



Texas State Soil & Water Conservation Board

BRUSH CONTROL PROGRAM

2003 ANNUAL REPORT

JANUARY 1, 2003 - DECEMBER 31, 2003

PROGRAM GOAL

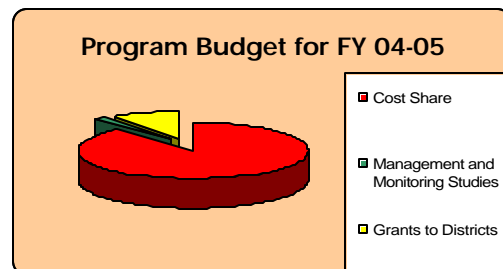
Enhance water availability through selective Brush Control.

2003 ACTIVITIES AT A GLANCE

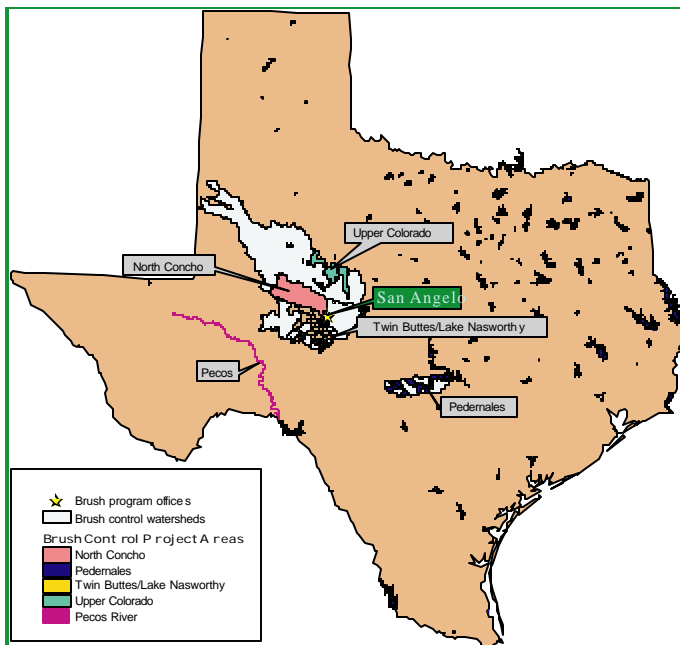
- Brush Controlled on 396,401 Acres (FY 00-03)
- 8 Mesquite and Juniper Projects Initiated
- Brush Control Rules Revised
- Reference Guide Updated
- 2 Salt Cedar Projects Initiated
- North Concho Watershed Project

PROGRAM BUDGET

FY 00-01	\$9,163,000	General Revenue
FY 02-03	\$9,163,000	General Revenue
	\$15,000,000	Agricultural Water Conservation Bond
FY 04	\$3,114,794	General Revenue



INTRODUCTION



Map of Ongoing Brush Control Projects

The Texas State Soil and Water Conservation Board presents this annual report covering the 2003 calendar year. To show trends, some data from other years is included.

This report is also being attached as a section of the report required by S.B. 1828, passed by the 78th Legislature R.S., which requires the State Board to prepare a semiannual report relating to the status of budget areas of responsibility.

For FY 03, brush projects were funded from Agricultural Water Conservation Bonds and from General Revenue appropriated by the 77th Legislature. FY 04 funding is from General Revenue appropriated by the 78th Legislature R.S.

The Brush Control Program, in existence since 1999, has treated 388,545 acres of the 665,633 acres under contract.

Drought conditions still persist in areas being treated and the water needs over the region remain critical. We must thank the Legislature for their vision in making this program a reality and express appreciation to those private landowners who are contributing their time and resources to implement a long range program to benefits others.

NORTH CONCHO RIVER PILOT BRUSH CONTROL PROJECT

In 1999, the 76th Legislature initiated the North Concho River Brush Control Project to enhance the amount of water flowing from the North Concho River Watershed into O.C. Fisher Reservoir. In 2001, this project was continued by the 77th Legislature. In FY 04, an additional \$650,000 of General Revenue money has been allocated to complete initial treatment of Brush Control in the North Concho River Watershed.

With 352,000 acres of the 950,000-acre North Concho River Watershed currently contracted for Brush Control by the TSSWCB, West Texans have focused their undivided attention to the progress of this project. Estimates indicate this project will enhance more than 267,000 acre-feet of water in the North Concho River Watershed over the 10-year life of the project. O.C. Fisher Reservoir is a water supply for the city of San Angelo where water levels have fallen to critical levels (currently 3% of capacity).

