

RECLAMATION

Managing Water in the West

Calendar Year 2008 Report to the Pecos River Commission

NEW MEXICO

James D. Renfrow

TEXAS

Julian W. Thrasher, Jr.

FEDERAL CHAIRMAN

Charles A. Calhoun



Department of the Interior
Bureau of Reclamation
Upper Colorado Region
Albuquerque Area Office
Albuquerque, New Mexico

April 2009

MISSION STATEMENTS

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

RECLAMATION

Managing Water in the West

2008 Calendar Year Report to the Pecos River Commission

**Department of the Interior
Bureau of Reclamation
Upper Colorado Region
Albuquerque Area Office
Albuquerque, New Mexico**

April 2009



Information contained in this document regarding commercial products or firms may not be used for advertising or promotional purposes and is not an endorsement of any product or firm by the Bureau of Reclamation.

The information contained in this document was developed for the Bureau of Reclamation; no warranty as to the accuracy, usefulness, or completeness is expressed or implied.

Table of Contents

TABLE OF CONTENTS i

LIST OF TABLES iii

LIST OF FIGURES iii

INTRODUCTION..... 1

PECOS BASIN WATER ACCOUNTING..... 1

CARLSBAD PROJECT OPERATIONS 3

Crop Production 3

Reservoir Storage Entitlements 4

Sumner Dam and Reservoir..... 8

 Sumner Dam Operations 8

 Sumner Dam Facility Review and Safety of Dams Programs 10

Brantley Dam and Reservoir..... 10

 Brantley Dam Operations 10

 Brantley Dam Facility Review and Safety of Dams Programs 11

Avalon Dam and Reservoir 12

 Avalon Dam Operations 12

 Avalon Dam Facility Review and Safety of Dams Programs 13

CARLSBAD PROJECT ENVIRONMENTAL COMPLIANCE..... 14

Endangered Species Program for Water Operations 14

 Pecos bluntnose shiner 14

 Bitter Lake National Wildlife Refuge (NWR) Restoration Project..... 14

 Interior Least Tern..... 15

National Environmental Policy Act (NEPA) Activities 16

 Pecos River Channel Restoration at Bitter Lakes National Wildlife Refuge

Environmental Assessment.....	16
Pecos Supplemental Water Environmental Assessment (EA).....	17
PECOS RIVER BASIN WATER SALVAGE PROJECT.....	19
Carlsbad Project Vegetation Management Program	19
FORT SUMNER PROJECT.....	21
Crop Production	21
Operations.....	21
Fort Sumner Irrigation District Review of Operation and Maintenance Program.....	22
OTHER PECOS RIVER ACTIVITIES AND OPERATIONS.....	23
Reclamation’s Water Offset Program	23
Carlsbad Irrigation District Water Lease Program.....	24
Water Release and Repayment Agreement for State Line Delivery	24
Pecos River Basin General Stream Adjudication	24
Endangered Species Act Related Litigation.....	25
Water 2025.....	25
Emergency Drought Relief Program.....	26

List of Tables

Table 1. 2008 Pecos River Storage Entitlements. 4

List of Figures

Figure 1. Project map of the Reclamation’s Albuquerque Area Office..... 2
Figure 2. Area map of the Carlsbad Project. 3
Figure 3. 2008 Sumner Dam bypass/release and total storage..... 9
Figure 4. 2008 Brantley Dam bypass/releases and total storage 11
Figure 5. 2008 Carlsbad Irrigation District Main Canal Diversions 12
Figure 6. 2008 Fort Sumner Irrigation District Diversions 22

Introduction

The Albuquerque Area Office of the Bureau of Reclamation (Reclamation) is responsible for operation, maintenance, and oversight of three projects on the Pecos River. 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*, which includes the Fort Sumner Diversion Dam. Figure 1 *Project Map of Reclamation's Albuquerque Area Office* depicts the general location of Reclamation's Projects under the Albuquerque Area Office's jurisdiction.

This Annual Report to the Pecos River Compact Commissioners is intended to convey all reporting requirement information on the three projects mentioned above, as well as inform the Commission of proposed changes in programs and management activities and strategies that may affect operations, operating conditions, and/or the Compact, including ESA issues.

Reclamation's Carlsbad Field Office now reports to the Albuquerque Area Office's Facilities and Lands Division. An agreement between Reclamation and Carlsbad Irrigation District (Carlsbad District), finalized on October 2, 1989, provided for the Carlsbad District to operate and maintain Brantley Dam, Avalon Dan, Sumner Dam, and the Pecos River Water Salvage Project. 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.

Reclamation also has a Resource Management Planner working in support of the Bureau of Land Management (BLM) in BLM's Carlsbad Field Office as lead for Reclamation in the implementation of Section 365 of the Energy Policy Act of 2005 Pilot Project. This position coordinates with and assists BLM to identify efficiencies in processing oil and gas leasing and development activities.

The gage data used within this report is provisional and was downloaded from the United States Geological Service web page, <http://waterdata.usgs.gov/nm/nwis/dv>. The reservoir elevation data, which is provisional as well, is recorded by the dam tender and reported to Reclamation on a monthly basis.

Pecos Basin Water Accounting

Reclamation and the State of New Mexico Interstate Stream Commission have nearly concluded negotiation on a 5-year Depletions Agreement for ESA water use (2006-2012). A draft Pecos River Annual Accounting method document and a draft User's Manual have been produced.

