

# TEXAS STATE SOIL & WATER CONSERVATION BOARD



## SEMI – ANNUAL REPORT

TO THE

GOVERNOR,  
LIEUTENANT GOVERNOR,  
AND  
SPEAKER OF THE HOUSE

JANUARY 1, 2004

## **FORWARD**

In response to S.B. 1828 passed by the 78<sup>th</sup> Texas Legislature in Regular Session, 2003, the Texas State Soil and Water Conservation Board presents this review of its programs and activities. S.B. 1828 added §201.028 to the Texas Agriculture Code to provide that the TSSWCB shall prepare and deliver to the Governor, the Lieutenant Governor, and the Speaker of the House of Representatives a report, not later than January 1 and July 1 of each year, relating to the status of the budget areas of responsibility assigned to the State Board including outreach programs, grants made and received, federal funding applied for and received, special projects, and oversight of water conservation district activities.

The FY04 Operating Budget versus Expenditures is attached to this report. Information on grants made to local districts and other entities is incorporated within the program section it involves. Federal grants received for the Clean Water Act are provided in that section.

Attached, as an addendum of this report, will be the Brush Control Program 2003 Annual Report. §203.056, Texas Agriculture Code, requires the State Board, before January 31 of each year, to submit a report of the activities of the Brush Control Program during the immediately preceding calendar year.

The Texas State Soil & Water Conservation Board takes pride in the accomplishments and remarkable progress that have been made in soil and water conservation in this state. Often environmental successes are slow to be realized. We are proud to report one success story in this report and that involves reducing the level of Atrazine in several water bodies, particularly the Aquilla Reservoir in the Hill County-Blackland SWCD.

However, we recognize there remains a continuing challenge and an ongoing need to ensure our land has the capability to produce food and fiber for future Texans. Because of changes in land use, ownership, technology, and population growth, the need for soil and water conservation programs will remain critical. Texas has a finite number of acres to provide for the needs and desires of citizens and visitors, and this places an ever-increasing demand on agricultural land. Farmers and ranchers face complex decisions concerning the best ways to manage and utilize the land available to them.

We believe that soil and water conservation programs must remain dynamic as land uses change and technology improves to make some conservation practices more capable of meeting demands on soil and water resources. We also maintain the belief that the purpose of the soil and water conservation program is to promote the wise use of our renewable natural resources and provide for the conservation and enhancement of the soil and water resources of this state through and by the dynamic decisions of local soil and water conservation districts which promotes the use of each acre of land within its capabilities and treating it according to its needs.

From the beginning, the Texas State Soil and Water Conservation Board and local soil and water conservation districts have formed an organizational framework through which various complex governmental conservation programs are delivered to local landowners and operators. This relationship has successfully been utilized to disseminate sound management techniques and practices to maintain individual productive land uses to provide for the needs of present and future generations.

To the landowners of Texas, the individual soil and water conservation district directors, and the many agencies and organizations assisting and working with our programs, we offer our sincere thanks.

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## **HISTORICAL BACKGROUND**

In the early history of the United States, the conservation of soil and water resources was not often considered by those involved in agriculture. Quite the contrary was true in fact. Land was cleared and put into farm production. When the land quit producing at a profitable level, the farmers merely moved on to new land farther west and started the process over again. There was no need to be concerned with soil conservation, as there was a seemingly unlimited supply of virgin land waiting to be tilled. This process continued through the 1800s and into the early 1900s. With the outbreak of World War I, farmers in the Great Plains states were encouraged to break out native grassland to grow wheat and other foodstuffs to feed the nation and the world. As a result of these and other unwise management practices and the fact that the farmlands were experiencing long periods of drought, the 1930s produced some of the worst dust storms the nation had ever seen. Clouds of dust rolled across the plains states sending dust storms through the south and into the nation's capitol. At the same time, the nation was in the midst of a great economic depression. The federal government, seeking ways to put people back to work and encourage conservation, created the Civilian Conservation Corps and Soil Erosion Service. Through these mechanisms, demonstration projects were initiated to train technicians and to educate the public in ways to conserve soil resources. These programs were successful in putting people back to work, but lacked the local ties to establish lasting conservation programs.

One of the early day leaders in the national effort to control soil erosion was Hugh Hammond Bennett from North Carolina. After graduation from the University of North Carolina in 1903, Hugh Bennett took a job with the Bureau of Soils in the United States Department of Agriculture. Because of his experience, scientific knowledge and leadership ability, he was put in charge of the Soil Erosion Service when it was created in 1933. In 1935, P.L. (Public Law) 46 was passed creating the Soil Conservation Service within the U.S. Department of Agriculture and Hugh Bennett became the first Chief of the agency. He soon became internationally known for his accomplishments in conservation work.

With the help of Congressman Buchanan from Columbus, Texas, Hugh Bennett was able to persuade President Franklin Roosevelt that the soil resources of this nation were being wasted. He convinced the President that a Model Soil Conservation Act should be developed and sent to the governors of each state for passage by their state legislatures. The purpose of this Model Act would be to develop programs at the state and local level to control soil erosion.

In 1936, such a Model Act was sent to the governors with the endorsement of President Roosevelt. The Model Act, developed in Washington, was patterned after the Texas Wind Erosion Act, the Grass Conservation Acts in the Northern High Plains and certain water conservation district law.

In 1937 legislation was introduced in the Texas Legislature based on this Model Act. It is reported that as many as 25 different versions of this soil conservation law were considered before a final version was passed. There was much heated discussion of the proposed legislation. When the final version was adopted, the bill contained many undesirable features. The law would have set up Soil Conservation Districts automatically on a county basis and made County Commissioners Courts the governing body. A portion of the county tax was to be used to finance the program and county agricultural agents were to be the administrative officers.

A number of agricultural leaders from across the state had, by this time, become concerned about the newly passed legislation. It was their opinion that, if the responsibility for installing and maintaining conservation measures lay in the hands of the land owners, the control of such a program should also be

in their hands. As a result of these and other concerns, a group of landowners led by V.C. Marshall of Heidenheimer, Texas, convinced the Governor to veto the 1937 legislation.

Hard feelings among agricultural leaders resulted from the attempt to pass this soil conservation law. Under the leadership of Mr. Marshall, a concerted effort was made during the interim between legislative sessions to heal the old wounds and to put together a version of a law that would be generally accepted by the farmers and ranchers of Texas. Mr. Marshall organized a committee of leaders from across the state to promote the passage of a new Soil Conservation Law. He traveled many miles at his own expense seeking the views of agricultural leaders and promoting the idea of the Soil Conservation District Program.

The key points Mr. Marshall felt should be included in the new law were that (1) farmers and ranchers should determine whether or not a Soil Conservation District was needed and hold a local option election prior to the establishment of the district; (2) the program should be controlled by landowners; and (3) the Soil Conservation Districts should have no taxing authority or the power of eminent domain.

In 1939 the Texas Legislature passed H.B. (House Bill) 20 which incorporated those features and was the first Soil Conservation Law for the state. The law created the State Soil Conservation Board and allowed for the creation of the Soil Conservation Districts. Mr. Marshall was elected as the first Chairman of the Soil Conservation Board and later resigned to become the first Executive Director of the agency.

On April 30, 1940, the Secretary of the State issued Certificates of Organization for the first 16 Soil Conservation Districts paving the way for the program we now operate. Today, Texas has 216 local soil and water conservation districts that encompass more than 99% of the state.

As previously mentioned, the Model Act endorsed by President Roosevelt was in part patterned after the Texas Wind Erosion Act. Texas was already making attempts to address soil conservation as a result of the “Dust Bowl” days of the 1930s. The 44<sup>th</sup> Legislature in 1935 passed legislation authorizing the establishment of Wind Erosion Conservation Districts. This law provided for the creation of districts to “conserve the soil by prevention of unnecessary erosion caused by winds, and the reclamation of lands that have been depreciated or denuded of soil by reasons of winds.” A number of such districts were created. With the passage of the Soil Conservation District Law in 1939, those Wind Erosion Conservation Districts, which were created, soon became dormant.

In 1975, Governor Dolph Briscoe, by Executive Order, designated the TSSWCB as lead agency to assume the planning and management responsibility for control of agricultural and silvicultural nonpoint source pollution as required by the Federal Water Pollution Control Act.

In 1981 the 67<sup>th</sup> Legislature passed H.B. 1436, which for the first time codified the agricultural laws of Texas. Title 7, Chapter 201 of this code contains the portion pertaining to Soil and Water Conservation.

In 1985 the 69<sup>th</sup> Legislature passed S.B. 1083 creating a Brush Control Program in Texas and granting new powers and responsibilities, without funding, to the TSSWCB and Soil and Water Conservation Districts under Chapter 203 of the Agriculture Code. In 1999, the TSSWCB received its first appropriation in the FY00-01 biennium to control water-depleting brush and trees, such as cedar and mesquite. The program received \$9.1 million to establish a pilot project in the North Concho Watershed.

In 1993, the 73<sup>rd</sup> Legislature passed S.B. 503 which named the TSSWCB the lead agency to address water quality issues relating to runoff from diffused, or nonpoint sources resulting from agricultural and forestry operations. In 1999, the Legislature expanded the TSSWCB's environmental mission and appropriated money to address water pollution from nonpoint sources under a separate, federally mandated program.

The leaders who framed the Texas Soil and Water Conservation Law in 1939 recognized that landowners and operators of private land constitute the basic resource for the conservation of our renewable natural resources. Without the support and willing participation of private landowners and operators in the development and implementation of soil and water conservation programs there is little hope of success. Local soil and water conservation districts led by farmers and ranchers who know the land and the local conditions and problems have the means to develop conservation plans that address each acre of land specific to its needs to solve or reduce the severity of its problems.

## **ORGANIZATION**

Since inception, the TSSWCB has been governed by five board members, elected by delegates from each of five regions of the state's 216 local soil and water conservation districts. Elections occur annually at regional conventions of the local soil and water conservation districts, with members serving two-year staggered terms. However, with the enactment of S.B. 1828 by the 78<sup>th</sup> Legislature, two Governor appointees join the five elected board members to create a seven-member board. Currently the two appointed positions are unfilled.

Elected State Board members must be 18 years of age or older; hold title to farmland or ranchland; and be actively engaged in farming or ranching. The Governor appointees must be actively engaged in the business of farming, animal husbandry, or other business related to agriculture and wholly or partly owns or leases land used in connection with that business; and may not be a member of the board of directors of a conservation district.

The State Board elects its own Chair and generally meets every other month, unless specific programs or issues require more immediate action. The following list shows the current Board members and shows which State Board Region they represent.

### **Texas State Soil and Water Conservation Board**

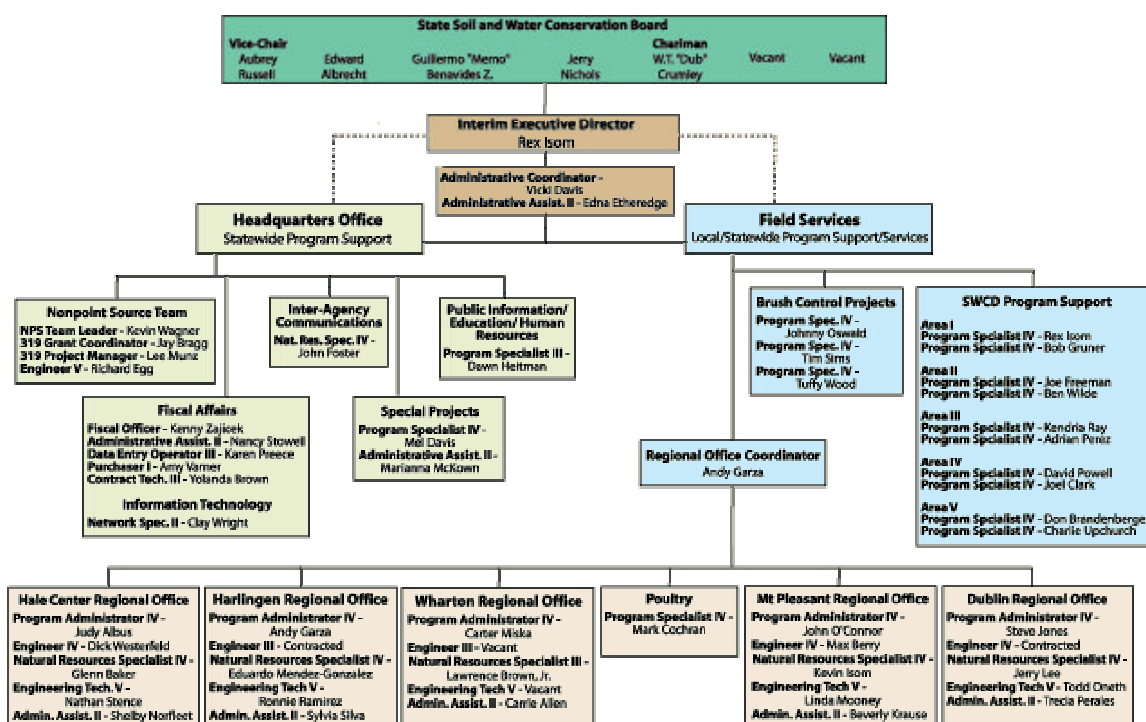
<b>Member Name</b>	<b>Region</b>	<b>Term</b>	<b>Residence</b>
Aubrey L. Russell	#1	May 5, 2003 – May 3, 2005	Panhandle
Edward G. Albrecht	#2	May 7, 2002 – May 4, 2004	Comfort
Guillermo "Memo" Benavides Z.	#3	May 5, 2003 – May 3, 2005	Laredo
Jerry D. Nichols	#4	October 1, 2003 – May 4, 2004	Nacogdoches
W.T. "Dub" Crumley	#5	May 5, 2003 – May 3, 2005	Stephenville

## **STAFF**

The TSSWCB began downsizing in July 2003 and in that process appointed Rex Isom as Interim Executive Director. Mr. Isom continues, as of this date, to serve in that capacity, carrying out the directives of the State Board and directing staff efforts.

