

IMPLEMENTATION OF AGRICULTURAL BEST MANAGEMENT PRACTICES IN SUPPORT OF THE PLUM CREEK WATERSHED PROTECTION PLAN

FINAL REPORT
TSSWCB PROJECT #08-10



**CALDWELL-TRAVIS #304 AND HAYS COUNTY #351 SOIL AND WATER
CONSERVATION DISTRICTS**

FUNDING PROVIDED THROUGH A CLEAN WATER ACT §319(h) NONPOINT
SOURCE GRANT FROM THE TEXAS STATE SOIL AND WATER CONSERVATION
BOARD AND THE U.S. ENVIRONMENTAL PROTECTION AGENCY

TABLE OF CONTENTS

- EXECUTIVE SUMMARY
- INTRODUCTION
- PROGRAM DEVELOPMENT
- CONCLUSIONS

EXECUTIVE SUMMARY

The Caldwell-Travis #304 and Hays County #351 Soil and Water Conservation Districts (SWCDs), working cooperatively with the Texas State Soil and Water Conservation Board (TSSWCB) and the United States Department of Agriculture-Natural Resources Conservation Service (NRCS), provided technical assistance and financial incentives to agricultural producers in the Plum Creek watershed.

A District Technician was hired and worked cooperatively with the TSSWCB and NRCS to provide agricultural producers with the opportunity to voluntarily implement best management practices (BMPs) that would have a positive impact on the Plum Creek watershed.

Through this project, 1 WQMP was developed and implemented on approximately 60.3 acres. Also through this project 5 WQMPs had a status review conducted. The District Technician and TSSWCB worked with the SWCDs and local producers to educate them on their operation, the WQMP Program, proper soil sampling, and water quality. They also presented at field events, field days, and were active in the implementation of the Plum Creek Watershed Protection Plan (WPP).

Implementation of WQMPs has and will continue to be a key component in the overall effort to reduce the potential for nonpoint source pollution and improve water quality in the Plum Creek watershed.

INTRODUCTION

Plum Creek rises in Hays County north of Kyle and runs south through Caldwell County, passing Lockhart and Luling, and eventually joins the San Marcos River at their confluence north of Gonzales County. Plum Creek is 52 miles in length and has a drainage area of 389 mi². The Plum Creek Watershed is very diverse, ranging from one of the state's most rapidly growing urban areas in the north to rural lands near the confluence with the San Marcos River. The creek itself played an important role in early development in the area and continues to be a valued resource for local citizens, and communities. According to the 2010 Texas Integrated Report, Plum Creek is impaired due to elevated levels of bacteria (category 4b) and exhibits concerns for nitrate, total phosphorus, depressed DO and orthophosphorus.

