Soil
Water

TSSWCB

Texas State Soil & Water Conservation Board

Working With Producers to Address Rural-Urban Interface Issues

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Rural America is changing rapidly in the 21st century as urban residents migrate to the countryside in search of open space, fresh air, increased recreational opportunities and, in general, a less stressful, more relaxed lifestyle (Libby, 2001). Rural living is easier and more convenient today than at any time in our nation's history. Federal highway expansion brings the countryside closer, sewer and water systems make rural living more manageable, and the Internet, digital satellite, and other state-of-the-art technologies facilitate communication at the touch of a button (Libby, 2001). Not surprisingly, however, the new face of rural America has also created tension at the rural-urban fringe. Recently constructed homes and businesses inevitably increase contact between new residents and traditional rural land uses such as agriculture and forestry.

Few will dispute that agricultural production provides one of America's biggest water quality challenges in the 21st century (Libby, 2001). While agricultural operations are not necessarily major polluters, point sources of pollution have largely been addressed, leaving agriculture, forestry, and other non-point sources as a primary barrier to achieving water quality objectives (Libby, 2001). Agricultural operations, particularly those near the rural-urban interface, are the focus of an environmental spotlight. Many agricultural operations are highly visible, and today more than ever, their link to water quality is something easily understood by a more informed and knowledgeable citizenry.

The Texas State Soil and Water Conservation Board (TSSWCB) has assembled a comprehensive collection of conservation practices, or best management practices (BMPs), to assist landowners and/or producers in preventing nonpoint source pollution. While TSSWCB has traditionally focused on agriculture and other rural land uses, it administers or shares responsibility for a number of natural resource and water quality programs that enhance the quality of life for all Texans. Conservation practices benefit agricultural producers, rural residents, transplanted urban residents, and city dwellers alike by protecting surface and groundwater quality in the State of Texas.

A Look at the Texas State Soil and Water Conservation Board

From its headquarters in Temple, TSSWCB is actively involved in a number of programs designed to protect and enhance the state's natural resources—from prevention of soil erosion, to coastal management, to wildlife conservation, to landowner education, and many others. As one example, the TSSWCB's Brush Control Program was designed to enhance water availability by removing the water depleting brush and trees that have invaded the state's grazing land. The TSSWCB achieves this objective by developing management strategies for designated areas where brush control is most needed. Since 1985, TSSWCB has worked closely with state and federal agencies to effectively implement this program.

The Water Quality Management Plan Program

In 1993, the Texas Legislature passed Senate Bill 503, which made TSSWCB the lead agency for activities designed to abate agricultural and silvicultural nonpoint source pollution. The legislation also directed the TSSWCB to develop and implement Water Quality Management Plans (WQMPs). The TSSWCB performs this function in coordination with the state's 217 local soil and water conservation districts (SWCDs), which are political subdivisions of the state.

While the Brush Control Program addresses an important natural resource concern, conservation practices are specifically designed to address a separate, yet equally important issue—the protection and enhancement of surface and groundwater quality. The TSSWCB plays a vital role in several programs that have a direct impact on water quality, most notably:

- The Water Quality Management Plan Program
- The Clean Water Act Section 319 Grant Program
- The Total Maximum Daily Load Program

Board members are selected by agricultural landowners in local elections. The districts generally reflect county boundaries but, in some cases, may follow river basin or watershed boundaries. The local SWCD's administer the WQMP program at the local level. They work with landowners and/or producers to implement conservation practices on their land.