We emphasize our agency philosophy as stated in our Strategic Plan, “The State Soil and Water Conservation Board will act in accordance with the highest standards of ethics, accountability, efficiency, and openness.... We approach our activities with a deep sense of purpose and responsibility.” Mr. Isom, as Interim Executive Director, is leading the agency in that direction and we expect all employees to follow that lead.

On December 1, 2002 the TSSWCB employed 62 staff, 28 of which worked in the Temple headquarters. The remaining 34 employees were field staff, either working out of their homes or located in the five regional offices located throughout the state. The FY04 budget for personnel was reduced and on December 1, 2003 the TSSWCB employed a total of 51, with 16 employees working in the Temple headquarters and 35 employees in the field. There are also two vacant field positions that will be filled in the near future as we progress through the hiring process. Due to the difficulties of finding engineers to hire, two field engineer positions are contracted. The following organization chart shows the agency’s current structure.



The results of restructuring the TSSWCB’s organizational structure to move more resources to the field and away from headquarters has been a 71% to 29% ratio of salary for Field Staff to Headquarters Staff. Prior to restructuring, the ratio for Field Staff to Headquarters Staff was 52% to 48%.

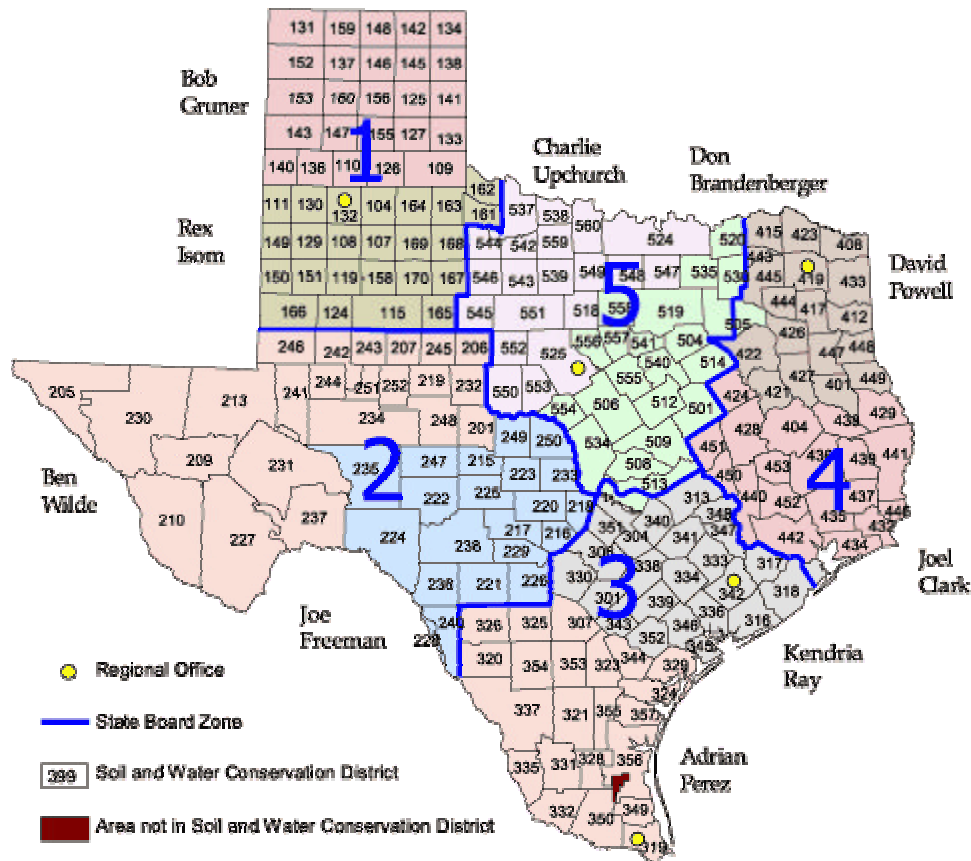
The regional office staff provides on-site technical assistance to farmers and the field staff serves as liaisons between the TSSWCB and local districts. The field staff also provides assistance to local districts and district employees concerning operations, programs, and activities. The regional office staff coordinates with the Texas Commission on Environmental Quality (TCEQ), Texas Cooperative Extension (TCE), and the USDA’s Natural Resource Conservation Service (NRCS) to provide technical assistance to landowners on conservation projects.



## SOIL AND WATER CONSERVATION DISTRICTS

The TSSWCB performs many of its activities in coordination with the state's 216 local soil and water conservation districts. These local districts are political subdivisions of the state, established through local option elections of agricultural landowners. Districts generally reflect county boundaries, but may also follow river basin or watershed boundaries, depending on the desires of the local landowners.

The following soil and water conservation district map shows the current 216 local districts that cover almost the entire state. That portion of the state not in a soil and water conservation district is in Kenedy County and contains the privately owned King Ranch. The map also shows the grouping of the districts into the five State Board Districts that respectively elect a State Board member and shows the field staff that is assigned to work with each district within a specific area.



Landowners within these local districts elect the five district directors that comprise the districts governing body or board of directors. This board of directors administers the programs and activities of the district. Representatives of the districts within each region then elect the members of the State Board through a series of convention style-elections.

Districts do not have taxing authority and rely on locally generated funds from various activities and programs, federal assistance, county assistance, and state assistance from the TSSWCB. The USDA Natural Resource Conservation Service (NRCS) provides most of the federal assistance available to districts and through cooperative agreements provide technical assistance to farmers and ranchers requesting assistance from the district.

As stated, there are currently 216 local districts. However, one district is in the process of dividing and reorganizing as two new districts that will be based on single county boundaries to better serve the landowners within each county. This action was based on a petition to the State Board and an affirmative local option election of the landowners indicating their desire to have the two new districts.

## **ANNUAL STATE MEETING OF SOIL AND WATER CONSERVATION DISTRICT DIRECTORS**

The Annual State Meeting of Soil and Water Conservation District Directors, required in §201.081, Texas Agriculture Code, was conducted in El Paso last October. There were 107 districts represented, with 206 individual district directors that registered for the meeting. The total registration was 563.

For the 2004 calendar year, the state meeting is scheduled for October 18-20 in Laredo. To help determine which cities should be contacted and evaluated for availability and feasibility to host the state meeting, the State Board is currently conducting a survey of district directors. The State Board will examine the final results of that survey following the January 30, 2004 deadline to respond.

## **DIRECTOR MILEAGE AND PER DIEM**

Due to the reductions in staff at the headquarters office, director mileage and per diem claims are now managed directly by districts. The TSSWCB sent each district 75% of their approved allocation (grant) on October 1, 2003. The remaining 25% will be used as a pool for any expenses not covered through the initial allocation (grant). Field staff will approve each claim before payment to ensure claims are accurate and comply with state statutes and guidelines. The FY04 state appropriation for this program is \$325,000.00.

## **DISTRICT TECHNICAL ASSISTANCE FUNDS**

Rider 4 of the TSSWCB 2004-2005 Appropriation revised the allocation method for technical assistance funds. On September 1, 2003, the TSSWCB authorized the payment of 25% of each district's approved allocation (grant). The remaining balance for each district allocation will be distributed on a reimbursement basis during the fiscal year as expenditures are incurred. The FY04 state appropriation for this program is \$1,036,241.00.

## **DISTRICT SUB-CHAPTER H FUNDS**

Sub-chapter H funds are appropriated to the TSSWCB from the Agricultural Soil and Water Conservation Account No. 563. Senate Bill 1053 enacted by the 78<sup>th</sup> Legislature moved the bond that funded Account No. 563 to the Texas Water Development Board (TWDB). Account No. 563 no longer exists and future funding for Sub-chapter H grants will come from the TWDB. The TWDB has adopted rules and an application process for distributing the funds from the fund. The TSSWCB, on behalf of districts, will apply to the TWDB for funding. The FY04 state appropriation for this program is a potential maximum of \$115,000.00.

## **DISTRICT CONSERVATION ASSISTANCE PROGRAM**

District Conservation Assistance funds are appropriated to the TSSWCB from general revenue funds. Of the 216 local soil and water conservation districts, 215 have requested to receive an allocation (grant) from these funds. Local districts receive these funds as a dollar for dollar match for money that they generate locally through various activities. The local districts use this money to pay operational expenses. The FY04 state appropriation for this program is \$916,364.00.

## **PROGRAMS & ACTIVITIES SUPPORTING THE TSSWCB**

### **Total Maximum Daily Load (TMDL) Program**

Section §303(d) of the 1972 Federal Clean Water Act (CWA) requires all states to compile a list of water bodies that do not meet their designated uses and then to develop total maximum daily loads (TMDLs) for the particular pollutant(s) that is causing the impairment. Following the development of a TMDL, a state approved implementation plan is developed prescribing the measures needed to restore the polluted water bodies.

In Texas, the responsibility to develop TMDLs is shared between two state agencies: the Texas State Soil and Water Conservation Board (TSSWCB) and the Texas Commission on Environmental Quality (TCEQ). In general, the TCEQ is the lead agency for protecting Texas' water quality. However, TCEQ shares the responsibility for managing and abating nonpoint source pollution with the TSSWCB. The TSSWCB is designated as the lead agency for *agricultural and silvicultural* nonpoint source pollution abatement while the TCEQ is the state's lead agency for *urban* nonpoint source pollution abatement and for *point source discharge permitting* through the Texas Pollutant Discharge Elimination System. As a result, any organization considering undertaking a TMDL project for a water body listed for an impairment due to agricultural or silvicultural nonpoint source pollution must coordinate efforts with the TCEQ and with the TSSWCB.

There are numerous watershed segments on the §303(d) List that involve agricultural nonpoint source (NPS) pollution and are targeted by TSSWCB Programs (i.e. CWA §319 and WQMP Programs) as funding becomes available. The TSSWCB is actively involved in the development for of TMDLs for almost 30 water bodies and the implementation of 5 TMDLs (E.V. Spence Reservoir, North Bosque River, Lake Aquilla, Lake of the Pines, and Arroyo Colorado) that have been identified as being impaired, at least in part, by agricultural activities. These TMDLs, which are primarily addressing dissolved oxygen/nutrients, bacteria, Atrazine, and salinity, are being implemented using both CWA §319 funding and WQMP Program funds. These programs are described in detail in following sections.

### **Clean Water Act, §319(h) Grant Program**

In the 2003 Federal Grant Cycle the TSSWCB applied on May 12, 2003 for and received on September 11, 2003, a grant of \$5,513,600.00 to carry out our responsibilities under the Clean Waters Act. The programs and projects to which those funds are being expended are listed below. During January 2004, EPA will start a new grant cycle. At that time the TSSWCB will submit a grant application for \$5,515,000.00. The award date and the award amount will be determined at a later date by EPA.

