

*2001 Calendar Year Report to the
Pecos River Commission*

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**UNITED STATES DEPARTMENT of the INTERIOR
BUREAU of RECLAMATION**



**Upper Colorado Region
Albuquerque Area Office
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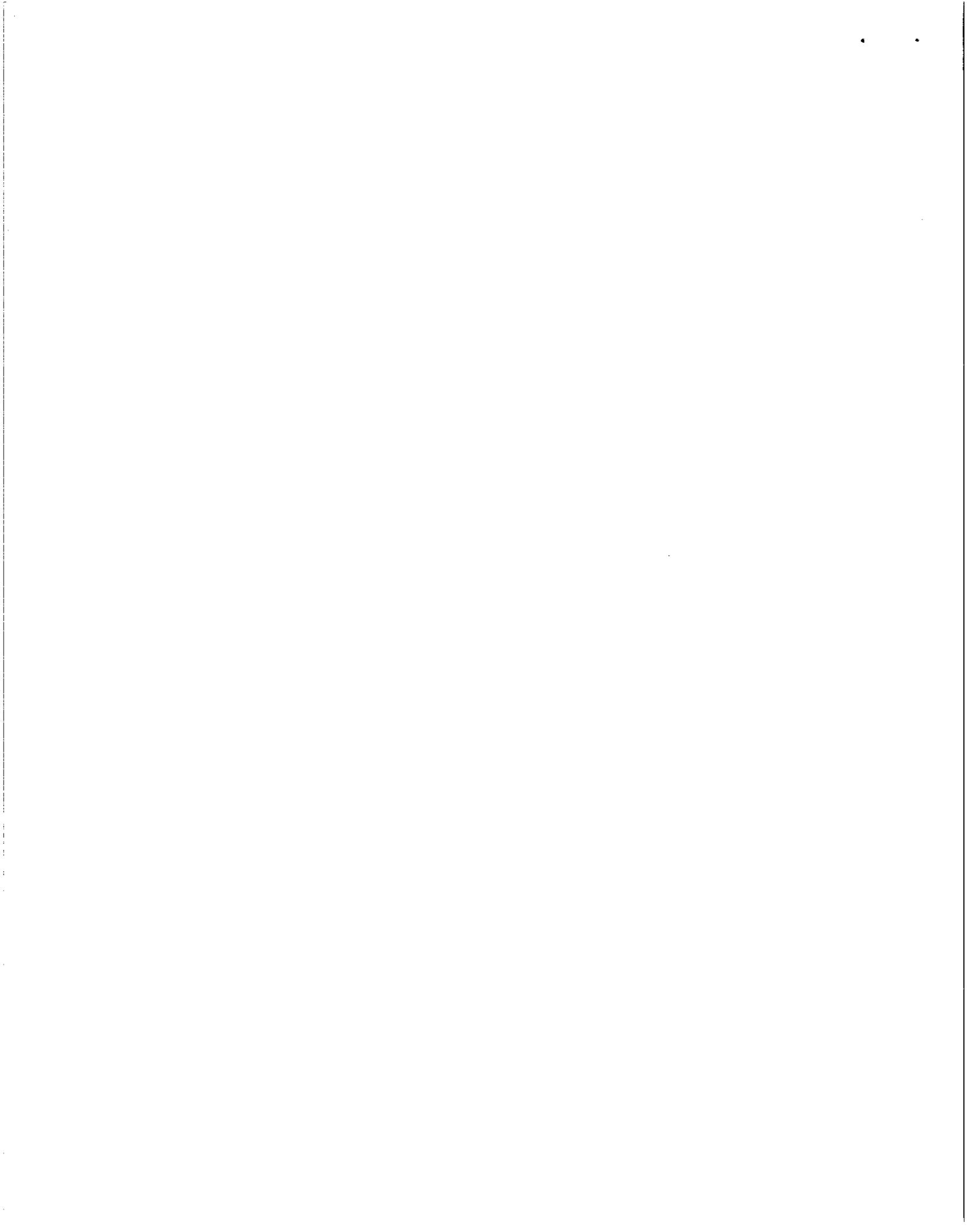


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**U. S. Bureau of Reclamation
Upper Colorado Region - Albuquerque Area Office
2001 Calendar Year Report to the Pecos River Commission**

INTRODUCTION

The Albuquerque Area Office of the Bureau of Reclamation (Reclamation) is responsible for operation, maintenance, and/or oversight of three projects on the Pecos River (Figure 1). These projects are: the *Carlsbad Project*, which includes Sumner, Brantley, and Avalon Dams; the *Pecos River Basin Water Salvage Project*; and the *Fort Sumner Project*.

Reclamation's Carlsbad Field Office continues to report to the Albuquerque Area Office's Water Resource Management Division. An agreement between Reclamation and Carlsbad Irrigation District (CID), finalized on October 2, 1989, provided for CID to operate and maintain Brantley and Sumner Dams, and the Pecos River Water Salvage Project. This contract was implemented during 1990 and has continued during 2001. Reclamation continues to be responsible for assuring that this work is accomplished in compliance with all applicable agreements, contracts, regulations, compacts, and other related laws.

CARLSBAD PROJECT

Crop Production

As of the printing of this report, the Carlsbad Irrigation District had not submitted a 2001 crop census report.

Reservoir Storage Entitlements

All Carlsbad Project reservoirs (Figure 2) were operated in accordance with the requirements of the Pecos River Compact and U.S. Army Corps of Engineers' (COE) flood control criteria.

The COE determines area and capacity tables for Santa Rosa Reservoir. Reclamation calculates annual total conservation storage entitlements for the Pecos River reservoirs that are in New Mexico. Table 1 presents the calendar year 2001 storage entitlements for the four Pecos River Reservoirs.

