

Texas State Soil and Water Conservation Board (TSSWCB) Brush Control Program Annual Report

January 1, 2001 through December 31, 2001

Program Goal:

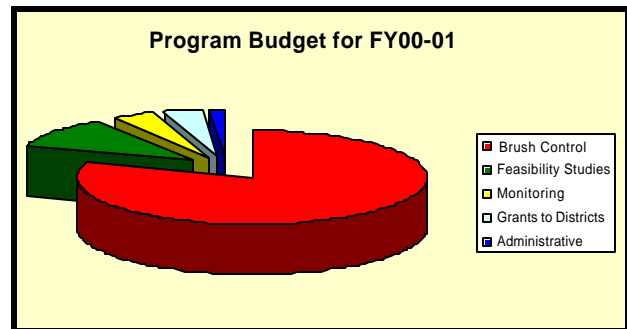
- Enhance Water Supplies Through Selective Brush Control

Program Budget:

| | |
|---------|--------------|
| FY00-01 | \$9,163,000 |
| FY02-03 | \$24,163,000 |

2001 Activities At A Glance:

- Brush Control On 40,000 Acres
- Assessing Increased Flows
- Initiation Of New Projects
- Feasibility Studies
- Special Studies
- State Brush Control Plan Revision



North Concho River Pilot Brush Control Project:

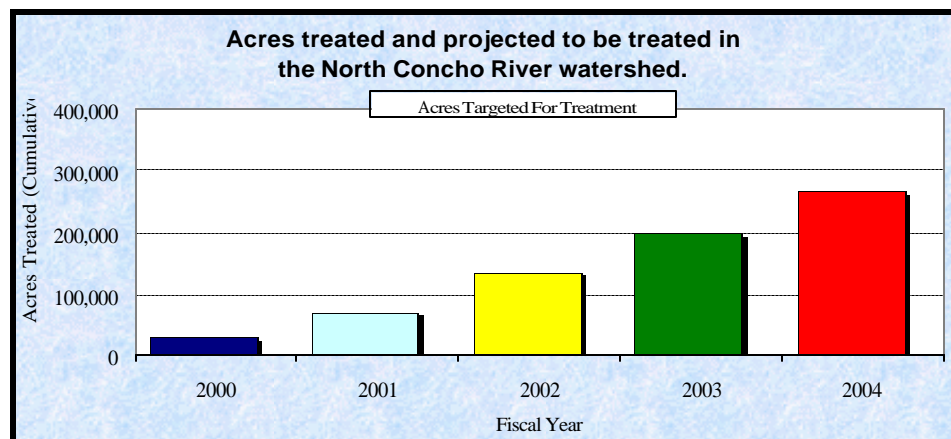
The purpose of the North Concho River Brush Control Project is to enhance the amount of water flowing from the North Concho River watershed into O.C. Fisher Reservoir. O.C. Fisher is a water supply for the city of San Angelo where water levels have fallen to critical levels (currently 4 percent of capacity).

The North Concho was selected for this project because of the demonstrable changes in the watershed brought about by brush infestation and the dramatic negative effects of these changes on water yields. Historically, the North Concho River and many of its tributaries flowed year round. Since the

early 1960s, the North Concho has been virtually dry and waterflow into O.C. Fisher Reservoir has been reduced to less than 20 percent of its normal.

With 400,000 acres of the 950,000-acre North Concho River watershed currently targeted for brush control by the TSSWCB (see chart below), drought-weary West Texans have their eyes fixed on this program looking for hope.

This project was initiated by the 76th Legislature and continued by the 77th Legislature. It is estimated this 10-year program will make over 65 billion gallons of water available during this period.



North Concho Project Con't:

Over 75,000 acres of brush have been cleared to date using state funds. Through a cooperative agreement with the Texas Department of Criminal Justice, prison inmates have cleared an additional 13,000 acres.



Shearer at work in Tom Green County.

Guidance has also been given to landowners to help them protect the natural resources on their land. Through this guidance, the natural resources on more than 450,000 acres have been protected.

The current drought in West Texas has presented a major challenge to the brush control program. Besides the obvious effects from lack of rainfall, the dry conditions have not allowed chemical treatment of mesquite. This has limited all 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 currently monitoring hydrologic responses in the watershed to brush removal. Drought conditions and the scattered brush removal pattern have made basin-wide responses difficult to monitor. As a result, the UCRA has focused on sub-basin and small area responses for early indications of benefits.



Shelving Rock Spring flows following brush control on Mims Ranch.



Sterling Creek following brush control on Horwood Ranch in Sterling County.

It is estimated this 10-year program will make over 65 billion gallons of water available to the North Concho River Watershed during this period.

Considering the following responses to date, it is believed that the program will be a success.

- Following brush removal at a recharge area on the East Fork of Chalk Creek in Coke County, a landowner reported the reactivation of a historical spring that had gone dry.
- On the Horwood Ranch, in Sterling County, a limited number of acres of brush were removed along the edge of Sterling Creek. This work resulted in the creek being transformed into a continually flowing stream even though there was no substantial rainfall in the area.
- Substantial juniper removal has occurred within the Chalk Creek and Grape Creek sub-basins. In response to moderate rainfall during the last five months of 2001, these watersheds have experienced three runoff events, which is not typical of recent years.
- Brush was removed from the recharge area of a historical spring (Shelving Rock) on the Mims Ranch in Coke County. Without rain fall, the dry spring became muddy within two weeks of the work and shortly thereafter began to flow.