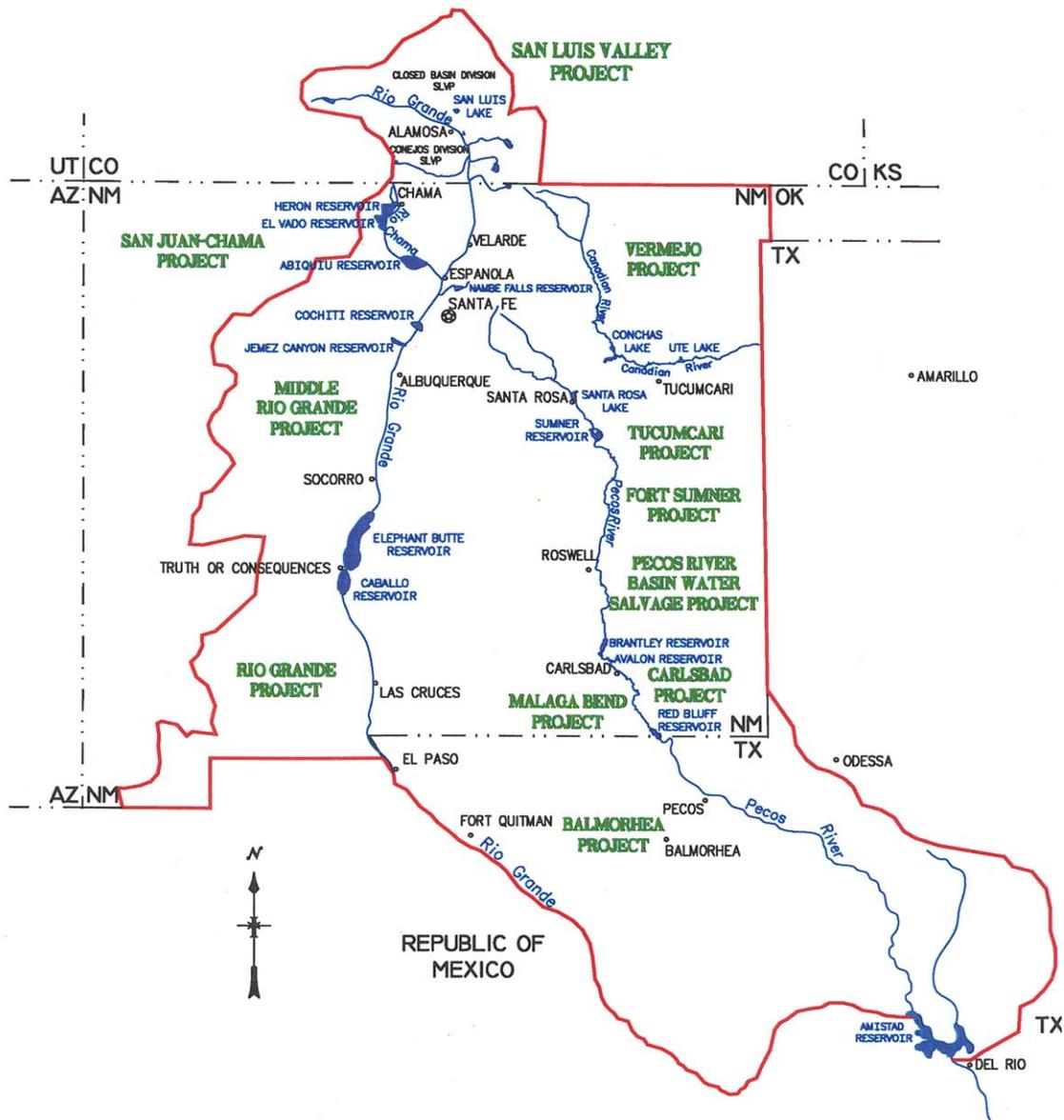


Figure 1. Project Map of Reclamation's Albuquerque Area Office.

Reclamation intends to construct an accounting model for the Pecos Basin, based on RiverWare®, as a tool for water management and accounting. This management and accounting model may eventually be proposed as a replacement for the spreadsheet accounting detailed in the Depletions Agreement.

Carlsbad Project Operations

Crop Production

As of the printing of this report, Reclamation had not received Carlsbad Irrigation District's (CID) 2008 crop and water data. This information is generally received in mid to late spring of each year and will be provided in the 2009 Calendar Year Report to the Pecos River Commission.

Since Reclamation had not received CID's 2007 crop and water data at the time of the printing of the 2007 Calendar Year Reports to the Pecos River Commission, this information is now being provided. As reported by CID, crops grown in the 2007 water year were as follows: alfalfa hay, cantaloupe, corn, cotton lint, grass, irrigated pasture, oats, pecans, peppers, silage, sorghums, watermelon, and wheat. Out of a total irrigable area of 25,055 acres, 17,520.20 acres were irrigated in 2007. Crop and water data submitted by the district did not contain total gross crop related income, therefore the average crop value per irrigated acre is not provided. Of the total water diverted, 56,510.48 af were delivered to irrigated lands for a total of 3.23 af per irrigated acre.

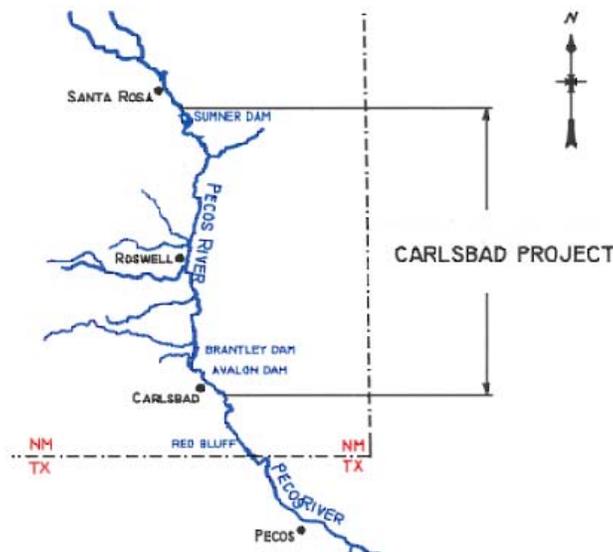


Figure 2. Area map of the Carlsbad Project.

Reservoir Storage Entitlements

All Carlsbad Project reservoirs were operated in accordance with the requirements of the Pecos River Compact and U.S. Army Corps of Engineers' (Corps) flood control criteria. Figure 2 *Area map of the Carlsbad Project* depicts the location of the Carlsbad Project Storage Dams on the Pecos River.

The Corps 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 *2008 Pecos River Reservoir Storage Entitlements* presents the calendar year 2008 storage entitlements for the four Pecos River Reservoirs.

Table 1. 2008 Pecos River Reservoir Storage Entitlements

Reservoir	Entitlement Storage (ac-ft)	Minimum Pool (ac-ft)	Estimated Sediment Accumulation Since Last Survey (ac-ft)	Total Conservation Storage (ac-ft)	Conservation Elevation (feet)
Santa Rosa	92,500	0	4,492	96,992	4,744.98
Sumner	40,134	2,500	292	42,926	4,262.88 (NAVD 88)
Brantley	40,000	2,000	1183	43,183	3,256.31 (NAVD 88)
Avalon	3,866	600	0	4,466	3,177.40
TOTAL	176,500				

Operation of the dams on the Pecos River is a joint effort between Reclamation, Carlsbad District, and the Corps in coordination with the Fort Sumner Irrigation District (Ft. Sumner District) and the State of New Mexico. The Corps has flood control responsibilities at Sumner Dam when the reservoir gets into the exclusive flood control pool (elevation 4262.88 to 4283.88 feet (ft) from May 1 through October 31, and 4269.16 to 4283.88 ft from November 1 through April 30). The Corps has flood control responsibilities at Brantley Dam when the reservoir elevation is above 3271.00 ft up to 3283.00 ft. Elevations are referenced to the North American Vertical Datum (NAVD 29).

The 2008 start-of-year total Carlsbad Project conservation storage in the four Pecos River reservoirs (Santa Rosa, Sumner, Brantley and Avalon) was 54 percent of entitlement. Santa Rosa, Sumner, Brantley and Avalon reservoirs on the Pecos River were at approximately 55, 61, 46, and 50 percent, respectively, of each reservoir's entitled conservation storage. The March 1, 2008 most probable forecasted snow melt runoff inflow into Santa Rosa Reservoir was

approximately 66,000 acre-feet (af) or 125 percent of the 30-year average.

The actual March through July 2008 inflow to Santa Rosa Reservoir was approximately 48,974 af, 92.4 percent of the 30-year average. On December 31, 2008, the total Carlsbad Project entitlement storage in the four Pecos reservoirs was 40 percent of entitlement. Santa Rosa, Sumner, Brantley and Avalon reservoirs were at approximately 34, 47, 46 and 57 percent, respectively, of each reservoir's entitlement storage.

SANTA ROSA RESERVOIR

Estimated Sediment Accumulation and Entitlement Storage for CY 2008

Estimated Sediment Accumulation:

Sediment accumulation calculations for Santa Rosa Reservoir are made by the Corps of Engineers. The Corps of Engineers performed a new sediment survey in 1996. The new area-capacity table was retroactive to January 1, 1997. Below is an annual tabulation of estimated deposition since January 1, 1997.

<u>Calendar Year</u>	<u>Sediment Accumulation (acre-ft)</u>
1997	760
1998	475
1999	532
2000	537
2001	327
2002	89
2003	81
2004	341
2005	711
2006	375
2007	264

Total: 4492

The estimated sediment deposition since the last sediment survey is 4,492 ac-ft.