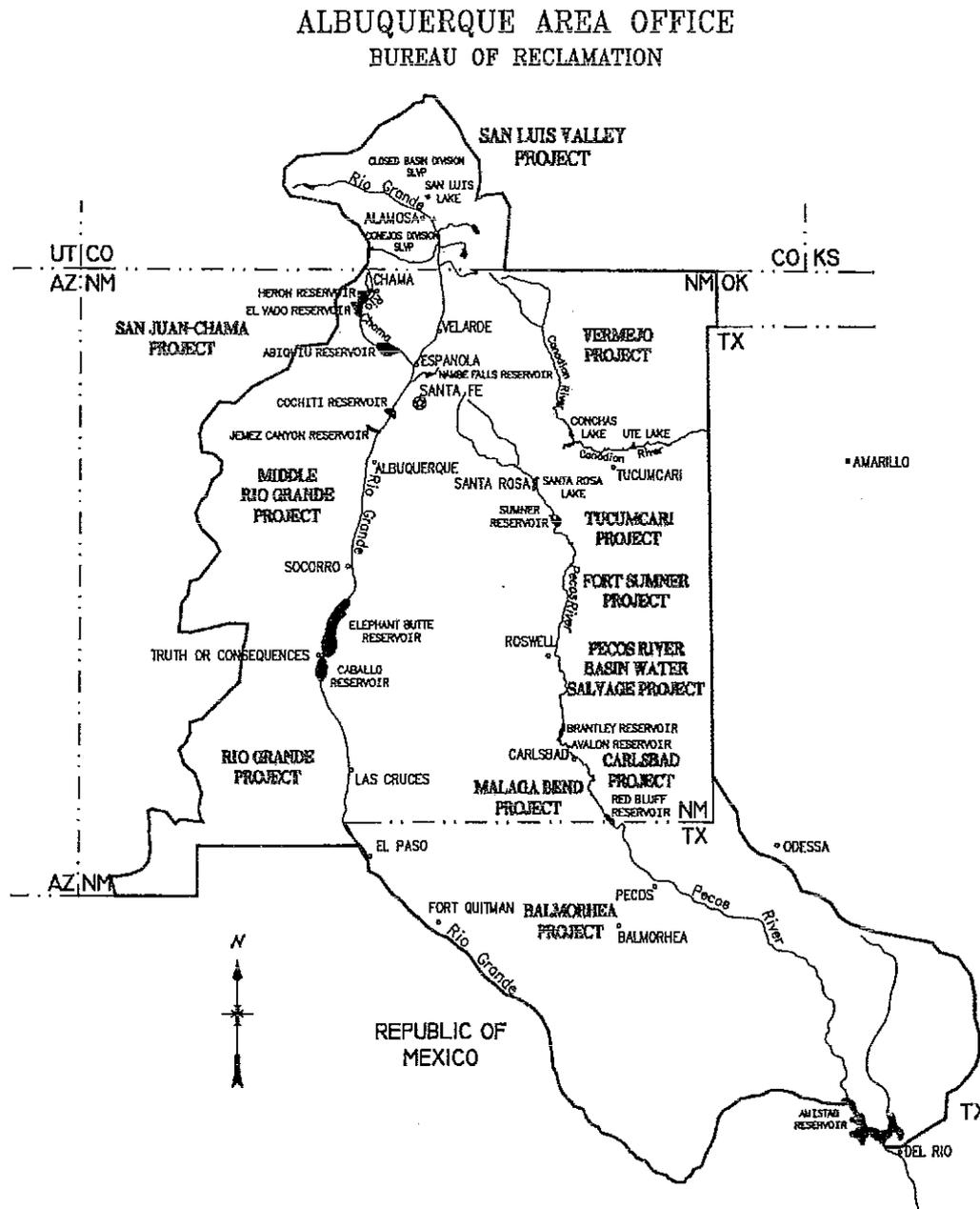


Figure 1. Project map of Reclamation's Albuquerque Area Office.

UNITED STATES
DEPARTMENT OF THE INTERIOR
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ALBUQUERQUE AREA OFFICE

CARLSBAD PROJECT

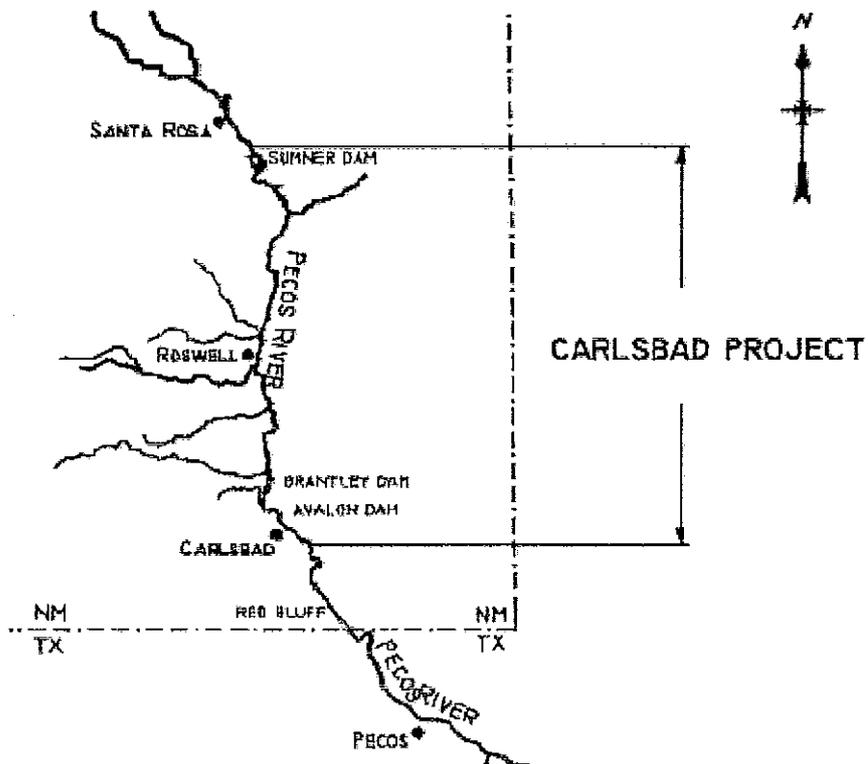


Figure 2. Area map of the Carlsbad Project

Table 1. 2001 Pecos River Reservoir Storage Entitlements.

