

The ABC's of Agricultural BMPs (Best Management Practices)

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CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

Presentation Overview

- What is NPS pollution?
- History and Description of Ag. BMP program
- Current Programs and Partnerships: State, Federal, Private
- Promotion and Outreach Efforts
- Benefits of BMPs
- Funding
- WQIF, Ag. Cost – Share Funding
- Tax Credits
- Loan Programs
- Current and Future Issues, Directions and Needs



Agriculture is one of the Sources of Nonpoint Source Pollution

- Other sources include lawns, streets, rooftops construction sites, office parks, golf courses, etc.
- NPS requires multiple strategies to control depending on source.
- Current NPS programs in Virginia are a mix of voluntary and regulatory
- DCR is the state's lead nonpoint source control agency



Nonpoint Source Pollutants

- **Nutrients**

- Fertilizers Septic systems
- Pet and animal waste
- Yard wastes and debris



- **Sediment (silt, sand, gravel)**

- Construction sites
- Roadways
- Suburban lawns and gardens
- Stream banks



Nonpoint Source Pollutants

- **Bacteria**

- Septic tanks
- Sewer lines
- Boating waste disposal
- Pet and animal waste



- **Toxic contaminants**

- Oil, grease and gasoline from roadways
- Home, garden and lawn chemicals



Agricultural “BMPs” Overview and History

- Practices designed to control topsoil loss & reduce negative environmental impact of farm production
- Initially designed to control soil loss beginning in the “Dust Bowl” days
- “Science-based” management developed and spread from land grant universities (through extension service)
- Protect/improve farm productivity initially
- Now, on & off farm environmental benefits of on-farm practices
- Traditionally BMP programs focused on demonstration and education.
- Given aggressive water quality goals, focus has now moved to ongoing **implementation**



Agricultural BMPs in Virginia --The Big Picture

- Virginia's Ag BMP Manual – DCR produces manual that establishes standards & specifications for a comprehensive suite of over 60 BMPs
- Incentive options for farmers vary; 34 of the BMPs contained in the manual provide a cost-shared or flat-rate incentive payment
- Some operations (CAFOs) must implement certain practices, all others voluntary
- WQIF is primary source of funding: 57% Bay / 38% Southern Rivers / 5% to local Soil and Water Conservation Districts according to amendments to WQIF
- 3 BMP categories:
 - farm management (e.g. sidedress application of nitrogen on corn)
 - agronomic practices (e.g. permanent vegetative cover on cropland)
 - engineered practices (e.g. establishing terraces, installing an animal waste control facility)



Ag. BMPs -- Financial Incentives Supported by the Commonwealth

3 options are available to farmers through state supported programs:

- **Funding Assistance** (VA Ag. BMP Cost-Share Program; CREP)
- **Tax credits** (Virginia State Tax)
- **Loan Programs** (Va. Ag BMP Loan Program- SRLF; Va Small Business Environmental Compliance Assistance Fund)

Note: Farmers can combine programs (e.g. receive tax credit for their portion of cost-share)



Federal Program Administered by Natural Resources Conservation Service (NRCS)

Federal Funds originate from national farm bills (2002 is most recent) and programs that deliver them...

- **EQIP** (Environmental Quality Incentive Program) provided >\$10 million in Ag BMP assistance to Virginia Farmers in 2007
- Targeting based on national goals (60% goes for livestock issues e.g. waste structures, stream exclusion and grazing management)
- NRCS also focuses on production and environment, VA program focuses only on water quality



BMPs -- Partnership

Virginia's Ag BMP Program delivery relies upon local-state-federal-private support and delivery system:

- **Virginia's 47 Soil and Water Conservation Districts** promote cost-share program to farmers, give technical assistance, manage cost-share \$'s through contracts with DCR, comply with program delivery requirements per §10.1-546.1
- **DCR** establishes targeting of \$'s with geographic and practice priorities, distributes funds to SWCDs, enables tracking & reporting system, audits SWCDs, provides overall program administration.
- **NRCS** provides engineering expertise, field staff, training, practice standards & specifications
- **Agricultural Producers** install and maintain practices and provides balance of funding according to practice requirements

Note: even with incentive options available, farmers often implement BMPs solely on their own initiative (and expense) due to agronomics or their stewardship ethic.