<b>Grantee</b>	<b>Amount</b>	<b>Time Period</b>	<b>Project Title</b>
Administered by the TSSWCB	\$154,231	5/12/03-3/31/06	Grant Administration
Administered by the TSSWCB	\$245,109	5/12/03-3/31/06	Statewide Technical Assistance and Information Education Assistance
Upper Colorado River Authority	\$19,200	5/12/03-3/31/06	The Aquatic Experience
Texas Forest Service	\$367,620	5/12/03-3/31/06	Texas Silviculture BMP Effectiveness
Shelby Soil & Water Conservation District	\$350,000	5/12/03-3/31/06	Sam Rayburn WQMP Implementation Supplemental
Texas Agricultural Experiment Station	\$247,198	5/12/03-3/31/06	Bacteria Monitoring for Buck Creek
Texas Cooperative Extension	\$98,341	5/12/03-3/31/06	Nitrate Impacts in Groundwater
Central Texas Soil & Water Conservation District and Little River – San Gabriel Soil & Water Conservation District	\$424,080	5/12/03-3/31/06	Central Texas Water Quality Management Plan Implementation Assistance (Supplemental)
Texas Agricultural Experiment Station	\$227,793	5/12/03-3/31/06	Technologies for Animal Waste Pollution
Navarro Soil & Water Conservation	\$430,279	5/12/03-3/31/06	Navarro Water Quality Management Plan District Implementation Assistance (Supplemental)
Administered by the TSSWCB	\$95,490	5/12/03-3/31/06	Santa Rosa Springs Well Plugging
Brazos River Authority	\$96,081	5/12/03-3/31/06	Edge of Field Monitoring
Texas Cooperative Extension	\$101,271	5/12/03-3/31/06	Reducing Atrazine Losses in Central Texas
USDA – Natural Resources Conservation Service	\$158,400	5/12/03-3/31/06	Atrazine Modeling
Administered by the TSSWCB	\$2,208,446	5/12/03-3/31/06	E.V. Spence Salt Cedar Project
USDA – Agricultural Research Service	\$99,246	5/12/03-3/31/06	Leaf Beetle Demonstration
Brazos River Authority	\$190,815	5/12/03-3/31/06	Bosque Watershed Coordinator
<b>Total:</b>	<b>\$5,513,600</b>		

In addition to the grant received in 2003, the 319 Grant has been utilized to assist in the implementation of a number of TMDLs (i.e. North Bosque), Initiatives (i.e. Atrazine Initiative), and Programs (i.e. Poultry WQMP Program) as described in following sections.

### **Water Quality Management Plan (WQMP) Program**

In 1993, the Texas Legislature passed Senate Bill 503 which directed the TSSWCB to implement Water Quality Management Plans (WQMPs) in Texas. The agency has implemented more than 6000 WQMPs since the inception of the program.

The WQMP Program is administered from five Regional Offices around the state. A poultry program specialist supports the WQMP Program out of a home office in East Texas. The Regional Offices are:

- Dublin Regional Office
- Hale Center Regional Office
- Harlingen Regional Office
- Mount Pleasant Regional Office
- Wharton Regional Office
- Poultry Program Office (Nacogdoches)

A WQMP is a site-specific conservation plan developed through (and approved by) SWCDs for agricultural or silvicultural lands. The plan includes appropriate land treatment practices, production practices, management measures, technologies or combinations thereof. The purpose of WQMPs is to achieve a level of pollution prevention or abatement determined by the TSSWCB, in consultation with local soil and water conservation districts, that is consistent with state water quality standards.

The TSSWCB selected requirements for a WQMP based on the criteria outlined in the *Field Office Technical Guide (FOTG)*, a publication of the United States Department of Agriculture's Natural Resources Conservation Service (NRCS).

Nutrient management must be included if nutrients are applied. If an animal feeding operation is involved (such as an unpermitted dairy), an animal waste management system will be a sub-component of the WQMP. Waste utilization will be considered when agricultural wastes are applied. These WQMPs also have subcomponents for irrigation waters, erosion control, and are flexible enough to cater to a wide range of operating systems.

Agricultural and forestry landowners may enter into these cooperative agreements with their local district to control nonpoint source pollution from their operations. While the decision to develop a plan is voluntary, landowners have many reasons to do so. These plans provide for landowners to use best management practices in their operations to protect their most precious agricultural resources by controlling erosion, conserving water, and protecting water quality. In addition, certified plans have the same legal status as Texas Commission on Environmental Quality (TCEQ) point source pollution permits, without having to go through that agency's regulatory process. Landowners may also receive financial incentives to help pay for implementing these plans.

It should be noted that the certified plans only have the same legal status as a TCEQ point source permit in certain cases such as forestry and animal feeding operations. A certified WQMP does not allow an

animal feeding operation that is required by law to operate within the confines of a water quality permit issued by the TCEQ.

Water Quality Management Plans are especially useful for animal feeding operations. Depending on their size, animal feeding operations may be regulated by TCEQ as a point source or are unregulated and eligible for the TSSWCB's voluntary program. Generally, these feeding operations are classified according to the number of animals they have, calculated as "animal units". Animal feeding operations with more than 1000 animal units must apply for a permit from TCEQ. Most animal feeding operations in Texas are not large enough to require a permit, which makes this program critical to protecting Texas' water quality.

In developing the Water Quality Management Plan, the TSSWCB, SWCDs, and the USDA Natural Resources Conservation Service (NRCS) provide technical assistance to help the landowner meet the criteria of the plan. A plan establishes practices and installations on the farm that adhere to best management practices specific for that area. The various installations that a plan calls for depend on the operation. A farm may include a combination of cropland, dairy cows, poultry, hogs or cattle.

These plans may also include erosion control measures such as terraces or grass waterways; or they may address nutrient management to help landowners avoid over-fertilizing their land, or over-applying animal waste. Although a plan will take into consideration each farm's unique components, all WQMPs generally attempt to control erosion, conserve water, and protect water quality.

Upon TSSWCB certification of a WQMP, a landowner may apply for a financial incentive that will help pay for implementing the plan. Local districts have varying rates for sharing the cost of plan implementation, however cost-share may not exceed 75% per plan, with a maximum \$10,000 grant limit. Landowners receiving financial incentive have approximately three years to implement the provisions of the WQMP.

The TSSWCB allocates money to local districts for financial incentives based on whether the area has impaired water bodies as determined by TCEQ, or if the TSSWCB had previously designated it as a priority. Most of these financial incentives were appropriated from General Revenue funds. Some plans received financial incentives from federal funds. State appropriations provided to local districts in FY04 amounted to \$2,171,740.00 to carry out a WQMP cost-share program in their district.

In addition to certifying WQMPs to ensure that they help abate nonpoint source pollution, the TSSWCB monitors WQMPs to ensure they are properly implemented. Each year, the TSSWCB conducts a status review on a minimum of 10% of the plans. Additional technical assistance may be offered to a landowner when a WQMP is found noncompliant. In the unlikely case that the landowner does not achieve compliance with the WQMP, the TSSWCB may decertify the plan.

During FY03, the WQMP Program was administered from the TSSWCB office in Temple. The staff reductions in the FY04 budget made it necessary for the program to be reorganized and the Regional Offices are now administered from the Harlingen Regional Office. Additionally, plan certification authority was shifted from the Temple headquarters to each regional office. This change is already expediting the certification process and reducing postage expenditures, while maintaining the integrity and standards of the program.

The last adjustment involved the complaint process, which was also administered out of the headquarters office during FY03. Headquarters office no longer has an individual to do complaint inspections and all complaints are investigated from the appropriate Regional Office.

For FY03, the WQMP met or exceeded its major performance measures. One example is the goal for the number of certified WQMP was exceeded by 12%. CWA §319 projects throughout the state helped in the process to exceed this particular measure. All five Regional Offices conducted their required plan evaluations effective through the program cycle of FY01. The evaluation period for the next round of cost-share allocations will include the fiscal years 97-01.

Considering the changes that have occurred for FY04, the WQMP Program is operating exceptionally well. For the first quarter of FY04, all performance measure goals were met and all challenges have been addressed in a reasonable and proficient manner.

### ***Poultry Water Quality Management Plan (WQMP) Initiative***

In 1994, the Texas State Soil and Water Conservation Board (TSSWCB) began assisting poultry operations with the establishment of the Northeast Texas - Senate Bill 503 Cost-share Area. Since 1994, over \$300,000 of WQMP Program funding has been provided annually to six soil and water conservation districts (SWCDs) in Northeast Texas to address animal feeding operations (AFOs).

In 1995, the TSSWCB initiated three Clean Water Act, §319(h) projects to demonstrate composting as a means for dead bird disposal, buffer strips, and proper land application of poultry litter. In 1996, the TSSWCB expanded its efforts by initiating a composting and marketing project. This effort to promote the installation of composters and other means of mortality management on poultry farms resulted in accelerated WQMP development.

In 1997, the Texas Legislature passed Senate Bill 1910, which required all poultry farms to have a TCEQ-approved method of dead bird disposal. The law took effect in March 1998. However, the rules were not adopted and did not take effect until fall 1999. It was during this time that requests for poultry-WQMPs significantly increased due to pursuit of cost-share for mandated mortality management. This activity intensified the TSSWCB's poultry initiative.

In response to water quality concerns and the initiation of TMDL development in the Big Cypress/Lake O' the Pines watershed in 1999, the TSSWCB began using §319 funds for cost-share in the area in addition to the Senate Bill 503 cost-share funds already directed to the watershed. Due to rising concerns in nearby watersheds, the TSSWCB also included the Sam Rayburn and Toledo Bend Reservoir watersheds in its initiative in 1999. The TSSWCB expanded the poultry initiative again in 2001 to the Gonzales area.

All together, the TSSWCB has focused \$5.3 million in §319 funding and over \$3 million in state funding to assist poultry operations with abating NPS pollution in Texas. Nine of the sixteen §319-funded projects are ongoing. Another \$2.9 million in USDA-NRCS Environmental Quality Incentives Program (EQIP) funding was obligated to assist poultry producers in Northeast Texas and Gonzales County from 2000 to 2003.

The 77<sup>th</sup> Legislature, in 2001, passed Senate Bill 1339, which requires all poultry facilities in Texas to operate in accordance with a WQMP certified by the TSSWCB. The review and certification process assures the plan includes appropriate practices, management measures and schedules of implementation.

This law provides a staggered-schedule of deadlines by which each producer, depending on their initial date of operation, must have requested the development of a WQMP from their soil and water conservation district. Any poultry facility constructed after January 1, 2002 is required to have a WQMP prior to the receipt of any birds.

Since the effective date of the new law, the TSSWCB has identified 1454 total poultry farms, of which 1232 (85%) currently operate under a certified WQMP. The TSSWCB estimates that 21 farms need to request a WQMP before January 2005 and 83 farms before January 2008. The other estimated 118 farms have already requested a plan and those plans are in various stages of development. However, there is an ongoing challenge of identifying new poultry farms continually being constructed and put into production and locating other poultry farms not yet identified.

Producers who fail to submit an application for a WQMP before the appropriate submission date for their specific facility are subject to enforcement actions by the Texas Commission on Environmental Quality. In fiscal year 2003, WQMPs were developed for 289 poultry farms. In fiscal year 2003, status reviews were conducted on 182 poultry operations in Texas, which is approximately 15% of poultry farms with a WQMP.

Since 2001, seven soil and water conservation district (SWCD) technicians have been employed under Federal Clean Water Act §319 contracts to develop WQMPs in poultry producing areas. Those contracts will expire in 2004. An eighth §319 district technician was hired in 2003 in the Shelby SWCD to conduct WQMP status reviews and that contract will expire in 2005. As a result, beginning in FY 2005, there will be a substantial reduction of available staff for developing new plans, conducting status reviews, and revising plans as needed.

Beginning in fiscal year 2004, a TSSWCB Poultry Program Specialist has been assigned to a field location in Nacogdoches County to assist with all aspects of the Poultry WQMP Program. Over 500 (35%) of the estimated 1454 poultry farms in Texas are located in Nacogdoches and Shelby counties. Approximately 130 (25%) of the existing farms in those two counties still need a WQMP developed. The specialist will also assist other soil and water conservation districts with poultry WQMP development as needed.

State appropriated grants in FY04 were made to the Hopkins-Rains SWCD and the Nacogdoches SWCD in East Texas for technical assistance in the Poultry WQMP Program for \$250,000.00. State appropriated grants made to entities other than local districts in FY04 were two grants made to the USDA-Agricultural Service (ARS). The first grant was for \$114,989.00 to conduct an investigation of nutrient loss mechanisms from land-applied poultry litter. The second grant was for \$80,000.00 to conduct an investigation of additional tasks involving nutrient loss mechanisms from land-applied poultry litter.

### **North Bosque River Watershed Initiative**

In 1998 the North Bosque River (Segments 1226 and 1255) was included in the Texas CWA §303(d) List of impaired waters under narrative water quality standards related to nutrients and aquatic plant growth.



In February 2001, the TCEQ adopted *Two Total Maximum Daily Loads for Phosphorus in the North Bosque River* for segments 1226 and 1255.

The TMDLs concluded that:

- Use of the two segments was “impaired” by high levels of nutrients.
- The nutrient of principal concern was soluble reactive phosphorus (SRP)
- Reduction of SRP of approximately 50% would reduce the potential for problematic algal growth in the river.
- The major controllable sources of nutrients in the North Bosque River basin were municipal wastewater treatment plants (WWTPs) and NPS pollution from dairy waste application fields (WAFs).

In December 2002, both the TCEQ and the TSSWCB adopted *An Implementation Plan for Soluble Reactive Phosphorus in the North Bosque River Watershed*. The four basic elements of phosphorus control identified in the plan were:

- Phosphorus application rates in WAFs.
- Reduced phosphorus diet for dairy cows to reduce the phosphorus content of dairy wastes.
- Removing approximately half of the dairy-generated manure from the North Bosque River watershed for use or disposal outside of the watershed.
- Effluent limits on phosphorus for municipal wastewater treatment plants.