Reservoir	Entitlement Storage (af)	Minimum Pool (af)	Total Estimated Sediment Accumulation (af)	Total Conservation Storage (af)	Conservation Elevation (feet)
Santa Rosa	98,279	0	2,304	100,583	4,745.95
Sumner	34,355	2,500	6,913	43,768	4,261.00
Brantley	40,000	2,000	12,931	54,931	3,257.49
Avalon	3,866	600	0	4,466	3,117.40
TOTAL:	176,500				

Operation of the dams on the Pecos River is a joint effort between Reclamation, CID, and the COE. The COE has flood control responsibilities at Sumner Dam when the reservoir gets into the exclusive flood pool (elevation 4261.0 to 4282.0 feet (ft); except it is 4267.2 to 4282.0 ft from November 1 through April 30) and at Brantley Dam when the reservoir elevation is above 3271.0 ft up to 3283.0 ft.

The 2000 end-of-year total CID conservation storage in the four Pecos River reservoirs (Santa Rosa, Sumner, Brantley and Avalon) was at 27 percent of entitlement. Sumner, Brantley and Avalon reservoirs on the Pecos River were at approximately 57, 37, and 51 percent, respectively, of each reservoir's entitled conservation storage. The March 1, 2001 forecasted snow melt runoff inflow to Santa Rosa Reservoir for the period March through July was approximately 70,000 acre-feet (af) or 156 percent of the 30-year average. The actual March through July 2001 inflow to Santa Rosa Reservoir was 43,490 af, approximately 97 percent of the 30-year average. On December 31, 2001, the total CID entitlement storage in the four Pecos reservoirs was at 16 percent of entitlement. Sumner, Brantley and Avalon reservoirs were at approximately 22, 16, and 24 percent, respectively, of each reservoir's entitlement storage.

Sumner Dam and Reservoir

The operation of Sumner Dam is to divert to storage available natural inflow above Fort Sumner Irrigation District's (FSID's) allotted water right (up to 100 cubic-feet-per-second (cfs) of the natural inflow above Sumner Reservoir) and when not required to target downstream flows at the United States Geological Survey (USGS) Pecos River near Acme river gage (located 113 miles downstream of Sumner Dam), and to provide irrigation block releases for CID. Reclamation took over the operation of Sumner Dam on November 12, 1998 to assure compliance with the Endangered Species Act (ESA) and provide bypasses

for the threatened Pecos bluntnose shiner. Reclamation continues to direct the CID dam tender on gate adjustments and the CID continues to be responsible for all maintenance activities. This operating procedure does not alter the normal operations of Santa Rosa and Brantley Reservoirs for the purpose of delivering water to CID.

Under a water right permit granted by the State of New Mexico, CID is allowed to store up to an additional 20,000 af in Sumner Reservoir from November 1 to April 30 each year, provided that the entitled conservation storage of all four reservoirs on the Pecos River in New Mexico does not exceed 176,500 af. No additional storage under this water right permit occurred in 2001.

Sumner Reservoir began the year with 28,720 af in total storage. Winter season ESA-related bypasses had been initiated on December 6, 2000, and were discontinued on February 28, 2001. FSID began calling for water on March 18, 2001, and discontinued irrigating on October 31, 2001. FSID's allotment ranged from 80 to 100 cfs for the year. Irrigation season ESA-related bypasses began on April 23, and continued throughout the summer season when needed and available. Two CID block irrigation releases were completed in calendar year 2001, totaling approximately 70,400 af (Figure 3). The first CID block release of the 2001 irrigation season was initiated on May 13. The irrigation block releases ranged in duration from 10 to 15 days at a discharge of approximately 1,200 to 1,500 cfs (which includes FSID's allotment). Sumner Reservoir reached a maximum total storage of 40,627 af on March 19. Sumner Reservoir's lowest total storage was on October 31, at a volume of 3,201 af. Sumner Reservoir end-of-year total storage was 10,158 af.

When applying the 2001 estimated accumulated sediment volume, Sumner Reservoir dropped below the minimum pool on June 15, and remained below that level for most of the irrigation season. Water was not being released for CID during the periods when Sumner Reservoir was below the minimum pool. Visual inspection of the reservoir indicated that the actual volume of water was greater than the calculated storage due to over-estimating the sediment accumulation. Implementation of the newly developed May 2001 Area and Capacity Tables (discussed later in this section) illustrated that the sediment accumulation was being over-estimated. FSID's water quality and operations were not impacted during the periods in which the calculated volume of water was below the minimum pool.

A total of approximately 587 af were bypassed for ESA-related purposes during the winter season from November 1, 2000, through February 28, 2001. A total of approximately 3,640 af were bypassed during the 2001 irrigation season. The effects of these modified operations on the Carlsbad Project water supply are discussed in **Reclamation's Water Offset Program** section. Reclamation has committed to keep the Carlsbad Project water supply whole, and has leased water from river pumpers and the Hagerman Irrigation Company in 2001 to replace the depletions associated with the modified operations.

