

STATE IMPLEMENTATION OF SECTION 319 NONPOINT SOURCE POLLUTION CONTROLS FOR FORESTRY IN THE SOUTHEAST

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INTRODUCTION

The 1972 Federal Water Pollution Control Act Amendments mandated control of point source and nonpoint source pollution of the nation's waters. Section 208 of the amendments authorized planning for nonpoint source pollution control. The Water Quality Act of 1987 (P.L. 100-4) authorized significant new programs for control of water pollution. Section 319 of this act mandates that each state prepare new plans for controlling nonpoint source pollution. The state plans must identify the principal nonpoint problem areas and causes, and also specify the control mechanisms which will be used to control the pollution (Hohenstein, 1987). These mechanisms can be voluntary or regulatory. This article summarizes a survey performed to determine what methods 13 southern states were using or developing to control nonpoint source pollution from forestry activities. These states were Alabama, Georgia, Florida, Texas, Arkansas, Oklahoma, Louisiana, Mississippi, North and South Carolina, Tennessee, Kentucky, and Virginia.

In 1987, a questionnaire was developed to obtain information on several aspects of state water quality control programs. It was sent to officials in two divisions of state government--lead environmental agencies and forestry agencies. After the questionnaires were mailed, we contacted each recipient. Several state forestry agencies declined to complete the questionnaire, and forwarded it to their state lead environmental agency. Thus there is no data on these state's forestry agency. To approximate each state's total expenditure for forestry-related nonpoint source programs, the nonpoint source budgets and personnel of the forestry agency were added to the forestry-related expenditures of the lead environmental agency.

RESULTS

In 1987, virtually all state silvicultural nonpoint source pollution control programs in the South were voluntary. These programs protected

forest water quality by distributing written information about voluntary best management practices (BMPs), conducting seminars, and providing on-site education and inspection. A few states had tax or other financial incentives programs, and some required that logging performance standards be included in logging contracts. Mississippi did not have a program for controlling silvicultural nonpoint source pollution, but reported that it was developing BMPs for forest and wetlands water quality control. Florida, which had the most developed program, was the only state which required mandatory use of BMPs.

Personnel and Budgets

Florida and its water management districts (WMDs) led all states with 6.7 full-year equivalent personnel (FYE: the equivalent of one individual working for one year) and expenditures of \$271,000. Three Florida WMDs had active forestry programs, and contributed most of this total. In 1987 they had 4.5 FYE staff, and spent \$137,000 on personnel and \$74,000 on operating costs for a total of \$211,000. Georgia reported 2.3 FYE staff, and expenditures of about \$50,000. Virginia, North Carolina, and Arkansas also had active programs, as demonstrated by their staff and expenditures. South-wide totals for all programs were \$1,012,000 and 24 FYE employees.

Educational Programs

Educational programs in the southern states had similar elements, but in different combinations and emphases. A written manual of state approved BMPs, indoor and outdoor BMP training workshops, and on-site inspections were the most typical approaches. In 1987, every state except Mississippi had written a BMP manual, though some had not yet been published. Virginia, Texas, Tennessee, North Carolina, Georgia, Florida, and Alabama relied on both BMP seminars and on-site inspections to assess levels of BMP implementation. Arkansas, Louisiana, Mississippi, Kentucky, and South Carolina reported limited use

of public education programs such as BMP seminars and workshops. However, these states did not conduct any on-site inspections. Oklahoma held on-site inspections, but did not conduct any BMP workshops.

Virginia's program was perhaps the most vigorous. In 1987, the state Division of Forestry held 32 workshops which were attended by an estimated 806 foresters, loggers, and landowners; it also reported making 1,154 on-site inspections. North Carolina conducted 30 workshops for about 1,450 people, and made 25 on-site inspections. Georgia sponsored 12 nonpoint source control workshops for about 960 people, of whom an estimated 792 were involved in the forest industry. Approximately 33 on-site inspections were held. The Florida Division of Forestry held 32 workshops which drew some 425 attendees, and made 225 on-site inspections. These figures do not include the activities of Florida's WMDs.

Financial Incentives

In 1987, only two states offered financial incentive programs to landowners who followed BMPs. North Carolina had a state cost-share program that covered three nutrient sensitive watersheds in 16 counties. The state paid 75% of the cost of road construction, road stabilization, and water management structures built during silvicultural activities. Each applicant could receive no more than \$3,000 a year in cost-share payments. In 1987, 38 people participated in the program.