Almost 59% of the contracted acres of brush have been treated to date using state funds. Prison inmates have cleared 17,000 acres to date (13,000 acres in 2001 and 4,000 acres in 2002). However, the current drought in West Texas continues to present major challenges to the brush control program. Due to unsuitable conditions for chemical treatment of mesquite, only 34,000 acres have been treated thus far through aerial application of chemicals. This in turn has limited a majority of the brush removal activities to mechanical treatment (power grubbing, dozing, etc.) and has scattered brush removal efforts throughout the watershed.

The Upper Colorado River Authority (UCRA), under contract with the TSSWCB, is continuing to monitor hydrologic responses in the watershed due to brush removal. Basin-wide responses have been difficult to monitor due to the depleted condition of the shallow alluvial aquifer prior to brush control efforts targeted and the fact that the area has been experiencing a drought since 1995.

As a result, the UCRA has focused on subbasin and small area responses for



O.C. Fisher Reservoir is a water supply for the city of San Angelo where water levels have fallen to dangerously low capacities.

early indications of benefits.

Through brush control, the restoration of the North Concho River is ongoing and the following effects have been observed thus far:

- Areas where brush control work has been concentrated thus far (Chalk Creek, Grape Creek, Sterling Creek, and Walnut Creek) exhibit more frequent runoff events of greater intensity and duration than other tributaries along the North Concho River.
- Field observations of the North Concho River indicate that flow responses to rainfall are more frequent and pools hold water for longer periods of time following rainfall events.
- Following aerial treatment of mesquite, a pronounced increase in soil moisture and decrease in evapotranspiration has been observed.

Since the start of the pilot project, 207,537 acres of brush have been treated of the 351,689 acres under contract. It is estimated that landowners have provided cost-share in the amount of \$2.9 million.



Monitoring Flow on Sterling Creek

**TWIN BUTTES RESERVOIR/
LAKE NASWORTHY
BRUSH CONTROL PROJECTS**

In September 2002, three brush control projects were initiated to enhance the amount of water flowing into the Twin Buttes Reservoir/Lake Nasworthy complex. Twin Buttes Reservoir is used to maintain sufficient water levels in Lake Nasworthy, which serves as a water supply for the city of San Angelo. Lake Nasworthy also provides cooling water for a power generation plant. Water levels in Twin Buttes Reservoir have fallen to critical levels (currently 3% of capacity).

Based on water needs and the results of feasibility studies, the TSSWCB allocated \$9.5 million for brush control cost-share for three projects in the Twin Buttes Reservoir/Lake Nasworthy Watershed. It is projected that this allocation will allow the treatment of nearly 203,000 acres of brush and will result in the enhancement of almost 191,000 acre-feet of water over the life of the project.

Additional funding will be needed to complete the treatment of the more than 555,000 acres of eligible brush in the Twin Buttes Subbasin.

To date, 160,000 acres have been contracted for treatment in this watershed. Over 100,000 acres of brush have been treated to date using state funds.

**LAKE BALLINGER
BRUSH CONTROL PROJECT**

In September 2002, the TSSWCB and local SWCDs initiated a Brush Control Project to enhance the amount of water flowing into Lake Ballinger which lies in the Upper Colorado Watershed. This lake supplies water to the city of Ballinger. Lake Ballinger is essentially dry except for water being pumped into it from the Colorado River.

Based on water needs and the results of feasibility studies, the TSSWCB allocated \$484,000 for Brush Control cost-share in the Lake Ballinger Watershed. It is projected that this allocation will allow the treatment of over 11,000 acres. To date, 9,694 acres have been contracted for treatment in this watershed.

SWCDs that Participate in the Brush Control Program:

Caldwell-Travis	Coke County
Crockett	Devil's River
Eldorado Divide	Gillespie
Glasscock County	Hays County
High Point	Howard
Kendall	Kerr
Middle Clear Fork	Middle Concho
Midland	Mitchell
Nolan County	North Concho River
Pedernales	Rio Grande-Pecos River
Runnels	Sandhills
Tom Green	Toyah-Limpia
Trans Pecos	Upper Colorado
Upper Pecos	

MOUNTAIN CREEK RESERVOIR BRUSH CONTROL PROJECT

In September 2002, a brush control project was initiated to enhance water yield to Mountain Creek Lake. This lake, which serves as a water supply for the city of Robert Lee, is located in the Upper Colorado Watershed.