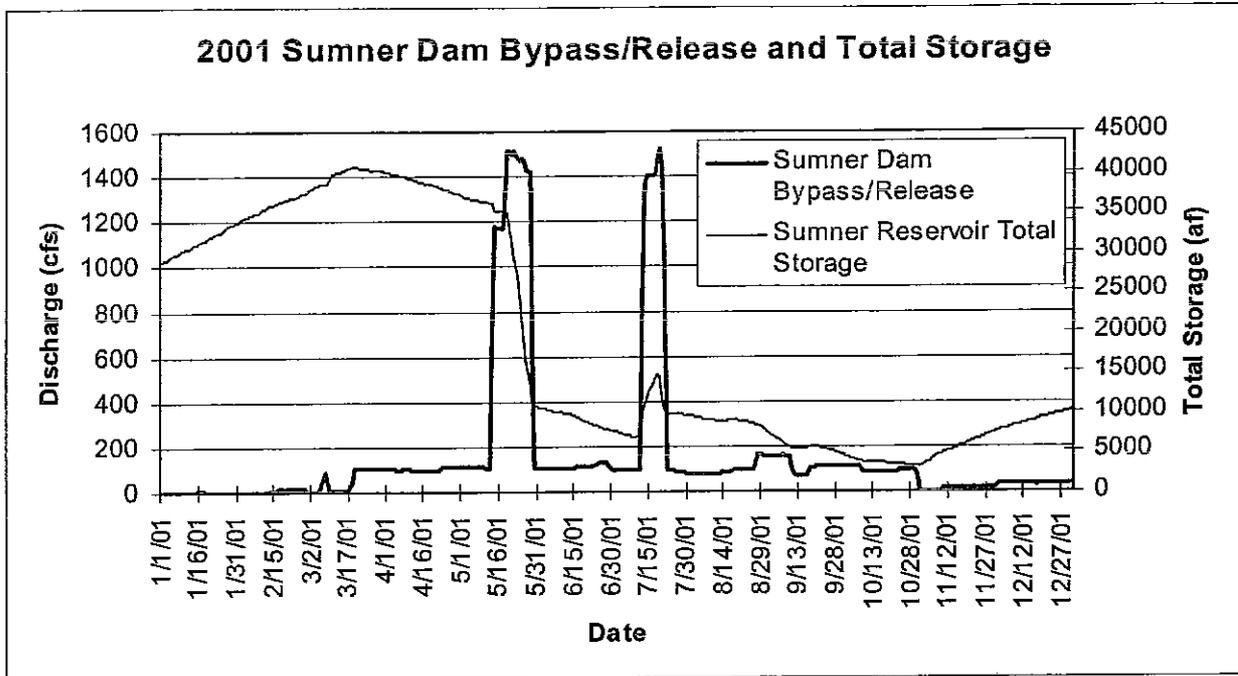


Figure 3. Calendar year 2001 Sumner Dam bypass/release and total storage.

A topographic survey of Sumner Reservoir was completed in May of 2001. The May 2001 Area and Capacity Tables became effective on November 1, 2001. The May 2001 Sumner Reservoir topographic survey and corresponding Area and Capacity Tables are referenced to the North American Vertical Datum of 1988 (NAVD 88). The previous August 1992 Area and Capacity Tables were referenced to approximately the National Geodetic Vertical Datum of 1929 (NGVD 1929). The May 2001 survey resulted in Area and Capacity Tables similar to the August 1992 tables, illustrating the over-estimation of sediment inflow in the sediment calculations. In March 2001, the sediment accumulation since the previous survey was calculated to be 6,913 af. The actual accumulation, as determined from the May 2001 survey, was 814 af. A new sediment-inflow relationship was developed to estimate annual sediment accumulation in Sumner Reservoir based on river flows. This relationship will be used in future water accounting starting in 2002.

Sumner Dam Facility Review and Safety of Dams Programs

A field examination of outlet works was completed on November 6, 2001, to evaluate the penstock coatings. In general, the coatings were in satisfactory condition, though some limited surface corrosion was identified. It was determined that the current conditions of the penstock were sufficient to initiate winter bypasses. Reclamation will initiate a process

in 2002 to develop methods to allow for the bypass of flows through Sumner Dam while performing penstock maintenance.

A monitoring program was started for the concrete cracking in the access tunnel at Sumner Dam. This program will assess if any testing of the concrete is to be performed.

A Sumner Dam periodic facility review is scheduled to begin in mid-year 2002.

Brantley Dam and Reservoir

The operations of Brantley Dam are the bypass of mitigation flows for the construction of Brantley Dam (20 cfs) during periods without irrigation releases and the release of water for use in CID. During the irrigation season (normally March through October), releases are made from Brantley Dam to Avalon Reservoir at the rate necessary to support the diversion into the CID's main canal, generally between 75 and 350 cfs, as required by irrigation demand (Figure 4). Additionally, Brantley Dam releases are initiated to deliver allotted water contracted by the New Mexico Interstate Stream Commission (NMISC) to the New Mexico-Texas state line (see **Carlsbad Irrigation District Water Lease Program** section). In December 2001, releases from Brantley Dam were also made to assist the NMISC in meeting its Pecos River Compact obligations (see **Water Release and Replacement Agreement for State Line Delivery** section).

The COE has flood operation responsibility once the reservoir rises into the flood pool, as identified by the COE in their Water Control Manuals for Brantley Dam. Even though the top of the conservation or entitlement pool for Brantley Reservoir was 3,257.49 ft (NGVD 29) for 2001, the COE does not recognize its flood operations control responsibility to start until the reservoir reaches elevation 3,271 ft which is the projected top of conservation after 100 years of sediment buildup. Therefore, Reclamation has flood operation control responsibility below elevation 3,271 ft to the top of the entitlement pool, which is adjusted each year for sediment.

Brantley Reservoir began the year with a total storage of 28,532 af. Brantley Dam irrigation releases were initiated on March 30, and discontinued on October 31. Approximately 81,750 af were released for irrigation during this period. Approximately 6,800 af were released in November to deliver unused allotment water leased by the NMISC to the New Mexico-Texas state line. Approximately 2,700 af were released in December to deliver end-of-year water to the New Mexico-Texas state line per the water exchange agreement with the NMISC. Brantley Reservoir reached a maximum total storage of 39,400 af on June 2. Brantley Reservoir's lowest total storage was on November 21 at a volume of 6,780 af. Brantley Reservoir end-of-year total storage was 8,471 af.

