CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

The Role of Nutrient Management in Restoring the Chesapeake Bay and Virginia's Rivers and Streams

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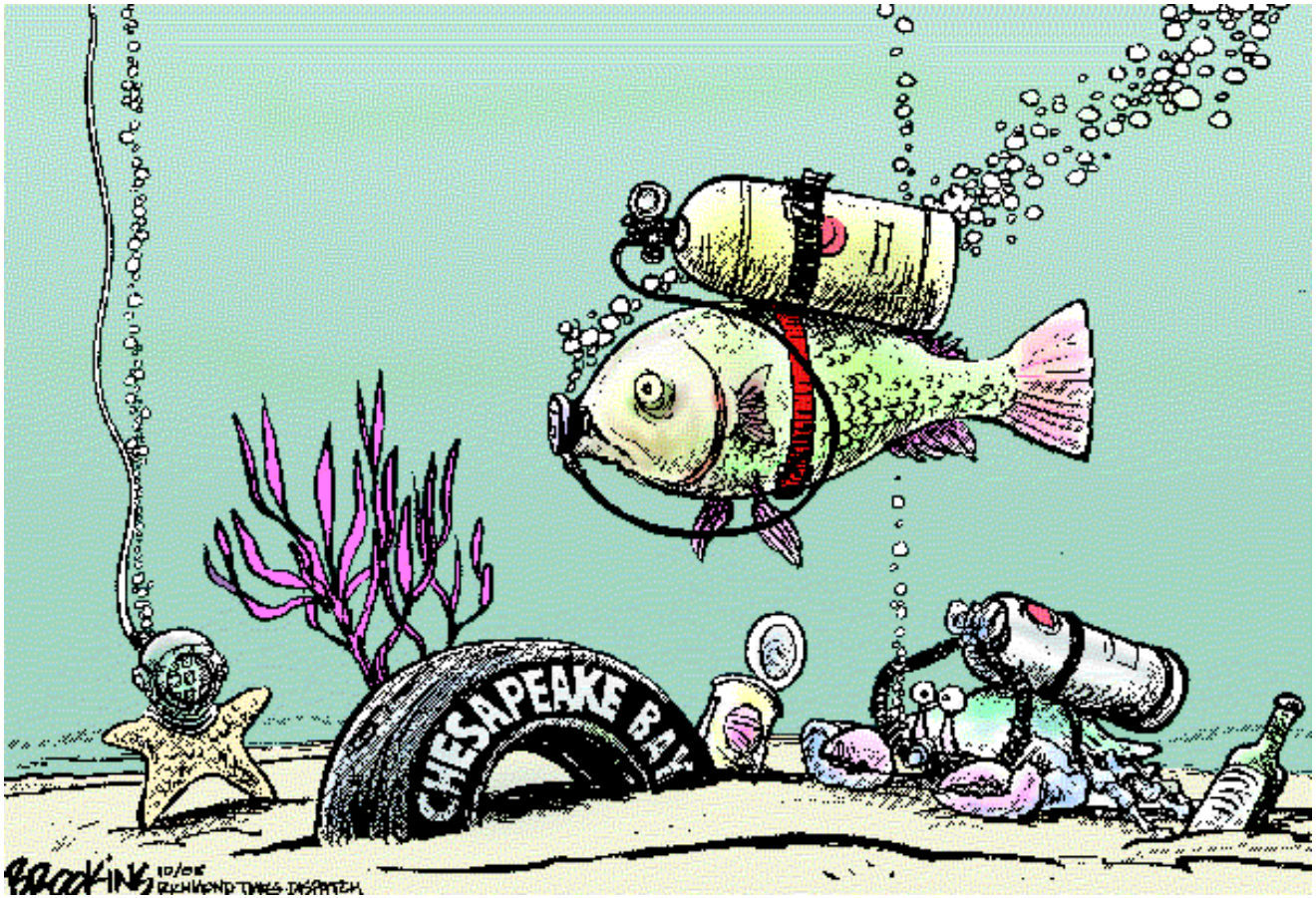
Virginia Executive Director
October 2, 2008

