

**Appendix D. Reclamation's ESA Assessment of the Seven Rivers Pipeline
Project**

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MEMORANDUM TO THE FILES

To: ALBFILES

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Thru: Lori Robertson, Environment Division Manager
CC: Connie Rupp, Area Manager
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Subject: Assessment of the Seven Rivers Pipeline Project

Pursuant to the requirements of the Endangered Species Act, Reclamation obtained a listing of the Endangered, Threatened, and Proposed species in Eddy County from the US Fish and Wildlife Service (Service) website, (http://www.fws.gov/southwest/es/newmexico/SBC_view.cfm?spcnty=Eddy) for the following assessment of the effects of the Seven Rivers Pipeline Project on listed species within the project area. Reclamation has determined that the Pecos bluntnose shiner (*Notropis simus pecosensis*) and the Interior Least Tern (*Sternula antillarum athalassos*), may be found within the project area, based on a biological survey¹ conducted by Marron and Associates, Inc.

It is Reclamation's determination that there will be "**no effect**" to the Pecos bluntnose shiner or its critical habitat from construction activities of this project. Also, there will be "**no effect**" to the Interior Least Tern from construction activities of this project, on Reclamation (Federal) lands, if completed prior to May 15, 2007. If these construction activities can not be completed prior to May 15, 2007, on Reclamation (Federal) lands, project work must cease till consultation with the Service can be completed or until the project would no longer pose a threat to any nesting birds in 2007.

I. INTRODUCTION

The purpose of this assessment is to determine the effects of Seven Rivers Pipeline activities that could affect the Pecos bluntnose shiner (shiner) and the Interior Least Tern (Least Tern).

II. DESCRIPTION OF THE PROPOSED ACTION

¹ "A Biological Survey and Evaluation of the Proposed Seven Rivers Pipeline Located in Eddy County, New Mexico," prepared for the State of New Mexico, Office of the State Engineer, NM Interstate Stream Commission, by Marron and Associates, Inc.

The proposed Federal action is for Reclamation to grant a license to the NMISC for pipeline construction and operation onto Federal property.

The purpose of the Proposed Action is to deliver water from the Seven Rivers augmentation well field to Brantley Reservoir for use as Carlsbad Project water.

The proposed pipeline from the Seven Rivers augmentation well field would address two primary needs along the Pecos River. The NMISC needs to:

- 1 Augment the CID water supply as partial fulfillment of the Settlement Agreement
- 2 Assist the NMISC in compliance with the Pecos River Compact and the Supreme Court Amended Decree, with or without the complete implementation of the Settlement Agreement.

The New Mexico Interstate Stream Commission (NMISC) is currently constructing a well field west of Brantley Reservoir, as required by the Carlsbad Project Settlement Agreement. Once completed, the well field will consist of ten wells. Five wells, all in the western section, have been completed at this time. Nine wells will be located on private property, most through easements with private landowners. One well is located on land owned by the NMISC.

The well field construction includes approximately 11 miles of buried pipeline network to connect all of the wells and deliver the water to Brantley. There will be two main pipeline segments. One segment, the Price and Home Farm Alignment, is designed to connect seven wells west of US 285 and one well east of US 285, in the northwestern section of Brantley Reservoir and deliver water to the Seven Rivers Outfall (UTM NAD 27: E556974/N3605508) on the south side of the mouth of the drainage to Brantley Reservoir. The outfall occurs adjacent to an undesignated parking lot used for fishing and boat launching.

The Lewis Farm Alignment collects water from two wells and joins each pipeline into one pipeline to the north of the reservoir and delivers that water to a discharge point identified as the Lewis Farm Outfall (UTM NAD 27: E558607/N36667222) at the inlet of Brantley Reservoir. The outfall drains into a cut above the high-water mark of Brantley Reservoir and is covered with Johnson Grass (*Sorghum halepense*), Junglerice (*Echinochloa colonum*), and summer cypress (*Kochia scoparia*).