Before and since the adoption of the Implementation Plan, the TSSWCB TMDL Program has been actively working on numerous projects and programs designed to assist the agricultural community in meeting its recommendations and requirements. All of the efforts explained in the following discussions are in support of the TMDL and the Implementation Plan.

State appropriated grants to entities other than local districts for projects in the North Bosque River were made to one project. That project was for \$15,000.00 to Keith Broumley as financial assistance to conduct a Comprehensive Nutrient Management Plan to support the North Bosque River Anaerobic Digester Demonstration Project.

### ***Dairy Manure Export Support (DMES) Program***

The TSSWCB initiated the Dairy Manure Export Support (DMES) program in an effort to bring an innovative solution to the problem of elevated phosphorus levels in the North Bosque and Leon River Watersheds. The DMES program offers financial incentives to commercial manure haulers to support the transport of raw manure from dairy farms in the North Bosque and Leon River Watersheds to commercial composting operations. The raw manure is then improved through a composting process so it may be put to beneficial use. Entities such as the Texas Department of Transportation and municipalities, as well as agricultural producers and the general public are some of the target purchasers of the composted product. The TCEQ, TSSWCB’s partner in the overall regional program, provides rebates to these target purchasers to facilitate the development of a sustainable market. The export of this surplus manure (and the nutrients contained in the manure) will help address concerns regarding potential NPS water quality impacts associated with traditional on-farm land application of manure in the region.

Overall DMES program management is controlled through the TSSWCB. The TSSWCB has contracted everyday activities to the Texas Institute for Applied Environmental Research (TIAER) at Tarleton State University. In April 2001, TIAER subcontracted many aspects of the program to the Foundation for Organic Resources Management (FORM), which was replaced by imange, LLC in July 2003. Through FORM, and later imange, LLC, the DMES program has been managed at the local level through a DMES program office located in Stephenville, Texas. The TSSWCB has contracted TIAER to manage the program through August 31, 2004.

Participation requirements for dairies include being located in the North Bosque and/or Leon River Watersheds. Dairies must have (or have applied for) a TSSWCB-certified Water Quality Management Plan or a TCEQ water quality permit and an approved nutrient utilization plan. Each composting facility must be compliant with all state regulations regarding compost facilities and be approved for participation in TCEQ's Composted Manure Incentive Project (CMIP). Manure haulers must attend a workshop convened by the TSSWCB's contractor and obtain a vendor number from the Texas State Comptroller and authorize direct deposit.

Individual hauling jobs are coordinated through manure haulers that make arrangements with dairies and commercial composting operations. A manure hauler completes a job notification form, which is then submitted to the DMES office for approval. Once approval is received, the manure hauler performs the work and submits an invoice to the DMES office, which is signed by a representative of the dairy, accompanied by load tickets signed by a representative of the composting facility, and a scale ticket for each load. The DMES office prepares semi-monthly reimbursement request summaries, has them approved by TIAER, and then submits them to the TSSWCB for payment. Because the TSSWCB is using Clean Water Act §319(h) funding from the U.S. Environmental Protection Agency (EPA), the TSSWCB must then request that the funds be released from EPA to the TSSWCB. The TSSWCB then issues reimbursements via direct deposit to the manure haulers.

The initial target amount of manure to be exported from dairy farms participating in the program was 300,000 tons during a 36-month program period from October 2000 through October 2003. Hauling of dairy manure under the DMES program has proceeded at a much faster rate than originally anticipated. In fact, as of October 31, 2003, over 685,500 tons of manure, or more than double the target amount, has been hauled under this program. The TSSWCB anticipates the DMES Program will continue through August 2004 and possibly beyond.

### ***Comprehensive Nutrient Management Plan (CNMP) Program***

The TSSWCB Comprehensive Nutrient Management Planning (CNMP) Program was developed in response to a control measure recommended in the *Implementation Plan for the North Bosque River Total Maximum Daily Load for Soluble Reactive Phosphorus*. The implementation plan recommended that dairy producers in the watershed voluntarily develop and implement a Comprehensive Nutrient Management Plan (CNMP). This program is confined to the North Bosque River Watershed by rule.

A CNMP is a resource management plan containing a grouping of conservation practices and management activities which, when combined into a conservation system, will help ensure that both agricultural production goals and natural resource concerns dealing with nutrient and organic by-products and their adverse impacts on water quality are achieved. A CNMP incorporates practices to utilize animal manure and organic by-products as a beneficial resource. The TSSWCB selected requirements for a CNMP based on the TCEQ rules and regulations required for permitted and unpermitted animal feeding

operations and criteria outlined in the *Field Office Technical Guide (FOTG)*, a publication of the United States Department of Agriculture's Natural Resources Conservation Service (NRCS). The FOTG represents the best available technology and is already tailored to meet the needs of soil and water conservation districts all over the nation. To be certified by the TSSWCB, the local SWCD, the producer, and the local NRCS Field Office must approve a CNMP. However, no state or federal regulations currently require a facility to develop a CNMP.

The TSSWCB is currently working with the owner of a dairy operation that was selected as the site of an anaerobic manure digester demonstration project in the North Bosque River Watershed. The overall project, managed by a group of entities including the Brazos River Authority, the TECQ, and the Texas Farm Bureau, is designed to reduce the amount of phosphorus present in the dairy's wastewater. The TSSWCB's contribution to the project is to provide the dairy with financial assistance from §319 grant funds toward the development of a CNMP so that the operation can appropriately utilize the reduced phosphorus wastewater, protect the natural resources on location, and be consistent with the recommendations of the Implementation Plan. The CNMP is currently under development by a third-party technical service provider with the assistance of the TSSWCB and NRCS.

### ***Water Quality Management Plan (WQMP) Program Implementation in the North Bosque Watershed***

The regional offices are maintained around the state for the purpose of providing technical assistance to rural landowners interested in conserving natural resources and protecting water quality. The Dublin Regional Office is located within the North Bosque River Watershed, and has been providing service to the area since 1993. Since September 1, 2002 (three months prior to the adoption of the TMDL Implementation Plan), the TSSWCB has certified 40 WQMPs covering more than 8,500 acres in the watershed. As stated in the TMDL Implementation Plan, the TSSWCB is interested in working with SWCDs to get as many acres of land as possible under the scope of a nutrient management plan (nutrient management plans are required components of WQMPs that cover land receiving either commercial fertilizer or animal waste). The previously mentioned 40 WQMPs include more than 4,900 acres now within the scope of a nutrient management plan. They also include more than 2,400 acres that are planned to be covered by improved vegetation. Vegetation helps to prevent NPS pollution by absorbing nutrients and preventing erosion that can carry nutrients with sediment into the North Bosque River stream system.

### ***Clean Water Act, §319(h) Grant Projects in the North Bosque Watershed***

Clean Water Act §319(h) Grant Program funding has been used extensively to assist in the development and implementation of the North Bosque River TMDL. Currently, seven CWA §319(h) are actively assisting the implementation of the North Bosque River TMDL. These are briefly described below.

#### ***Technical and Financial Assistance to Dairy Producers and Landowners of the North Bosque River Watershed Within the Cross Timbers and Upper Leon SWCDs***

This project provides technical and financial assistance to landowners toward the development and implementation of certified WQMPs and CNMPs for any agricultural operations that land-apply animal waste. The project employs three SWCD technicians for developing WQMPs for unpermitted animal feeding operations (AFOs) or non-AFO farms, and for reviewing the technical completeness of CNMPs developed by third-party technical service providers on permitted dairy CAFOs.

The project also includes cost-share funding. The cost-share, applied through the TSSWCB rules and requirements, encourages producers to properly implement the best management practices (BMPs) included in the WQMPs and CNMPs. The project also includes funding for water quality monitoring, carried out by TIAER, at the micro-watershed level. This methodical monitoring scheme is being performed to determine the nutrient reductions that are achieved through the implementation of BMPs within the watershed.

Funding is also provided for the SWCDs and TIAER to conduct “micro watershed producer council” meetings with the owners of the WQMPs and CNMPs once a sufficient number of the plans have been implemented. Topics such as the overall TMDL progress, the latest water quality monitoring results, and how they relate to the impact of WQMP and CNMP implementation are intended to be presented to the councils.

*Development of a Bacterial Source Tracking Library and  
Assessment of Bacterial Sources Impacting Lakes Waco and Belton*

This project is a component of a larger statewide bacterial source-tracking (BST) program. This project includes Parsons Engineering Science, Inc., Texas Farm Bureau, Brazos River Authority, City of Waco, TSSWCB, and the Environmental Protection Agency as project partners.

Protection of our water resources is one of the most significant environmental challenges of the new millennium. Nonpoint sources (NPS) of pollution, especially from agricultural activities, can greatly impact water quality. One key component in effectively implementing a NPS pollution management program is the identification and assessment of sources of bacterial contamination, especially for impaired waterbodies on the Texas Clean Water Act §303(d) list. Proper evaluation of these sources is needed to develop microbial total maximum daily loads (TMDLs) and appropriate best management practices (BMPs). This information may also be useful to properly assess risk in contact recreation, as many waterborne pathogens causing human illness do not colonize nonhuman hosts.

Fecal coliform bacteria have extensively been used as an indicator of fecal pollution and the potential presence of other pathogenic microorganisms in water. It has been established that the fecal coliform bacterium *Escherichia coli* (*E. coli*) is more closely associated with fecal pollution than other fecal coliform bacteria, which may normally reside and multiply in the environment.

*E. coli* is a common inhabitant of animal and human intestines and recent studies have shown that isolates from humans and various host animals (e.g. cattle, chickens, and pigs) may differ genetically and phenotypically. Use of genetic and biochemical tests may allow the original host animal to be identified, referred to as bacterial source tracking (BST). Molecular tools appear to hold the greatest promise for BST, providing the most conclusive characterization and level of discrimination for isolates. Of the molecular tools available, ribosomal ribonucleic acid genetic fingerprinting (ribotyping) and pulsed-field gel electrophoresis (PFGE) are emerging as versatile and feasible BST techniques. A phenotypic characterization method, antibiotic resistance analysis, also has the potential to identify the human or animal origin of isolates. However, reference “libraries” of bacterial genetic fingerprints and antibiotic resistance profiles are needed to correctly identify the source of bacteria isolated from environmental water samples.

There are projects in progress at Lake Waco and Lake Belton, the San Antonio River and tributaries, Oyster Creek and a project planned for the greater Houston area. These projects have two general

objectives: (1) to assess the water quality with regard to the relative contributions of fecal bacteria from bovine, human, and other animal contributions to the water bodies and (2) to develop local libraries, genetic and biochemical that can be used in determining the animal or human nonpoint fecal source contamination of surface water.

#### *Field Validation of the Texas Phosphorus Index*

This project is intended to determine the effects of selected soil properties in the North Bosque and Leon River Watersheds for measuring and predicting phosphorus runoff, as well as comparing and correlating different soil test and soil solution soluble phosphorus extracts to runoff phosphorus. The project, carried out by Texas Cooperative Extension, will also attempt to validate and/or modify the Texas Phosphorus Index as a predictive tool for classification of field sites relative to phosphorus loss potential. The information attained from these field studies will help validate and improve the Texas Phosphorus Index. With this information and additional studies similar to this across the state, quantitative assessments to predict the amount of phosphorus in runoff utilizing the Texas Phosphorus Index can be estimated. The runoff analyses will help determine the form of phosphorus, and whether it is mainly solution soluble or suspended. This will enable identification of appropriate best management practices to reduce the amount of phosphorus leaving fields, thus decreasing the amount of phosphorus reaching surface water resources. The Texas Phosphorus Index is an integral part of effective nutrient management planning.

#### *Improving Water Quality by Developing, Implementing, and Field Testing Innovative Methods*

This project, conducted by Texas Water Resources Institute, provides funding for the testing of new technologies designed for reducing water pollution associated with animal production systems, principally dairies. The focus is restricted to reducing phosphorus in dairy waste streams. Four technologies have already been selected, while the overall project is designed to accommodate two additional technologies yet to be determined. The four selected technologies include an electrocoagulation system, a polymer enhanced solids separation system, an aeration with microbubblers system, and a geotextile solids separation system. These technologies are tested and utilized in municipal waste treatment systems, dredging and sediment recovery from streams, and the oil and gas industry but they have not been adequately tested or demonstrated for treating animal waste. This is especially true for testing these technologies for the reduction of phosphorous from land applied liquid dairy manure in the Bosque River Watershed.

#### *Edge-of-Field Monitoring of a Wastewater/Manure Management System Demonstration*

This project will monitor and evaluate the phosphorus reduction capabilities of a state-of-the-art methane digester system installed on a dairy facility in the North Bosque River Watershed operating in conjunction with a TSSWCB-certified Comprehensive Nutrient Management Plan (CNMP). A multi-agency group including the Brazos River Authority, Texas Farm Bureau, and TCEQ is carrying out the overall methane digester project. Edge-of-field monitoring, funded by the TSSWCB and conducted by the Texas Institute for Applied Environmental Research, was initiated to determine the level of phosphorus reduction associated with the wastewater that has undergone treatment using methane digester technology and applied in accordance with the dairy's CNMP. Monitoring will occur on the liquid application fields used by the dairy operator to determine nonpoint source pollution (NPS) reductions.