Virginia Agricultural BMPs

(samples of practices in BMP manual)

- Cover Crops
- Continuous No-till System
- Nutrient Management Planning
- Filter Strip
- Riparian Forest Buffer
- Stripcropping Systems
- Livestock Exclusion
- Alternative Watering Systems
- Stream Protection
- Stream Crossing & Hardened Access
- Animal Waste Control Facility
- Sinkhole Protection
- Loafing Lot Management System
- Permanent Vegetative Cover of Critical Areas

BMP Example

This practice protects streams through exclusion of livestock by fencing and provision of alternative water sources...

Grazing Land Protection SL-6

Important Facts

Practice Lifespan

Maintained for a minimum of 10 years following the calendar year of installation.

Cost-share Rate

A rate based on 75% of the cost of all eligible components has been established. Cost-share may be from the state funds or a combination of state and other sources.

CREP cost share rate is 25% of FSA approved cost.

Tax Credit

The tax credit rate is 25% of the total eligible cost not to exceed \$17,500.00. If a cooperator receives cost-share, only the percent of the total cost of the project that the cooperator contributed is used to determine the tax credit.



Grazing land protection are structural and/or management practices that will enhance or protect vegetative cover to reduce runoff of sediment and nutrients from existing pastureland and reduce NPS pollution associated with grazing livestock. Their purpose is to provide livestock water systems and/or fencing that will improve water quality by establishing rotation grazing to control erosion and eliminate direct access to live streams where there is a defined water quality problem.

- A written management plan (and rotational schedule when more than one grazing unit is planned) must be prepared and followed for all grazing units contained in the system in accordance with NRCS FOTG.
- To supply water, cost-sharing and tax credit are authorized for construction or deepening of wells, development of springs or seeps, construction or repair of dug-outs, dams, pits, or ponds, and installing pipelines, storage facilities, cisterns, troughs, and artificial watersheds. Watering facilities which distribute grazing to improve water quality when an existing livestock exclusion of an adjacent stream or sensitive feature fails to protect water quality is also authorized by cost-share.



5 Priority Ag BMPs

Virginia adopted a strategy to promote 5 well accepted and effective practices:

1. Cover Crops
 2. Conservation Tillage (no-till)
 3. Development and Implementation of Nutrient Management Plans
 4. Riparian (streamside) Buffers
 5. Livestock Exclusion (livestock watering systems/streamside fencing)
- **Full implementation of these 5 priority practices achieves 60% of the Bay NPS goal from all land uses**
 - **90% of ag acres in Bay need BMPs to meet goals (current status varies by practice, roughly 30% overall)**



Ag BMPs Achieve **Multiple Farm Benefits**

Why farmers implement BMPs:

- Conserve farm natural resources (“original conservationists”)
- Realize benefits to the farm operation (for example)
 - A system of year round cover (including cover crops) and minimal soil disturbance (“no-till”) improves soil quality, retains greater soil moisture, improves crop yields...
 - Excluding livestock from waterways improves herd health, reducing veterinary costs...
 - Maximizing crop production is achievable without wasteful use of fertilizers –both commercial and organic (nutrient management)
- Enhance water quality

**However, implementing BMPs comes at a cost “\$”
(...time, labor, equipment, materials)**

Ag. BMPs -- “Selling” Conservation

- In order to achieve needed levels of participation and promote Districts, DCR contracted for market study and marketing assistance. Study confirms that farmers prefer receiving conservation information face-to-face from trusted sources:
 - Other farmers
 - SWCD personnel with established relationships
 - Extension agents
- Effective use of outreach media helps raise farmer awareness of resources and incentives...



