virginia's	<i>Vermivora virginiae</i>
Warbler, Lucy's	<i>Vermivora luciae</i>
Parula, Northern	<i>Parula americana</i>
Warbler, Yellow	<i>Dendroica petechia</i>

Warbler, Blue, Black-throated	<i>Dendroica caerulescens caerulescens</i> (NM)
Warbler, Yellow-rumped	<i>Dendroica coronata</i>
Warbler, Gray, Black-throated	<i>Dendroica nigrescens</i>
Warbler, Townsend's	<i>Dendroica townsendi</i>
Warbler, Green, Black-throated	<i>Dendroica virens virens</i> (NM)
Warbler, Grace's	<i>Dendroica graciae graciae</i> (NM)
Warbler, Palm	<i>Dendroica palmarum</i>
Warbler, Black-and-white	<i>Mniotilta varia</i>
Redstart, American	<i>Setophaga ruticilla tricolora</i> (NM)
Warbler, Prothonotary	<i>Protonotaria citrea</i>
Ovenbird	<i>Seiurus aurocapillus cinereus</i> (NM)
Waterthrush, Northern	<i>Seiurus noveboracensis</i>
Warbler, Macgillivray's	<i>Oporornis tolmiei</i>
Yellowthroat, Common	<i>Geothlypis trichas</i>
Warbler, Wilson's	<i>Wilsonia pusilla</i>
Warbler, Red-faced	<i>Cardellina rubrifrons</i>
Redstart, Painted	<i>Myioborus pictus pictus</i> (NM)
Chat, Yellow-breasted	<i>Icteria virens auricollis</i> (NM)
Tanager, Hepatic	<i>Piranga flava</i>
Tanager, Summer	<i>Piranga rubra</i>
Tanager, Western	<i>Piranga ludoviciana</i>
Towhee, Green-tailed	<i>Pipilo chlorurus</i>
Towhee, Spotted	<i>Pipilo maculatus</i>
Towhee, Canyon	<i>Pipilo fuscus</i>
Sparrow, Tree, American	<i>Spizella arborea ochracea</i> (NM)
Sparrow, Chipping	<i>Spizella passerina arizonae</i> (NM)
Sparrow, Clay-colored	<i>Spizella pallida</i>
Sparrow, Brewer's	<i>Spizella breweri</i>
Sparrow, Black-chinned	<i>Spizella atrogularis evura</i> (NM)
Sparrow, Vesper	<i>Pooecetes gramineus</i>
Sparrow, Lark	<i>Chondestes grammacus strigatus</i> (NM)
Sparrow, Fox	<i>Passerella iliaca</i>
Sparrow, Song	<i>Melospiza melodia</i>
Sparrow, Lincoln's	<i>Melospiza lincolnii</i>
Sparrow, Swamp	<i>Melospiza georgiana ericrypta</i> (NM)
Sparrow, White-throated	<i>Zonotrichia albicollis</i>
Sparrow, Harris's	<i>Zonotrichia querula</i>

Sparrow, White-crowned	<i>Zonotrichia leucophrys</i>
Sparrow, Golden-crowned	<i>Zonotrichia atricapilla</i>
Junco, Dark-eyed	<i>Junco hyemalis</i>
Cardinal, Northern	<i>Cardinalis cardinalis</i>
Pyrrhuloxia	<i>Cardinalis sinuatus sinuatus</i> (NM)
Grosbeak, Rose-breasted	<i>Pheucticus ludovicianus</i>
Grosbeak, Black-headed	<i>Pheucticus melanocephalus</i>
Grosbeak, Blue	<i>P. caerulea interfusa</i> (NM)
Bunting, Lazuli	<i>Passerina amoena</i>
Bunting, Indigo	<i>Passerina cyanea</i>
Bunting, Painted	<i>Passerina ciris pallidior</i> (NM)
Blackbird, Red-winged	<i>Agelaius phoeniceus</i>
Blackbird, Brewer's	<i>Euphagus cyanocephalus</i>
Grackle, Common	<i>Quiscalus quiscula versicolor</i> (NM)
Grackle, Great-tailed	<i>Quiscalus mexicanus</i>
Cowbird, Bronzed	<i>Molothrus aeneus loyei</i> (NM)
Cowbird, Brown-headed	<i>Molothrus ater</i>
Oriole, Orchard	<i>Icterus spurius</i>
Oriole, Hooded	<i>Icterus cucullatus</i>
Oriole, Baltimore	<i>Icterus galbula</i>
Oriole, Bullock's	<i>Icterus bullockii</i>
Oriole, Scott's	<i>Icterus parisorum</i>
Finch, House	<i>Carpodacus mexicanus frontalis</i> (NM)
Siskin, Pine	<i>Carduelis pinus pinus</i> (NM)
Goldfinch, Lesser	<i>Carduelis psaltria</i>
Goldfinch, American	<i>Carduelis tristis pallidus</i> (NM)
Grosbeak, Evening	<i>Coccothraustes vespertinus</i>
Cormorant, Double-crested	<i>Phalacrocorax auritus</i>
Cormorant, Neotropic	<i>Phalacrocorax brasilianus</i>
Heron, Blue, Great	<i>Ardea herodias</i>
Heron, Green	<i>Butorides virescens</i>
Night-Heron, Black-crowned	<i>Nycticorax nycticorax hoactli</i> (NM)
Vulture, Turkey	<i>Cathartes aura</i>
Duck, Wood	<i>Aix sponsa</i>
Kite, White-tailed	<i>Elanus leucurus majusculus</i> (NM)
Kite, Mississippi	<i>Ictinia mississippiensis</i>
Eagle, Bald	<i>Haliaeetus leucocephalus</i>