### *Establishment of a Watershed Coordinator for the North Bosque River Watershed*

The objectives of this project include identifying all pollution prevention projects and measures that are currently underway in the watershed, tracking the progress of these projects and measures, tracking rules and regulations that affect operations of entities in the watershed, reviewing water quality data for trend identification, providing opportunities for efficient and effective use of resources, and communicating through regularly scheduled stakeholder group meetings. Another objective of this project is to identify areas within the watershed that may not have received the attention necessary to reduce potentially detrimental impacts to water quality. The TSSWCB has contracted the Brazos River Authority to provide overall coordination of the project.

### *Athletic Field Topdressing as a Commercial Market for Compost from Dairy Manure*

Composting of dairy manure and exporting of the compost out of the watershed have been advanced as a solution to the problem of the impaired water quality in the North Bosque River Watershed. The composting facilities have been established and the infrastructure to move manure from dairies to these facilities is in place. A high-volume market is needed that can afford the production and transportation costs of the compost. This project, carried out by the Leon-Bosque Resource Conservation and Development Council, seeks to develop that market by demonstrating the value of compost as a component to a premium blend of compost and sand.

## **Texas Atrazine Initiative**

### ***Background***

Atrazine is a pre-emergent herbicide primarily used to control broadleaf and grassy weeds in corn and sorghum. Since it went on the market in 1958, it has become the most widely used herbicide in the United States.

It is classified as a restricted use herbicide due to its potential for groundwater contamination. Inconsistent with its restricted use designation, it is commonly found in *Weed and Feed* and other home and garden products, making it not only an agricultural issue, but an urban issue as well.

Atrazine, a chlorinated triazine herbicide, acts as a photosynthesis inhibitor. It is nontoxic to humans, having about the same toxicity as table salt. It has no adverse reproductive effects. It's not teratogenic or mutagenic. Only low levels of bioaccumulation may be expected in fish organs. It is nontoxic to birds and only slightly toxic to aquatic life.

Atrazine is, however, a possible human carcinogen (Class C). Due to this, a Maximum Contaminant Level (MCL) of 3 µg/L (micro-grams per liter) has been established for finished drinking water. A micro-gram would equate to 0.000,001 grams per liter of water.

Atrazine is persistent in the environment, having a field half-life of 60 days. It is moderately soluble in water and is not removed from drinking water by conventional water treatment methods. Activated carbon, ozonation, cation exchange, and UV treatment methods must be used to remove it from drinking water.

Because of its persistence, solubility, and widespread use, Atrazine is commonly found in surface water. A 1993-95 US Geological Survey (USGS) study of pesticides in urban and agricultural streams in the Trinity River Basin found Atrazine in 100% of samples from both sources. This suggests that Atrazine is both an agricultural and urban problem. The concentrations in the agricultural streams were, however, greater than the concentrations in the urban streams.

### ***Development of the Texas Approach***

In Texas, testing of Atrazine in drinking water began in 1993. However, the method used only had a detection limit of 3 µg/L, and few detections were observed. In 1996, the state began using EPA (testing) Method 525.2, which has a much lower detection limit 0.065µg/L. Once the state began using this new (testing) method, numerous detections began appearing around the state in both surface and groundwater supplies. Between 1996 and 1999, Atrazine was detected in 69 water supplies around the state. In addition to drinking water monitoring, some raw water monitoring for Atrazine has been performed, but it has been infrequent and project specific.

In 1995, due to a detection of 9.6 µg/L in Marlin City Lake, the Marlin City Manager contacted the TCEQ-Source Water Assessment and Protection (SWAP) team for assistance. The City of Marlin and TCEQ-SWAP team then approached EPA for federal assistance. In 1996, Marlin City Lake was designated an EPA Region 6 Pilot Source Water Protection Program project.

To deal with the growing number of Atrazine detections around the state, TCEQ-SWAP formed an “Atrazine Steering Committee” in 1997 (later, the committee was renamed the “Surface Water Protection Committee). Committee membership consisted of the TSSWCB, the TDA, Texas A&M University, Novartis, the USDA- NRCS, the USDA-Agricultural Research Service (ARS), the Texas Farm Bureau, the Brazos River Authority, and municipal representatives. The committee’s goal was to develop a strategy to address the numerous detections of Atrazine in drinking water in a proactive manner through BMP implementation and public education.

In 1998, nine reservoirs were listed as impacted by Atrazine on the §303(d) List. One of these, Aquilla Reservoir was listed as impaired by Atrazine. The running annual average at the Aquilla Water Supply District’s treatment plant for the second quarter of 1997 through the first quarter of 1998 was 4.0 µg/L, violating the drinking water standard (3 µg/L) and triggering the listing of Aquilla Reservoir as an impaired water of the state. The other eight reservoirs, Lake Bardwell, Joe Pool Lake, Marlin City Lake, Lake Lavon, Lake Tawakoni, Richland Chambers Lake, Lake Waxahachie, and Big Creek Lake, were listed as threatened by Atrazine.

Following the listing of these reservoirs on the §303(d) List, the state began developing and implementing an initiative to remediate the Atrazine threats and impairments consisting of:

- Performing a standard TMDL in Aquilla Reservoir
- Building on the Source Water Protection Program in Marlin City Lake
- Performing targeted monitoring and implementing BMPs in the 7 threatened lakes

### ***Implementation of the Atrazine Initiative***

The Aquilla TMDL was initiated in November 1998. It was a cooperative effort among the Texas Agricultural Experiment Station (TAES), Texas Cooperative Extension (TCE), Texas Department of Agriculture, Texas A&M University, TCEQ, TSSWCB, NRCS, Novartis, and local stakeholders. Over

\$500,000 was provided for the Aquilla and Marlin projects through PPG funds, §§319(h), 604(b), Source Water Protection, TCEQ GR, and in-kind contributions. Stakeholder committees were formed for the Marlin and Aquilla projects. Training for pesticide applicators, demonstration of BMPs, and TEX\*A\*SYST was provided by the TAES in cooperation with the TCE. The Texas Agricultural Experiment Station conducted monitoring in the Aquilla and Marlin Watersheds. SWAT modeling of the watershed was completed as an in-kind contribution effort of NRCS, TDA, and TCEQ. Economic analyses of the implementation of BMPs on farms in both watersheds were also completed by the TAES.

The TMDL for Atrazine in Aquilla Reservoir was adopted by the TSSWCB and TCEQ in March 2001, and was revised in June 2002 in response to comments from the Environmental Protection Agency (EPA). The implementation plan was approved by the TSSWCB and TCEQ in January 2002. Region 6 of the EPA approved the TMDL on October 30, 2002.

The TMDL stated that a load reduction of approximately 25% would result in attainment of the water quality standards.

The environmental target set for measuring the success of the TMDL implementation plan is a running annual average concentration of Atrazine *in the reservoir* that does not exceed 3.0 µg/L for two consecutive years.

The TCEQ and the TSSWCB had the leadership roles for implementing the project, as well as for developing the TMDL. The key groups involved in implementing the plan at the local watershed level were agricultural producers and city governments. Regionally, the key partners were Aquilla Water Supply District, the Woodrow-Osceola Water Supply Corporation, the Hill County Appraisal District, and the Hill County-Blackland Soil and Water Conservation District. The Texas Cooperative Extension (TCE) and the Texas Department of Agriculture (TDA) also implemented aspects of the project. The U.S. Army Corps of Engineers, the federal agency that owns and operates the lake, also cooperated.

Since the source of the Atrazine was known, some activities were initiated before the TMDL and its implementation plan were complete. In 1998, the NRCS established the Aquilla EQIP Priority Area. From 1998-2003, the NRCS obligated over \$2 million to implement BMPs in the Aquilla Watershed. Along with the EQIP funding, the TSSWCB initiated a §319 project in 1999 to provide cost-share and technical assistance through the Hill County-Blackland SWCD to encourage the implementation of BMPs in the Aquilla Watershed to reduce sediment and pesticide runoff from corn and sorghum farms.

In 1999, Aquilla area farmers formed a Producers Atrazine Action Committee. Meetings featured speakers on water quality topics and training on pesticide application. The Producers Committee developed a list of BMPs recommended for use in the watershed, and composed a questionnaire to document adoption of BMPs over time. In addition, the committee met with pesticide dealers to increase dealers' awareness of the problem and to gain their assistance. The practice to incorporate herbicides into the soil upon application was already adopted by about 33% of area producers at the end of the first year, and reached nearly 100% by the third year of the project.

In the seven threatened lakes, targeted monthly monitoring was conducted near water supply intakes to verify the level of impairment and provide baseline data for future actions. Texas A&M University conducted the analysis. Water quality sampling conducted by the TCEQ was used to measure the effectiveness of the practices. In addition, Syngenta, a private corporation that markets Atrazine, continued its voluntary pesticide monitoring program with the area's public water suppliers.



Partners in the program include the TSSWCB, the TCEQ, the TDA, the TPWD, the Texas Agricultural Experiment Station (TAES), the TCE, and the federal Natural Resources Conservation Service (NRCS). Several other agencies and interested parties were involved, including the EPA, the Brazos River Authority, the Sabine River Authority, the Aquilla Water Supply District, and Syngenta (formerly Novartis), a private corporation.

Monitoring was completed in August 2003, with the exception of Bardwell and Lake Waxahachie. The City of Waxahachie continues to sample these lakes to obtain the needed 36 monthly samples.

Technical and financial assistance was provided to corn and sorghum farmers to implement BMPs in the seven lakes watersheds through 12 TSSWCB §319 projects funded by EPA, over \$4.1 million in cost share and TA was provided to farmers through SWCDs. Demonstrations, monitoring, and modeling were also conducted through TSSWCB 319 projects to support and evaluate the implementation of BMPs in the seven threatened lakes. Through the TSSWCB 319 program, almost \$4.6 million has been obligated to address the Atrazine issues in the seven threatened lakes.

In 2000, the Little River was listed as threatened by Atrazine. In response to this listing, the TSSWCB initiated two 319 projects in 2002 to provide technical and financial assistance to the area to address this threat. These efforts were continued in 2003 with the provision of additional funding. Over \$1.1 million in 319 funding has been provided to encourage BMP implementation.

### ***Atrazine Initiative Results – A Success Story***

As a result of the Atrazine Initiative, Atrazine concentrations in Aquilla Reservoir have been reduced to safe levels. Between 1998 and 2003, Atrazine concentrations in Aquilla Reservoir have been reduced by approximately 60%, to amounts lower than those required for treated drinking water. There have also been no Atrazine concentrations higher than the allowable amount at the Aquilla Water Supply District's drinking water treatment plant. Monitoring will be continued on a quarterly schedule to ensure that Atrazine concentrations remain at a safe level.

Monitoring by TCEQ indicates that Atrazine concentrations in five of the seven lakes have been reduced to levels that warrant their reclassification from threatened. Those lakes are now attaining their uses as a source for treated drinking water.

The other two lakes, Bardwell and Waxahachie Reservoirs, are still being monitored. However, trends in those two reservoirs indicate that they, too, will no longer be classified by the TCEQ as threatened within the next six months.

## **Coastal Management Program**

### ***Background***

The Texas Coastal Management Program (CMP) was created to coordinate state, local, and federal programs for the management of Texas coastal resources. The program brings in federal Coastal Zone Management Act (CZMA) funds to Texas state and local entities to implement projects and program activities for a wide variety of purposes. The Coastal Coordination Council (CCC) administers the CMP and is chaired by the Commissioner of the GLO. It comprises the chair or appointed representatives from

the TPWD, the TCEQ, the TWDB, TxDOT, a member of the Texas State Soil and Water Conservation Board, a member of the RRC, the director of the Texas A&M University Sea Grant Program and four gubernatorial appointees. These members are selected to provide fair representation for all aspects concerning coastal issues.

The Council is charged with adopting uniform goals and policies to guide decision-making by all entities regulating or managing natural resource use within the Texas coastal area. The Council reviews significant actions taken or authorized by state agencies and subdivisions that may adversely affect coastal natural resources to determine their consistency with the CMP goals and policies. In addition, the Council oversees the CMP Grants Program and the Small Business and Individual Permitting Assistance Program.

The Coastal Zone Act Reauthorization Amendments (CZARA), Section 6217, requires each state with an approved coastal zone management program to develop a federally approvable program to control coastal nonpoint source pollution. The Texas CCC appointed a Coastal Nonpoint Source Pollution Control Program workgroup to develop this document. The National Oceanic and Atmospheric Administration and the U.S. Environmental Protection Agency jointly administer the program. In Texas, two agencies hold primary responsibility for the program's development and implementation: the Texas Commission on Environmental Quality and the TSSWCB.