A WQMP is a site-specific conservation plan developed and approved by SWCDs for agricultural and silvicultural lands. Its purpose is to achieve a level of pollution prevention or abatement that is consistent with state water quality standards. The requirements contained in a WQMP are

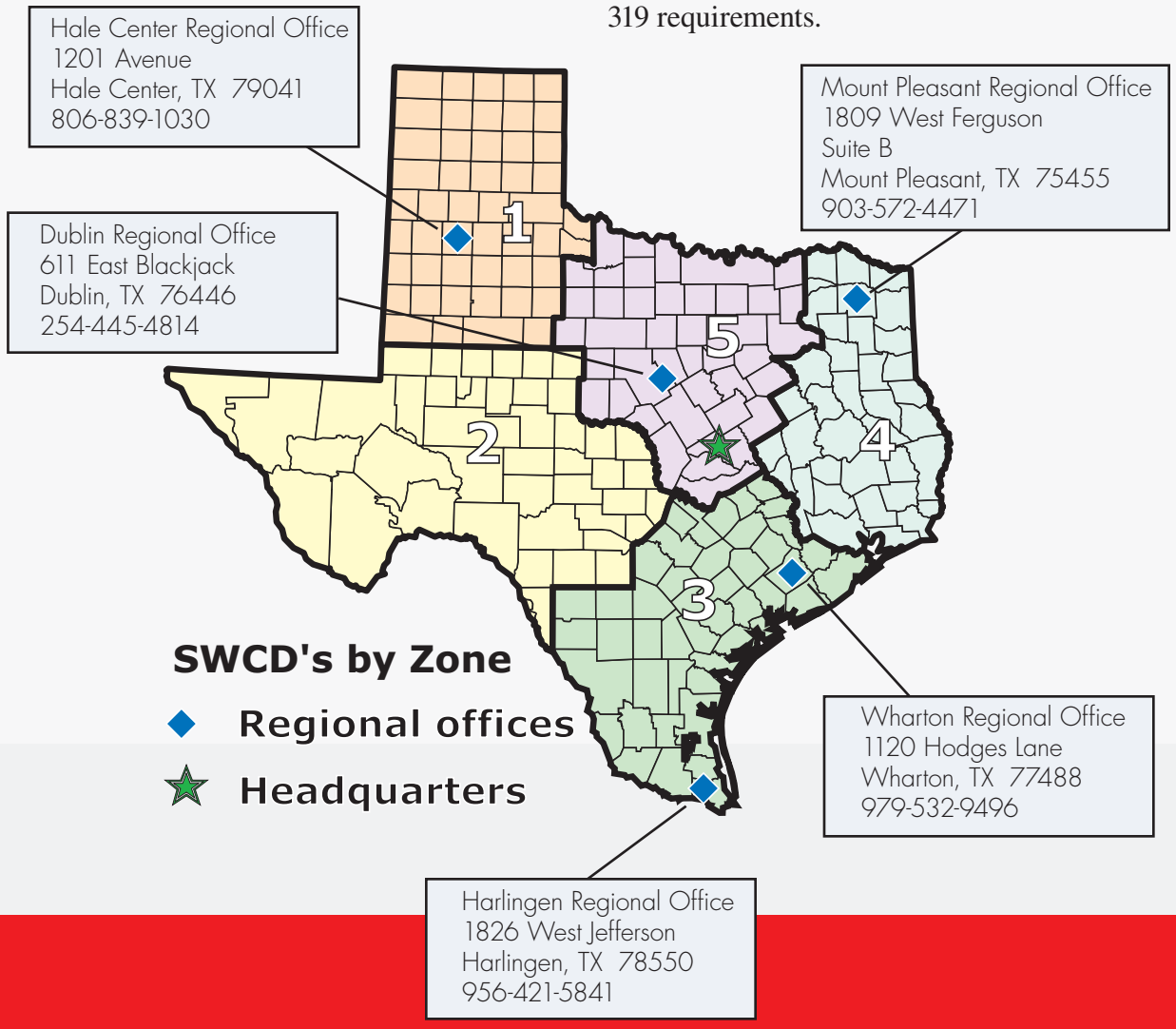
based on criteria outlined in the Field Office Technical Guide, a publication of the U.S. Department of Agriculture's Natural Resources Conservation Service.