Harrier, Northern	<i>Circus cyaneus hudsonius</i> (NM)
Hawk, Sharp-shinned	<i>Accipiter striatus velox</i> (NM)
Hawk, Cooper's	<i>Accipiter cooperii</i>
Goshawk, Northern	<i>Accipiter gentilis</i>
Black-Hawk, Common	<i>Buteogallus anthracinus anthracinus</i> (NM)
Hawk, Harris's	<i>Parabuteo unicinctus harrisi</i> (NM)
Hawk, Swainson's	<i>Buteo swainsoni</i>
Hawk, Zone-tailed	<i>Buteo albonotatus</i>
Hawk, Red-tailed	<i>Buteo jamaicensis</i>
Hawk, Ferruginous	<i>Buteo regalis</i>
Hawk, Rough-legged	<i>Buteo lagopus johannis</i> (NM)
Eagle, Golden	<i>Aquila chrysaetos canadensis</i> (NM)
Kestrel, American	<i>Falco sparverius sparverius</i> (NM)
Merlin	<i>Falco columbarius</i>
Falcon, Prairie	<i>Falco mexicanus</i>
Falcon, Peregrine, American	<i>Falco peregrinus anatum</i>
Pheasant, Ring-necked	<i>Phasianus colchicus</i>
Turkey, Wild	<i>Meleagris gallopavo</i>
Quail, Montezuma	<i>Cyrtonyx montezumae mearnsi</i> (NM)
Quail, Scaled	<i>Callipepla squamata pallida</i> (NM)
Quail, Gambel's	<i>Callipepla gambelii</i>
Sandpiper, Spotted	<i>Actitis macularia</i>
Dove, Rock	<i>Columba livia</i>
Pigeon, Band-tailed	<i>Columba fasciata fasciata</i> (NM)
Dove, White-winged	<i>Zenaida asiatica</i>
Dove, Mourning	<i>Zenaida macroura</i>
Ground-dove, Common	<i>Columbina passerina pallescens</i> (NM)
Cuckoo, Yellow-billed	<i>Coccyzus americanus occidentalis</i> (NM,AZ)
Roadrunner, Greater	<i>Geococcyx californianus</i>
Owl, Barn	<i>Tyto alba pratincola</i> (NM)
Owl, Flammulated	<i>Otus flammeolus</i>
Owl, Screech, Western	<i>Otus kennicottii</i>
Owl, Great-horned	<i>Bubo virginianus</i>
Owl, Pygmy, Northern	<i>Glaucidium gnoma californicum</i> (NM)
Owl, Elf	<i>Micrathene whitneyi whitneyi</i> (NM)
Owl, Burrowing	<i>Athene cunicularia hypugaea</i> (NM,AZ)
Owl, Spotted, Mexican	<i>Strix occidentalis lucida</i> (NM,AZ)