Section 6217 calls for implementation of management measures (§6217(g) measures or (g) measures) that will control significant nonpoint sources of pollution to coastal waters. Six source categories are addressed by these measures: agriculture, forestry, urban and developing areas, marinas, wetland/riparian areas, and hydro modification. States can use voluntary approaches combined with existing state authorities to achieve implementation of management measures. However, if the voluntary mechanisms are not effective, states must have backup enforcement authorities in place to ensure that management measures are implemented.

Texas requested exclusion from the program for silviculture, rangeland, and dry land rowcrop agriculture from the northern boundary of the Coastal Bend Bays and Estuaries Program Area southward to the northern boundary of the Arroyo Colorado Watershed. The silviculture and rangeland exclusions were not allowed.

Texas submitted the Texas Coastal Nonpoint Source Pollution Control Program to EPA and NOAA in December 1998. In October 2000, Texas submitted the Texas Coastal NPS Control Program 15-year Program Strategy and FY 2001-2005 Implementation Plan.

Final findings were issued by NOAA/EPA in July 2003, which contained conditional approval of the program. The agricultural and silvicultural portions of the program were approved without conditions. In these findings, the dry land rowcrop exclusion was denied. Texas is collecting additional information to support the dryland rowcrop exclusion and will provide this to NOAA/EPA for further consideration.

### ***Current Status***

The TSSWCB is responsible for implementing the agricultural and silvicultural management measures of the program. The main mechanism we have for this is the State's cost-share program for implementing Water Quality Management Plans on farms and ranches through local soil and water conservation districts

(SWCD). For over five years, more than \$300,000 of state funds have been spent annually in the coastal zone to provide cost-share to implement approximately 80 Water Quality Management Plans.

In addition to state funding, Texas receives §6217 funding from NOAA for implementing the Coastal Nonpoint Source Pollution Control Program. For the past several years, SWCDs in the Coastal Management Zone have received grants from NOAA's §6217 Implementation Funds to install agricultural management measures through the TSSWCB Water Quality Management Plan program. This has been very effective in expanding Texas' effort in carrying out the agricultural portion of its coastal nonpoint source program.

NOAA recently (November 2003) issued its draft guidance for §6217 grants for cycle 9 (FY04). With the new guidance, SWCDs will no longer be able to use §6217 funds for cost-share to implement Best Management Practices (BMP) on private property. Even demonstration projects cannot be on private land. Project proposals have been received from nine districts for cycle 9 of the grant program. This guidance will significantly reduce SWCDs ability to obtain any funding from the Coastal Program for implementing the agricultural management measures.

The TSSWCB and the GLO both wrote letters to NOAA to express concerns to this change in the use of the §6217 Implementation Funds. At the CCC meeting on December 11, 2003, the Council voted to write a letter to NOAA expressing similar concerns about no longer allowing the funds to be used to implement management measures on private land. They also asked Commissioner Patterson to call NOAA at the policy level to discuss Texas' concerns.

In the meantime, our Water Quality Management Plan program in the coastal management zone continues.

Implementation of the silvicultural management measures in the coastal zone is through a CWA §319 grant from the TSSWCB to the Texas Forest Service.

## **Information Technology**

### ***Construction of Wireless Local Area Networks at Regional Offices***

In December 2002 and January 2003, the Network Specialist constructed wireless networks at regional offices in Dublin, Mount Pleasant, Harlingen, Wharton, Hale Center and Fredericksburg. This project brought file and print sharing capabilities to offices that previously did not have these capabilities, allowing for much more efficient sharing of data and office resources. These networks also provide convenient network access to visiting TSSWCB employees equipped with wireless laptop PCs.

### ***Construction of Agency Wide Area Network***

During the spring and summer of 2003, the Network Specialist, in coordination with the Texas Department of Information Resources (DIR), developed and installed a Linux-based routing network to deliver Internet connectivity to the headquarters and regional offices. This project brought full time, broadband connectivity to the regional offices for the first time. According to DIR, the use of Linux as the foundation for routing services is unique among Texas agencies and universities and is currently being investigated by DIR for possible use at other agencies because of its flexibility and cost-effectiveness. By building its own Linux routers, the TSSWCB saved over \$10,000, not including annual service fees,

compared to a bid for the same job from SBC using Cisco routers.

### ***Email Virus Scanning***

In June and July of 2003, the Network Specialist installed and configured the agency's first email virus scanner. This scanner checks each incoming and outgoing email for malicious code. Since its deployment in July 2003, several hundred emails with malicious code have been safely quarantined by the system. This project was completed using open source software components resulting in no cost to the agency for software purchases, licensing, or support.

### ***Virtual Private Network***

During August and September of 2003 the Network Specialist designed and installed a virtual private network server at the headquarters office. This allows remote staff members at regional offices or other locations to securely login to the HQ network resources via encrypted tunnels through dial-up or broadband connections. This technology was used in December 2003 to further protect the wireless local area network at the agency headquarters. This project was completed using open source software components resulting in no cost to the agency for software purchases, licensing, or support.

### ***SWCD Email Support***

During the summer of 2003, the Network Specialist, in coordination with the National Association of Conservation Districts and the USDA-Natural Resources Conservation Service, setup email addresses for each SWCD in Texas. These addresses follow the naming convention of swcdnameswcd@tx.nacdnet.org (Central Texas SWCD = centraltexasswcd@tx.nacdnet.org). A mailing list was also set up to provide a convenient way for participating organizations and SWCDs to communicate with each other.

### ***Email Spam Scanning***

In October and November 2003, the Network Specialist configured an additional content filtering system that scores received email based on the likelihood that it is unsolicited commercial email, or spam. The Network Specialist quarantines mails that score above a certain threshold on the server for review. This system has blocked several hundred spam messages since its deployment. This technology compliments other checks in place on the mail server that filter spam emails. This project was completed using open source software components resulting in no cost to the agency for software purchases, licensing, or support.

### ***Secure POP3 Service***

In November 2003, the Network Specialist designed and configured a POP3 server on the agency's email server that uses Secure Socket Layer (SSL) technology to encrypt the user names, passwords used by agency email clients to send and receive mail. This greatly diminishes the likelihood of an attacker gaining employees' login credentials as that information travels over the network. This project was completed using open source software components resulting in no cost to the agency for software purchases, licensing, or support.

## ***Network Specialist Duties***

The agency Network Specialist performs duties in the following IT areas (as defined in the DIR 2004 Statewide Information Technology Asset Report):

### ***E-Mail Services***

Management and administration of all E-Mail support activities and resources. Examples include: E-Mail account management, E-Mail database/disk management, E-Mail application support, Mail server configuration, Mail alias maintenance, Content filtering, Filtering for viruses, worms, and Trojan horses, E-Mail software management upgrades (sendmail, Exchange, etc.), Hardware upgrades on a dedicated E-Mail server, Web Mail / E-Mail gateways.

### ***Web Hosting***

Activities and resources related to publishing and maintaining web servers. Examples include: Web server software (e.g., Apache, IIS) upgrades, Disk space upgrades allocated to hosting HTML or web application storage, Statistics and performance monitoring, Web Site content policies, look-and-feel management. Note: Do not include web HTML content development.

### ***Local Area Network Infrastructure***

Oversight of design, installation and support of local area network (LAN) servers, bridges, routers, gateways, cabling, hubs and network management systems. Examples include: Developing LAN component requirements and specifications, Testing and evaluating hardware and software, Installing and upgrading LAN components, Supporting network operating system, Troubleshooting, LAN traffic monitoring.

### ***Wide Area Network Infrastructure***

Design, installation and support of wide area network components. Examples include: DNS maintenance, Wiring for external hubs and routers, Diagnosing/solving external router errors, Link to the Internet, Router maintenance, Data circuit lease lines.

### ***Financial/Accounting/HR***

Support activities such as gathering user requirements, designing, analyzing, coding, configuring, implementing and supporting agency administrative systems. Examples include: Financial/Accounting/Budgeting, Purchasing, Inventory/Asset Management, Human Resources/Payroll, Time and Leave Accounting.

### ***Application Support***

Application and database administration activities such as gathering user requirements, designing, analyzing, coding, configuring, implementing, hosting and supporting agency- or program-specific applications. Applications may be web-based, custom, or commercial off the shelf (COTS). Example application areas: Case Management, Claims Management, Contract Management, Document Management, Grants Management, Geographic Information Systems, Issue Tracking, Performance

Measurement/Management, Project Management/Tracking, Records Management, Regulatory-Licensing/Permitting, Enforcement, Scheduling. NOTE: Does not include E-Mail and those administrative systems that are covered in the E-Mail and Financial/Accounting/Human Resources service areas.

### ***Security Services***

Network management of design, installation and support of security infrastructure. Examples include: Developing and implementing security policy and procedures, Installing or maintaining firewalls, Installing or maintaining virtual private network (VPN), Penetration testing, Performing network infrastructure security audit.

### ***User Services***

General IT customer support functions that are not application-specific and are not covered by another IT Service Area as defined in this report. These customer support functions range from staffing a help desk to end user training and PC installation and maintenance. Examples include: Level One Help Desk support, including all calls from end users, Tracking end user issues and maintaining status of problem management system, Questions about COTS software, PC installation, maintenance and upgrades, Seat management services, Installing applications for end users, End user training, Content filtering for Internet connection, User password maintenance.

### ***Operations/ Other***

IT operations and production support functions, plus any other IT activities and resources that were not reported in the previous IT Service Areas. Examples include: Agency IRM functions, Production scheduling, Backups and restoring, File and print services, Performance monitoring and management, Hanging tapes for the mainframe, Upgrading server hardware and software, Server operating system patches, Preventative maintenance, Capacity monitoring management, Assess new server technology and software, Installing and upgrading server hardware, Disaster recovery planning and procedures, Data Center services, Offsite data storage, Directory services, Hard disk formatting, partitioning and setup.

## **Public Information /Education Report FY03**

### ***General Overview***

The purpose of the public information/education program is to provide leadership and coordination of information/education programs relating to the agency and district programs, services, operations and resources. The TSSWCB prepares and disseminates public information relative to the agency and district functions, programs, events and accomplishments for the public and to farmers and ranchers. TSSWCB staff coordinates seminars, conferences, workshops, displays at trade shows and training for district directors and district bookkeepers, conservation professionals, youth groups and other entities. Staff provides guidance to districts with their own individual information/education programs as well as regional and state information/education programs initiated by districts. Staff prepares and disseminates press releases, news stories and printed promotional products. The TSSWCB monitors the use of the publications and use of information. Staff represents the agency as needed with various information/education groups and entities. The TSSWCB has a cooperative agreement with the Association of Texas Soil and Water Conservation Districts to provide assistance and help coordinate

district involvement and participation with Association's Information/Education Committee and its programs.

### ***2003 Summer Teacher Workshops***

Several teacher workshops are held each summer for teachers interested in conservation and natural resource issues. The workshops are held in various parts of the state in cooperation with the TSSWCB. The Texas Environmental Education Advisory Committee to the Texas Education Agency approves the content of these workshops, sponsored by the TSSWCB. As an approved Environmental Education Professional Development Provider teachers are able to get credit hours toward their required continuing education units (CEUs), while experiencing nature and the outdoors.

### ***2003 Texas Conservation Awards Program***

Each year, the Texas State Soil and Water Conservation Board and the Association of Texas Soil and Water Conservation Districts co-sponsor the Texas Conservation Awards Program to recognize and honor those who dedicate themselves and their talents to the conservation and wise use of renewable natural resources. The 2003 Awards Program marked the 25<sup>th</sup> year of this joint program.

Local districts select their outstanding individuals as winners and submit them by mid-February each year for regional judging. Those selected as regional winners are honored each May at regional Awards Banquets. From these regional winners, a state winner is selected for the Outstanding Conservation Districts, Outstanding Conservation Teacher, Poster Contest, and the Essay Contest. These individuals are invited to the Annual State Meeting for recognition. The State Winners for 2003 were:

- Outstanding Conservation District – Fannin County SWCD, Bonham, Carroll W. Jones, Chairman.
- Outstanding Conservation Teacher – Dr. Tina Davies, High School Biology, John Cooper School, The Woodlands, Montgomery County SWCD.
- Poster Contest – Jessie Neuendorff, LaGrange Intermediate School, LaGrange, Fayette SWCD.
- Essay Contest – Amanda Davis, Brackettville High School, Brackettville, West Nueces-Las Moras SWCD.

The conservation awards program provides competition and incentives to expand and improve conservation efforts, resource development, and increase the wise utilization of renewable natural resources. As a result, soil and water conservation districts, and both rural and urban citizens of Texas are benefited.

Soil and water conservation districts may enter their local recognition honorees in any of 10 categories (East Texas has an additional category of Forestry Conservationist), depending on appropriateness to the category description. For the youth of the district, there is also a poster and essay contest.

The categories and a brief explanation of each are:

### ***Outstanding Conservation District***

Awarded to the winning soil and water conservation district in each area for the most outstanding program during the past fiscal year.