SUMNER RESERVOIR

Estimated Sediment Accumulation and Entitlement Storage for CY 2008

Estimated Sediment Accumulation Computation (Ratio Method):

Estimated sediment accumulation calculations for Sumner Reservoir are based on the ratio of total sediment deposition to total inflow during the period between the May 1989 and May 2001 sediment surveys. The USGS gage, Pecos River near Puerto De Luna, NM, (PDL) is used to measure inflow to Sumner Reservoir. The total sediment deposition during this period is the difference in contents between 1989 and 2001 surveys at the top of conservation pool, elevation 4,262.88 feet (NAVD 88 vertical datum, 4261.00 feet previous local area-capacity vertical datum). The total sediment deposition is divided by the total inflow to obtain an average ratio of sediment deposition to inflow during this period. Sediment deposition after the 2001 survey is estimated by multiplying this ratio by the calendar year inflow.

<u>Calendar Year</u>	<u>Inflow (ac-ft)</u>	<u>Sediment Accumulation (ac-ft)</u>
6/2001-12/2001	68,140	29
2002	74,938	31
2003	77,328	32
2004	110,815	47
2005	121,739	51
2006	123,937	52
2007	120,163	50
2008		
	<u>Total:</u>	<u>292</u>

The estimated sediment deposition since the last sediment survey is 292 ac-ft.

BRANTLEY RESERVOIR

Estimated Sediment Accumulation and Entitlement Storage for CY 2008

Estimated Sediment Accumulation Computation (Ratio Method):

Estimated sediment accumulation calculations for Brantley Reservoir are based on the ratio of total sediment deposition to total inflow during the period between the September 1988 and May 2001 sediment surveys. The USGS gage, Pecos River near Lakewood, NM, (Kaiser Channel) is used to measure inflow to Brantley Reservoir. The total sediment deposition during this period is the difference in contents between 1988 and 2001 surveys at the top of the designated conservation pool, elevation 3,272.69 feet (NAVD 88 vertical datum, 3271.00 feet previous local area-capacity vertical datum). The total sediment deposition is divided by the total inflow to obtain an average ratio of sediment deposition to inflow during this period. Sediment deposition after the 2001 survey is estimated by multiplying this ratio by the calendar year inflow.

<u>Calendar Year</u>	<u>Inflow (ac-ft)</u>	<u>Sediment Accumulation (ac-ft)</u>
6/2001-12/2001	28,124	50
2002	77,850	139
2003	54,828	98
2004	140,612	250
2005	130,068	232
2006	125,889	224
2007	106,655	190
	<u>Total:</u>	<u>1183</u>

The estimated sediment deposition since the last sediment survey is 1,183 ac-ft

Sumner Dam and Reservoir

Sumner Dam Operations

The operation of Sumner Dam is to divert to storage the available natural inflow above Fort Sumner Irrigation District's allotted direct diversion water right, when bypassing this water is not required to meet the 35 cfs target at the United States Geological Survey (USGS) gage Pecos River Below Taiban Creek Near Fort Sumner, and to maintain continuous flow in the river. Fort Sumner Irrigation District has a direct diversion right of up to 100 cubic-feet-per-second (cfs) of the natural inflow above Sumner Reservoir as calculated (2-week average inflow calculation) by the New Mexico Office of the State Engineer.

Releases of stored Carlsbad Project water occur as block releases for the Carlsbad District. The duration of block releases is restricted to a maximum of 15 contiguous days, and the cumulative annual duration of all block releases is restricted to a maximum of 65 days. Block releases are scheduled so that there is not less than 14 days between releases, and scheduling block releases during the six week period around August 1 is avoided if possible. Block releases are scheduled to alleviate river intermittency as long as this scheduling does not constitute a wasteful use of water due to excessive net losses accrued during transit, or due to excessively high net downstream reservoir evaporation. Reclamation directs the Carlsbad District dam tender on gate adjustments and the Carlsbad District is responsible for all maintenance activities. This operating procedure does not alter the normal operations of Avalon and Brantley Reservoirs for the purpose of delivering water to the Carlsbad District.

Under a water right permit granted by the State of New Mexico, the Carlsbad Project 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 2008.

Sumner Reservoir began the year with 24,464 af in total storage. An early spring peak total storage of 28,612 af occurred on February 17 prior to the reservoir being drawn down by evaporation and block releases for the Carlsbad Project. Sumner Reservoir's lowest total storage occurred on October 31, after the reservoir was drawn down to 11,156 af by the third and final block release of the year. Sumner Reservoir ended the year with 18,781 af in storage.

Three block releases occurred during the 2008 calendar year. The first block release was initiated on March 6 and terminated on March 15 at a rate 1,400 cfs, for a total release of approximately 28,245 af. The second block release occurred on June 16 through July 1 when approximately 34,881 af was released at 1,400 cfs. The third and final block release for 2008 occurred from August 22 through August 26 at the rate of approximately 1,470 cfs for a total release of 10,897 af. The total for all three block releases was 74,023 af.

Non-irrigation season ESA-related bypasses were initiated for the 2007-2008 winter season on November 20, 2007 following the release of the remaining Fish Conservation Pool water. Figure 3 *2008 Sumner Dam Bypass / Release and Total Storage* illustrates Sumner Dam’s total storage, bypasses, and releases. A total of approximately 6,823 af were bypassed for ESA related purposes for 2008. A total of approximately 1000 af were released from the Fish Conservation Pool for ESA related purposes.

The effects of these modified operations on the Carlsbad Project water supply are discussed in the section on Reclamation’s water offset program. Reclamation has leased water from river pumpers and the Hagerman Irrigation Company to replace the depletions associated with the modified operations.

During 2008, Reclamation stored 1,000 af in Santa Rosa and Sumner Reservoirs to provide releases to achieve target flows at the Taiban gage and avoid intermittency in the river. Reclamation replaced the water released out of Sumner Reservoir with 750 af of water pumped directly into Brantley Reservoir. During 2008, releases from the Fish Conservation Pool were made as needed during and after irrigation season at rates from 5 to 20 cfs.