Virginia had an agricultural cost-share program which paid landowners for stabilizing erodible woodlands, planting buffer strips, and reforesting erodible pasture land. The woodland stabilization program paid 75% of landowner cost, with a limit of \$3,500 per applicant per year. Stabilization measures included vegetative cover, and if necessary, the use of structural practices such as broad-based dips or water bars to control erosion from forest roads. Landowners who planted buffer strips around unforested streams could receive a one-time payment of \$100 an acre. These strips varied in width from 50 to 150 feet, depending on each site's soil classification. In 1987, there were no participants in either the woodland stabilization or buffer strip programs. Sixty-eight people participated in the state's erodible pasture land program, and received \$75 for each acre of land planted in trees. All the state's tree planting programs require landowners to leave the vegetative cover in place for 10 years.

Other Implementing Mechanisms

Other states employed less expensive, procedural measures to encourage the use of BMPs during silvicultural activities. These were often used in conjunction with other nonpoint source control programs. Alabama, Georgia, Louisiana, North Carolina, Oklahoma, and Texas recommended that logging performance standards be written into

silvicultural contracts. These standards explicitly state what BMPs must be used on the harvest site. No southern states had formal cooperative agreements with loggers, site preparation, or planting contractors. Such an agreement exists in Vermont between the state Water Quality Board and the Vermont Timber Truckers. The Truckers make the initial response to complaints about sedimentation. If they cannot negotiate corrections, the Water Quality Board will take enforcement action against the polluter (NCASI, 1983).

Florida's Water Management Districts

Florida's water quality protection program is the most rigorous in the South. In 1984, Florida created five water management districts. Each of the districts generates revenue to support itself through an ad-valorem property tax, which is levied on all landowners.

The Florida Division of Forestry's silvicultural nonpoint source pollution control measures are contained in two Best Management Practice Manuals. One manual addresses normal forestry operations, and the second is specifically targeted on forestry activities in wetlands. The state Division of Forestry only encourages landowners to use BMPs on a voluntary basis. However, the WMDs require that forest operators use the state BMPs, where applicable. Each WMD implements the state BMPs through its particular rules and regulations. The WMDs also issue copies of the state BMP manuals, conduct workshops and seminars, and check for landowner compliance.

The water management districts use a permit system to regulate forestry and other land development activities. Landowners must notify and obtain a permit from their WMD before taking any action "...which has the sole or predominate purpose of impounding or obstructing surface waters" (Menella, 1988). Normal harvest, site preparation, and planting activities are exempt from these permit requirements, although the exemption is narrowly interpreted by the WMDs.

Florida's system of water quality protection measures is backed by rigorous penalties. Fines of up to \$10,000 a day per violation can be levied, and several violations involving silvicultural operations have been prosecuted by the water management districts. To date, all violators have paid negotiated penalties in lieu of going to court.

PROSPECTS AND CONCLUSIONS

Respondents from nine states felt that BMPs would continue to be the primary method for silvicultural pollution control in their states. However, respondents in four states--Florida, Georgia, North Carolina, and Virginia--felt that most citizens, interest groups, and natural resource agencies in their state would support greater regulation of forestry. Among the

regulatory practices they felt might be implemented were mandatory BMPs, including leaving uncut buffer strips along lakes and perennial streams. Some respondents thought that programs of harvest notification, logger certification, or cooperative agreements with forest industry might be created.

Agency personnel in most states thought that existing BMPs would offer sufficient protection to wetlands, and that those practices would simply be extended to cover wetlands. However, respondents from Mississippi, North Carolina, and Tennessee reported that their states would develop separate BMPs for wetlands. Georgia's wetland BMPs are currently under development, and should be published by June of 1989. Several states already have laws which address wetlands protection, including Texas, Louisiana, South Carolina, and Florida. Virginia's non-tidal wetlands law is currently under legislative review.

Most southern states currently rely on programs of voluntary best management practices to control silvicultural nonpoint source pollution. State forestry and lead environmental agencies use educational programs to emphasize the value of BMPs to landowners and forest operators. These programs may use written BMP manuals, workshops, or on-site inspections. The states with the most active educational programs in 1987 were Virginia, North Carolina, Georgia, and Florida. Financial incentives programs such as those in Virginia and North Carolina may be another effective, nonregulatory way to encourage the use of desired land management practices. Florida is the only southern state with an active program of BMP enforcement. The degree of regulation found in Florida does provide a perspective on the directions that some states, particularly those on the East coast, may take in the future. In 1987, the thirteen southern states employed a total of 24 personnel, and spent approximately \$1.01 million on forestry-related nonpoint source pollution control.

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