Owl, Long-eared	<i>Asio otus</i>
Owl, Saw-whet, Northern	<i>Aegolius acadicus acadicus</i> (NM)
Nighthawk, Lesser	<i>Chordeiles acutipennis texensis</i> (NM)
Nighthawk, Common	<i>Chordeiles minor</i>
Poorwill, Common	<i>Phalaenoptilus nuttalli nuttalli</i> (NM)
Whip-poor-will	<i>Caprimulgus vociferus arizonae</i> (NM)
Swift, White-throated	<i>Aeronautes saxatalis saxatalis</i> (NM)
Hummingbird, Black-chinned	<i>Archilochus alexandri</i>
Hummingbird, Calliope	<i>Stellula calliope</i>
Hummingbird, Broad-tailed	<i>Selasphorus platycercus platycercus</i> (NM)
Hummingbird, Rufous	<i>Selasphorus rufus</i>
Kingfisher, Belted	<i>Ceryle alcyon</i>
Woodpecker, Lewis's	<i>Melanerpes lewis</i>
Woodpecker, Red-headed	<i>Melanerpes erythrocephalus caurinus</i> (NM)
Woodpecker, Acorn	<i>Melanerpes formicivorus formicivorus</i> (NM)
Sapsucker, Yellow-bellied	<i>Sphyrapicus varius varius</i> (NM)
Sapsucker, Red-naped	<i>Sphyrapicus nuchalis</i>
Sapsucker, Williamson's	<i>Sphyrapicus thyroideus nataliae</i> (NM)
Woodpecker, Ladder-backed	<i>Picoides scalaris</i>
Woodpecker, Downy	<i>Picoides pubescens leucurus</i> (NM)
Woodpecker, Hairy	<i>Picoides villosus</i>
Flicker, Northern	<i>Colaptes auratus</i>
Flycatcher, Olive-sided	<i>Contopus cooperi</i>
Pewee, Wood, Western	<i>Contopus sordidulus</i>
Flycatcher, Willow	<i>Empidonax traillii</i>
Flycatcher, Willow, SW.	<i>Empidonax traillii extimus</i>
Flycatcher, Dusky	<i>Empidonax oberholseri</i>
Flycatcher, Gray	<i>Empidonax wrightii</i>
Flycatcher, Cordilleran	<i>Empidonax occidentalis</i>
Phoebe, Black	<i>Sayornis nigricans semiatra</i> (NM)
Phoebe, Eastern	<i>Sayornis phoebe</i>
Phoebe, Say's	<i>Sayornis saya</i>
Flycatcher, Vermilion	<i>Pyrocephalus rubinus</i>
Flycatcher, Ash-throated	<i>Myiarchus cinerascens cinerascens</i> (NM)
Flycatcher, Brown-crested	<i>Myiarchus tyrannulus magister</i> (NM)
Kingbird, Cassin's	<i>Tyrannus vociferans vociferans</i> (NM)
Kingbird, Western	<i>Tyrannus verticalis</i>

Kingbird, Eastern	<i>Tyrannus tyrannus</i>
Flycatcher, Scissor-tailed	<i>Tyrannus forficatus</i>
Shrike, Northern	<i>Lanius excubitor invictus</i> (NM)
Shrike, Loggerhead	<i>Lanius ludovicianus</i>
Vireo, Bell's	<i>Vireo bellii</i>
Vireo, Solitary	<i>Vireo solitarius</i>
Vireo, Cassin's	<i>Vireo cassinii</i>
Vireo, Plumbeous	<i>Vireo plumbeus</i>
Vireo, Warbling	<i>Vireo gilvus swainsonii</i> (NM)
Jay, Steller's	<i>Cyanocitta stelleri macrolopha</i> (NM)
Jay, Scrub, Western	<i>Aphelocoma californica</i>
Magpie, Black-billed	<i>Pica hudsonia</i>
Crow, American	<i>Corvus brachyrhynchos</i>
Raven, Chihuahuan	<i>Corvus cryptoleucus</i>
Raven, Common	<i>Corvus corax sinuatus</i> (NM)
Martin, Purple	<i>Progne subis</i>
Swallow, Tree	<i>Tachycineta bicolor</i>
Swallow, Violet-green	<i>Tachycineta thalassina lepida</i> (NM)
Swallow, Rough-winged, N.	<i>Stelgidopteryx serripennis</i>
Swallow, Bank	<i>Riparia riparia riparia</i> (NM)
Swallow, Barn	<i>Hirundo rustica erythrogaster</i> (NM)
Swallow, Cliff	<i>Petrochelidon pyrrhonota</i>
Chickadee, Mountain	<i>Poecile gambeli gambeli</i> (NM)
Titmouse, Bridled	<i>Baeolophus wollweberi phillipsi</i> (NM)
Titmouse, Juniper	<i>Baeolophus ridgwayi</i>
Verdin	<i>Auriparus flaviceps ornatus</i> (NM)
Bushtit	<i>Psaltiriparus minimus</i>
Nuthatch, Red-breasted	<i>Sitta canadensis</i>
Nuthatch, White-breasted	<i>Sitta carolinensis nelsoni</i> (NM)
Nuthatch, Pygmy	<i>Sitta pygmaea melanotis</i> (NM)
Creeper, Brown	<i>Certhia americana</i>
Wren, Cactus	<i>Campylorhynchus brunneicapillus couesi</i> (NM)
Wren, Rock	<i>Salpinctes obsoletus obsoletus</i> (NM)
Wren, Canyon	<i>Catherpes mexicanus conspersus</i> (NM)
Wren, Bewick's	<i>Thryomanes bewickii</i>
Wren, House	<i>Troglodytes aedon parkmannii</i> (NM)
Wren, Marsh	<i>Cistothorus palustris</i>