The pipelines will cross private property through easements with the private landowners. Both pipelines must cross Reclamation property for the water to efficiently reach the reservoir. The northwestern section of the Seven Rivers pipeline will cross approximately 1.3 miles of federal property as measured from the South Seven Rivers branch of Brantley Reservoir. The pipeline connecting wells in the northern section of the well field will cross approximately 1.4 miles of federal property as measured from the North Seven Rivers branch of Brantley Reservoir. The pipelines will be aligned along existing rights-of-way, when possible, to reduce the amount of new disturbance on federal property.

The pipelines will discharge groundwater at two locations adjacent to Brantley Reservoir. The western discharge location will be in the South Seven Rivers Channel, while the

northern discharge location will be in the North Seven Rivers Channel. The maximum pipe diameter will be 36 inches of HDPE or PVC pipe construction, designed to carry a total 14,000 GPM from the northwestern section and 6,000 GPM from the northern section, both under gravity flow conditions. The pipeline will be buried at a general depth of 10 to 36 inches, but may reach a maximum depth of 15 feet below the surface. Lateral disturbance of the surface will range from 6 to 30 feet from the center of the pipeline depending upon the topography.

Excavators, front-end loaders, and trucks will be used to install the pipe. The area of intense disturbance from excavation is expected to be 6 to 30 feet, with a maximum disturbance area of about 65 feet from the center of the pipe. The pipe is expected to be covered and leveled upon completion. Water at each outfall will discharge into concrete structures with baffles. A layer of riprap will overlie each outfall.

The construction of the pipeline is expected to start April 15, 2007 and be completed by May 15, 2007, prior to the terns nesting activities.

III. STATUS OF THE SPECIES/CRITICAL HABITAT

PECOS BLUNTNOSE SHINER

The Pecos bluntnose shiner was federally-listed as a threatened species under the ESA on February 20, 1987, by the Service. The shiner is endemic to the Pecos River and is presently found only in eastern New Mexico.

Background

The *N. simus* was first collected by Cope and Yarrow, at San Ildefonso, Santa Fe County, New Mexico in 1876 (Sublette et. al., 1990). Confusion regarding taxonomic status of *N. simus* was resolved when Chernoff et al. (1982) determined that two subspecies occurred: the Rio Grande form (*N. simus simus*) and Pecos form (*N. simus pecosensis*).

The Rio Grande form was historically found in the Rio Grande drainage from the Chama River, north of Santa Fe, New Mexico, downstream in the Rio Grande to El Paso, Texas.

The Rio Grande form is now extinct (Bestgen and Platania, 1990; Sublette et. al., 1990). The Final Rule determining the shiner as threatened indicates historic occupation of the shiner in the Pecos River between the towns of Santa Rosa and Carlsbad, New Mexico (USFWS, 1987). Collections of shiner during 1990's indicate a current range from Sumner Dam, New Mexico, downstream to Brantley Reservoir (Brooks et al., 1991; USFWS, 2001). "Some stretches of the Pecos River are frequently dry downstream from impoundments." (50 CFR § part 17).

The shiner is a member of the minnow family (Cyprinidae). It is relatively small, reaching lengths of up to 3.5 inches. Sublette et.al., (1990) described the shiner as having a spindle-shaped body, with a silvery head, back, and abdomen; sparsely scattered with small

melanophores along the head and sides. The mouth is large, appearing slightly subterminal with an overhanging blunt nose. Males and females look very similar, except in the breeding season when the female's abdomen becomes distended with eggs and the males develop fine tubercles (bumps) on the head and pectoral fin rays. The shiner primarily feeds on detritus, filamentous algae, and terrestrial invertebrates, such as Diptera, a large order of flies and midges. Its average life span is two to three years.

Distribution and Abundance

Historically, shiners ranged throughout the upper portion of the Pecos River in New Mexico from about the Gallinas Creek confluence, above Santa Rosa, to near the New Mexico-Texas border (USFWS, 2000). Their present range is listed as being from Sumner Dam to Brantley Reservoir, a distance of approximately 225 river miles; a 25 percent reduction from the historical range. However, the shiner may now be extirpated from the 14 mile section between Sumner Dam and the FSID Diversion Dam, (Platania and Altenbach, 1998).