New Brush Control Projects:

Additional brush control projects were established as a result of the positive outcome of feasibility studies completed by the TSSWCB in 2000. These projects were funded from \$15 million provided by the 77th Legislature. Based on water needs and the results of these feasibility studies, the TSSWCB allocated \$3.7 million for brush control in the Pedernales River watershed and \$11.3 million for brush control in the Upper Colorado/Twin Buttes Reservoir watershed.

Taking information from the feasibility studies, it is estimated that over 45,000 acres of brush will be treated in the Pedernales River watershed and almost 200,000 acres will be treated in the Upper Colorado/Twin Buttes Reservoir watershed. Projections indicate that over the next 10 years, this will result in an additional 110 billion gallons of water in the Pedernales watershed and over 75 billion gallons in the Upper Colorado/Twin Buttes Reservoir watershed.

The Pedernales River is a tributary to Lake Travis, which provides water to the city of Austin and other areas. The Upper Colorado/Twin Buttes Reservoir watershed provides water to the City of San Angelo and much of West Texas.



Aerial view of brush work done on the Demere Ranch in Coke County.

These projects are currently in the planning phase. Input is being obtained from local soil and water conservation districts and river authorities. These projects are scheduled to begin in Fall 2002 when the funds become available.

Over the next 10 years, 110 billion gallons of water in the Pedernales Watershed and 75 billion gallons in the Upper Colorado/Twin Buttes Reservoir watershed will be made available.

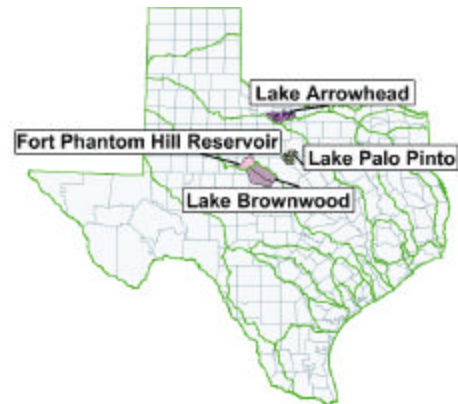


Excavator at work on the Mimms Ranch in Coke County.

Feasibility Studies:

The feasibility of using brush control to enhance water yield is currently being studied in the Lake Arrowhead, Lake Brownwood, Lake Fort Phantom Hill, and Lake Palo Pinto watersheds. The 77th Legislature provided \$500,000 to initiate these brush control feasibility studies. These watersheds are identified in the State Brush Control Plan as reservoirs where brush control could enhance water supplies. The users of the water supplies in these watersheds have been hit hard by recent droughts resulting in the institution of water-use restrictions.

These new brush control feasibility studies were initiated in September 2001 and will be completed in November 2002.



Participants in these studies include the following:

- Central Colorado Soil and Water Conservation District
- Archer County Soil and Water Conservation District
- Palo Pinto Soil and Water Conservation District
- Middle Clear Fork Soil and Water Conservation District
- Brazos River Authority
- Lower Colorado River Authority
- Red River Authority
- Texas A&M University-Texas Agricultural Experiment Station

The final reports will be delivered to the Texas Legislature in December 2002.

Special Studies:

The 77th Legislature also provided \$500,000 to study methods for adequately addressing future maintenance needs, identifying appropriate watershed management activities, and financing mechanisms for the State Brush Control Program.



Sterling Creek on Horwood Ranch in Sterling County after brush work.

The UCRA, under contract with the TSSWCB, is heading up these studies. 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 watershed. The Texas Agricultural Experiment Station is assisting the UCRA with researching maintenance needs and watershed management. The UCRA has contracted Freese & Nichols, Inc. to research future financing options for the State Brush Control Program.

A report will be delivered to the Texas Legislature in December 2002 describing the findings.

State Brush Control Plan Revision:

Section 203.054 of the Agriculture Code requires that the State Brush Control Plan be reviewed at least every two years and amended if necessary to reflect changes in the program.

The State Brush Control Plan was last revised in 1999. A number of amendments were made due to the following:

- completion of eight feasibility studies
- the designation of three additional critical areas for brush control
- the identification of two additional water supply reservoirs where brush control could enhance supplies
- the initiation of four additional feasibility studies.

A hearing was held on January 17, 2002 to consider the amendments prior to adopting the revised plan.

Conclusion:

The State Brush Control Program continues to evolve and be refined. In the next year, a guidance document will be developed describing the operation of the program in detail.

Two new projects will be implemented which will present new challenges and opportunities. If weather cooperates, a substantial amount of brush control will be performed in the North Concho watershed. This will allow the State to more accurately measure the effects of the program on increasing water supplies.

The completion of the special study of methods will provide needed changes to the Program Guidance and State Brush Control Plan. This will ensure the long-term effectiveness of the program by adequately addressing future maintenance needs and identifying appropriate watershed management activities and financing mechanisms for the State Brush Control Program.

These activities will allow the state to become more effective in reaching its goal of increasing water yield through brush control.



Aerial spraying is one of the approved brush control practices.

For more information, see the Web site at <http://www.tsswcb.state.tx.us/programs/brush.html> or contact Kevin Wagner at (254) 773-2250 or kwagner@tsswcb.state.tx.us.