BMPs -- Selling Conservation Through Effective Use of Media

YOU HAVE TO PRODUCE. YOU WANT TO CONSERVE. SEE YOUR SWCD.

Through the Virginia Agricultural Best Management Practices Cost Share Program ("BMP"), your local SWCD can help you balance your desire to be a good steward with your need to remain profitable. Since 1996, SWCDs have distributed nearly \$60 million to mid-size farms to farmers and landowners like you.

Cost share funding usually becomes available on July 1 for the following growing season. Demand for cost share assistance can be great, so timely applications are encouraged. SWCD staff welcome your interest and offer cost share you with the paperwork.

QUALIFY FOR YACS FUNDING

You may qualify for cost share money if you:

- are an individual, partnership, corporation, trust or other business operating a farm in Virginia.
- have a water quality issue on your farm that needs to be addressed, and you
- submit a complete and timely application to your SWCD.

In addition, your project must:

- be approved by your local SWCD board,
- meet VACS technical specifications, and
- pass a field inspection, if one is required.

There is a cap on the amount a farmer can receive annually from VACS. Check with your SWCD for details. The state cost share program cannot exceed 75 percent of the total eligible costs for the best practice cost.

LOOK INTO TAX CREDIT

In addition, state income tax credits are available for the purchase and use of certain conservation equipment and for specified best management practices. Ask your SWCD for more information.

YACS offers more than 50 conservative practices that cover the full spectrum of agricultural operations. Here are a few of the practices with the greatest impact on water quality.

INSTALL A STREAMSHORE BUFFER

Planting trees, shrubs and herbaceous vegetation between field margins and streams creates habitat for streams of crop yields and can limit your losses from flooding. Riparian buffers also filter sediment runoff and prevent erosion.

FENCE STREAMS AND PROVIDE ALTERNATIVE WATER SOURCES.

When you fence livestock out of streams and provide another source of drinking water, your herd will enjoy better health. You'll lower nutrient and bacteria levels in local waters, too.



USE A PLAN TO MANAGE NUTRIENTS

Following a professionally developed nutrient management plan lets you maintain optimum conditions for crop growth while improving efficiency and most saving money. Plans also reduce the nutrients that leave your farm.

STABILIZE HIGHLY ERODIBLE LAND

Grassed waterways, contour strip cropping and erosion bank stabilization control erosion so you can hold on to your valuable land. In addition, these practices keep sediments from choking streams.

PLANT YEAR-ROUND COVER

Implement a continuous system of year-round cover and you'll improve soil structure, suppress weeds and conserve moisture all while reducing erosion. There's a cover crop to fit almost every rotation and production need.

At your local SWCD, we work with the people who work the land.

Beef producer. Conservationist.



Your local SWCD is geared to the success of both.

Stop by your local Soil and Water Conservation District, and you'll learn how some conservation practices improve production and, with federal and state cost-sharing, can be affordable, too. Experienced staff at your district office can recommend practices that fit your situation. Answer any questions that come up. And help you qualify for funding. Because successful farmers know conservation makes good business sense.

Mountain Castles SWCD: (540)977-2698 ext. 3



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CHESAPEAKE BAY - 5 Priority Practice
Implementation: 60% in 6 years Estimates (Ag BMPs and
Technical Assistance)

River Basins (Bay watersheds)	Grand Total (BMPs & TA)	Technical Assistance Needs Sub-Total*	5 Priority BMP Sub-Total
Shenandoah/Potomac	\$97	\$4.6	\$92.5
Rappahannock	\$46	\$2.2	\$44.3
York	\$47	\$2.2	\$45.5
James	\$77	\$3.6	\$74
E. Shore	\$6.5	\$312,000	\$6
State Share- Bay River Basins Total	Approx \$275	Approx \$13	Approx \$262
Farmer Share Total	\$105	\$0	\$105

SOUTHERN RIVERS: NPS TMDL Clean up Estimates

River Basins (SR watersheds)	Grand Total (BMPs & TA)	Technical Assistance Needs Sub- Total*
Chowan/Albermarle Sound	\$210	\$10
Roanoke	\$468	\$22
New/Yadkin	\$281	\$13.4
Tennessee/Big Sandy	\$296	\$14
Atlantic Coastal	\$48	\$2
State Share - Southern Rivers Total	Approx \$1.3 billion	Approx \$62 million

History of WQIF Funding Nonpoint Source

Funding has been unpredictable and dependent upon state surpluses and year-end contributions to the Water Quality Improvement Fund – Nonpoint account.