Brooks et al. (1991) reviewed historic and recent surveys of fish communities in the Pecos River. These surveys included collections from Sumner Dam downstream to the Brantley Reservoir inflow. Intensive surveys and monitoring by the Service from 1992 through 2004 form the basis for current knowledge of shiner distribution and abundance.

The NMDGF (1982) reported that there was a substantial decline in the abundance of shiners from 1939 to 1986 (New Mexico Department of Game and Fish, 1982). Collections between 1986 and 1990 indicate a further decline in abundance and a reduction in range, although the species still exists within the designated critical habitat reaches (Brooks et al., 1991). Non-native species, including the plains minnow (*Hybognathus placitus*) and the Arkansas River shiner (*N. girardi*) (Sublette et. al., 1990), comprised a large portion of the shiner guild, and may have indicated interspecific competition as a factor in shiner reduction in abundance and distribution.

Shiner adults and larvae have been seen in the area of the Kaiser Channel above the Brantley inlet, but have little hope of survival when they reach the reservoir. The Service anticipated that shiner eggs and larvae were taken as a result of block releases during the spawning season. The block releases were suggested to transport the eggs and larvae downstream into Brantley Reservoir where death would occur, or where they would be unable to successfully develop and breed and thereby contribute offspring to the next generation. It was anticipated that killing of larvae and eggs would occur when they reach Brantley Lake through consumption by predatory fish, by exposure to higher salinity, or by other unsuitable habitat conditions in the reservoir.

Critical Habitat

Critical habitat for the shiner was designated to include two sections of the Pecos River. The upper end of the reach starts about two-thirds of a mile upstream from the Taiban Creek confluence and extends approximately 64 river miles downstream to the Crockett

Draw confluence. The second section starts at a point due East of Hagerman, New Mexico and extends 37 river miles downstream to the Highway 82 Bridge, East Artesia, New Mexico (USFWS, 1987). Unlike the upper reach the lower reach is largely dependent upon irrigation return flows and base inflows for much of its water supply.

INTERIOR LEAST TERN

The Interior Least Tern was federally listed as endangered June 25, 1985 (50 Federal Register 102).

Background

The Interior Least Tern was federally-listed in the states of Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana (in the Mississippi River and its tributaries north of Baton Rouge), Mississippi (Mississippi River), Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Tennessee, and Texas (except within 80 km of the Gulf Coast). Many subpopulations existed across these areas, but continued loss and degradation of its habitat led to low numbers within its range.

The Tern is state-listed as endangered in South Dakota, Iowa, Illinois, Missouri, Texas, Kansas, and Nebraska and is extirpated in Indiana. It is also listed endangered in New Mexico by the New Mexico Department of Game and Fish (NMDGF) (1976). Severe declines of Interior Least Tern populations were due to habitat loss from river channelization, dam construction, and regulated flows.

The Least Tern is the smallest member of the tern subfamily (Sternidae), measuring about 21 to 24 cm in length with a 51 cm wingspan. Sexes are alike with a characteristic black-capped crown and white forehead. The back and dorsal wing surface are grayish, with white breast, belly and underwings. Legs are shades of orange or yellow and the bill, which is black tipped, also varies from yellow to yellow-orange in color. Immature Least Terns have darker plumage than adults, a dark bill, and dark eye stripe.

The validity of the taxonomy of the least tern subspecies has been questioned and identification in the field is difficult, therefore the U.S. Fish and Wildlife Service designated as endangered those Least Terns occurring in interior North America.

Distribution and Abundance

New Mexico is located on the extreme southern and western periphery of the Interior Least Tern's historic range. Least Terns were first recorded breeding in New Mexico at Bitter Lake NWR (BLNWR), Chaves County, in 1949, (Jungleman, 1988). They have bred annually at or in the vicinity of BLNWR since 1949.

This refuge was established adjacent to the Pecos River in 1939. Numbers of breeding Least Terns at BLNWR have remained low and relatively constant. A small population of Least Terns has utilized this area for the past 51 years; the number of terns sighted at BLNWR during peak abundance fluctuates annually, with 60 sighted on September 5,

1961 and no birds sighted for several years. Since 1989, there have been 3 to 7 pairs nesting and as many as 5 chicks fledged in any given year. Least Terns were known to summer in the vicinity of Dexter National Fish Hatchery in 1996 and two pairs were located north of BLNWR along the Pecos in 1997.