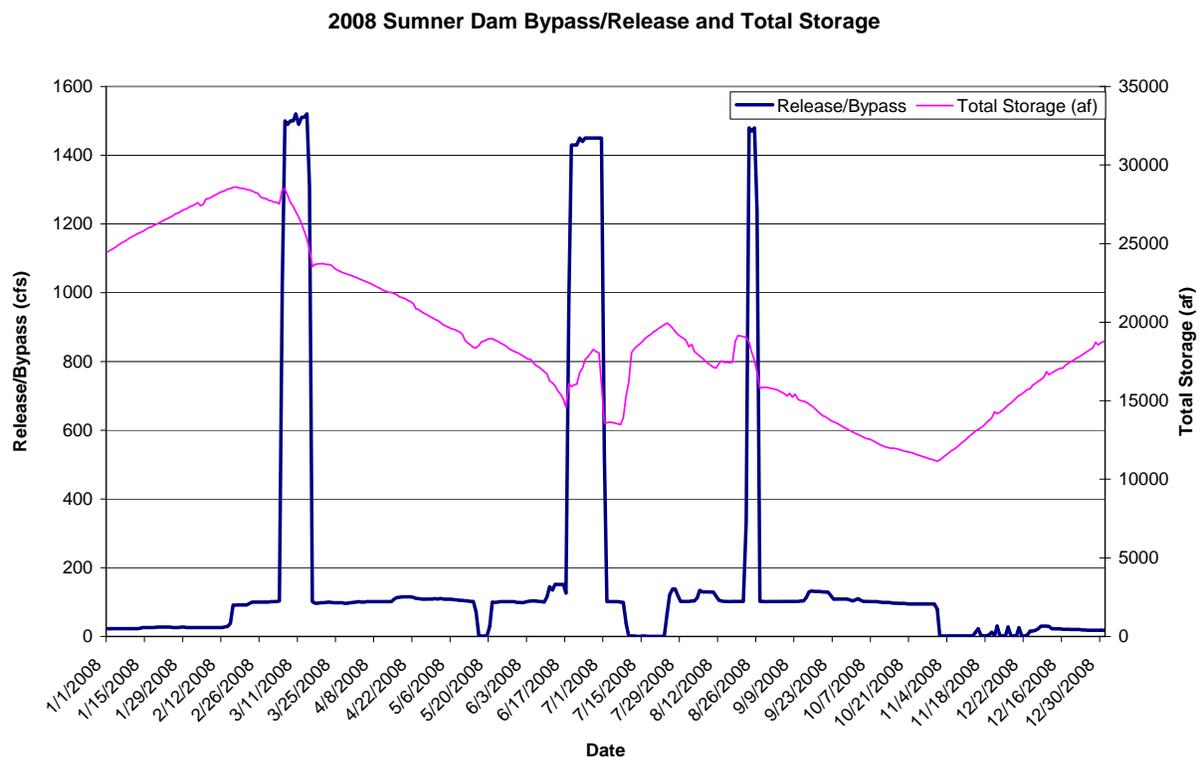


Figure 3. Calendar year 2008 Sumner Dam bypass/release and total storage (discharge downloaded from USGS web site on 02/25/2008).

Sumner Dam Facility Review and Safety of Dams Programs

All three radial gates at Sumner Dam, with a total design capacity of up to 56,000 cfs, are in need of repairs. CID is responsible for the repairs and for 68.36% of the cost and Reclamation is responsible for 31.64% of the cost. Reclamation has budgeted for their portion, and CID has begun work on the multi-year repairs needed.

Sumner Dam Standing Operating Procedures (SOP) and Emergency Action Plan (EAP) were completely revised and the EAP was removed from the SOP in 2008. The SOP and EAPs are scheduled for distribution in 2009. The Sumner Dam Periodic Facility Review (PFR) (examination) was completed in June 2008 and the report is scheduled for distribution in 2009. There were a total of three incomplete O&M recommendations for Sumner Dam in 2008; four O&M recommendations were completed in 2008.

Brantley Dam and Reservoir

Brantley Dam Operations

During periods without irrigation releases Brantley Dam bypasses mitigation flows of 20 cfs. 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 Carlsbad District's main canal, generally between 75 and 350 cfs, as required by irrigation demand. Releases from Brantley Dam were also made in November of 2008 (17,050 af) to assist the New Mexico Interstate Stream Commission (NMISC) in meeting its Pecos River Compact obligations as discussed in the sections labeled Water Release and Replacement Agreement for State Line Delivery and Carlsbad Irrigation District Water Lease Program. Figure 4 *2008 Brantley Dam Bypass/Release and Total Storage* depicts Brantley Dam's Total Storage, Release, and Bypasses.

The Corps has flood operation responsibility once the reservoir rises into the flood pool, which is identified to begin at elevation 3271.00 ft (NAVD 29) in the Corp's Water Control Manual for Brantley Dam. The top of the conservation or entitlement pool for Brantley Reservoir was calculated to be elevation 3254.61 (NAVD 29) as stated in the 2008 Pecos River Storage Entitlements. Therefore, Reclamation is responsible for control and operations until elevation 3271.00 (NAVD 29) is reached, regardless of the conservation elevation in the respective year, at which point the Corp assume operational responsibility.

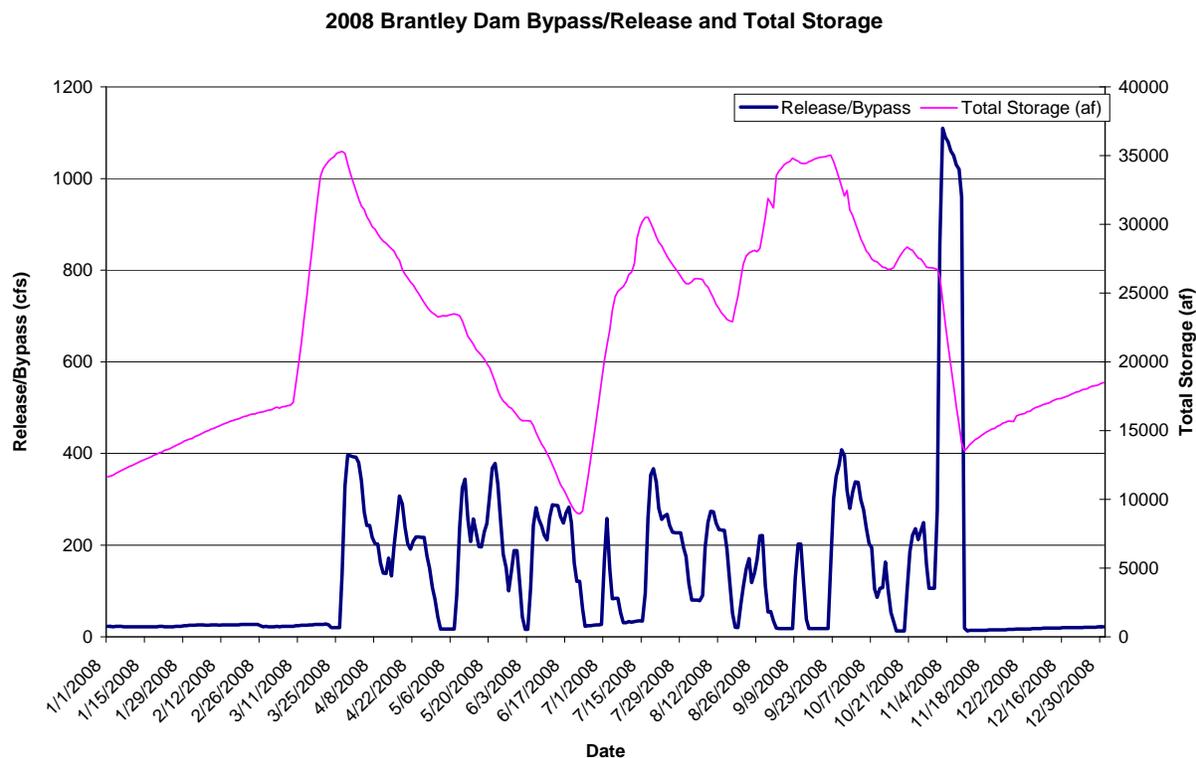


Figure 4. Calendar year 2008 Brantley Dam releases and total storage (discharge downloaded from USGS web site on 02/25/2008).

Brantley Reservoir began the year with a total storage of 11,635 af. Irrigation releases from Brantley were initiated on March 6 and then stopped and started as needed to meet demand and to conserve water. The final irrigation release from Brantley Reservoir occurred on October 31. Approximately 64,093 af were released from Brantley for irrigation during this period. Brantley Reservoir reached a maximum total storage of 35,302 af on March 27, 2008. The lowest total storage occurred on June 22 with a volume of 8,930 af. Brantley Reservoir ended the year with a total storage of 18,497 af. There was also a release at the beginning of November for a state line delivery to Texas, which is discussed in detail later in this report.

Brantley Dam Facility Review and Safety of Dams Programs

The Brantley Dam Emergency Action Plan (EAP) was completely revised and was removed from the Standing Operating Procedures (SOP) in 2008. The SOP and EAPs are scheduled for distribution in 2009. The Brantley Dam Periodic Facility Review (PFR) (examination) was completed in June 2008 and the report is scheduled for distribution in 2009. There were a total of four incomplete O&M recommendations for Brantley Dam in 2008; four O&M recommendations were completed in 2008.

