



# Texas State Soil & Water Conservation Board

## BRUSH CONTROL PROGRAM

### 2004 ANNUAL REPORT

JANUARY 1, 2004 - DECEMBER 31, 2004

### PROGRAM GOAL

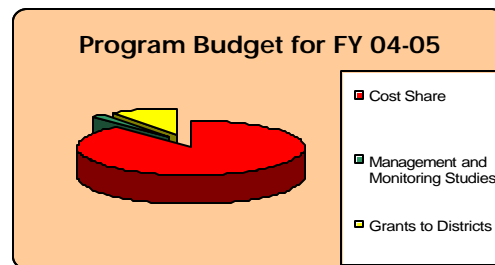
Enhance water availability through selective Brush Control.

### 2004 ACTIVITIES AT A GLANCE

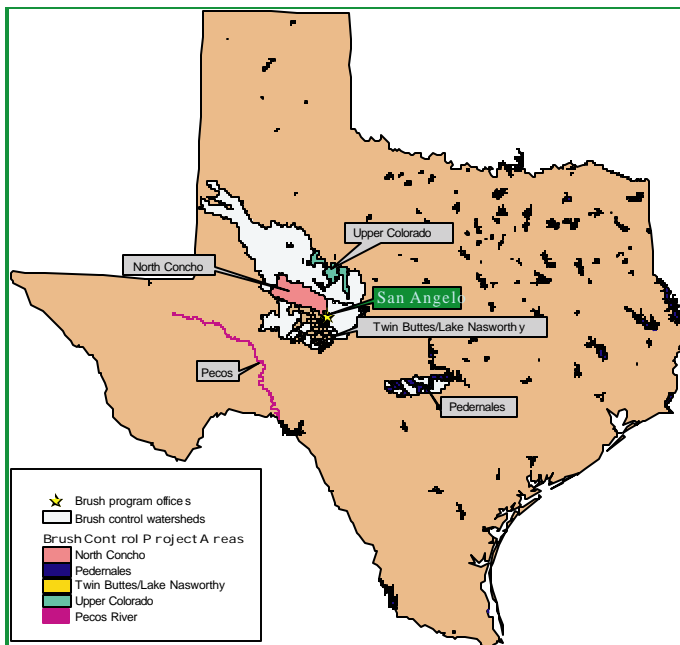
- Brush Controlled on 582,642 Acres (FY 00-04)
- 10 Mesquite and Juniper Projects
- 2 Salt Cedar Projects
- Consultation with the Texas Water Development Board (TWDB) on the effects of the Brush Control program on water quantity.

### 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
FY 05	\$607,805	General Revenue



## INTRODUCTION



**Map of Ongoing Brush Control Projects**

The Texas State Soil and Water Conservation Board presents this annual report covering the 2004 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 04, brush projects were funded from Agricultural Water Conservation Bonds and from General Revenue appropriated by the 77th Legislature. FY 05 funding is from General Revenue appropriated by the 78th Legislature R.S.

The Brush Control Program, in existence since 1999, has treated 582,642 acres of the 675,386 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 are at critical levels due to drought conditions; however levels have improved due to brush control efforts.

Almost 85% 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.

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 early indications of benefits.



**An Excavator is being used for Brush Management**



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

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, 295,510 acres of brush have been treated. It is estimated that landowners have provided cost-share in the amount of \$3.3 million.

**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.

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, 180,000 acres have been contracted for treatment in this watershed. Over 158,348 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 \$419,900 for Brush Control cost-share in the Lake Ballinger Watershed. It is projected that this allocation will allow the treatment of over 6,776 acres. To date, 8,187 acres have been contracted for treatment in this watershed.

**SWCDs that Participate in the Brush Control Program:**

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

**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, 1,616 acres have been contracted for treatment and 1,440 have been treated in this watershed.

**Aerial sprayed Mesquite on Pecan Creek**



## 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.



**Brush recently treated in the Twin Buttes Watershed**

Thus far, landowners have submitted requests for funding to treat over 27,000 acres. To date, 16,535 acres have been contracted for treatment in this watershed and over 14,328 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 2002-2004, 56,979 acres were contracted for treatment in this watershed. Over 55,696 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, \$525,976 was

allocated to the project by the TSSWCB and 8,177 acres were put under contract and 3,693 acres have been treated.

**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 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, 17,381 acres have been contracted for treatment in this watershed and 13,168 acres have been treated.

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

<b>Project</b>	<b>Total Allocation</b>	<b>Acres Under Contract</b>	<b>Treated Acres</b>
<b>North Concho River</b>	<b>\$ 13,254,024.00</b>	<b>26,245</b>	<b>295,510</b>
<b>Twin Buttes</b>	<b>\$ 9,765,989.00</b>	<b>180,282</b>	<b>158,348</b>
<b>Pedernales</b>	<b>\$ 4,001,199.00</b>	<b>56,979</b>	<b>55,696</b>
<b>Lake Ballinger</b>	<b>\$ 419,900.00</b>	<b>8,187</b>	<b>6,776</b>
<b>Oak Creek Lake</b>	<b>\$ 1,095,765.00</b>	<b>16,535</b>	<b>14,328</b>
<b>Champion Creek</b>	<b>\$ 906,932.00</b>	<b>17,381</b>	<b>13,168</b>
<b>Pecos/ Upper Colorado</b>	<b>\$ 525,976.00</b>	<b>8,177</b>	<b>3,693</b>
<b>Mountain Creek</b>	<b>\$ 95,532.00</b>	<b>1,616</b>	<b>1,440</b>

## **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. The TSSWCB is also using State Brush money along with local match from Mitchell SWCD to utilize federal EPA dollars to treat Salt Cedar along the Upper Colorado River 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. *Field Inspections of Mesquite and Redberry Juniper Control Treatments Used in the North Concho River Watershed Brush Control Project.*
2. *Field Visits to Assure that Aerial Spraying of Mesquite is Applied According to Program Specifications.*
3. *Evaluation of Future Financing Alternatives for the*

*State Brush Control Program.*

4. *Provide Training Assistance to SWCDs in the State Brush Control Program Areas.*
5. *Meetings with Texas Department of Agriculture (TDA), Texas Parks and Wildlife Department (TPWD), TWDB and Legislative Staff on Brush Control Issues.*
6. *Assist Landowners and Other Conservation Agencies with Field Days and Demonstrations in Regards to Brush Control.*
7. *Coordinate with Texas USDA/NRCS to Target EQIP dollars for Use in Brush Control Project Areas.*
8. *Updating the State Brush Control Plan.*
9. *The TSSWCB is coordinating with the Texas Water Resource Institute in providing information that documents the hydrologic impacts of brush control.*
10. *Assist SWCDs with conservation planning and performance certifications for their landowners.*



**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**