

PERFORMANCE REPORT

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FEDERAL AID IN SPORT FISH RESTORATION ACT

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FEDERAL AID PROJECT F-30-R-32

STATEWIDE FRESHWATER FISHERIES MONITORING AND MANAGEMENT PROGRAM

2006 Survey Report

Sweetwater Reservoir

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SURVEY AND MANAGEMENT SUMMARY

Fish populations in Sweetwater Reservoir have not been surveyed since 2002 because of low water conditions. This report contains a management plan for the reservoir.

- **Reservoir Description:** Sweetwater Reservoir is a 630-acre reservoir, at conservation pool, located on Bitter and Cottonwood creeks, tributaries of the Clear Fork of the Brazos River. It was constructed by the city of Sweetwater in 1930 to provide water for municipal and industrial purposes. It is located approximately 12 miles southeast of the city of Sweetwater in Nolan County. Water level began dropping in 1999 and was too low to allow fish population sampling in 2006. As of April 2007, the reservoir was 37 ft. below conservation pool. There has been no boat access for several years.
- **Management History:** Since 2003, water level has been too low to conduct fish population surveys and fish stocking. In March 2003, there was a fish kill caused by golden algae (*Prymnesium parvum*).
- **Fish Community:** The status of all prey and sport fish is unknown, however, due to the low water level and susceptibility to fish kills caused by golden algae, it is likely that few desirable fish species remain in the reservoir.
- **Management Strategies:** Stock forage and sport fish species when the reservoir fills. Monitor fish populations in 2010/2011 if boat access is suitable.

INTRODUCTION

The purpose of the document is to provide fisheries information and make management recommendations to protect and improve the sport fishery at Sweetwater Reservoir.

Reservoir Description

Sweetwater Reservoir is a 630-acre reservoir, at conservation pool, on Bitter and Cottonwood creeks, tributaries of the Clear Fork of the Brazos River. It was constructed by the city of Sweetwater in 1930 to provide water for municipal and industrial purposes. It is located approximately 12 miles southeast of the city of Sweetwater. Land use around the reservoir is pastureland and residential. Soil types are Colorado loam and Nipsum (clay loam) associations.

Water level began dropping in 1999 and has continued to decline to a low of 37 ft. below conservation level as of April 2007 (Figure 1). There has been no boat access for a number of years. Other descriptive characteristics for Sweetwater Reservoir are shown in Table 1.

Management History

Previous management strategies and actions: Management strategies and actions from the previous survey report (Dumont and Jons 2003) included:

1. Stock reservoir with 100 Florida-strain largemouth bass fingerlings per acre in the first two years after the reservoir fills to increase Florida-strain largemouth bass alleles and genotype.
Action: Water level has continued to decline since 2003 and as of April 2007 it was at 37 ft. below conservation level. Stocking at this time is not viable.
2. Conduct an economic evaluation of the fishery a year or two after the reservoir fills.
Action: Water level at the reservoir is too low to maintain a fishery at this time.
3. Re-introduce populations of forage and game fish through management and hatchery stockings when reservoir fills.
Action: Due to the drought no stocking has taken place.

Harvest regulation history: A 14-to-18-inch slot limit on largemouth bass was implemented on 1 September 2001. All other sport fish in Sweetwater Reservoir are currently managed with statewide regulations (Table 2).

Stocking history: Largemouth bass were introduced in 1966, flathead catfish in 1973, and walleye in 1976, 1977, and 1984. Triploid Florida-strain largemouth bass marked with coded wire tags were stocked from 1996 to 2000 as part of a research project to investigate whether it was possible to create and maintain a non-reproductive, trophy Florida-strain largemouth bass fishery while maintaining high catch rates of naturally reproducing fish. Due to the poor survival of the marked fish this project was terminated in 2001. The complete stocking history is shown in Table 3.

Vegetation/habitat history: Sweetwater Reservoir has no significant vegetation/habitat management history.

METHODS

No surveys were conducted in 2006 or 2007 because of low-water conditions. Source for water level data was the United States Geological Survey website.

RESULTS AND DISCUSSION

Habitat: A habitat survey was last conducted in 1996 (Munger and Dumont 1997). No significant manmade changes have occurred since the 1995 habitat survey.

Fish community: No results are presented because the reservoir was not surveyed in 2006 or 2007.

Fisheries management plan for Sweetwater Reservoir, Texas

Prepared – July 2007.

ISSUE 1: As of April 2007, Sweetwater Reservoir was 37 ft. low and likely has an unbalanced remnant fish population.

MANAGEMENT STRATEGIES

1. When the reservoir fills, determine the status of the remnant fish population.
2. Stock forage and sport fish species after the reservoir has filled and its pre-stocking population status is determined.

SAMPLING SCHEDULE JUSTIFICATION:

Standard surveys and report are scheduled for 2010/2011, unless drought continues.