Water Quality Management Plans can be particularly useful in addressing animal feeding operations, such as unpermitted dairy facilities. WQMPs are developed with practices that individually, or in combination with others, properly manage animal waste and waste application. WQMPs can also include sub-components for irrigation water and erosion control and are flexible enough to cater to a wide range of operating systems.

Since the program began in 1993, TSSWCB has certified the technical adequacy of more than 8,400 WQMPs.

The Clean Water Act Section 319 Grant Program

Recognizing the need for greater federal leadership to help focus State and local nonpoint source efforts, Congress amended the CWA in 1987 to enact the section 319 nonpoint source management program. Section 319 established a grant that Congress awards annually to the U.S. Environmental Protection Agency (EPA), which then allocates the funds among states to implement activities to achieve CWA goals. In Texas, section 319 grant funds are divided between TSSWCB and the Texas Commission on Environmental Quality (TCEQ). These agencies are responsible for maintaining a statewide management program that satisfies section 319 requirements.



The TSSWCB reviews section 319 grant proposals to ensure funds are directed to the most effective, high quality nonpoint source projects. The agency ultimately awards grants in support of a wide variety of activities including technical assistance, education and training, technology transfer, demonstration projects, watershed planning activities, and monitoring to assess the progress of nonpoint source programs. Section 319 grant funds are also used to develop Total Maximum Daily Loads (TMDLs) and to implement management practices that support restoration goals established in TMDLs.

The section 319 program has successfully addressed a variety of nonpoint source challenges. For example, the TSSWCB has helped implement BMPs that address nonpoint source pollution from forestry activities, through voluntary participation of local foresters, landowners, and silvicultural contractors. Educational efforts have reached approximately 20,000 people and evaluations show an 88 percent BMP implementation compliance rate (EPA, 2003). Overall, forestry BMPs have reduced stream sedimentation by approximately 40 percent (EPA, 2003).

The Total Maximum Daily Load Program

The Total Maximum Daily Load program was created by section 303(d) of the CWA, the same piece of legislation that created the National Pollutant Discharge Elimination System (NPDES), which has been so effective in curbing point source pollution. Section 303(d) requires states to:

- Identify waters that are and will remain polluted (water quality standards not achieved) after the application of technology based activities associated with point sources.
- Prioritize the waters, taking into account the severity of their pollution.
- Establish total maximum daily loads for the waters at levels necessary to meet applicable water quality standards.

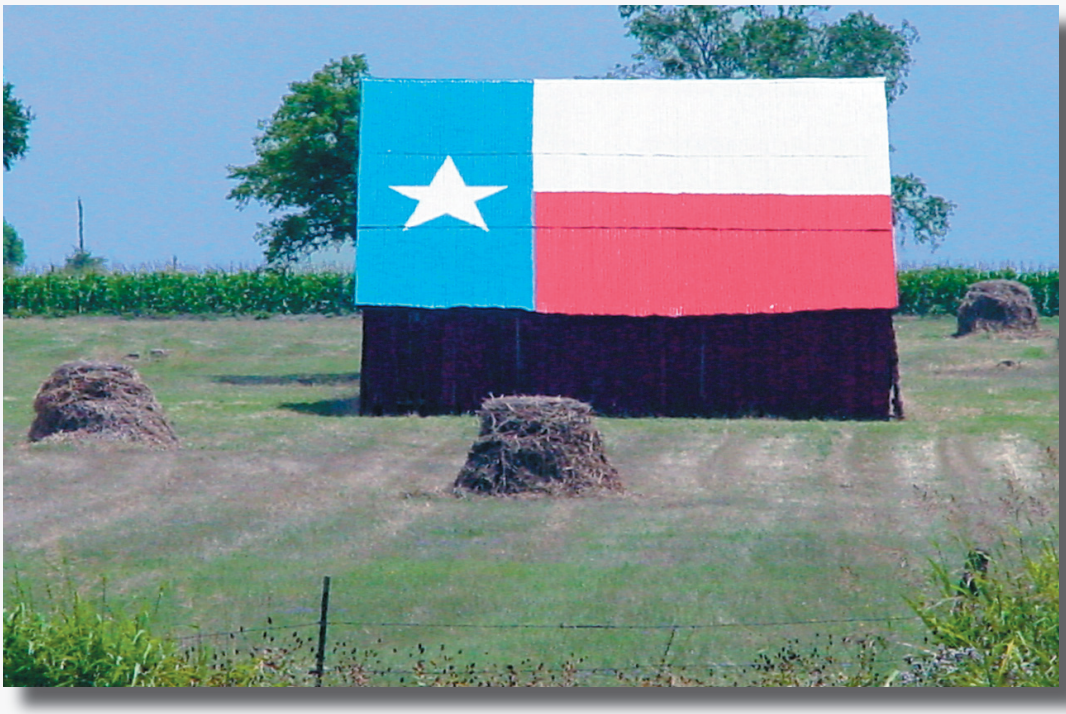
Stated simply, a TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. Thus, a TMDL specifies the amount of a particular pollutant that may be present in the impaired water body, allocates allowable pollutant loads among sources, and provides the basis for attaining and maintaining water quality standards.