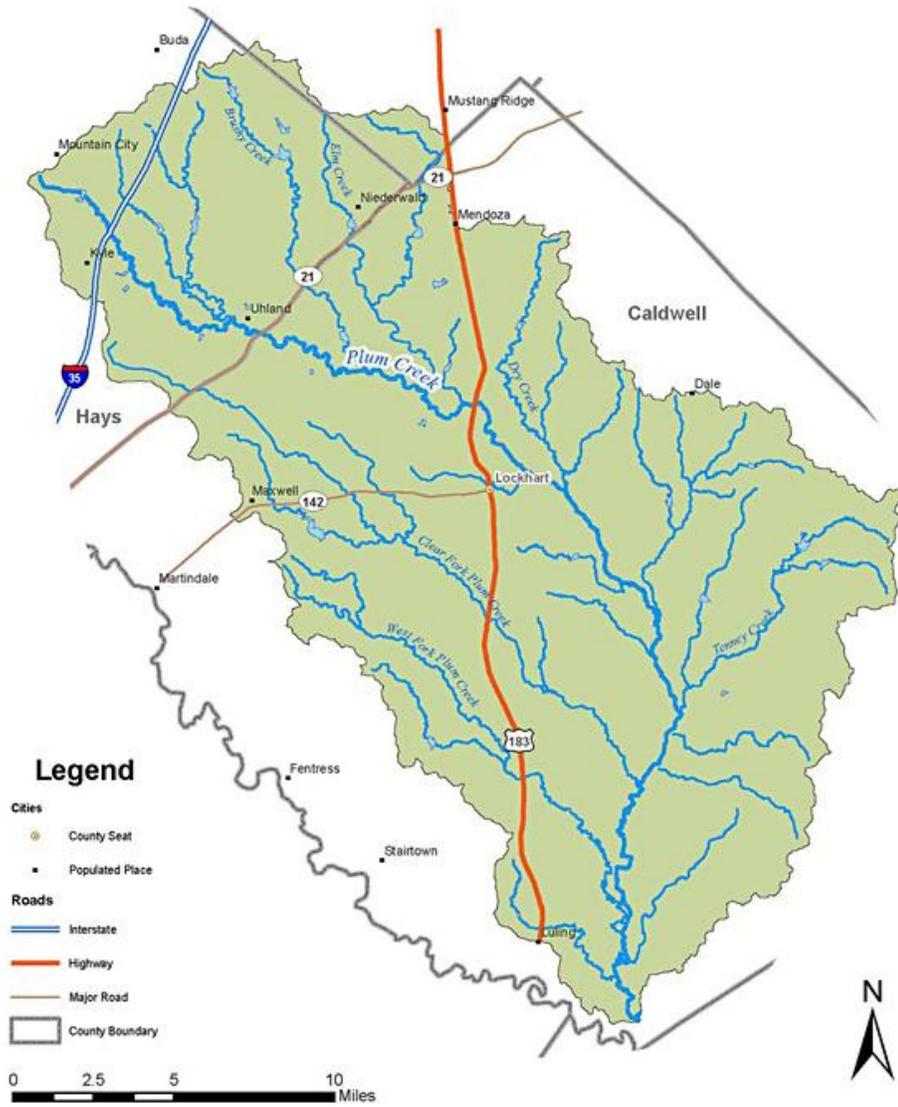
TSSWCB and Texas A&M AgriLife Extension Service, Department of Soil and Crop Science established the Plum Creek Watershed Partnership (PCWP) in April 2006 to develop a watershed protection plan (WPP) to address the water quality issues in the Plum Creek watershed. Led by a Steering Committee, the Partnership worked with citizens, businesses, and officials in the watershed to identify management measures that could restore the health of Plum Creek. The Plum Creek Watershed Protection Plan was completed in 2008 and will continue to be implemented until water quality restoration is achieved.

Sources of pollutants identified in the Plum Creek WPP include urban stormwater runoff, pet waste, failing or inadequate on-site sewage facilities (septic systems), wastewater treatment facilities, livestock, wildlife, invasive species (feral hogs), and oil and gas production. Since the completion of the plan and implementation has begun, the watershed has seen significant changes, including severe drought, construction of State Highway 130 and subsequent commercial and residential growth, all of which have altered the land use and management of many areas in the watershed, affecting the implementation of some strategies.

Through scientific analysis it was determined how much bacteria and nutrient levels in Plum Creek should be reduced in each monitored region of the watershed. Based on existing water quality data and watershed characteristics and information, work groups recommended management measures needed to reduce pollutant levels in Plum Creek. The Agricultural Nonpoint Source work group recommended implementation of voluntary site-specific Water Quality Management Plans (WQMP) for individual farms. Enhanced planning and financial assistance was provided to farmers and ranchers for development of management plans that reduce bacteria and nutrient losses and meet the needs of each farm operation.

A WQMP is a site-specific 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 SWCDs, to be consistent with state water quality standards. This project was incorporated into the WPP in order to address the potential agricultural sources of NPS pollution and will be coordinated with educational and assessment activities planned within the Plum Creek watershed.

Plum Creek Watershed



Plum Creek Watershed

PROGRAM DEVELOPMENT

This project consisted of the TSSWCB working with the Caldwell-Travis SWCD #304 and Hays County SWCD #351 to provide technical assistance and financial incentives to landowners for the development, implementation, and/or maintenance of WQMPs.