While most of the past research has centered in and around Roswell, New Mexico, other sightings have been documented near Las Cruces, New Mexico (1980), in the Rio Grande Basin, White Sands (1981), Holloman Lake near Alamogordo (1980/1982), Bottomless Lakes State Park, and Wade's Bog (prior to 1973).

On June 9, 2004, five pairs of Interior Least Terns were observed in a backwater area of Brantley Lake (Eddy County, New Mexico). The nearest documented nesting has been at BLNWR, 60 miles north of Brantley Lake, since the mid 1980's. These north-bound birds were probably migrating to BLNWR, but stopped short as suitable habitat was present at Brantley Lake. At least 14 adults were observed with an estimated seven nests on the lakeshore.

Again, monitoring of the shoreline and adjacent areas of Brantley Lake for the possibility of nesting by terns began the second week of May 2005 and continued through July at approximately two-week intervals. Terns were first observed at the lake on 12 May with two adults present. Subsequent surveys in May, June, and July resulted in varying numbers of terns detected, ranging from a maximum of 18 (all adult) on 24 May to a low of 8 (4 adult, 4 sub-adult) on 13 July.

On the date the maximum number of terns was observed at Brantley Lake (24 May), many of the birds were observed in the Champion Cove area engaging in courtship behavior and mating. On 28 July the first juvenal-plumaged Interior Least Terns were observed. It was unlikely, however, that these terns originated at Brantley Lake as no evidence of nesting was found during the summer months. These juvenile birds likely were south-bound migrants, possibly originating from BLNWR Refuge.

The area of the Brantley Lake shoreline on the south side of the North Seven Rivers drainage inlet was the location of most observations of terns during summer 2005. This area remained mostly unvegetated, was not entirely submerged during the summer, and appeared to have the greatest likelihood for use in nesting by the terns. Despite the potential of this area as a nesting site for terns, it was not utilized as such and roosting was the only activity observed. In 2005, much of the 2004 breeding site remained overgrown with kochia (*Kochia scoparia*), common cocklebur (*Xanthium strumarium*), and bearded sprangletop grass (*Leptochloa fascicularis*).

In 2006, vegetation was cleared from two areas totaling 56 acres adjacent to the maximum reservoir storage pool (elevation 3256 feet), as described in the 2006 Biological Opinion for the operation of Brantley Lake (Fig. 1). These two areas were not utilized by terns for nesting in 2006, however at least two nests were attempted within the reservoir pool (Fig. 1). Those nests were ultimately lost to a rising reservoir in early June 2006. Approximately 12 adult Least Terns were observed at Brantley Lake at the time of nest initiation in summer 2006.

Life Requirements

Least Terns are piscivorous and are associated with shallow water areas of rivers, streams and lakes. Generally they feed close to their nesting areas and forage by hovering and diving for fish over standing or flowing water. They are believed to be opportunistic feeders, exploiting any fish species within a certain size range.

Least Terns spend about 4 to 5 months at their breeding sites, arriving from late April to early June. Courtship behavior occurs in the general vicinity of the nest site and involves fish presentations, nest scraping, copulation and a variety of vocalizations. Nests are a shallow and inconspicuous depression in an open sandy area, gravelly patch or exposed flat. Least terns generally nest in colonies; however, colonial nesting is not always the case at BLNWR with single pairs nesting up to 3.5 miles from the next closest nesting terns.

Reproduction

Interior least terns are migratory and breed along the Red, Missouri, Arkansas, Mississippi, Ohio, and lower Rio Grande river systems. Interior Least Terns breed on sand bars in rivers and lake or pond edges free of vegetation.

Least Terns lay 2 to 3 eggs beginning in late May with incubation lasting approximately 20 to 25 days. Tern chicks are semiprecocial and gradually wander away from the nesting territory as they mature. Fledging occurs at about 3 weeks with parental attention continuing until migration.

Critical Habitat

There is no designated critical habitat for the Interior Least Tern.

