TEXAS FOREST SERVICE JULY 2009

THE TEXAS WATER SOURCE

UPDATING CASS AND MARION CO. FOREST LANDOWNERS ON FORESTRY AND WATER ISSUES

BMP Effectiveness Monitoring

The Texas Forest Service has promoted Best Management Practices (BMPs) for over 20 years to mitigate against erosion and sedimentation. However, there had been no formal project to test the effectiveness of these scientific principles.

A BMP effectiveness study was conducted to evaluate Texas' BMPs for protecting water quality during intensive, operational forestry activities. This project followed the BACI study design (before – after / control – impact) to compare the above (reference) and below (test) segments for one year before and three years after the treatment (harvest) to determine if water quality was affected when Texas BMPs were applied. This monitoring was conducted on four East Texas streams.

Water samples were collected every month and analyzed for conductivity, dissolved oxygen, pH, temperature, turbidity, total suspended solids, total nitrogen, and total phosphorous. Samples were also collected after rain events and analyzed for turbidity, total suspended solids, total nitrogen, and total phosphorous. Habitat assessment and biological monitoring (for benthic macroinvertebrates and fish) were conducted twice a year.

The results from this project indicate that Texas forestry BMPs, when implemented properly, are effective in protecting water quality and aquatic biological communities.

The analysis of physiochemical and biological parameters showed no significant treatment differences between forest stands harvested and regenerated using BMPs and undisturbed forests.

Fish and benthic macroinvertebrate species remained diverse in number, with 115 different benthic species and 38 fish species sampled - a sign that healthy aquatic environments were maintained. These results demonstrate the value of and provides empirical justification for the continued use and implementation of forestry BMPs in Texas.

For more information:

- http://texasforestservice.tamu.edu/BMP

The WET Center at SFA

The Waters of East Texas (WET) Center was established in the Division of Environmental Science at Stephen F. Austin State University (SFA) to conduct research and assessment projects on water related resources, ecosystems, and issues in East Texas.

Areas of expertise at the WET Center include: wetland function and restoration, surface hydrology, water quality assessment, aquatic biology, fish population assessment, GIS applications, remote sensing applications, soil sampling and analysis, and wildlife assessment.

For more information, go to http://environmental.sfasu.edu/ and click on "Wet Center."

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Agency Spotlight

The Texas State Soil and Water Conservation Board

For more information:

- http://www.tsswcb.state.tx.us/
- http://www.tsswcb.state.tx.us/brushcontrol
- http://www.tsswcb.state.tx.us/wqmp
- http://www.tsswcb.state.tx.us/tmdl
- http://www.tsswcb.state.tx.us/wpp
- http://www.tsswcb.state.tx.us/coastalnps

The Texas State Soil and Water Conservation Board (TSSWCB) is the state agency that administers Texas' soil and water conservation law and coordinates conservation and nonpoint source (NPS) pollution abatement programs throughout the State. Headquartered in Temple, Texas, the TSSWCB offers technical assistance to the state's 217 soil and water conservation districts (SWCDs).

The TSSWCB is the lead state agency for the planning, management, and abatement of agricultural and silvicultural (forestry) nonpoint source pollution, and administers the Texas Brush Control Program. The local regional office is located at 1809 W. Ferguson Rd, Suite B, in Mount Pleasant, and can be reached at (903) 572-4471.

The TSSWCB was created in 1939 by the Texas Legislature to organize the State into soil and water conservation districts (SWCDs) and to serve as a centralized agency for communicating with the Texas Legislature as well as other state and federal entities.

The Texas Legislature and the United States Environmental Protection Agency (EPA) provide funding to the TSSWCB to demonstrate and implement activities that control and abate NPS pollution. The federal funding originates from the Clean Water Act, Section 319(h) grant program.

Local SWCDs and the TSSWCB employ the Certified Water Quality Management Plan (WQMP) Program as a first line of defense against NPS pollution. The TSSWCB also works with other state and federal agencies on NPS issues as they relate to Water Quality Standards and Criteria, Total Maximum Daily Loads, Watershed Protection Plans, and the Coastal Management Plan. Because the TSSWCB is the lead Texas agency for agricultural and silvicultural NPS pollution abatement, all other state agencies must coordinate their NPS abatement efforts with the TSSWCB, and the TSSWCB is charged with representing the State before the EPA in such matters.

Soil and Water Conservation Districts

For more information:

- http://www.tsswcb.state.tx.us/en/swcds/info?page=0%2C0
- http://www.tsswcb.state.tx.us/swcds

The TSSWCB organizes the State into soil and water conservation districts (SWCDs). Each SWCD is an independent political subdivision of state government and is governed by five directors elected by fellow rural landowners. A district's board of directors is made up of agricultural landowners, one from each of five subdivisions.

Through a chartered, legally established SWCD, local farmers and ranchers are given the opportunity to decide for themselves how they were going to solve local soil and water conservation problems.