Sinkholes exist on the left side, upstream and downstream of Brantley Dam. The sinkholes are

visually monitored on a regular basis and are surveyed every six years. The latest survey was completed in April 2004. The next sinkhole survey is scheduled for March 2009. Currently, the sinkholes are not a structural threat to the facility.

Avalon Dam and Reservoir

Avalon Dam Operations

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 Carlsbad District. Water is released from Brantley Dam and the small reservoir at Avalon is used to fine tune the releases into the Carlsbad District Main Canal. Avalon Reservoir began the year with conservation storage at 1,925 af. A total of approximately 17,050 af of water was released from Avalon Dam directly to the Pecos River in 2008 for the NMISC and Carlsbad District lease agreement. Avalon Reservoir end-of-year total storage was 2,204 af.

Diversions into the Carlsbad District Main Canal began on March 3, and ceased on October 31, totaling approximately 75,320 af. Carlsbad District diversions are presented in *Figure 5. 2008 Carlsbad Irrigation District Main Canal Diversions*.

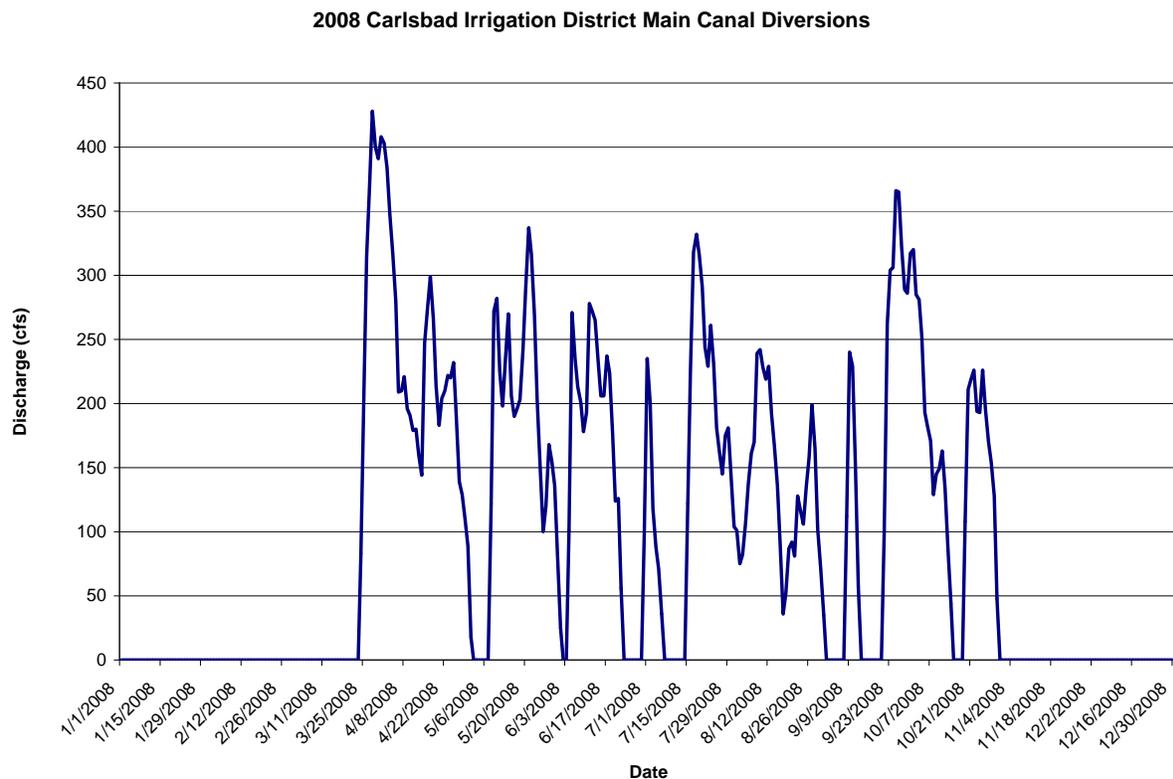


Figure 5. Calendar Year 2008 Carlsbad District Main Canal Diversions (graph downloaded from the USGS web site 02/09/2009).

Avalon Dam Facility Review and Safety of Dams Programs

Avalon Dam Standing Operating Procedures (SOP) and Emergency Action Plan (EAP) were completely revised and the EAP was removed from the SOP in 2008. The SOP and EAPs are scheduled for distribution in 2009. The Avalon Dam Periodic Facility Review (PFR) (examination) was completed in June 2008 and the report is scheduled for distribution in 2009. There were a total of three incomplete O&M recommendations for Sumner Dam in 2008; two O&M recommendations were completed in 2008.

Carlsbad Project Environmental Compliance

Endangered Species Program for Water Operations

Pecos bluntnose shiner

Reclamation continued into its second year of monitoring flows under the Biological Opinion (10-year BO) for Reclamation's Proposed Carlsbad Project Water Operations and Water Supply Conservation EA, (2006-2016, Cons. #22420-2006-F0096) implemented in August 2006.

Flows remained continuous throughout the 2008 calendar year on the Pecos River between Santa Rosa Dam and Avalon Reservoir, a distance of nearly 300 miles. Reclamation received an annual update on the Status of the Pecos bluntnose shiner (shiners) from the US Fish and Wildlife Service (Service). The running two-year average catch rate for the first trimester period (January through April) in the was 7.2 fish/100m², ±1.3 (one standard error). The catch rate was almost three times higher than the required incidental take set by the Service. The running two-year average catch rate for the third trimester was considerably higher, 14.3 fish/100m², ±4.5 (one standard error). Again, this catch rate was about three times higher than the incidental take required by the Service. The two-year running average catch rate for any trimester was 9.7 fish/100m², well over three times the required incidental take set by the 10-year Biological Opinion..

There were no shiners collected at either Old Fort Park in the Tailwater section below Sumner Dam or at the Brantley Reservoir inflow.

The Vaughan Pipeline provided 770 acre-feet (af) of 1,100 af purchased for the year of 2008. Delivery of the "Vaughan" water was stopped on Friday, December 5, 2008 due to flows undermining the gravel substrate at river outfall. The balance of the remaining water, 330 af, was not pumped in 2008. Reclamation is working with the State of New Mexico, Interstate Stream Commission and the Vaughan Family to correct that situation. Bypass flows were available to supplement the target flow at Taiban gage. As of the date of publication, Vaughan pipeline is operational again and is expected to be used through 2009 as water is needed to meet the targets.

The Supplemental Water Pool in Sumner Lake and Santa Rosa Reservoir was completely released prior to the end of 2008. Reclamation started the 2008 year with 1,000 acre-feet (a-f) of water. In February, Reclamation released 133 af of water in order to prevent a drying event. An additional 99 af of water was released in March, and 263 af of water was released in November. The remaining 532 af of supplemental water was finally released by December 30, 2008.

Bitter Lake National Wildlife Refuge (NWR) Restoration Project

Reclamation ended the 2008 year completing the Environmental Assessment and ready to sign

the Finding of No Significant Impact determination in January 2009. Reclamation's Socorro Field Office will start moving their equipment into place at the Bitter Lake National Wildlife Refuge around the first of February, to start work shortly after. The project will take approximately 3 months to accomplish.

Reclamation plans to restore 1.5 miles of cutoff oxbow in Reach 4 at the bottom of the project area (see cover photo). The Service believes that restoring flow to this oxbow will benefit the shiner's overall habitat, thus potentially improving the shiner's population status. Restoration of Oxbow 4 is a part of a larger effort to restore several oxbows above and adjacent to this oxbow, that have been cut off by natural fluvial processes.