Kinglet, Golden-crowned	<i>Regulus satrapa</i>
Kinglet, Ruby-crowned	<i>Regulus calendula calendula</i> (NM)
Gnatcatcher, Blue-gray	<i>Polioptila caerulea amoenissima</i> (NM)
Gnatcatcher, Black-tailed	<i>Polioptila melanura melanura</i> (NM)
Bluebird, Eastern	<i>Sialia sialis</i>
Bluebird, Western	<i>Sialia mexicana bairdi</i> (NM)
Bluebird, Mountain	<i>Sialia currucoides</i>
Solitaire, Townsend's	<i>Myadestes townsendi townsendi</i> (NM)
Thrush, Hermit	<i>Catharus guttatus</i>
Robin, American	<i>Turdus migratorius</i>
Catbird, Gray	<i>Dumetella carolinensis ruficrissa</i> (NM)
Mockingbird, Northern	<i>Mimus polyglottos leucopterus</i> (NM)
Thrasher, Sage	<i>Oreoscoptes montanus</i>

Category: Mammals

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Opossum, Virginia	<i>Didelphis virginiana</i>
Shrew, Dusky	<i>Sorex monticolus</i>
Shrew, Desert, Crawford's	<i>Notiosorex crawfordi crawfordi</i> (NM,AZ)
Bat, Myotis, California	<i>Myotis californicus</i>
Bat, Myotis, Small-footed, W.	<i>Myotis ciliolabrum melanorhinus</i> (NM,AZ)
Bat, Myotis, Yuma	<i>Myotis yumanensis yumanensis</i> (NM,AZ)
Bat, Myotis, Brn., Little, Occult	<i>Myotis lucifugus occultus</i> (NM,AZ)
Bat, Myotis, Long-legged	<i>Myotis volans interior</i> (NM,AZ)
Bat, Myotis, Fringed	<i>Myotis thysanodes thysanodes</i> (NM,AZ)
Bat, Myotis, Southwestern	<i>Myotis auriculus apache</i> (NM,AZ)
Bat, Myotis, Long-eared	<i>Myotis evotis evotis</i> (NM,AZ)
Bat, Silver-haired	<i>Lasionycteris noctivagans</i>
Bat, Pipistrelle, Western	<i>Pipistrellus hesperus</i>
Bat, Brown, Big	<i>Eptesicus fuscus pallidus</i> (NM,AZ)
Bat, Hoary	<i>Lasiurus cinereus cinereus</i> (NM,AZ)
Bat, Spotted	<i>Euderma maculatum</i>
Bat, Big-eared, Allen's	<i>Idionycteris phyllotis</i>
Bat, Big-eared, Townsend's, Pale	<i>Plecotus townsendii pallelescens</i> (NM,AZ)
Bat, Pallid	<i>Antrozous pallidus pallidus</i> (NM,AZ)
Bat, Free-tailed, Brazilian	<i>Tadarida brasiliensis mexicana</i> (NM,AZ)
Rabbit, Cottontail, Desert	<i>Sylvilagus audubonii</i>