Local SWCDs are actively involved throughout the State in soil and water conservation activities such as operation and maintenance of flood control structures, sponsoring pesticide workshops, producer field days, land and range judging contests, scholarships, and securing money for the construction of outdoor classrooms.

The Marion-Cass SWCD is located at 207 Hwy. 8 N in Linden in the NRCS office. Meetings are conducted on the second Wednesday of the month at 2 p.m. at this location. Contact them at marioncassswcd@tx.nacdnet.org.

What is a Watershed Protection Plan?

The Texas Commission on Environmental Quality (TCEQ) and the Texas State Soil and Water Conservation Board (TSSWCB) apply the watershed approach to managing nonpoint source pollution by supporting the development and implementation of watershed protection plans (WPPs). These plans are developed through local stakeholder groups with funding and technical assistance from the TCEQ and/or the TSSWCB.

Watershed protection plans facilitate the restoration of impaired water bodies and/or the protection of threatened waters before they become impaired. These stakeholder-driven plans give the decision-making power to the local groups most vested in the goals specified in the plans.

In 1993, Caddo Lake was designated as a "wetland of international importance" under the Ramsar Convention. Caddo Lake (Segment 0401) was listed as an impaired waterbody because of non-attainment of the aquatic life and fish consumption uses due to low dissolved oxygen, low pH, and mercury in fish tissue.

The first phase in developing a watershed protection plan for Caddo Lake involved a Watershed Characterization. A Watershed Characterization is used to develop an understanding of the impacts seen in the watershed, identify possible causes and sources of the impacts, and subsequently quantify the pollutant loads. Characterizing the watershed, its problems, and pollutant sources provides the basis for developing effective management strategies to meet watershed goals.

Using a spatially-explicit Geographic Information System (GIS) methodology, the potential source locations of pollutants (identified in the §303(d) list, Water Quality inventory, and through stakeholder concerns) were ranked and the potential fate and transport of those pollutants were categorized.

Potential pollutant loads from various sources, e.g. agriculture, urban, and wildlife, will be identified and estimated for each. Existing water quality data for the watershed and data generated through the Clean Rivers Program will be used for assessment.

Parameters evaluated in this study included dissolved oxygen (DO), pH, ammonia (NH3), total nitrite nitrate nitrogen (NOx), total phosphorus (TP), orthophosphate (OP), chlorophyll-a, and bacteria (fecal coliform and *E. coli*).

Based on the results from the ranking and categorizing exercise, preliminary pollutant loadings for the watershed can be calculated and contributing components will be ranked based on percentage and estimated production. In addition to the GIS methodology, Load Duration Curves (LDCs) or other methods of linking water quality and flow will be developed and will be used to estimate the amount of reductions for each pollutant required to identify attainable water quality goals.

At the September 2008 WPP Stakeholders meeting, David Harkins, Ph.D., of Espey Consultants Environmental and Engineering Services, outlined the findings of four months of research into specific areas. Though no alarming levels — either high or low — were revealed, Harkins pointed out some spikes and trends which may indicate future concerns if ignored. He said additional monitoring would be necessary to identify areas of concern and potential sources of nutrients.

The next Stakeholders Meeting will be **July 28, 2009, in Jefferson**. Contact caddowpp@aol.com with questions or comments.

For more information:

- http://www.tceq.state.tx.us/compliance/monitoring/nps/mgmt-plan/watershed-pp.html
- http://www.tsswcb.state.tx.us/wpp#wpp
- http://www.netmwd.com/Caddo%20Lake%20Protection%20Plan/Caddo_index.html

Did you know…

The majority of the timberland in East Texas is owned by landowners just like you. More than 60% of the 12 million acres of timberland in East Texas are owned by non-industrial private landowners. Forest industry owns 32%, and all levels of government combined only own about 7%.

Distribution of *The Texas Water Source* is provided free of charge to forest landowners of Cass and Marion Counties. Funding has been provided through cooperation of the Environmental Protection Agency (EPA), the Texas State Soil and Water Conservation Board (TSSWCB) and Texas Forest Service (TFS). PLEASE ADVISE US IF YOU WISH FOR YOUR NAME TO BE REMOVED FROM OUR MAILING LIST.

The Texas Forest Service is an Affirmative Action/Equal Opportunity Employer committed to Excellence Through Diversity.

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Your Local Water District

The Northeast Texas Municipal Water District (NETMWD) was created in 1953 as a political subdivision. It operates in Marion, Morris, Camp, Cass, and Upshur counties. The Board of Directors consists of seven members, each member selected by their respective city councils to represent that city. The district is charged with the orderly development and conservation of the water resources in the Cypress Basin. It is fully self-supporting and no state funds are allocated for its basic operations.

Public involvement and outreach efforts help support the permitting process. Citizens are encouraged to voice their concerns or opinions in identifying permit-related priorities and other water quality issues.

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