Interior Least Tern

The 10-year BO included coverage for the Interior Least Tern, which was discovered nesting in 2004 at Brantley Reservoir. In 2008, Reclamation cleared and maintained a total of 84+ acres of nesting and brood-rearing habitat for use by terns.

Life-sized Least Tern decoys were again used on these created habitat sites in an attempt to establish a breeding colony outside of the Brantley Lake conservation pool (at or above 3256 feet elevation). Fifty decoys were placed in pairs in the southern-most created habitat site in early May 2008 and monitored throughout the spring and summer. No use of these sites was observed.

A maximum of 12 terns were observed at Brantley Reservoir on 26 June 2008. These birds attempted to nest within the reservoir pool on lake-bottom mudflats. A total of five nests with five eggs were subsequently inundated during the course of a block release that was initiated prior to the discovery of the nests. This incidental take of Interior Least Tern nests is within the allowable annual take, per the 2006 BO.

Reclamation biologists are currently working with the USFWS and the New Mexico Department of Game and Fish to develop solutions to allow for successful tern nesting and to avoid incidental take of terns in the future.

National Environmental Policy Act (NEPA) Activities

An Environmental Assessment (EA) on the 7-Rivers well pumping/pipeline has been tiered off the Long Term Miscellaneous Purposes Environmental Impact Statement (EIS) and was completed with a signed Finding of No Significant Impact (FONSI) April 16, 2007. This project was funded by Reclamation's Water 2025 Challenge Grant Program – the water is required for state line deliveries to meet the requirements of the Pecos Settlement Agreement.

Three EAs were/are being tiered off the Carlsbad Project Water Operations and Water Supply Conservation Environmental Impact Statement: **(1)** the Pecos River Restoration at Bitter Lake National Wildlife Refuge EA (ISC/FWS agreed on the depletions issue) to meet RPM #1 in the BiOp – completion date for this project is 2009, **(2)** the Pecos River Supplemental Water EA to meet ESA requirements (see below), and **(3)** the Long-Term Lease of Groundwater Rights, Pecos River near Ft Sumner, NM (Vaughan Pipeline – 25 year lease). The Long-Term Lease of Groundwater Rights draft EA was finalized July 25, 2007 (FONSI signed) without the FCP included (<http://www.usbr.gov/uc/albuq/library>). The ribbon cutting ceremonies were July 25, 2007 for the Vaughan Pipeline. The pipeline was on-line as of July 2008 producing 10-13 cfs, and shut down for repairs to the outfall in December, prior to full delivery of the annual contract volume.

Pecos River Channel Restoration at Bitter Lakes National Wildlife Refuge Environmental Assessment

Reclamation and NMISC are currently conducting other projects and NEPA actions in the Pecos River basin. Relevant activities include river restoration at Bitter Lake Wildlife Refuge to create fish habitat for the Pecos bluntnose shiner (project). Both Reclamation and ISC are parties to a Settlement Agreement, dated March 25, 2003 which among other things provides for ISC to use Carlsbad Project Water for state line deliveries to meet its Pecos River Compact deliveries.

The project is needed to comply with the 2006-2016 Biological Opinion for the Carlsbad Project Water Operations and Water Supply Conservation Environmental Impact Statement (EIS), June 2006. The Biological Opinion and EIS commit Reclamation to operate the Carlsbad Project with a target flow of 35 cubic feet per second (cfs) at the Taiban Gage and to keep the river continuous in order to conserve the federally protected Pecos bluntnose shiner. In addition to providing adequate water to keep the river continuous, the purpose of the project is to meet the contracted irrigation needs of the Carlsbad Project, to avoid hindering New Mexico delivery requirements to Texas, and to establish partnerships in the basin.

The Bureau of Reclamation (Reclamation) is preparing an EA for the Project. The Project would be entirely within the boundaries of the Bitter Lake National Wildlife Refuge (BLNWR) near Roswell, New Mexico, which is managed by the US Fish and Wildlife Service (Service). The purpose of the proposed Project is to improve riparian and in-channel habitat, extending the reach of connected good quality habitat for the benefit of native aquatic and riparian plant and

animal communities. Reclamation and the Service would improve habitat for the Pecos bluntnose shiner (shiner) by restoring parts of the river to more natural flow conditions within the context of the modern hydrologic regime, including reconnecting the river to the floodplain. A variety of restoration techniques may be used such as removing vegetation, lowering banks, changing the channel morphology, and restoring flow into historic meanders. Some or all of these techniques may be implemented, and work may be conducted in phases by agencies and entities other than Reclamation.

As part of the consultation process under the Endangered Species Act (ESA), the Service issued a Biological Opinion (BO) (2006 – 2016) on the selected alternative from the Carlsbad Project Water Operations EIS. One of the provisions of the BO was for Reclamation to partner with Federal, state, and private entities to participate and assist in the completion of ongoing habitat improvement projects on the Pecos River and to restore 1-1.5 miles of quality habitat within the Farmlands reach by 2009 and another 1-1.5 miles by 2014. According to the BO, activities that restore and optimize the interaction of river channel and floodplain habitats with available flows will be most successful in mitigating the observed displacement of shiner eggs. The reach that would provide the most benefit for the shiner is from the BLNWR south to Hagerman where flows are perennial due to inflow from the Roswell Basin and habitat is degraded.

The government to government letters, interested parties letter and the cooperating agency letters are all out and completed. Signed MOA between Reclamation and FWS is completed. A workshop was held January 15 and 16, 2008 at BLNWR in Roswell. The 404/401 has been completed as of June 2008. The draft EA was out for public review as of September 19th, the comment period ended October 20, 2008. The Finding of No Significant Impact was signed January 30, 2009 and is posted at <http://www.usbr.gov/uc/albuq/index.html>.

Pecos Supplemental Water Environmental Assessment (EA)

The Bureau of Reclamation is proposing to obtain supplemental water to provide the operational ability to release approximately 2,500 acre-feet of water out of Sumner Lake per year to keep the river continuous, while also ensuring that there is enough water at Brantley Reservoir to meet the contracted irrigation needs of the Carlsbad Project.

The project is needed to comply with the 2006-2016 Biological Opinion for the Carlsbad Project Water Operations and Water Supply Conservation Environmental Impact Statement (EIS), June 2006. The Biological Opinion and EIS commit Reclamation to operate the Carlsbad Project with a target flow of 35 cubic feet per second (cfs) at the Taiban Gage and to keep the river continuous in order to conserve the federally protected Pecos bluntnose shiner. The purpose of the project, in addition to providing adequate water to keep the river continuous and meeting the contracted irrigation needs of the Carlsbad Project, is to avoid hindering New Mexico water delivery requirements to Texas, and to establish partnerships in the basin.

FSID is still considering a 10 year lease (with renewal option) with Reclamation. FSID may lease up to 1600 af of its 100 cfs water right that is not required for FSID use.

Reclamation will transfer title of any Ft Sumner Project facilities (diversion dam) held by the US to the district and relieve the remaining payment obligation under current contract subject to congressional authorization. FSID will not divert any water Reclamation releases for preservation of the PBNS and will pursue ESA Section 10 consultation with the FWS for their activities on the Pecos.

Any water provided by the district to Reclamation under the contract and not release by February 15 (CID still negotiating) of the subsequent year will be treated as Carlsbad Project water and made available for block release.

A second scoping letter was mailed November 13, 2007 to update interested parties. The Draft EA is out for review with comments already received from the Corp of Engineers and internally within Reclamation. Further alternative development and assessment is pending the outcome of discussions with the State Engineer and a decision from Reclamation management on how to proceed.