A topographic survey of Brantley Reservoir was completed in June 2001. The June 2001 Area and Capacity Tables became effective on September 1, 2001. The June 2001

Brantley Reservoir topographic survey and corresponding Area and Capacity Tables are referenced to the NAVD 88. The previous June 1992 Area and Capacity Tables were referenced to approximately the NGVD 1929. The June 2001 survey resulted in Area and Capacity Tables similar to the June 1992 tables, illustrating the over-estimation of sediment inflow in the sediment calculations. In March 2001, the sediment accumulation since the previous survey was calculated to be 12,931 af. The actual accumulation, as determined from the June 2001 survey, was 3,265 af. A new sediment-inflow relationship was developed to estimate annual sediment accumulation in Brantley Reservoir based on river flows. This relationship will be used in future water accounting starting in 2002.

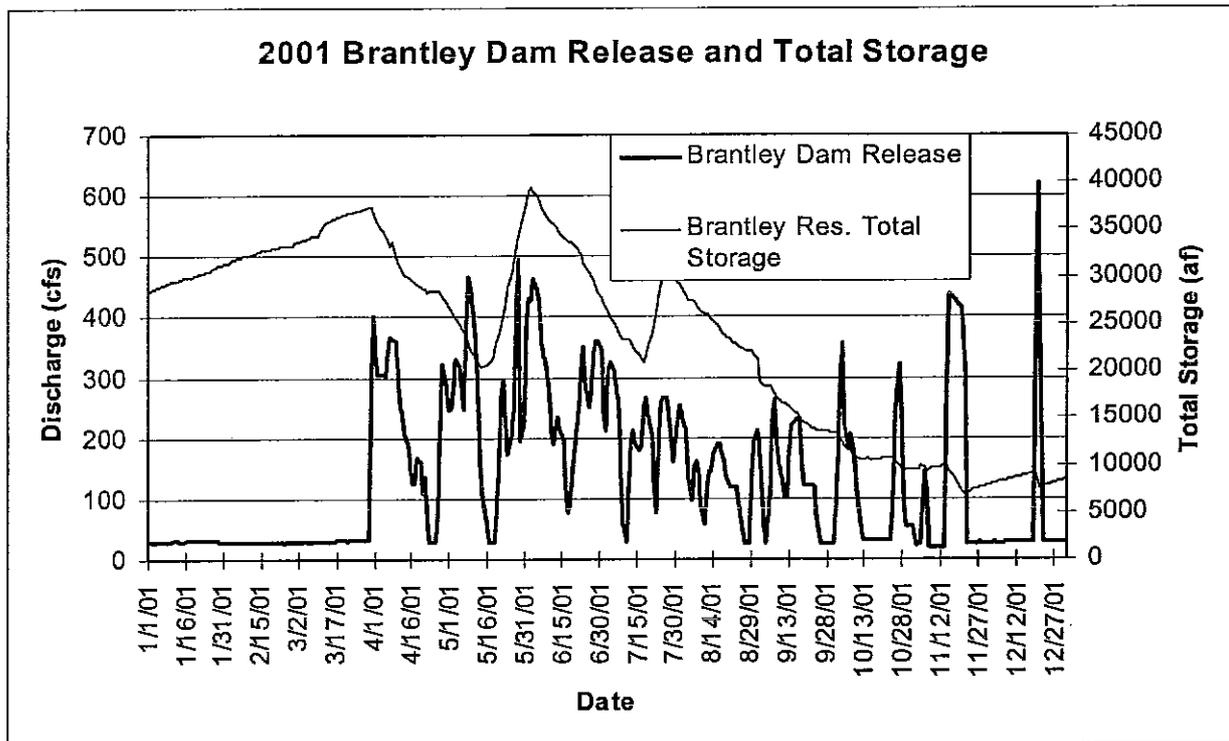


Figure 4. Calendar year 2001 Brantley Dam releases and total storage.

Brantley Dam Facility Review and Safety of Dams Programs

An annual inspection was completed in 2001 with no significant issues identified. A periodic facility review for Brantley Dam is scheduled to begin in mid-year 2002. The sinkholes downstream and upstream of the left end of Brantley Dam are being monitored visually and include yearly surveying.

Avalon Dam

Avalon Reservoir began the year with a conservation storage of 1,988 af. Due to the small reservoir capacity and the location of Brantley Dam 10 miles upstream, Avalon Dam is used primarily as a diversion dam to meet irrigation demand for the CID. Water is released from Brantley Dam and the small reservoir at Avalon is used to fine tune the releases into the CID Main Canal. Diversions into the CID Main Canal began on March 26, and ceased on October 31, totaling 71,370 af.

Releases for the NMISC and CID lease agreement (see **Carlsbad Irrigation District Water Lease Program** section) are also controlled from this dam. Approximately 6,880 af of leased allotment water were released from Avalon Dam for state line deliveries in November. Additionally, approximately 2,900 af were released in December to deliver end-of-year water to the New Mexico-Texas state line per the water exchange agreement with the NMISC (see **Water Release and Replacement Agreement for State Line Delivery** section). A total of 9,780 af of water was released from Avalon Dam directly to the Pecos River in 2001. Avalon Reservoir end-of-year total storage was 1,525 af.

Avalon Dam Facility Review and Safety of Dams Programs

The Safety of Dams modification to install the dam embankment erosion protection on the right side of spillway #1 began with the contract awarding in October 2001. Construction and final Inspection of the work was completed on January 17, 2002. A periodic facility review for Avalon Dam is scheduled to begin in mid-year 2002.

Carlsbad Irrigation District Title Transfer

Public Law 106-220 was enacted on June 20, 2000, to authorize the Secretary of the Interior (Secretary) to convey certain real property within the Carlsbad Project in New Mexico to the CID and is cited as the "Carlsbad Irrigation Project Acquired Land Transfer Act." The Carlsbad Project includes Sumner Dam and Sumner Reservoir, McMillan Dam and Lake McMillan (subsequently breached and replaced by Brantley Dam and Brantley Reservoir), and Avalon Dam and Avalon Reservoir. The CID operates and maintains Brantley Dam and Reservoir, Avalon Dam and Reservoir, and the irrigation and drainage system of the Carlsbad Project. In summary, P.L. 106-220 authorized the Secretary to convey to the Carlsbad Irrigation District the right, title, and interest of the United States in and to certain acquired lands and all interests the United States holds in the irrigation and drainage system of the Carlsbad Project and all related lands, together with ditch rider houses, maintenance shop and buildings, and the Pecos River Flume. The lands conveyed are to continue to be managed and used by the CID according to the purposes for which the Carlsbad Project was authorized, on the basis of historical operations and in a manner consistent with the management of other adjacent Carlsbad Project lands.