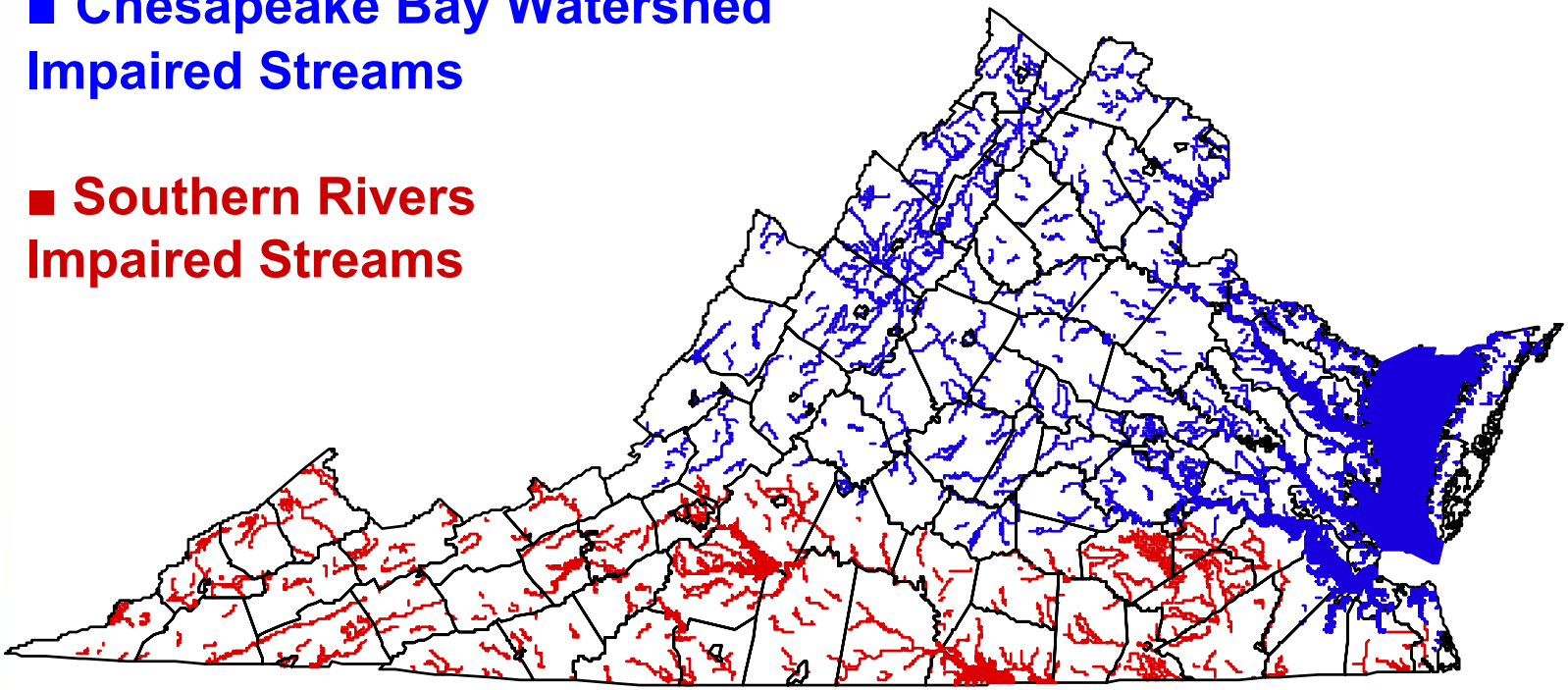
Largest land to water ratio of any estuary in the world.



Excess nitrogen and phosphorus trigger noxious algae blooms and dead zones - areas of the water devoid of oxygen.

Water Quality – A Statewide Concern

- Chesapeake Bay Watershed Impaired Streams
- Southern Rivers Impaired Streams



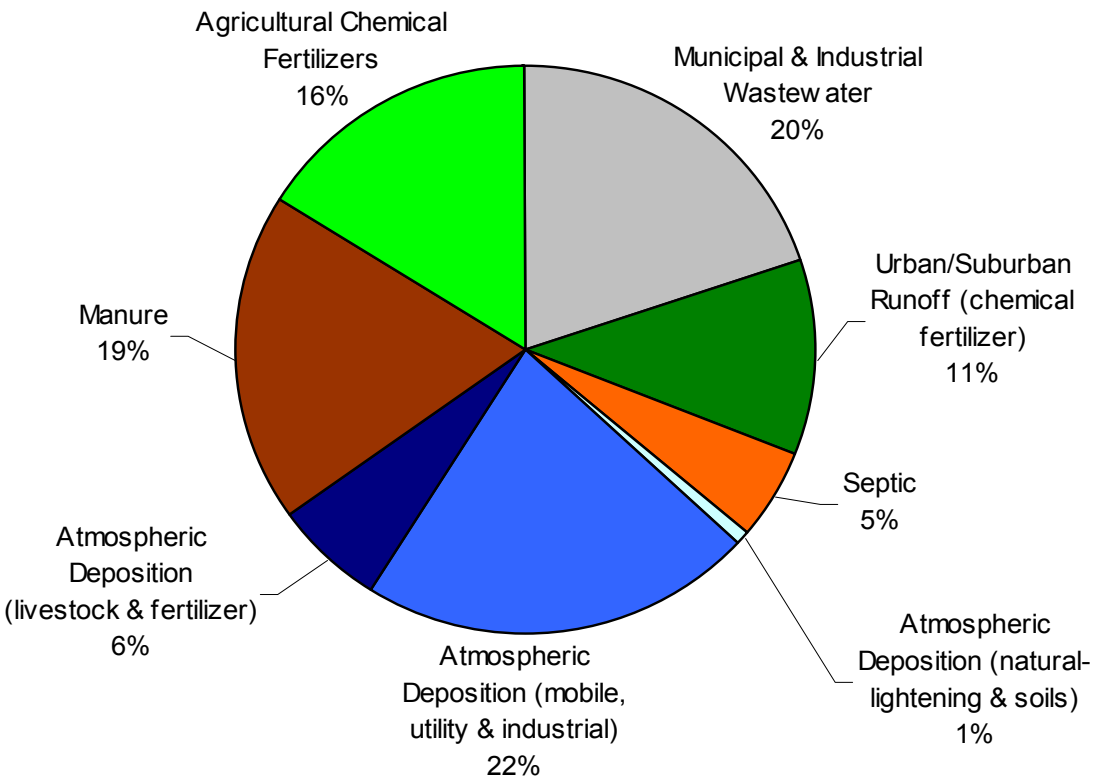
Virginia's Commitment to Restore Water Quality