- FY 02 – No funding
- FY 03 – No funding
- FY 04 – No funding
- FY 05 – \$ 9.4 M
- FY 06 – \$ 69.7 M
- FY 07 – \$ 3.8 M (added in caboose bill during 2007 session)
- FY 08 – No funding
- FY 09 - \$ 20 M

“New” Money Expenditure Schedule

Allocations by Program Year	2009	2010	2011	Total
BMPs (all basins)	\$17.750 m	\$1.250 m	\$1 m	\$20 m
BMPs CBay (57%)	\$10.05 m	\$750,000	\$600,000	\$11.4 m
BMPs SR (38%)	\$6.7 m	\$500,000	\$400,000	\$7.6 m

Virginia Agricultural Conservation Tax Credits

Virginia Code enables two types of credits (non transferable) towards Virginia Income Tax due:

1. Credit from expenses for implementation of Ag BMPs
2. Credit from costs of purchasing certain types of farm equipment

Va Tax Credits for Ag BMPs

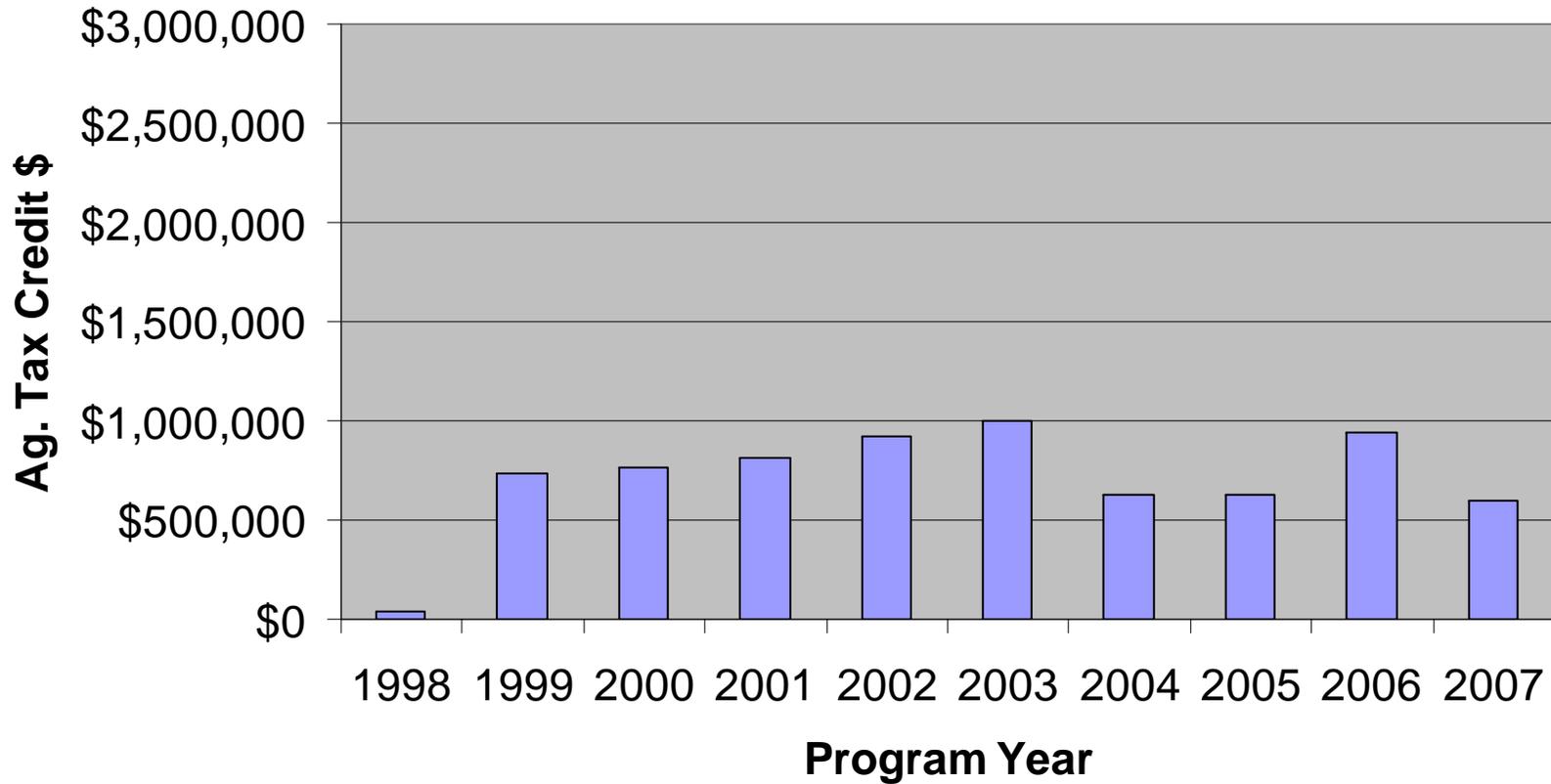
1) Agricultural BMPs

- Individuals and corporations eligible
- 25% of first \$70,000 expended for BMPs (**up to \$17,500 credit** in the year completed)
- May be carried over and applied up to 5 years (credits are not transferable to another)
- Credits authorized by local SWCD board
- BMPs include those that address livestock wastes, reduce erosion, nutrients and pesticides and equines (added in 2006)

2) Credits also available for purchase of certain types of conservation equipment including no-till planters, precision application equipment



AG. TAX CREDIT \$ AUTHORIZED BY PROGRAM YEAR



Note: chart shows credits authorized, not used



Loan Programs

Agricultural BMP Loan Program

- Administered by VA Dept. Environmental Quality (DEQ)
- 22 BMPs and certain equipment eligible
- All farmers eligible
- Interest rate 3%, min. loan \$5,000
- To date (2000 – 2008) over \$26 million in loans provided to 327 agricultural producers

Small Business Environmental Compliance Assistance Fund