Reclamation completed the transfer of lands to the CID pursuant to P.L. 106-220 on July 18, 2001. An Environmental Assessment (EA) was prepared and evaluated the transfer of certain real property, including interest and ownership of acquired lands and irrigation facilities within the Carlsbad Project in Eddy County, New Mexico, from the United States to the CID. The transfer involved about 6,000 acres of land in the area of Brantley and Avalon Reservoirs and an irrigation distribution and drainage system south of Carlsbad, comprising approximately 1,200 acres of fee and easement interests. The total irrigation and drainage system includes 151 miles of laterals, 37 miles of canals, and 24 miles of drains. The system is used to irrigate 25,055 acres of land between Avalon Reservoir and Malaga, along the west side of the Pecos River.

CARLSBAD PROJECT ENVIRONMENTAL COMPLIANCE ACTIVITIES

Endangered Species Program for Water Operations

Water operations during the year included bypassing a portion of Sumner Reservoir inflows when needed and available to target an average flow of 35 cfs at Acme for the Pecos bluntnose shiner. Block irrigation releases from Sumner Reservoir did not last longer than 15 days and were timed to avoid a portion of the threatened Pecos bluntnose shiner peak summer spawning period. Reclamation completed consultation with the U.S. Fish and Wildlife Service (FWS) for both the 2000-2001 winter operations and the 2001 irrigation season operations.

Back-to-back drought years caused the Pecos River to go intermittent for the first time in 10 years (as recorded by the USGS Acme gage). The event occurred during the middle of July for a period of four days. The FWS surveyed a 28.5-mile stretch of the river from Bosque Draw Confluence to the Bitter Lake National Wildlife Refuge New Scout Camp. Their report identified intermittent sections from the Mayhill Road near the Lynch Ranch to near Acme Gage as recorded on July 12, 2001. Reclamation moved forward a block release to transport water for irrigation in CID. The release did not prevent the intermittent event, however, the block release did end the intermittence that was occurring.

The U.S Fish and Wildlife Service, Fisheries Resource Office, made a total of six monitoring trips throughout the 2001 Irrigation Operations season. The monitoring trips focused on the fish community between Sumner Dam and Brantley Reservoir. The data collected in this monitoring effort was analyzed and used to determine the status (both short- and long-term) of the Pecos bluntnose shiner. Currently, the Pecos bluntnose shiner population appears to be stable. The analyzed data will be incorporated into the decision making process of seasonal water operations and its effect on the shiner. Additionally, the Service, in cooperation with the New Mexico Department of Game and Fish (NMDGF), monitored the river between Five Mile Draw and the lower end of the Bitter Lake National Wildlife Refuge during a four-day intermittent event.

National Environmental Policy Act (NEPA) Activities for Water Operations

During 2001, Reclamation and the NMISC attempted to reach an agreement to serve as joint lead agencies for preparation of an Environmental Impact Statement (EIS) for Pecos River Water Operations/Management. To date, an agreement has not been signed. However, with recent developments of the Pecos River Ad Hoc Committee and the State Legislature, NMISC and Reclamation are renewing discussions and developing a new NEPA compliance strategy that will address issues facing each agency. Meanwhile, EIS technical work groups continued some tasks. In particular, the hydrology work group made substantial progress in model development.

Biological Resources Working Group

The Biological Resources Working Group (BRWG) is a technical work group of the Pecos EIS. The BRWG is made up of biologists and representatives of Reclamation, FWS, COE, NMDGF, NMISC, and CID, and is co-chaired by biologists representing Reclamation and NMISC. Although the BRWG was established to address all biological resources, in 2001, work focused on the Pecos bluntnose shiner. An objective of the BRWG is to review existing data and reports prepared by the FWS and develop methods to help formulate and evaluate water management scenarios.

The BRWG compiled a list of questions based on each participant's review of the draft final report of the study conducted by the FWS from 1992 to 1997 and sought dialogue with the author so that the BRWG could adequately assess the contents of the report. This document represented the first organized effort to produce a draft compilation of questions that have been raised by BRWG participants who took part in the review process. The final revised draft of this report was completed in January 2002 and submitted to Reclamation for comments. The BRWG will again meet in April 2002 to review this document and provide comments to the proposed Pecos EIS management team.

Pecos River Hydrology Working Group

The Hydrology Working Group (HWG) consists of representatives from Reclamation, NMISC, New Mexico Office of the State Engineer (NMOSE), COE, CID, Pecos Valley Artesian Conservancy District (PVACD), and FWS. The HWG was formed in January 2000 to further develop the river and operations simulation computer model (RiverWare) of the Pecos River from Santa Rosa Lake to Avalon Dam. In 2001, the HWG continued reviewing the current RiverWare model and studying processes in the Pecos basin that affect the water supply and river flows. The focus was primarily on side inflows, model performance, and operations rules.

During 2001, the Pecos River RiverWare model was used to monitor the impacts of the November 1, 1999 through October 31, 2000, modified operations. In addition to assessing the impacts to Carlsbad Project water supply, this process develops the accounting methodologies that will be important when using the model to evaluate alternatives for the current water operations NEPA process.

National Environmental Policy Act Activities for Resource Management Plan

On September 29, 2000, a draft EA for the Brantley/Avalon Resource Management Plan was released to the public for comment. In addition, a Biological Assessment has been prepared and submitted to the FWS for their review and approval. The draft EA identified four management alternatives including A) No Action, B) Resource Conservation

Emphasis, C) Multipurpose Emphasis, and D) Recreational Development Emphasis. Reclamation is presently reviewing the comments received on the draft EA and anticipates completing the Final EA and the Resource Management Plan by the end of 2002.