Rabbit, Jack, Black-tailed	<i>Lepus californicus</i>
Chipmunk, Cliff	<i>Neotamias dorsalis dorsalis</i> (NM)
Squirrel, Ground, Spotted	<i>Spermophilus spilosoma</i>
Squirrel, Rock	<i>Spermophilus variegatus grammurus</i> (NM,AZ)
Squirrel, Red	<i>Tamiasciurus hudsonicus</i>
Gopher, Pocket, Botta's	<i>Thomomys bottae</i>
Gopher, Pocket, Yellow-faced	<i>Cratogeomys castanops</i>
Mouse, Pocket, Plains	<i>Perognathus flavescens</i>
Mouse, Pocket, Silky	<i>Perognathus flavus</i>
Mouse, Pocket, Rock	<i>Chaetodipus intermedius</i>
Rat, Kangaroo, Ord's	<i>Dipodomys ordii</i>
Rat, Kangaroo, Banner-tailed, NM	<i>Dipodomys spectabilis baileyi</i> (NM,AZ)
Rat, Kangaroo, Merriam's	<i>Dipodomys merriami</i>
Beaver, American	<i>Castor canadensis</i>
Mouse, Harvest, Plains	<i>Reithrodontomys montanus</i>
Mouse, Harvest, Western	<i>Reithrodontomys megalotis</i>
Mouse, Cactus	<i>Peromyscus eremicus</i>
Mouse, Deer	<i>Peromyscus maniculatus</i>
Mouse, White-footed	<i>Peromyscus leucopus</i>
Mouse, Brush	<i>Peromyscus boylii rowleyi</i> (NM,AZ)
Mouse, Pinyon	<i>Peromyscus truei truei</i> (NM,AZ)
Mouse, Osgood's	<i>Peromyscus gratus gentilis</i> (NM)
Mouse, Grasshopper, N.	<i>Onychomys leucogaster</i>
Mouse, Grasshopper, Mearn's	<i>Onychomys arenicola</i>
Rat, Cotton, Hispid	<i>Sigmodon hispidus</i>
Rat, Cotton, Tawny-bellied	<i>Sigmodon fulviventer minimus</i> (NM,AZ)
Rat, Wood, White-throated	<i>Neotoma albigula</i>
Rat, Wood, Stephen's	<i>Neotoma stephensi</i>
Muskrat, Pecos River	<i>Ondatra zibethicus ripensis</i> (NM)
Mouse, House	<i>Mus musculus</i>
Mouse, Jumping, Meadow	<i>Zapus hudsonius luteus</i> (NM,AZ)
Porcupine, Common	<i>Erethizon dorsatum</i>
Coyote	<i>Canis latrans</i>
Fox, Red	<i>Vulpes vulpes</i>
Fox, Kit	<i>Vulpes macrotis</i>
Fox, Gray, Common	<i>Urocyon cinereoargenteus scottii</i> (NM,AZ)
Bear, Black	<i>Ursus americanus amblyceps</i> (NM,AZ)

Ringtail	<i>Bassariscus astutus</i>
Raccoon, Common	<i>Procyon lotor</i>
Weasel, Long-tailed	<i>Mustela frenata</i>
Badger, American	<i>Taxidea taxus berlandieri</i> (NM,AZ)
Skunk, Spotted, Western	<i>Spilogale gracilis</i>
Skunk, Striped	<i>Mephitis mephitis</i>
Skunk, Hog-nosed, Common	<i>Conepatus leuconotus</i>
Lion, Mountain	<i>Puma concolor</i>
Bobcat	<i>Lynx rufus baileyi</i> (NM,AZ)
Peccary, Collared	<i>Peccari tajacu</i>
Elk	<i>Cervus elaphus nelsoni</i> (NM,AZ)
Deer, Mule	<i>Odocoileus hemionus</i>
Deer, White-tailed, Coues'	<i>Odocoileus virginianus couesi</i> (NM,AZ)
Sheep, Bighorn, Desert	<i>Ovis canadensis mexicana</i> (endangered pops)
Sheep, Barbary	<i>Ammotragus lervia</i>

Category: Reptiles

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Turtle, Box, Ornate	<i>Terrapene ornata</i>
Turtle, Mud, Yellow	<i>Kinosternon flavescens flavescens</i> (NM,AZ)
Lizard, Collared	<i>Crotaphytus collaris</i>
Lizard, Leopard, Longnose	<i>Gambelia wislizenii</i>
Lizard, Earless, Lesser	<i>Holbrookia maculata</i>
Lizard, Horned, Texas	<i>Phrynosoma cornutum</i>
Lizard, Horned, Roundtail	<i>Phrynosoma modestum</i>
Lizard, Spiny, Desert	<i>Sceloporus magister</i>
Lizard, Spiny, Crevice	<i>Sceloporus poinsettii poinsettii</i> (NM)
Lizard, Fence, Eastern	<i>Sceloporus undulatus</i>
Lizard, Tree, Northern	<i>Urosaurus ornatus</i>
Lizard, Side-blotched	<i>Uta stansburiana</i>
Whiptail, Spotted, Chihuahuan	<i>Aspidoscelis exsanguis</i>
Whiptail, Checkered, CO	<i>Aspidoscelis tessellata</i>
Whiptail, Striped, Trans-pecos	<i>Aspidoscelis inornatus heptagrammus</i> (NM)
Whiptail, Western	<i>Aspidoscelis tigris</i>
Skink, Many-lined	<i>Eumeces multivirgatus epipleurotus</i> (NM)
Skink, Great Plains	<i>Eumeces obsoletus</i>
Snake, Rat, Trans-Pecos	<i>Bogertophis subocularis subocularis</i> (NM)