LITERATURE CITED

- Dumont, S., and G. D. Jons. 2003. Statewide freshwater fisheries monitoring and management program survey report for Sweetwater Reservoir, 2002. Texas Parks and Wildlife Department, Federal Aid Report F-30-R, Austin.
- Munger, C., and S. Dumont. 1997. Statewide freshwater fisheries monitoring and management program survey report for Sweetwater Reservoir, 1996. Texas Parks and Wildlife Department, Federal Aid Report F-30-R, Austin.

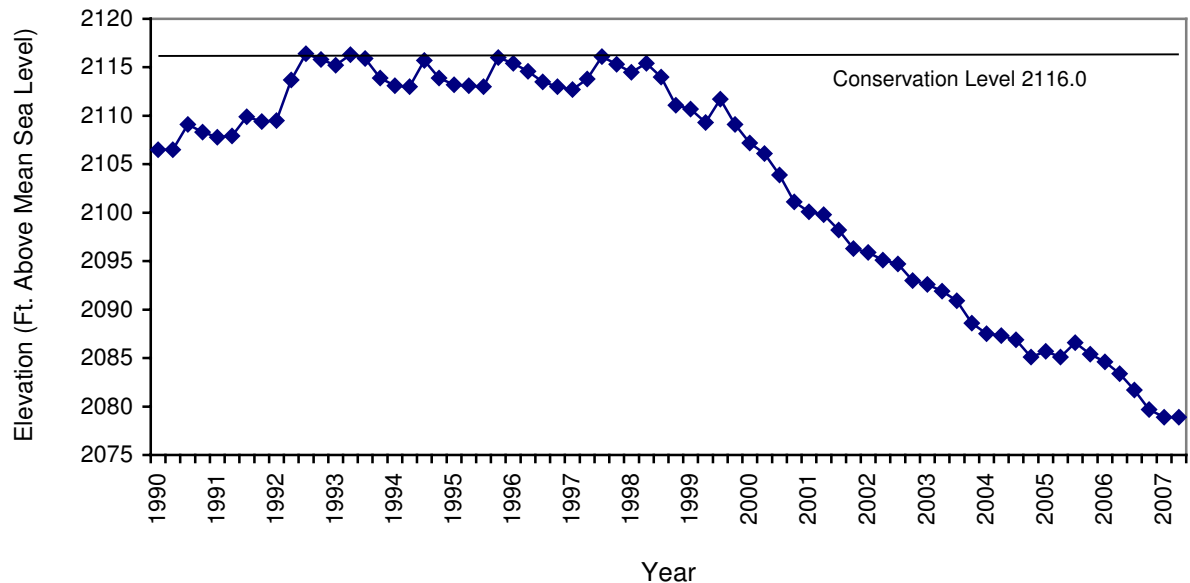


Figure 1. Quarterly water level elevations in feet above mean sea level recorded for Sweetwater Reservoir, Texas.

Table 1. Characteristics of Sweetwater Reservoir, Texas.

Characteristic	Description
Year constructed	1930
Controlling authority	City of Sweetwater
County	Nolan
Reservoir type	Tributary stream
Shoreline Development Index	4.62
Conductivity	2250 umhos/cm

Table 2. Harvest regulations for Sweetwater Reservoir, Texas.

Species	Bag Limit	Minimum-Maximum Length (inches)
Channel catfish	25	12 - No Limit
Catfish, flathead	5	18 - No Limit
Bass, largemouth	5	14 - 18 Slot Limit *
Bass, white	25	10 - No Limit
Crappie white	25	10 - No Limit

* Largemouth bass ≤ 14 inches and ≥ 18 inches may be harvested.

Table 3. Stocking history of Sweetwater Reservoir, Texas. Size categories are: FRY ≤ 1 inch; FGL = 1-3 inches.

Species	Year	Number	Size
Flathead catfish	1973	1,600	FGL
Largemouth bass	1966	70,000	FGL
Florida largemouth bass	1996	1,169	*FGL
	1997	2,412	*FGL
	1998	25,000	*FGL
	1999	15,998	*FGL
	2000	12,821	*FGL
	Total	57,400	
Walleye	1977	8,000	FGL
	1977	1,220,000	FRY
	1984	3,512,500	FRY
	Total	4,740,500	

* 3-inch triploid fish marked with coded wire tags.

Table 4. Proposed sampling schedule for Sweetwater Reservoir, Texas. Gill netting surveys are conducted in the spring, while electrofishing and trap netting surveys are conducted in the fall. Standard survey denoted by S.

Survey Year	Electrofisher	Trap Net	Gill Net	Creel Survey	Report
Fall 2007-Spring 2008					
Fall 2008-Spring 2009					
Fall 2009-Spring 2010					
Fall 2010-Spring 2011	S	S	S		S