Endangered Species Act Related Litigation

Forest Guardians v. United States Army Corps of Engineers, et al., Civ No. 00-746 JP/RLP

The Bureau of Reclamation is named, along with the COE, in the complaint which alleges that federal defendants have failed to comply with ESA consultation requirements and have operated the reservoirs without completing consultation for the Pecos bluntnose shiner. The parties, including the COE, Reclamation, the Forest Guardians, and the NMISC as an intervening party, requested mediation discussions be ordered. Participating in settlement discussions also are the FWS, CID, and FSID. Conditions of the Stipulation of Settlement, signed by all parties on April 27, 2001, were met when the Service issued the Biological Opinion. The lawsuit between the Forest Guardians, the COE, and Reclamation was dismissed on August 14, 2001.

Forest Guardians v. Bureau of Reclamation, et al. - 60-Day Notice of Intent to Sue Regarding Inadequate Consultation Efforts Regarding the Effects of the Bureau of Reclamation's and the Corp of Engineers' Operation of Fort Sumner and Santa Rosa Dams and Other Related Actions in the Pecos River Basin, Filed September 24, 2001.

The Bureau of Reclamation is named along with the COE in this Notice of Intent which is intended to bring a civil action for violations of the ESA and its implementing regulations. The plaintiffs claim that Reclamation and the COE's actions and or inactions "with respect to the management, operation, administration, authorization, construction, reconstruction, repair, funding, and/or other activities or failures to act within or impacting the Pecos River from Brantley Reservoir upstream," are impacting the threatened fish and wildlife dependent upon the Pecos River. They also claim that Reclamation and the Corps have failed to "consult adequately with the FWS over the full agency action." The end of the 60-day notice occurred on November 23, 2001. No official complaint has been filed to date.

PECOS RIVER BASIN WATER SALVAGE PROJECT

Under the authority of Public Law 88-594, Reclamation continues to control saltcedar growth from the Sumner Dam area to the New Mexico-Texas state line. This excludes the area between the Artesia bridge and north boundary of Reclamation's Brantley lands. Reclamation contracts with the CID to perform the mechanical removal work. Saltcedar removal is primarily accomplished utilizing rubber-tire tractors with root plows, and a D-7 caterpillar with a rake attachment.

Pecos River lands cleared in New Mexico total approximately 33,230 acres. Acreage cleared by Reclamation, south of the New Mexico-Texas state line, totaled about 14,000 acres. The State of Texas presently addresses saltcedar clearing on these areas. Federal lands in the program make up about 36 percent of the cleared areas, and private lands make up about 64 percent.

The original authorizing legislation allowed clearing for approximately 58,000 acres, but was reduced by litigation brought by the Audubon Society and the completion of an EIS in 1977. Future additional clearing would require further legislation. The current expenditure for maintaining the cleared areas of saltcedar is about \$9.75 per acre, for a total budget of about \$325,000, of which about one half continues to be funded by the NMISC.

NMISC continues to fund Reclamation's involvement in obtaining annual cooperative agency agreements from private landowners for the Pecos River Basin Water Salvage Program.

Although the program did not achieve the original acreage intended, the Water Salvage Project is, to date, the largest, and most successful effort to control the growth of saltcedar in the Pecos Valley.

FORT SUMNER PROJECT

Crop Production

As reported by the FSID, the crops grown in 2001 were alfalfa hay, other hay, irrigated pasture, cantaloupe, watermelon, honey ball and honeydew melons, oats, nursery, and pecans. Out of a total irrigable area of 6,500 acres, 5,731 acres were irrigated in 2001. Total gross crop related income was approximately \$2,518,200. The average crop value per irrigated acre is approximately \$440. Of the total water diverted, 29,113 af were delivered to the irrigated lands, for a total of 5.1 af delivered per irrigated acre.

Operations

The irrigation season for FSID typically begins March 1 and ends October 31. FSID is also allowed to divert for two, eight-day periods during the winter. This winter right is usually taken just prior to the March 1 irrigation season. During irrigation season, 80 to 100 cfs is usually bypassed through Sumner Reservoir depending on demand or FSID's available water right. FSID began calling for water on March 18, 2001 and discontinued irrigating on October 31, 2001. FSID's allotment ranged from 80 to 100 cfs for the year (Figure 5). A total of 40,562 af were diverted into the FSID Main Canal as recorded at the USGS Fort Sumner Main Canal Near Fort Sumner, NM gage.

