

BEST MANAGEMENT PRACTICES (BMPS) AND AGRICULTURAL WATER QUALITY POLICY

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INTERPRETIVE SUMMARY

In an effort to better address the Best Management Practices (BMPs) education and outreach needs of agriculture, the LSU Agricultural Center re-initiated extensive commodity-specific BMP reviews in 1996. The primary goal of this effort is the development of commodity specific / voluntary / cost-effective BMPs that will help sustain and improve environmental quality. Reviews covered swine, poultry, aquaculture, grain crops, cotton, rice, fruits & vegetables, nursery crops, dairy, sugarcane, and sweet potatoes. The review / development of beef cattle (forage and grasslands) BMPs has also been initiated recently. BMPs covering forestry and ornamentals were also reviewed; however, industry (the Louisiana Forestry Association and the Southern Nurserymen's Association, respectively) assumed a lead role in the development of BMPs for these commodities and final BMP publications are now complete.

Why BMPs?

Agriculture has been targeted as significantly contributing to both point and nonpoint source pollution nationwide. Nutrient over-enrichment caused by animal waste, fertilizer, and sediment runoff has been blamed for causing impairment in many streams and hypoxia in the Gulf of Mexico. Proposals mandating that all streams meet specific standards through the development and implementation of Total Maximum Daily Loads (TMDLs) are being considered by EPA. TMDLs are defined as the minimum amount of a pollutant that a stream can assimilate and still meet specific water quality standards. TMDLs must be allocated to all

input sources that are contributing to a stream's impairment (both point and nonpoint source discharges originating from agriculture, forestry, municipal sewage treatment plants, urban runoff, etc.).

Additionally, several agricultural and sivilcultural activities that have traditionally been classified as nonpoint discharges are now being proposed by EPA to be re-classified as point source discharges. This may require that National Pollution Discharge Elimination System (NPDES) permits be obtained for many routine activities such as runoff/irrigation water drainage, tree harvest, prescribed burning, and manure management.

In addition to the EPA proposals outlined above, numerous lawsuits have been filed by environmental groups nationwide challenging state environmental quality agencies for not addressing surface water impairment and for not adequately listing streams that are still not meeting EPA standards for dissolve oxygen, fecal coliform, metals, and nutrients. In Louisiana, streams listed on the Section 303(d) impaired waters list increased from 196 to almost 350 after the final court order was issued. This represents approximately 70% of all Louisiana's inland waters. These and similar actions will have serious implications on agriculture and timber producers nationwide.

Recently published TMDLs for streams located in southwest Louisiana include required reductions in manmade nonpoint source discharges of 70-100%. Additionally, an EPA developed TMDL for fecal coliform in one of these streams calls for a 700% reduction.

The voluntary implementation of cost-effective BMPs by producers that result in continued water quality improvements presents the best strategy for agriculture to maintain non-regulatory initiatives. Voluntary approaches are generally less costly and lead to enhanced cooperation and partnerships with landowners.

Groundwater Resources

Because of multiple-year drought conditions and increased demand for groundwater resources, several freshwater aquifers are now beginning to experience identifiable stress. Water tables are dropping and, in many areas, chloride concentrations are increasing. In Louisiana, two aquifers are getting increased attention, the Sparta in north central Louisiana and the Chicot in southwest Louisiana.

In 1999, the Louisiana Legislature authorized the formation of a Sparta Groundwater Conservation Commission charged with evaluating potential components of a conservation plan. In March 2000, the LSU AgCenter and Louisiana Rice Research Board entered into a 3-year agreement with the U.S. Geological Survey to study the effect of rice and crawfish irrigation on the Chicot aquifer. This study was initiated due to increased demand on groundwater due to lack of surface water for irrigation and reported increased chloride levels in several rice water wells.

Increased global competition will require that our farmers increase yields and reduce costs. The development and implementation of surface and subsurface irrigation capabilities are expected to increase due the globalization of agriculture. This necessity will make it crucial that efforts be made to assure that irrigation water quantity and quality are sustained through the implementation of effective conservation practices both on the farm and in urban areas.

Planned LSU Ag Center BMP Education and Outreach Strategies

As mentioned before, the BMP draft review reports developed by the LSU AgCenter are now being used as technical references in the development of producer-friendly BMP publications that will be completed and printed in July 2000. Additionally, the following strategy actions are being proposed:

- Identify research opportunities aimed at verifying the efficacy of current and new BMP technologies.
- Seek potential research funding from state, federal, and private sources.
- Initiate survey research initiatives that document current baseline and future enhanced BMP adoption rates by commodity, watershed, and/or region.
- Develop a general Agricultural Water Quality Management educational publication that introduces producers to (1) water quality related environmental policy affecting agriculture, (2) the general agriculture/forestry related nonpoint source pollutants (nutrients, sediments, pesticides, fecal matter, oil & grease, etc.), and (3) recommended effective BMPs that can be implemented to reduce water quality threats.
- Using BMP Review Reports as a guide, develop easy to understand, commodity specific BMP educational publications (with illustrations and on-the-ground application designs) targeting producers. Focus on BMPs that are both effective and economically practicable and delineate BMPs that are effective but require some type of cost-share assistance.
- Develop and implement statewide AgCenter faculty training initiatives focusing on the following issues:

- a) justification for voluntary implementation/cooperation
 - b) current water quality related policy issues important to agriculture
 - c) sources of nonpoint pollution (nutrients/sediments/pesticides/fecal, etc.)
 - d) BMP recommendations by commodity with site specificity if possible
 - e) cost-share assistance programs
- Develop an LSU Agricultural Center BMP web page.
 - Develop and implement a statewide producer BMP educational initiative called the *Master Farmer Program*. Incorporate field trips highlighting in-the-field BMP applications.
 - Develop and incorporate a “whole-farm” resource conservation assessment approach to on-the-farm environmental stewardship plan development.
 - Initiate crop consultant environmental education initiative covering regulatory policy, watershed management, BMPs, and other pertinent environmental topics.
 - Initiate a regulatory agency educational program that includes field trips highlighting effective producer-implemented BMPs statewide.
 - Celebrate successes via media releases, fact sheets, and public presentations.
- Consider initiating a producer environmental stewardship awards program that recognizes voluntary BMP implementation by commodity, watershed, and/or region.
 - Initiate watershed-based producer advisory committees that can better address water quality issues and encourage voluntary BMP implementation statewide and regionally.

Summary

Through cooperation and collaboration, natural resource agencies, universities, agri-business owners, and farmers are joining together to address environmental stewardship nationwide. This is being accomplished through a commitment to the implementation of voluntary, cost-effective BMPs/conservation practices on the ground. To assure continued success and increased adoption by farmers, research testing the efficacy and economic feasibility of these practices must be continued. Additionally, farmers and landowners must provide the leadership that will be required to secure public support for voluntary implementation policies and incentive-based programs critical to agricultural profitability - and improved water quality.