IV - EFFECTS OF THE PROPOSED ACTION

“Effects of the action” refers to the direct and indirect effects of a proposed action on listed species or critical habitat together with the effects of other activities that are interrelated or interdependent with that action.

The Proposed Action, as described above in section II, identifies when construction starts and ends and also identifies the boundaries of the project. This section describes the effects of the proposed actions on the shiner and tern and their critical habitats.

PECOS BLUNTNOSE SHINER

None of the proposed activities would occur near shiner critical habitat. The construction, operation, and/or maintenance activities of the pipeline that are associated with this project are terrestrial activities that occur within the Brantley Reservoir area and only reach the water's edge at the Brantley inlet and Seven Rivers drainage within the reservoir proper. Any shiner eggs or larvae that end up in Brantley Reservoir as a result of block releases or other inflows probably do not survive since they are not adapted to lake conditions. Take for shiners being incidentally transported into Brantley Reservoir has already been assessed in the Biological Opinion for the Bureau of Reclamation's Proposed Carlsbad Project Water Operations and Water Supply Conservation, 2006-2016. (Cons. # 22420-2006-F-0096) Based on the distribution of the shiner critical habitat in relation to the proposed action, the lack of viable shiners in Brantley Reservoir, and since no construction would occur within Brantley pool, there are no known effects to the shiner or its critical habitat that will occur.

INTERIOR LEAST TERN

There will be two discharge (outfall) areas, the Lewis Farm Outfall to the north which drains into directly into Brantley Reservoir at the inlet and the Seven Rivers Outfall which drains into the Seven Rivers Arroyo (drainage) and then into Brantley Reservoir to the northwest. At the present time, there is no tern nesting sites at the Lewis Farm Outfall.

The alignment of the Price and Home pipeline parallels the Seven Rivers drainage, passing through the drainage to the east and discharging at a location on the south side of the Arroyo, near the mouth of the drain into Brantley Reservoir. The outfall is directly above the southern most, habitat nesting area created by Reclamation for the terns in 2006. The outfall is also directly across the drainage adjacent to the southern most end of the northern habitat nesting area, also created by Reclamation. As described in Section II of the Description of the Proposed Action, the pipeline will be buried at a general depth of 10 to 36 inches. Lateral disturbance of the surface will range from 6 to 30 feet from the centerline of the pipeline depending upon the topography.

The nearest disturbance to either of the created habitats will be within 500 feet as the pipeline alignment approaches the outfall. No personnel, equipment, or vehicles will enter the established tern nesting site areas. Due to the heavy vegetation around each established nesting site, visuals of equipment to the terns will be kept to a minimum. Also, the vegetation surrounding the two sites will act as natural noise abatement to terns which might be assembling in the area prior to the nesting season. Given the minimal disturbance to the area and the timing of the construction activities, there will be no effects to the terns or their courtship or nesting behaviors.

V. DETERMINATION OF EFFECTS

The following determination of effects for the shiner and the tern consider the effects of the proposed action on the listed species together with the effect of other activities that are interrelated or interdependent with the action.

PECOS BLUNTNOSE SHINER

Because there is no critical habitat present, the Pecos bluntnose shiner does not presently survive in Brantley Reservoir and because construction will occur in the dry, implementation of the proposed action will have “**no effect**” on the shiner or its critical habitat.

LEAST INTERIOR TERN

Reclamation’s proposed action, as identified in Section IV Effects of the Proposed Action, seeks to avoid jeopardizing the Interior Least Tern in the project area by completing construction on the Seven Rivers Pipeline Project, on Reclamation (Federal) lands prior to the Interior Least Terns nesting period (on or before May 15, 2007). By completing the above proposed construction prior to May 15, 2007, Reclamation has determined that there will be “**no effect**” on the Interior Least Tern or its existing created habitats. If these construction activities can not be completed prior to May 15, 2007, on Reclamation (Federal) lands, project work must cease till consultation with the Service can be completed or the project would no longer pose a threat to any nesting birds in 2007.



Figure 1. Locations of two created Least Tern nesting and brood-rearing habitat sites adjacent to Brantley Lake (red areas). Sites where terns attempted to nest in 2006 are indicated with yellow circles.