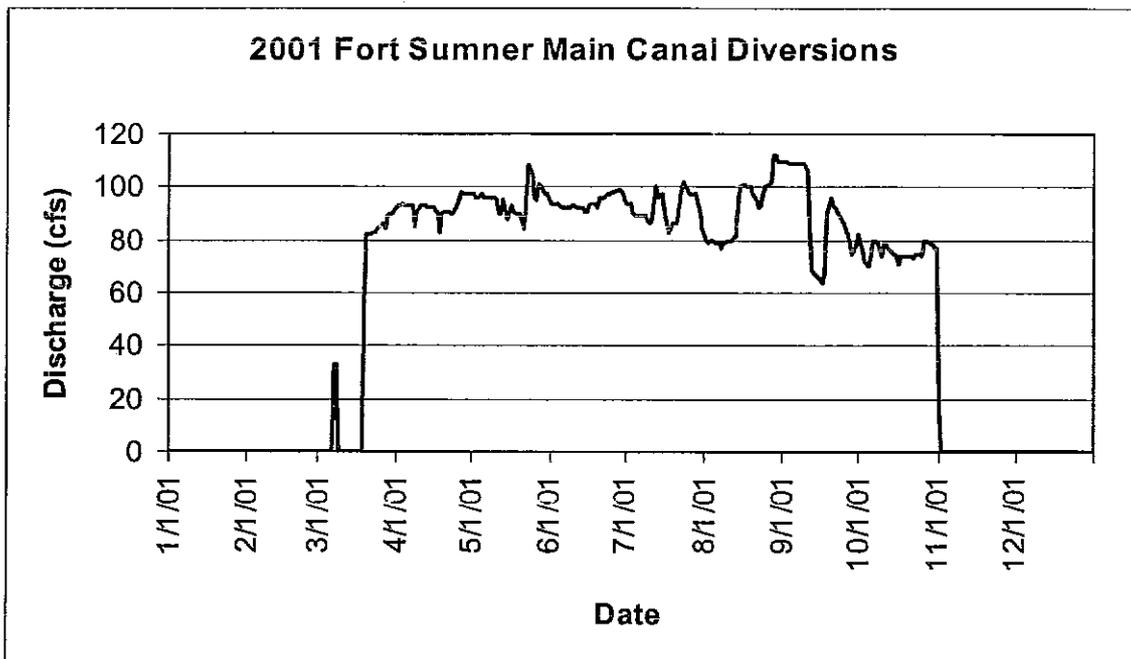


Figure 5. Fort Sumner Irrigation District 2001 diversions.

OTHER PECOS RIVER ACTIVITIES AND OPERATIONS

Reclamation's Water Offset Program

Reclamation continued its best effort to offset the additional depletions to the Carlsbad Project water supply associated with the ESA-related modified operations of Sumner Dam through a water offset program. During 2001, agreements were reached with six Pecos River pumpers to lease the water rights associated with 1,255.4 acres. Agreements were also made with Hagerman Irrigation Company (HIC) irrigators to lease the water rights associated with 835 acres. During the November 1, 2000, through October 31, 2001, accounting period, only 25 percent of the leased HIC water was delivered to the river (the rights associated with approximately 205 acres). Applying a consumptive irrigation requirement of 2.1 af/acre to the 1,255.4 acres associated with the river pumpers and the 205 acres associated with the HIC deliveries applicable for the 2001 accounting period, an offset credit of approximately 3,065 af is realized.

Reclamation also leased groundwater rights associated with 300 acres located approximately 15 miles upstream of the Acme gage. Approximately 220 af were pumped to the Pecos River between August 2 and November 2. The land fallowing and pumping operation associated with the groundwater lease did not increase or decrease the Carlsbad Project water supply in 2001.

General calculations show that Reclamation's water offset program was successful in offsetting the additional depletions incurred by the modified operations of Sumner Dam for the period November 1, 2000, through October 31, 2001. In general, the bypass flows are approximately 50 percent as efficient as block releases. The bypass of approximately 4,227 af resulted in approximately 2,115 af of additional depletions to the Carlsbad Project water supply. Reclamation's water acquisition credit of approximately 3,065 af offsets the additional depletions. Reclamation and NMISC staff are working together to finalize the accounting. The Pecos River RiverWare model is being used in the final accounting. Preliminary model runs, which incorporate other processes (e.g., transport and storage losses) not included in the previously described general accounting, indicate that the offset credit was greater than the additional depletions by approximately 300 af.

Reclamation's water offset program and modified operations to benefit the Pecos bluntnose shiner have been negatively affected by the New Mexico Office of the State Engineer's permitting the change of place and purpose of use of Pecos River waters. A largely unused Pecos River direct diversion right for irrigation was moved to a location approximately three miles upstream of the Acme gage location, in a stretch of the Pecos most prone to intermittence, for road construction purposes. This additional diversion reduces the flows of the Pecos River and diminishes Reclamation's ability to supplement Carlsbad Project supply.

Carlsbad Irrigation District Water Lease Program

Reclamation and CID entered into a 5-year agreement on February 9, 1999, which authorizes the conversion of Carlsbad Project water from irrigation to miscellaneous purposes and uses other than irrigation. This agreement is an umbrella contract which allows individual yearly contracts with the NMISC. A three-party agreement among CID, Reclamation, and NMISC for the 2001 water year was entered into on May 3 to lease from CID water allocated and available to CID but uncalled for by its users (undelivered allotment water). Approximately 6,800 af of water were released to the Pecos River in November 2001, for delivery to the New Mexico-Texas state line.

Water Release and Replacement Agreement for State Line Delivery

In December 2001, Reclamation signed a water release and replacement agreement with CID and the NMISC that allowed release of 2,500 af of water from Avalon Dam for end-of-year state line delivery. The NMISC replaced the released water by purchasing groundwater from Seven Rivers Inc. and delivering it to Brantley Reservoir. Delivery of the replacement water was completed on February 18, 2002.

Ad Hoc Pecos River Basin Committee

Reclamation is participating in the ad hoc committee convened by NMISC to develop a consensus plan for continuing to meet New Mexico's Compact obligations. Implementing the ad hoc committee's plan for the longer term will require a conversion contract allowing release of Carlsbad Project water allotted to lands that the NMISC proposes to purchase. Preliminary discussions relating to the conversion contract and the required NEPA compliance have taken place between Reclamation and the NMISC.

Pecos River Basin General Stream Adjudication

State of New Mexico, ex rel. the Office of the State Engineer and Pecos Valley Artesian Conservancy District v. L. T. Lewis, et al. and the United States of America
Case Nos. 20294 and 22600 (Consolidated).

The Pecos River General Stream Adjudication (State Engineer v. L.T. Lewis) is ongoing in the 5th Judicial District Court in Chavez County, New Mexico. Reclamation is involved in this case as record title holder of the water rights for the Carlsbad Project.

Brantley Reservoir Water Quality Monitoring

Weekly monitoring of water quality has been ongoing since 1997 under contract to the Carlsbad Environmental Monitoring and Research Center of New Mexico State University. Total dissolved solids, salinity, specific conductivity, temperature, dissolved oxygen, and

pH data are collected each week at locations in the inflow to the lake, the outflow below the dam, and at 5-ft depth intervals at the dam. Data are provided to CID, Brantley Dam and Reclamation in Albuquerque. Quarterly and annual reports were received by Reclamation in 2001.