Racer, Yellowbelly, E.	<i>Coluber constrictor</i>
Snake, Ringneck	<i>Diadophis punctatus</i>
Snake, Rat, Great Plains	<i>Elaphe guttata</i>
Snake, Hognose, W.	<i>Heterodon nasicus</i>
Snake, Night	<i>Hypsiglena torquata</i>
Kingsnake, Desert	<i>Lampropeltis getula splendida</i> (NM,AZ)
Coachwhip	<i>Masticophis flagellum</i>
Whipsnake, Striped, Desert	<i>Masticophis taeniatus taeniatus</i> (NM)
Snake, Gopher	<i>Pituophis cantifer</i>
Snake, Longnose, Texas	<i>Rhinocheilus lecontei</i>
Snake, Blackhead, Plains	<i>Tantilla nigriceps</i>
Snake, Garter, Blackneck, W.	<i>Thamnophis cyrtopsis cyrtopsis</i> (NM)
Snake, Garter, Wandering	<i>Thamnophis elegans</i>
Snake, Garter, Checkered	<i>Thamnophis marcianus marcianus</i> (NM)
Snake, Garter, New Mexico	<i>Thamnophis sirtalis dorsalis</i> (NM)
Rattlesnake, Diamondback, W.	<i>Crotalus atrox</i>
Rattlesnake, Blacktail	<i>Crotalus molossus molossus</i> (NM)



The New Mexico Natural Heritage Program is part of the [Natural Heritage Network](#) and the [Museum of Southwestern Biology](#), [Department of Biology](#) at the [University of New Mexico](#)

Last Updated May 13, 2004



New Mexico State-listed Noxious Weeds

Class A: Class A weeds are species that are not present in New Mexico or have limited distribution; preventing new infestations of these species and eradicating existing infestations is the highest priority.

- Alfombrilla (*Drymaria arenarioides*)
- Black henbane (*Hyoscyamus niger*)
- Camelthorn (*Alhagi pseudalhagi*)
- Canada thistle (*Cirsium arvense*)
- Dalmatian toadflax (*Linaria genistifolia* ssp. *dalmatica*)
- Diffuse knapweed (*Centaurea diffusa*)
- Dyer's woad (*Isatis tinctoria*)
- Eurasian watermilfoil (*Myriophyllum spicatum*)
- Hoary cress (*Cardaria draba*)
- Hydrilla (*Hydrilla verticillata*)
- Leafy spurge (*Euphorbia esula*)
- Onionweed (*Asphodelus fistulosus*)
- Perennial pepperweed (*Lepidium latifolium*)
- Purple loosestrife (*Lythrum salicaria*)
- Purple starthistle (*Centaurea calcitrapa*)
- Scotch thistle (*Onopordum acanthium*)
- Spotted knapweed (*Centaurea maculosa*)
- Yellow starthistle (*Centaurea solstitialis*)
- Yellow toadflax (*Linaria vulgaris*)

Class B: Class B weeds are species that are limited to portions of New Mexico. In areas that are not infested, these species should be treated as Class A weeds. In areas with severe infestations, management plans should be designed to contain the infestation and stop spread.

- African rue (*Peganum harmala*)
- Bull thistle (*Cirsium vulgare*)
- Halogeton (*Halogeton glomeratus*)
- Malta starthistle (*Centaurea melitensis*)
- Musk thistle (*Carduus nutans*)
- Russian knapweed (*Acroptilon repens*)
- Poison hemlock (*Conium maculatum*)
- Teasel (*Dipsacus fullonum*)

Class C: Class C weeds are species that are widespread in New Mexico. Management decisions for these species should be determined at the local level based on feasibility of control and level of infestation.

- Field bindweed (*Convolvulus arvensis*)
- Jointed goatgrass (*Aegilops cylindrica*)
- Russian olive (*Elaeagnus angustifolia*)
- Saltcedar (*Tamarix* spp.)
- Siberian elm (*Ulmus pumila*)