Pecos River Basin Water Salvage Project

Under the authority of Public Law 88-594, Reclamation continues to control salt cedar 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 Carlsbad District to perform the mechanical removal work. Salt cedar removal is primarily accomplished utilizing rubber-tire tractors with root plows, and caterpillars with rake attachments.

Pecos River lands cleared in New Mexico total approximately 33,200 acres. 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 as a result of litigation brought by the Audubon Society, and the completion of an EIS in 1979. Fiscal Year 2008 expenditures for maintaining the cleared areas of salt cedar was \$283,723, or \$8.53 per acre. The NMISC funded \$150,000.00 of these costs.

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 salt cedar in the Pecos Valley.

Carlsbad Project Vegetation Management Program

The United States Department of the Interior, Bureau of Reclamation completed a five-year programmatic environmental assessment/biological assessment (EA/BA) for the purpose of performing research and demonstration using integrated methods (herbicides, biological and mechanical) on saltcedar to determine effective methods of control and rehabilitation while monitoring). Saltcedar is considered a noxious species whose impacts to water resources in New Mexico are detrimental. It spreads rapidly, grows in dense monotypic stands and out-competes native vegetation, potentially transpiring large amounts of water per acre in comparison to native vegetation. The proposed work would involve lands within the Carlsbad Project area which include Brantley and Avalon Reservoirs. Proposed work would be located on Reclamation lands within the Carlsbad Project area, called the Research Project area.

Reclamation has participated in the experimental release of beetles for saltcedar control in the Pecos Basin. Release of beetles (*Diorhabda elongate*) began in 2004. Mortality among the released beetles has been high, with only 5 beetles surviving from 2006 into 2007. In 2007, an additional 300 beetles were released at two sites (site A and site B) in the same area as the 2006

release. Two weeks after the release, no adult beetles or egg masses were found at either site, and little if any leaf defoliation was detectable. No beetles were released in 2008.

Reclamation, along with other state, federal, and county agencies, meet every six months to review and update on-going research and demonstration projects within the Carlsbad Project area. The Carlsbad Soil and Water District presented a map on the Avalon Watershed Project by BLM at the September 2008 meeting . Approximately 126 acres of saltcedar has been extracted and 490 acres treated. Next winter (2009) coordination with Bureau of Land Management will be needed to burn all the piles collected on the 126 acres. By 2010 the 126 acres should be ready to be revegetated. Reclamation currently posts the Microsoft PowerPoint® presentations and maps presented at the meetings on the Reclamation Web Site: <http://www.usbr.gov/uc/albuq/library/eaba/saltcedar/saltcedar.html> . Tentatively, a date in April 2009 (no specific day) has been set for the next meeting. Members will be contacted next year to determine the place and exact time.

Fort Sumner Project

Crop Production

Crop data for 2008 was not available for this report. As reported by Fort Sumner Irrigation District (FSID), crops grown in 2007 were alfalfa hay, other hay, irrigated pasture, melons, pecans, and nursery. A total of 6,901 irrigable acres were irrigated in 2007. Total gross crop related income of \$6,768,748 was reported on FSID's crop and water data for an average crop value of \$980.84 per irrigated acre. Of the total water diverted, 31,132 af were delivered to irrigated lands for a total of 4.5 af delivered per irrigated acre.

Operations

The irrigation season for Ft. Sumner District (FSID) typically begins March 1st and ends October 31st. The Ft. Sumner District is also allowed to divert for two, eight-day periods during the winter. This winter right is usually taken just prior to March 1st. During irrigation season, 80 to 100 cfs is usually bypassed through Sumner Reservoir depending on Ft. Sumner District's available water right. For 2008, Ft. Sumner District began calling for water on February 16 and discontinued irrigating on October 31. In 2008, Ft. Sumner District's allotment ranged from 70 to 100 cfs. A total of approximately 45,340 af were diverted into the Ft. Sumner District Main Canal as recorded at the USGS Fort Sumner Main Canal Near Fort Sumner, NM gage. This total includes Reclamation's ESA related bypasses and Supplemental Water Acquisition Pool (SWAP) releases which were diverted at Fort Sumner Diversion Dam and returned to the river at the Ft. Sumner District's Sandgate wasteway. A graph of Ft. Sumner District's diversions is shown in Figure 6 *2008 Fort Sumner Irrigation District Main Canal Diversions*.

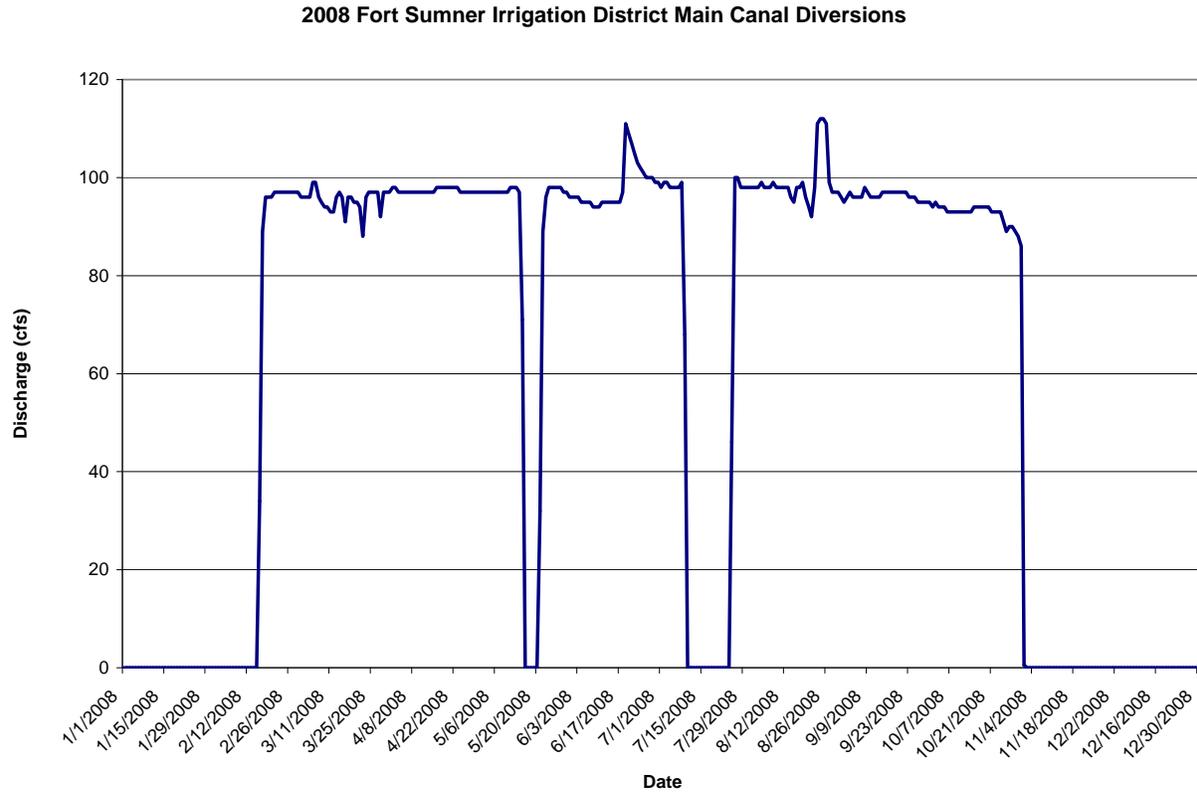


Figure 6. Fort Sumner Irrigation District 2008 diversions (discharge downloaded from USGS web site on 02/25/2008).