### ***Resident Conservation Rancher***

Awarded to the outstanding resident conservation rancher in each area. They **must** be a resident of the district, perform ranching activities within the district and be a cooperater with the district from which the entry was submitted. The rancher may have other business or professional interests.

### ***Resident Conservation Farmer***

Awarded to the outstanding resident conservation farmer in each area. They **must** be a resident of the district, perform farming activities within the district and be a cooperater with the district from which the entry was submitted. The farmer may have other business or professional interests.

### ***Absentee Conservation Farmer/Rancher***

Awarded to the outstanding absentee conservation farmer or rancher in each area. They **must** reside **outside** the district, but operate farming or ranching activities within the district and be a cooperater with the district from which the entry was submitted. The person may have other business or professional interests.

### ***Water Quality Management Plan***

Awarded to the outstanding Water Quality Management Plan recipient in each area. They **must** be a district cooperater who has a district approved Water Quality Management Plan and has incorporated water quality into their farming or ranching activities and soil and water conservation work.

### ***Essay Contest***

Essays (topic: “The Living Soil”) are to be submitted to local soil and water conservation districts for local judging. Each local district will judge the entries and submit three essays to the TSSWCB for competition on the area level. Plaques will be awarded to 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> place winners on the area level and state winners will be selected from the area winners. This contest is open to students, 18 years and younger, and does not jeopardize Texas University Interscholastic League eligibility.

### ***Poster Contest***

Posters should address one of the following subjects: “Food for the Future” or “The Living Soil”. Posters shall be submitted to local soil and water conservation districts for local judging. Each local district will judge the entries and submit three posters to the TSSWCB for competition on the area level. Plaques will be awarded to the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> place winners on the area level and state winners will be selected from the area winners. This contest is open to students, 12 years and under, and does not jeopardize Texas University Interscholastic League eligibility.

### ***Business/Professional Individual***

Awarded to the outstanding man or woman in the business community who has rendered the most unselfish conservation service in each area. Representatives of the news media (radio, television, newspaper, magazines, etc) who contribute to or provide support for conservation shall also be considered



eligible for this award. (This award is not for individual conservation practices or individuals who, because of employment, assist with or augment the work of the soil and water conservation district.)

### ***Conservation Teacher***

Awarded to the outstanding teacher of conservation in schools in each area. Teachers of all grade levels are eligible for this award.

### ***Wildlife Conservationist***

Awarded to the outstanding wildlife conservationist in each area. They **must** be a district cooperater who has incorporated wildlife conservation into their farming and ranching activities.

### ***Conservation Homemaker***

Awarded to the outstanding conservation homemaker in each area. The homemaker and or family **must** own or operate a farm or ranch, be a district cooperater and have knowledge of the conservation programs being implemented.

### ***Conservation District Employee***

Awarded to the outstanding soil and water conservation district employee who exhibits a degree of knowledge, skill, ability, and leadership that clearly results in superior job performance far above the basic requirements of the position.

### ***Forestry Conservationist (Area IV only)***

Awarded to the outstanding forestry conservationist for the most outstanding farm forestry conservation program in the commercial forest areas of Texas. They **must** be a district cooperater or an individual who has implemented conservation practices on their land and has done missionary work for conservation and the district program.

### ***Soil & Water Stewardship Public Speaking Contest***

The Soil & Water Stewardship Public Speaking Contest is open to high school FFA students interested in conservation. The contest is aimed at broadening students' interest and knowledge of conservation and how individuals must depend on and take care of the world around them for survival. The contest is coordinated through the Texas FFA, with contests at the local, area and state level. Local winners compete in the 10 state FFA areas and those winners compete for the state title. Each year the state winner is invited to the Annual State Meeting of District Directors to deliver their presentation.

To prepare for the contest, students are to consult with their Agriculture Science teacher and work with their local soil and water conservation district. Students are encouraged to visit with their local SWCD to find out more about conservation practices in their area.

This project is a partnership between the Texas FFA, the Vocational Agriculture Teacher's Association of Texas, The Texas State Soil and Water Conservation Board, and the Association of Texas Soil and Water Conservation Districts.

The Soil & Water Stewardship Public Speaking Contest Winners in 2003 were:

Jaida Brown, Hartley, Hartley SWCD  
Donna Mitchell, Lamesa, Dawson SWCD  
Danae Trahan, Van Vleck, Matagorda SWCD  
Randi Roanhaus, Henrietta, Little Wichita SWCD  
Angela Price, Chico, Wise SWCD  
Jody Rodenberg, Gilmer, Upshur-Gregg SWCD  
Jamie Callahan, Florence, Taylor SWCD  
Dillon DeWald, Granbury, Brazos Valley SWCD  
Megan Murrell, Winnie, Trinity Bay SWCD  
Megan Shearrer, Jourdanton, Atascosa SWCD (2003 State Winner)

The State Winner of the Soil and Water Stewardship Public Speaking Contest is invited to attend the Annual State Meeting each year and asked to deliver their winning address. Without notes, the presentation delivered by Megan Shearrer this year in EL Paso was as follows:

### ***Food for the Future***

*From insects, spit-roasted animals, dry cracker biscuits, to filet mignon, food and food preservation have been ever changing over the centuries. I'm sure the founding fathers of our country never expected a typical future lunch to be a burger and fries. For a history of Soil Stewardship Week, we turn to the Bedia Creek and Walker County Soil and Water Conservation District's web page. Soil Stewardship began as an early tradition in Europe. Early France was hit by an unexpectedly severe drought. The people implored God to help them, and their situation improved. They set aside special days, or Rogation Days, to thank God for the fertility of the earth and for their harvest. When our country was founded, the tradition became a part of our culture. Soil Stewardship week is our opportunity to be thankful for the fruitfulness of our soils and other natural resources. It is also a time to increase awareness of everyone's personal responsibility to do what he or she can to preserve our nation's resources. "Food for the Future" cannot be possible without conservation in the present. No great thing such as this can be accomplished alone, however. We must all work together in our communities, counties, states, and country to ensure that our posterity has the opportunity to enjoy fertile soils and pure waters. We must give them the chance to enjoy "Food for the Future". Our local Soil and Water Conservation District is concerned with providing "Food for the Future". The conservation of cropping systems, proper grazing techniques, crop residue use, and brush management are among their top priorities. These concerns are affiliated with preserving the ecosystem. The ecosystem is like a giant pyramid. If the foundation of the pyramid shifts, then the entire structure is damaged. That kind of damage could endanger "Food for the Future". In summary, the mission statement dictates that knowledge, understanding, and awareness are the keys to guaranteeing that we leave our descendants with the proper means to fashion "Food for the Future". The local Soil and Water Conservation Districts and communities work hard to make certain that no pieces will be missing when it comes to "Food for the Future". My local area supports many crops. Some of the major crops are peanuts, pecans, watermelons, corn, and strawberries. Without the preservation of soil, water, and other resources, future crops of peanuts or watermelons won't have the nutrients they need to thrive and bear fruit. Thinking ahead is a major characteristic of the "Food for the Future" theme. The local Soil and Water Conservation District is aiming to bring more people to understand the importance of conservation for the future. Urban communities increase the need for "Food for the Future". The Malthusian theory states that population grows geometrically, while food supply and resources only grow arithmetically. Necessity is the mother of invention, however, and*

*because of modern agricultural advancements, resources, or alternatives to resources, have been able to grow geometrically as well. Still, there will come a point when that is no longer possible and we are faced with the same old problem: more people than adequate resources. The growth of urban areas brings the world closer and closer to testing this theory. This has spurred an agricultural revolution of sorts. More and more alternatives to traditional agricultural practices are being devised daily. Many have turned to watering their crops/gardens with gray water, or wastewater that has been purified by a sewage plant. Genetically engineered foods that are more resistant to diseases and pests are being grown. Alternative forms of finding energy have been developed. Instead of corn, some farmers are growing switchgrass as a fuel source. Ethanol can be produced from the switchgrass at less of an environmental concern. The technology we possess can be used to provide for the future. Agriculture and silviculture, the science of forestry, have one basic thing in common: ecology. Both study the relationships between organisms and their environment, something very important to food production. Altering one environment, such as cutting down too many trees, can change the global environment. We get food from plants and animals, and understanding their relationship with their environment is vital to the prosperity of "Food for the Future". Efficient growing practices can be derived from ecology. Agriculture and silviculture are important to food production because they walk hand in hand, and there would be no food without them. Ensuring food for the future can be done by the city businessman and the small farmer. Urban people should, in summary, reduce resource consumption. Compost piles, family gardens, and alternative means of transportation such as carpooling or bicycles all help to reduce resource consumption. Farmers can use Best Management Practices (BMPs), such as land stripping and skipping rows to benefit preservation of food crops. Drip irrigation is becoming popular. BMPs, if practiced, can contribute to the future health of soil and water in the area. BMPs help farmers while also helping the environment. In my area, the SWCD is assisting approximately 1,300 cooperators. This all means "Food for the Future". To me, "Food for the Future" means providing for the approaching times, just as our ancestors did for us. Inevitably, the population will grow to so much that people will outnumber natural resources. We are all obligated to see that this comes as late as possible. Simple conservation is key. It doesn't take a million dollars or a PhD to recycle, reduce waste, and protect the environment. It is something feasible for everyone, which makes it that much more imperative. As technology grows, we will find other ways to make food production that much more efficient. "Food for the Future" means that my great-grandchildren, as well as yours, have rich soil, clean water, and bountiful harvests.*

### **Wildlife Alliance For Youth**

The Wildlife Alliance for Youth (WAY) contests offer opportunities at the local district level for 4-H and FFA students to demonstrate their knowledge of the outdoors on wildlife habitat and management, wildlife laws, sportsmanship and other factual information on wildlife. The program offers scholarships to contest winners. It is a powerful tool for students to become involved in conservation and obtain an appreciation for wildlife.

To compete in the WAY contests, high school FFA students are required to be enrolled in or have completed Agriscience 381: Wildlife and Recreation Management. This is because the WAY contests address the following nine subject areas in Wildlife and Recreation Management: Wildlife Plant Identification; Wildlife Plant Preferences; Wildlife Biological Facts; Wildlife Habitat; Habitat Management; Game Laws; Hunter, Boater and Angler Safety; Compass and Pacing; and Identification Techniques. Students should have an understanding of these subject areas before they compete.

The WAY contests are held in the five Texas State Soil and Water Conservation Board areas. Area IV (East Texas) holds their contest in November, which is the only contest held in the Fall. Area V (North Central) holds their contest in March and Areas I (Panhandle), II (West Texas) and III (South Texas) hold their contests in April. Each team is certified to the area level by their local SWCD. The WAY State Contest is held each May in a different geographical area.

The TSSWCB is the lead agency in sponsoring and organizing the contests. The Association of Texas Soil and Water Conservation Districts, Natural Resources Conservation Service, Texas Parks and Wildlife Commission, Cooperative Extension service, and the Texas Education Agency, along with local soil and water conservation districts (SWCD), all partner in the success of this program.

### **State Woodland Clinic and Contest**

The Texas State Woodland Clinic and Contest is held annually in the month of April. It is a joint effort between local soil and water conservation districts, Stephen F. Austin University School of Forestry and the NRCS-USDA.

It is an opportunity for 4-H and FFA youth to demonstrate their expertise in different aspects of forestry management and skills in identification of needed practices and management techniques. Competition is between teams composed of four members representing either a 4-H Club or a FFA Chapter. Prior to the state contest several local districts conduct contests for 4-H Clubs and FFA Chapters within their district and the surrounding area.

The contest began in the late 1950's and was initiated by local SWCDs and timber industry personnel to develop forestry and woodland curriculum in schools in the commercial timber area of the state (East Texas Piney Woods). The clinic and contest have experienced widespread popularity and now has participation from outside of the commercial timber area on a regular basis. The state participation level for teams averages around 55 teams per year, with the vast majority of teams being composed of FFA Chapters. Winners at the state level are eligible to participate in the four states regional woodland contest held each May in one of four states. Texas, Louisiana, Arkansas and Oklahoma host the regional contest on a rotational basis.

### **Regional Woodland Contest**

The four states regional woodland contest is sponsored by soil and water conservation districts in each of the four states with program and technical support provided by USDA-NRCS and Resource Conservation and Development (RC&D), state organizations and industry personnel. The soil and water conservation districts in Texas hosted the first four states or southern regional woodland contest in 1984.

An attempt was made to expand this clinic and contest to a national level. However, that effort was dropped due to the wide diversity of forestry species and management practices across the nation.

Each state is allowed to send a maximum of six teams to the regional contest. Each state has a competition that determines the six teams from that state that may enter in the regional contest. Those teams may be composed of individuals representing either a 4-H Club or an FFA Chapter.

## ***Conservation Education Video Library***

The Association of Texas Soil and Water Conservation Districts has established and updates a conservation related video library that is maintained by TSSWCB staff on their behalf for the benefit of local districts and educators. Currently there are over 180 conservation-related videos in the library available to districts and teachers. No rental fees are assessed to those wishing to borrow the videos from the library. Borrowing privileges are for a length of two weeks and must be returned upon date specified by the librarian. Videos can be ordered through your local soil and water conservation district or by contacting the TSSWCB. During FY 03, 162 videos were loaned to various districts and teachers across the state.