In the Mountain Creek Lake Watershed, over 7,500 acres of the 19,000-acre watershed have been targeted for brush control. Thus far, 2,034 acres have been contracted for treatment and 1,414 have been treated in this watershed.



BEFORE - Mesquite before aerial spraying.



AFTER - Mesquite 2 weeks after aerial spraying.

OAK CREEK RESERVOIR BRUSH CONTROL PROJECT

Based on water needs and the results of feasibility studies, the Oak Creek Watershed has been allocated \$1 million in Brush Control cost-share. This Brush Control Project will enhance the amount of water flowing into Oak Creek Reservoir, which supplies water for the citizens of Sweetwater, Blackwell, and Bronte. The lake, which is located in the Upper Colorado Watershed, also serves as a recreational site. Water levels in Oak Creek Reservoir have fallen to seriously low levels (currently 7% of capacity).

It is projected that the \$1 million allocated to this project will allow the treatment of almost 23,000 acres in the Oak Creek Watershed.

Additional funding may be needed to complete the treatment in the 152,000-acre watershed. Projections indicate that over the life of the project, the treatment of targeted acres may result in approximately 66,000 acre-feet increase in water within the Oak Creek Watershed.



Vegetation is returning following brush control work.

Thus far, landowners have submitted requests for funding to treat over 27,000 acres. To date, 15,214 acres have been contracted for treatment in this watershed and over 10,193 acres of brush have already been treated.

PEDERNALES RIVER BRUSH CONTROL PROJECT

In September of 2002, a brush control project was initiated to enhance the amount of water flowing from the Pedernales River Watershed into Lake Travis, a water supply for the city of Austin. The lake is also used for power generation and has become a major resort area providing opportunities for boating, fishing, swimming, and camping.

The Pedernales River Watershed has been allocated \$4 million for cost-share. It is projected that this allocation will allow the treatment of over 62,000 acres of brush in the Pedernales River Watershed and may result in the enhancement of an estimated 317,000 acre-feet of water over the life of the project.

Additional funding will be needed to complete the treatment of the 140,000 acres of brush that are targeted in the 815,000-acre watershed. Feasibility studies indicate that over the life of the project, treatment of the targeted acres may result in the enhancement of over 715,000 acre-feet of water in the Pedernales River Watershed.

Landowners have submitted requests for funding to treat more than 70,000 acres in priority subbasins. In 2002-2003, 59,000 acres were contracted for treatment in this watershed. Over 41,000 acres of brush have been treated to date using state funds.

A 10 foot mesquite tree can consume up to 20 gallons of water per day.

PECOS/UPPER COLORADO SALT CEDAR PROJECT

In September 2003, the TSSWCB, SWCDs USDA/NRCS, along with TDA, and TAES were involved in a combined effort to treat Salt Cedar along the Pecos and Upper Colorado Rivers. Salt Cedar is becoming an increasing problem along the Pecos and Upper Colorado Rivers. Salt Cedar is estimated to use 200 gallons of water per tree and increases the salinity of the water. To date, \$410,710 was

allocated to the project by the TSSWCB and 6,220 acres were put under contract.

This allocation of money allowed for the utilization of over \$2 million of federal funds.

CHAMPION CREEK RESERVOIR BRUSH CONTROL PROJECT

A brush control project was initiated in September 2002 to enhance the amount of water flowing into Champion Creek Reservoir which is located in the Upper Colorado critical area. This reservoir is an important water source for the Colorado City and their service area including the city's population of approximately 5,000 citizens and over 2,000 inmates within the TDCJ system.



Bulldozers and other heavy machinery are used to effectively clear brush.

The lake also serves as an important tool in the power generation process for the TXU power plant located in Colorado City as well as a regional tourist attraction for recreational purposes. Water levels have fallen to critical levels (currently 5% of capacity) and are now well below the intake valves for both Colorado City and TXU. Based on a proposal submitted by local Soil and Water Conservation Districts, the TSSWCB allocated \$907,000 for brush control cost-share in the Champion Creek Reservoir Watershed. It is projected that the funds allocated may allow the treatment of all 24,000 acres of brush targeted in the 116,000-acre watershed. Projections indicate that over the next 10 years, treatment of the targeted acres will increase water yield to Champion Creek Watershed by almost 19,000 acre-feet. To date, 7,241 acres have been contracted for treatment in this watershed.

These funds are also being utilized to match funds in a 319 Water Quality Project along the Upper Colorado River.