- Administered by VA Dept. of Business Assistance (DBA) and DEQ
- Available to any small business operating in Virginia
- 16 BMPs eligible for loans
- Interest rate 3%, max loan amount is \$100,000
- \$231,000 have been given in loans



Ag. BMP Incentive Programs – Issues, Future Directions and Needs

- Targeting BMP funds, technical staff and outreach efforts will continue to maximize improvements in water quality: DCR has adopted targeted “priority practice” strategy
- **Funding fluctuation**; recent farmer research confirms this is the greatest deterrent to farmer participation in the Ag BMP Cost-Share Program
- **Insufficient funding** to meet voluntary demand results in farmers being turned away sign-up or the achieve water quality goals
- **Targeting** cost-effective practices is and will continue to be a high priority (nutrient reduction per dollar is generally high for most ag. practices)
- Many Ag. BMPs are **short-term** and must be renewed annually, unlike upgrades at wastewater treatment plants which, if installed and operated correctly, are “permanent”.



Issues, Future Directions and Needs (continued)

- GA Action in 2008 created a “subfund” to be used **exclusively for Ag. BMPS** will all 2008 appropriation deposited in it; Will funding for urban NPS controls be provided?
- **Continued outreach and promotion** necessary to achieve needed participation levels.
- Continued and expanded **support and technical assistance needed (Districts, DCR and NRCS)**
- **Emerging issues such a bio-fuels** and resulting higher crop prices could impact farmers desire to keep or take lands out of production
- **Impacts of climate change** and changing precipitation patterns on BMP design and efficiencies are unknown.