The District Technician worked to compile a list of producers who were interested in the Water Quality Management Plan Program. The applications were then ranked based on a two-tier system. Highest priority was given to the implementation of the most cost effective and most needed pollution abatement practices based upon the recommendation stated in the Plum Creek Watershed Protection Plan. The two-tier system included the following:

1st priority: Subwatersheds designated as critical for contributions of bacteria and nutrients from Agriculture

2nd priority: All other subwatersheds

The District Technician, working in cooperation with the NRCS, developed WQMPs based on the criteria outlined in the Field Office Technical Guide (FOTG), a publication of the NRCS. The FOTG represents the best available technology and is already tailored to meet the needs of SWCDs all over the nation. A WQMP includes the following:

- Conservation plan map showing boundaries, fields, land use, acres and facilities
- Soils map
- Soils description
- Topography map
- Conservation Plan of Operation
- Soil test (required when nutrients are applied)

Once the WQMP was developed and approved by NRCS and the local district, it was then sent to the TSSWCB Wharton Regional Office for technical review and certification. Upon certification of the WQMP, the plan could be implemented. The District Technician worked with the landowner to implement BMPs laid out in the WQMP. The major BMPs installed included:

Forage and Biomass Planting (512)

Establishing adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production. This practice applies to all lands suitable to the establishment of annual, biennial, or perennial species for forage or biomass production. This practice does not apply to the establishment of annually planted and harvested food, fiber, or oilseed crops.



Cross Fencing (382)

Locate fences to help facilitate management of different land uses and special management areas within land uses such as ecological sites, pasture types, riparian areas, critical eroding areas, etc. For domestic livestock, install fences in areas that will best facilitate the handling, feeding, watering and movement of the type of livestock managed.



Water Well (642)

This practice is to be installed on land uses where a suitable aquifer is available. The water well will be drilled to provide drinking water for livestock, and must be drilled by a licensed water well driller.

Nutrient Management (590)

This practice manages the amount, source, placement, form, and timing of the application of plant nutrients and soil amendments.

Other BMPs installed were water well pumping plant (533), pipeline (516), pest management (595), prescribed grazing (528), forage harvest management (511). The District Technician helped the landowner acquire any financial assistance available. The landowner was reimbursed once the practice was implemented and certified. Status reviews were conducted on 5 WQMPs developed and certified through TSSWCB project 08-07A to ensure the BMPs were installed and maintained properly.

In addition to the development, installation, and maintenance of WQMPs, the District Technician and TSSWCB Wharton Regional Office worked with the SWCDs and local producers to educate them on their operation, the WQMP program, proper soil sampling, and water quality. The District Technician and TSSWCB Wharton Regional Office attended field days and educational events in the Plum Creek watershed disseminating information on this project and other agricultural related issues.

- Luling Feral Hog Workshop – 130 attendees
- Luling Foundation Field Day – 300 attendees
- Chisholm Trail Round Up Ag Field Day – 50 attendees

CONCLUSIONS

The development, installation, and maintenance of WQMPs in the Plum Creek watershed was and will strive to be a success. The District Technician, working cooperatively with the TSSWCB and NRCS, provided agricultural producers with the opportunity to voluntarily implement BMPs that have a positive impact on the Plum Creek.

Through this project, a total of 5 status reviews were conducted and 1 WQMP was developed and implemented on approximately 60.3 acres. On the majority of the 60.3 acres, nutrient management, pest management, and grazing management were planned and initiated.

Due to extreme droughts, the implementation of WQMPs was hampered. It was estimated that a total of 235 management plans on livestock operations and 24 management plans on cropland operations would need to be implemented to achieve estimated bacteria and nutrient load reductions called for in the Plum Creek WPP. As such, there continues to exist a significant need for technical assistance and financial incentives to implement BMPs through WQMPs in order to achieve the goals in the WPP to restore water quality. These efforts plan to be continued through another proposal that is being considered for funding by TSSWCB and EPA.

A local watershed coordinator funded through TSSWCB project 11-07, *Coordinating Implementation of the Plum Creek Watershed Protection Plan*, began work in the watershed in March of 2012. Since that time, monthly coordination meetings among the SWCD Technician, Extension personnel and the Plum Creek Watershed Coordinator have helped to quantify challenges and to propose additional opportunities for the development of WQMPs.