## ***Conservation Education Models***

The Nonpoint Source Pollution Watershed Flow Model and the Groundwater Flow Model allow students to understand how water supplies can become polluted from nonpoint sources through interactive demonstrations.

### ***Nonpoint Source (NPS) Pollution Watershed Flow Model***

The NPS model is a hands-on representation of a landscape that allows students to understand how water sources can become polluted from nonpoint sources. The plastic landscape structure has industrial, undeveloped, agricultural, and residential and roadway features complete with individual houses, trees, cars, tractors and cows. When "rain" falls on the model, the runoff flows into a city lake. Using various products to add color to the water, the model demonstrates how potential pollutants are picked up by runoff.

The model is a layout of a watershed that includes all the factors that may contribute to polluting our water. (Urban features such as: factories, parking lots, construction sites, lawn chemicals and golf courses and Rural features such as: forested land, dairies, feedlots, cropland and pastureland). To demonstrate how each type of potential pollutant can enter a water body Kool-Aid and cocoa are used to color "runoff". Grape Kool-Aid is used to represent pollution from factories and oil from parking lots and roads. Orange Kool-aid represents pollution from lawn chemicals, golf courses, and cropland and pastureland chemicals. Cocoa is used to represent pollution from construction sites, forested land, dairies and feedlots. The Kool-aid and Cocoa are sprinkled on the model in the areas that represent each type of pollutant. Once all the pollutants are sprinkled on the model a spray bottle with water is use to represent rainfall. As the pollutants get wet and start to runoff the students can see how the water carries them to the streams and into the lake where we get our drinking water. Once all the pollutants have run into the lake the students can see how these factors have the potential to make surface waters unattractive and unsafe. This demonstration leads to a discussion about how to protect the water quality and prevent our water from looking like the model.

### ***Groundwater Flow Model***

This model shows a cross-section of soil layers with a lake, a lagoon, and several wells represented. It uses a vacuum pump to make the water move through the soil layers and injection dyes to help visualize the flow of groundwater though soil and demonstrates how pollutants can travel in groundwater. The model demonstrates both percolation and the movement of groundwater due to pumping. Accompanied

by an instructional video with tips on the setup, presentation and cleanup, the model is useful and easy to use.

### ***Public Information and Education Program Transition***

During FY03, the Public Information and Education Department consisted of four full-time employees. The TSSWCB FY04 Public Information and Education Program appropriations were eliminated from the budget, resulting in the loss of the four full-time employees that were in the department.

Because our conservation program is a voluntary program, education and information concerning the availability, value, and need for soil and water conservation is an important tool for contributing to continuing participation and support for the program. To maintain a minimum level of outreach and assist local districts with their planned programs, our agency has reorganized in a manner that provides for the public information and education program to be coordinated through one employee who is also assigned to Human Resource responsibilities.

### **Brush Control Program**

The TSSWCB's Brush Control Program is designated to enhance water availability by removing water-depleting brush and trees, such as cedar and mesquite, which have invaded much of the state's cattle grazing land. In 1985, the Legislature directed the TSSWCB to administer the program entailing the development of management strategies and the designation of areas where brush control is most needed.

In 1999, the Legislature appropriated \$9 million to the TSSWCB for financial incentives to landowners who adopted Water Quality Management Plans and would participate in a Brush Control Pilot Project in the North Concho River Basin.

The Brush Report for this document is attached. It is also a stand-alone document that meets the requirements of §203.056, Texas Agriculture Code, which requires the TSSWCB to prepare an Annual Report on the activities of the Brush Control Program for the preceding calendar year.

State appropriated grants made to entities other than a local district was made to the Upper Colorado River Authority in the amount of \$60,000.00 to conduct North Concho River Pilot Brush Control Program monitoring and paired watershed evapotranspiration studies.



# Texas State Soil & Water Conservation Board

## BRUSH CONTROL PROGRAM

### 2003 ANNUAL REPORT

JANUARY 1, 2003 - DECEMBER 31, 2003

### PROGRAM GOAL

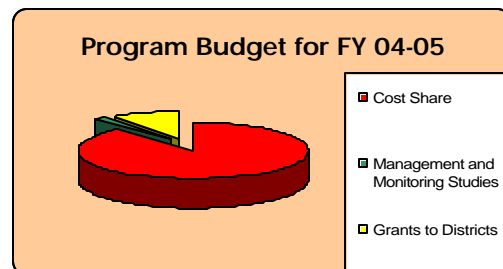
Enhance water availability through selective Brush Control.

### 2003 ACTIVITIES AT A GLANCE

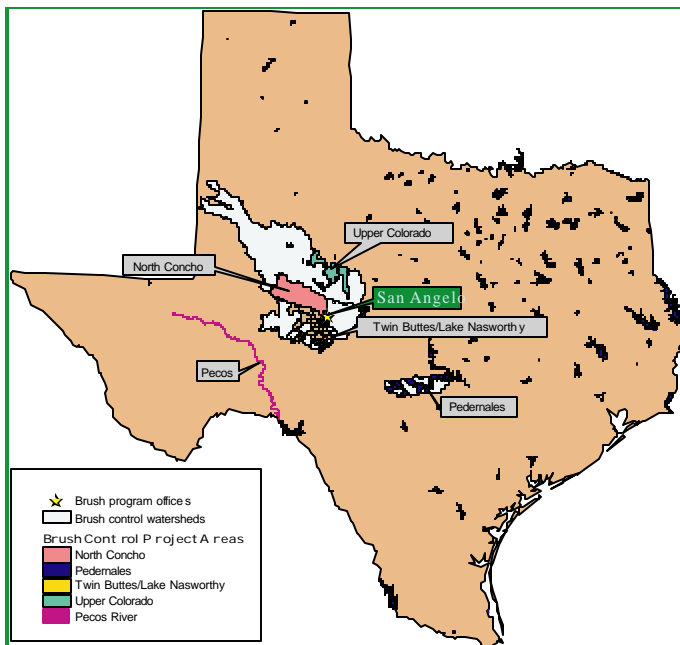
- Brush Controlled on 396,401 Acres (FY 00-03)
- 8 Mesquite and Juniper Projects Initiated
- Brush Control Rules Revised
- Reference Guide Updated
- 2 Salt Cedar Projects Initiated
- North Concho Watershed Project

### 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 267,520 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:**

<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, 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

Project	Total Allocation	Acres Under Contract	Treated Acres	Avg. Cost Per Ac.	Expected Water Yield
<b>North Concho River</b>	\$ 13,254,024.00	351,689.00	207,537.00	\$ 41.00	157,728.00
<b>Twin Buttes</b>	\$ 9,765,989.00	207,058.00	115,518.00	\$ 43.00	108,586.00
<b>Perdernalles</b>	\$ 4,001,199.00	58,845.00	41,524.00	\$ 64.00	212,187.00
<b>Lake Ballinger</b>	\$ 484,886.00	10,235.00	4,559.00	\$ 45.00	6,063.00
<b>Oak Creek Lake</b>	\$ 1,095,765.00	15,214.00	10,752.00	\$ 47.00	12,149.00
<b>Champion Creek</b>	\$ 906,932.00	14,338.00	7,241.00	\$ 45.00	5,503.00
<b>Pecos/ Upper Colorado</b>	\$ 410,710.00	6,220.00	-		-
<b>Mountain Creek</b>	\$ 95,532.00	2,034.00	1,414.00	\$ 49.00	1,230.00

## 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**

**TEXAS STATE SOIL AND WATER CONSERVATION BOARD**  
**FY04 OPERATING BUDGET VERSUS EXPENDITURE REPORT**  
**FOR THE TIME PERIOD THRU DECEMBER 23, 2003**

**A. GOAL:** To Protect and Enhance the Farm and Grazing Land of Texas by Ensuring that a Quality Conservation Program is Available and Being Applied in All Soil and Water Conservation Districts and that Funds are Being Used Effectively to Increase Water Yield in Targeted Areas

**STRATEGY 1.**

Provide Program Expertise, Technical Guidance and Assistance, and Financial Assistance on a Statewide Basis in Managing and Directing Conservation Programs

<u>Object of Expense</u>	<u>Budget</u>	<u>Expended</u>	<u>Balance</u>
Salaries and Wages	\$583,855.00	\$140,723.27	\$443,131.73
Administrative and Operating Expenses	\$338,675.00	\$57,929.51	\$280,745.49
<u>Programs</u>			
Director Mileage and Per Diem	\$325,000.00	\$250,860.64	\$74,139.36
Conservation Assistance Grant (Matching Funds)	\$916,364.00	\$175,996.58	\$740,367.42
Technical Assistance Grant	\$1,036,241.00	\$508,794.36	\$527,446.64
Subchapter H Water Conservation Grant	\$115,000.00	\$0.00	\$115,000.00
Strategy Subtotal	\$3,315,135.00	\$1,134,304.36	\$2,180,830.64
Full Time Equivalent Positions:	13		

**STRATEGY 2.**

Provide Financial and Technical Assistance to Implement Brush Control Projects to Increase Water Yields in Targeted Watersheds

<u>Object of Expense</u>	<u>Budget</u>	<u>Expended</u>	<u>Balance</u>
Salaries and Wages	\$0.00	\$0.00	\$0.00
Administrative and Operating Expenses	\$0.00	\$0.00	\$0.00
<u>Programs</u>			
Unexpended Balance Forward Bond Funds	\$11,250,000.00	\$0.00	\$11,250,000.00
Unexpended Balance Forward General Revenue	\$100,000.00	\$0.00	\$100,000.00
General Revenue	\$3,114,794.00	\$284,427.72	\$2,830,366.28
Strategy Subtotal	\$14,464,794.00	\$284,427.72	\$14,180,366.28
Full Time Equivalent Positions:	0		

**TEXAS STATE SOIL AND WATER CONSERVATION BOARD**  
**FY04 OPERATING BUDGET VERSUS EXPENDITURE REPORT**  
**FOR THE TIME PERIOD THRU DECEMBER 23, 2003**

**B. GOAL:** To Effectively Administer a Program for the Abatement of Nonpoint Source Pollution Caused by Agricultural and Silvicultural Uses of the State's Soil and Water Resources

**STRATEGY 1.**

Implement and Update as Necessary a Statewide Management Plan for the Control of Agricultural and Silvicultural Nonpoint Source Water Pollution

<u>Object of Expense</u>	<u>Budget</u>	<u>Expended</u>	<u>Balance</u>
Salaries and Wages	\$184,182.00	\$43,128.95	\$141,053.05
Administrative and Operating Expenses	\$162,834.00	\$41,395.31	\$121,438.69
<u>Programs</u>			
319(h) Federal Grants to Cooperating Entities	\$3,826,987.00	\$551,611.32	\$3,275,375.68
Strategy Subtotal	\$4,174,003.00	\$636,135.58	\$3,537,867.42
Full Time Equivalent Positions:	5		

**STRATEGY 2.**

Develop and Implement Pollution Abatement Plans for Agricultural and Silvicultural Operations in Identified Problem Areas

<u>Object of Expense</u>	<u>Budget</u>	<u>Expended</u>	<u>Balance</u>
Salaries and Wages	\$1,132,657.00	\$256,156.21	\$876,500.79
Administrative and Operating Expenses	\$427,778.00	\$93,735.51	\$334,042.49
<u>Programs</u>			
Nonpoint Source Water Quality Management Plan Cost-Share Program (S.B. 503)	\$2,171,740.00	\$128,188.15	\$2,043,551.85
Poultry Water Quality Management Plan Program (S.B. 1339)	\$250,000.00	\$0.00	\$250,000.00
Strategy Subtotal	\$3,982,175.00	\$478,079.87	\$3,504,095.13
Full Time Equivalent Positions:	29		

**TEXAS STATE SOIL AND WATER CONSERVATION BOARD**  
**FY04 OPERATING BUDGET VERSUS EXPENDITURE REPORT**  
**FOR THE TIME PERIOD THRU DECEMBER 23, 2003**

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**C. GOAL:** Indirect Administration

**STRATEGY 1.**

Indirect Agency Administration

<u>Object of Expense</u>	<u>Budget</u>	<u>Expended</u>	<u>Balance</u>
Salaries and Wages	\$282,865.00	\$54,687.99	\$228,177.01
Administrative and Operating Expenses	\$130,400.00	\$59,124.00	\$71,276.00
Strategy Subtotal	\$413,265.00	\$113,811.99	\$299,453.01
Full Time Equivalent Positions:	7		
<b>TOTAL OPERATING BUDGET</b>	<b>\$26,349,372.00</b>	<b>\$2,646,759.52</b>	<b>\$23,702,612.48</b>
<b>TOTAL FULL TIME EQUIVALENT POSITIONS:</b>	<b>54</b>		