Fort Sumner Irrigation District Review of Operation and Maintenance Program

The Albuquerque Area Office of the Bureau of Reclamation decided to change the Review of Operation and Maintenance (RO&M) examination of the Fort Sumner Irrigation Project from every 3 years to every 6 years. The next RO&M examination is scheduled for October 2009.

Other Pecos River Activities and Operations

Reclamation's Water Offset Program

Reclamation leases water rights from willing owners within the Pecos River Basin to offset the additional depletions caused by Endangered Species Act related operations. Reclamation is entirely dependent on the availability of willing water rights holders and congressional budget decisions to meet the instream flow requirements of the 2006 PBNS BiOp.

From November 1, 2007, through October 31, 2008 (the 2008 water year), Reclamation had water lease agreements with seven Pecos River pumpers, one of whom is also a Hagerman Irrigation Company irrigator, to lease 2,614 acre-feet (consumptive use portion) of surface water rights and 509 acre-feet (consumptive use portion) of Hagerman Canal water rights. The land associated with the leased water was fallowed. The Hagerman Canal water was pumped directly into the Pecos River.

Reclamation also entered into a lease agreement with Interstate Stream Commission for 1,100 acre-feet (consumptive use) of shallow well water (Vaughan) to be pumped into the Pecos River annually. Delivery of this water to the river commenced in November of 2008 (water year 2009) and ceased in December due to damage to the outfall structure. Another lease for 900 acre-feet of shallow well water (Lynch) remains in place. This water was pumped into the Pecos River during water year 2008 and was used to maintain streamflows for the Pecos bluntnose shiner.

In addition to the lease agreements described above, Reclamation has established a 1,000 acre-foot fish conservation pool in Sumner Lake through an exchange of 750 acre-feet of water rights it owns at Seven Rivers. Water is pumped into Brantley Reservoir from wells at Seven Rivers in exchange for water being released from Sumner Lake to maintain streamflows for the Pecos bluntnose shiner.

Draft calculations produced using the new Pecos Annual Accounting Method, developed jointly by the NMISC and Reclamation, indicate that for the 2008 water year Reclamation's Carlsbad Project Water Acquisition (CPWA or offset) program put more water into the Pecos River than the additional depletions incurred by the modified operations of Sumner Dam. Reclamation bypassed 6,823 acre-feet of water through Sumner Dam creating 2,219 acre-feet of additional depletions for the 2008 water year. CPWA amounts of 2,452 acre-feet (adjusted for consumptive use, transmission loss, and Brantley evaporation) were provided at Brantley Reservoir for the water year to eliminate these additional depletions, resulting in an additional Reclamation credit of 233 acre-feet for the 2008 water year.

Reclamation and the NMISC are close to signing an agreement for offsetting depletions resulting from bypass operations for the bluntnose shiner.

Carlsbad Irrigation District Water Lease Program

Reclamation and the Carlsbad Irrigation District entered into a 40-year contract on November 21, 2006, which provides for the use of Carlsbad Project water for purposes other than irrigation. This contract provides for the Interstate Stream Commission and the Carlsbad Irrigation District to enter into third-party lease agreements for the purposes of leasing water from other district water users. It also provides for the Interstate Stream Commission to use water appurtenant to lands it owns within the district for purposes other than irrigation. Such leases must be approved by Reclamation. No third-party agreements have been executed and approved to date. No water was leased during 2008. Reclamation, CID and ISC are working together to develop a third-party agreement during 2009.

Water Release and Repayment Agreement for State Line Delivery

The release for the repayment agreement occurred from November 1 to November 11, and was 17,050 af for 2008.

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 Chaves County, New Mexico. Reclamation and the U. S. Department of Justice are involved in this case by virtue of the U. S. interest in the water rights for the Carlsbad Project.

In authorizing funding to implement the ad hoc committee's consensus plan, the New Mexico legislature required that there be a settlement of the Carlsbad Project's surface water claims (H.B. 417, NMSA 72-1-2.4). The Carlsbad Irrigation District, Pecos Valley Artesian Conservancy District, the State of New Mexico, and the United States reached a settlement agreement in March, 2003. Key settlement terms are in accordance with the consensus plan and H.B. 417. They include NMISC purchase of land and water rights, augmentation of the flow of the Pecos River by pumping groundwater to the river, and provisions for management of supplemental well pumping within Carlsbad District. The settlement also includes operating rules governing the use of water allotted to Carlsbad District lands purchased by the NMISC. Depending on stateline delivery status and the water supply available to Carlsbad District, NMISC allotments may be delivered to the state line or re-allotted to Carlsbad District irrigators. Under the settlement the United States and Carlsbad District have agreed to refrain from making a priority call unless the supply available to Carlsbad District drops below 50,000 af. The settlement agreement addresses only the rights of the United States and Carlsbad District. Adjudication of individual Carlsbad District members' rights is continuing.

The settlement parties have agreed to an extension of the interim period to allow all conditions precedent necessary for fully implementing the settlement to be met. The conditions precedent in the settlement agreement include minimum levels of land and water right purchases by NMISC, a minimum capacity for augmentation well pumping to be in place, and completion of environmental compliance requirements.

Reclamation and the NMISC completed an Environmental Impact Statement in August, 2006 clearing the way for a long term “Miscellaneous Purposes Contract” which is required to allow Carlsbad Project Water to be released for delivery to the state line. This contract is currently in place.

Endangered Species Act Related Litigation

The Forest Guardians filed a Notice of Intent (NOI) to Sue on August 21, 2007 citing many numerous, alleged violations of the Endangered Species Act. On September 19, 2007, Reclamation responded to the Forest Guardians detailing its compliance with the 10-year BiOp and its many additional efforts to keep the Pecos River whole. There has been no response from the Forest Guardians. In January 2008, the Forest Guardians announced it was merging with Sinapu, a Boulder nonprofit group that works to protect and restore large carnivores in the southern Rockies. The new group is now called WildEarth Guardians.

Water 2025

The Department of the Interior’s Water 2025 initiative assists communities and irrigation districts in the western United States with funding to meet critical water related needs. The Department is seeking to collaborate with local interests on projects that will help reduce the potential for water related conflicts. Through the Water 2025 program Reclamation has awarded challenge grants for up to 50 percent of the cost of projects to improve conservation, efficiency, and opportunities for development of water markets.

The NMISC received Water 2025 grants for two projects on the Pecos River. One grant helped fund improvements to the Red Bluff Gage (completed in July, 2006), and a grant of \$930,600 was awarded for pipelines in the Seven Rivers area that are being used to deliver augmentation water to Brantley Reservoir, as required under the Pecos River settlement agreement, which was completed in June of 2008.

New Water 2025 Challenge Grants for the Pecos River for 2009:

Funding Opportunity Announcement # 09-SF-811468 under the Challenge Grant Program: Water Marketing and Efficiency Grants for Fiscal Year 2009 were due by January 14, 2009.

Funding Opportunity Announcement # 09-SF-811471 under the Challenge Grant Program: System Optimization Reviews for Fiscal Year 2009 were due by January 28, 2009.

Emergency Drought Relief Program

Under the Emergency Drought Relief Program, Reclamation completed municipal water supply wells for Ruidoso Downs, NM, Ruidoso, NM, and Las Vegas NM. Additional well projects for Eunice, NM, Carlsbad, NM, Hagerman, NM, Brazos, NM, Regina, NM, Cannon, NM, have been approved. Work is currently under way for Eunice, Carlsbad, and Hagerman. The solicitation for the Brazos well is out for bid – work is scheduled to begin in April/May of 2009.