Juniper has been documented to intercept 73% of precipitation.

PROJECT STATUS TO DATE

Project	Total Allocation	Acres Under Contract	Treated Acres	Avg. Cost Per Ac.	Expected Water Yield
North Concho River	\$ 13,254,024.00	351,689	207,537	\$ 41.00	157,728
Twin Buttes	\$ 9,765,989.00	207,058	115,518	\$ 43.00	108,586
Perdernalles	\$ 4,001,199.00	58,845	41,524	\$ 64.00	212,187
Lake Ballinger	\$ 484,886.00	10,235	4,559	\$ 45.00	6,063
Oak Creek Lake	\$ 1,095,765.00	15,214	10,752	\$ 47.00	12,149
Champion Creek	\$ 906,932.00	14,338	7,241	\$ 45.00	5,503
Pecos/ Upper Colorado	\$ 410,710.00	6,220	-		-
Mountain Creek	\$ 95,532.00	2,034	1,414	\$ 49.00	1,230

OTHER ACTIVITIES

The 78th Legislature provided a \$3.1 million budget to continue State Brush Control projects and initiate a combined effort with the Natural Resources Conservation Service to continue Salt Cedar control in the Pecos/Upper Colorado Watershed. Monitoring efforts are continued by the Upper Colorado River Authority (UCRA), under contract with the TSSWCB. The UCRA is working with the Texas Institute for Applied Environmental Research to determine the effects of Brush Control on the water balance and water yield within the North Concho River Watershed.

Other continuous activities by the TSSWCB:

1. *Provide Assistance to the Texas A&M Research Center on Various Brush Control Practices in the North Concho Watershed.*
2. *Alternative Mechanisms for Implementing and Administering Maintenance Control Programs for Mesquite and Redberry Juniper. Included Are Considerations of Incentive-Driven vs. Mandatory Driven Programs and a Review of Other Cost-Share Programs for Maintenance Brush Control that May Be Used in Lieu of or to Supplement Funds Available From the Texas Brush Control Program.*
3. *Recommendations for Consideration in Future Rule Making Activities Related to the Texas Brush Control Program by the Texas State Soil and Water Conservation Board.*
4. *Field Inspections of Mesquite and Redberry Juniper Control Treatments Used in the North Concho River Watershed Brush Control Project.*
5. *Field Visits to Assure that Aerial Spraying of Mesquite is Applied According to Program Specifications.*
6. *Evaluation of Future Financing Alternatives for the State Brush Control Program.*
7. *Provide Training Assistance to SWCDs in the State Brush Control Program Areas.*
8. *Coordinate Monitoring Activities with the Texas Water Development Board (TWDB) and Other Involved Agencies.*
9. *Meetings with Texas Department of Agriculture (TDA), Texas Parks and Wildlife Department (TPWD), TWDB and Legislative Staff on Brush Control Issues.*
10. *Assist Landowners and Other Conservation Agencies with Field Days and Demonstrations in Regards to Brush Control.*
11. *Coordinate with Texas USDA/NRCS to Target EQIP dollars for Use in Brush Control Project Areas.*
12. *Updating the State Brush Control Plan.*

BRUSH CONTROL RULES REVISION

In response to Senate Bill 1828, 78th Legislature, R.S., the Texas State Soil and Water Conservation Board is revising the Brush Control Rules to reflect changes in the law.

As directed by the TSSWCB, staff has drafted proposed Brush Control Rules that implement changes made by SB 1828. These rules comply with the Brush Control Law (§203 of the Agriculture Code) and provide for local involvement in the administration of the Brush Control Program to the maximum extent possible. To develop these rules, staff integrated the law, existing rules, existing policies and procedures, the State Brush Control Plan, and input from landowners, local SWCDs, TPWD, USDA/NRCS, TDA, Office of the Attorney General, Texas A&M University, Texas Farm Bureau, Upper Colorado River Authority, Lower Colorado River Authority, TSSWCB staff, and

Association of Texas Soil and Water Conservation Districts.

Revisions to the Brush Control Rules will be published December 26, 2003 in the Texas Register and will be available for a 30-day public comment period.

Major changes include:

- consultation with the TWDB and TDA
- total maximum Cost-Share decreased from 80% to 70%
- Cost-Share for political subdivisions at 50% and public lands at 100%
- Rank all areas of the State in need of a Brush Control Program

For more information, visit TSSWCB's website at <http://www.tsswcb.state.tx.us/programs/brush.html> or contact the Brush Control Office at 325-481-0335