In Texas, responsibility for TMDLs is shared between the TSSWCB and the Texas Commission on Environmental Quality (TCEQ). Although, in general, TCEQ is the lead agency for protecting water quality, it shares responsibility for managing nonpoint source pollution with TSSWCB, the lead agency for nonpoint source pollution related to agricultural and silvicultural activities. Accordingly, TMDLs for water bodies impaired by agricultural or silvicultural nonpoint source pollution must be coordinated between TCEQ and TSSWCB.

The TSSWCB is currently involved in the development and implementation of a number of TMDLs for water bodies that are impaired, at least in part, by agricultural activities. These TMDLs, which primarily address dissolved oxygen, nutrients, bacteria, Atrazine, and salinity, are implemented using CWA section 319 grant funds and state WQMP program funds.

Final Thoughts

As described above, the TSSWCB is responsible for a number of natural resource and water quality programs. Although these programs primarily target rural farmers and ranchers, the results of TSSWCB activities benefit all Texans by protecting urban drinking water supplies and enhancing the quality of outdoor recreational activities. Flood control structures, for example, protect heavily populated areas from flood damage and prevent the build up of sediment, while best management practices and WQMPs prevent pesticides, nutrients, and other pollutants from impairing the state's waters.



A TMDL for Atrazine in the Aquilla Reservoir is one of many projects considered a TSSWCB success story. Atrazine, a possible human carcinogen, is a pre-emergent primarily used to eradicate 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 U.S. Although classified as a restricted use product due to its potential for groundwater contamination, Atrazine is commonly found in home and garden products, making it not only an agricultural issue, but an urban issue as well.

In 1998, the Aquilla Reservoir was listed as impaired for Atrazine on the Texas section 303(d) list. The TSSWCB and TCEQ prepared a TMDL and corresponding implementation plan, which were approved by EPA. Working in cooperation with an assortment of federal, state, and local stakeholders, TSSWCB encouraged the implementation of BMPs to reduce sediment and pesticide runoff from corn and sorghum fields. These efforts, and others, resulted in a 60 percent reduction of Atrazine in the Aquilla Reservoir, to levels lower than those required for treated drinking water.

With its many successes, TSSWCB understands the challenge of ensuring agricultural lands maintain their capability to produce food and fiber for future generations, while at the same time protecting water quality. Because of changes in land use, ownership, technology, and population growth, there continues to be a critical need for TSSWCB soil and water conservation programs. Texas has a finite number of productive acres, which places increased demands on agricultural lands. More than ever, farmers and ranchers face complex decisions regarding land use and land management.

References:

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Libby, Lawrence W. 2001. Policy Issues and Options at the Rural-Urban Interface: A National Perspective. Southern Perspectives 5:1, pp. 12-15.

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