- Article XI of the Constitution: "It shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth."
- State Water Control Law: Calls for a policy to "protect existing high quality waters and restore all other state waters to such condition of quality that any such waters will permit all reasonable public uses and will support propagation and growth of aquatic life …" (§62.1-44.2).
- State Water Control Law: Requires the State Water Control Board to "develop and implement a plan to achieve fully supporting status for impaired waters." (§62.1-44.19:7).

Virginia's Commitment to Restore Water Quality

- **Chesapeake Bay 2000 Agreement:** "By 2010, correct the nutrient- and sediment-related problems in the Chesapeake Bay and its tidal tributaries sufficiently to remove the Bay and the tidal portions of its tributaries from the list of impaired waters …."
- **Chesapeake Bay and Virginia Waters Clean Up and Oversight Act:** "The Secretary of Natural Resources shall develop a plan for the cleanup of the Chesapeake Bay and Virginia's waters designated as impaired …."

Nitrogen Sources in the Chesapeake Bay



Agriculture is Key to Achieving Virginia's Water Quality Goals

- 34% of Virginia's total land area is categorized as farm land.
- The total economic impact of Virginia agriculture is $55 billion and 501,500 jobs or 10.3 % of state employment.

Agriculture is Key to Achieving Virginia's Water Quality Goals

- Annually, Virginia farms produce:
  - 56 million chickens and turkeys
  - 1.6 million cattle and calves
  - Over 5 million tons of litter and manure
- Virginia farmers annually manage:
  - Over 400 million pounds of nitrogen commercial fertilizer
  - 11 million pounds of phosphorus fertilizer

Agriculture is Key to Achieving Virginia's Water Quality Goals

There are 47,600 farms in Virginia today – less than half of the number of farms in 1960.

Strategies for Managing Nutrients and Non-Point Source Pollution

I. Cost-share programs to increase adoption of high priority BMPs:

A. Cover crops
B. Conservation tillage
C. Nutrient management plans
D. Stream buffers
E. Livestock stream exclusions

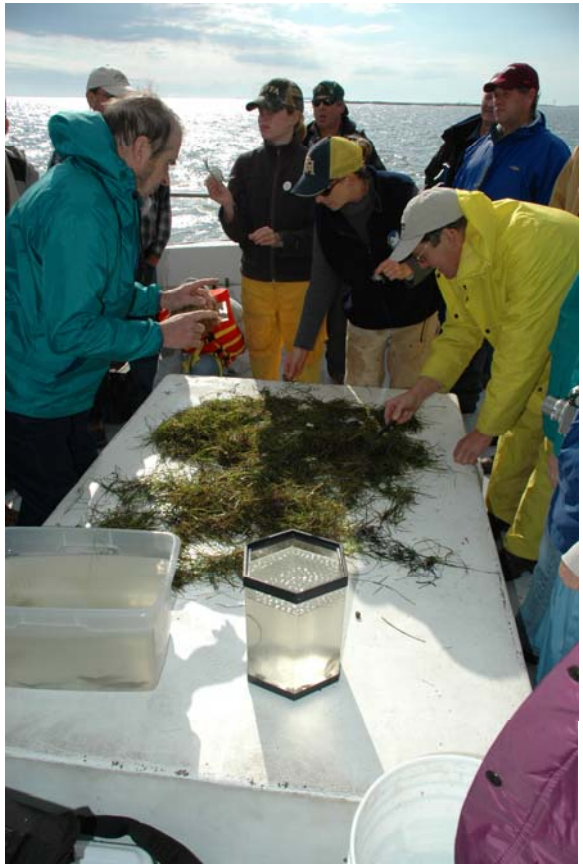
These Priority BMPs are the Most Cost-Effective Tools to Achieve Virginia's Water Quality Goals

	Cost of Nitrogen Removal ($/lb)
Sewage Treatment Plant	$8.56
Storm Water Treatment	Minimum of $53.00
Conservation Tillage	$1.57
Nutrient Management	$1.66
Early Cover Crops	$2.33

Virginia BMP Cost-Share Funding

The Agriculture and Conservation Partnership for Water Quality

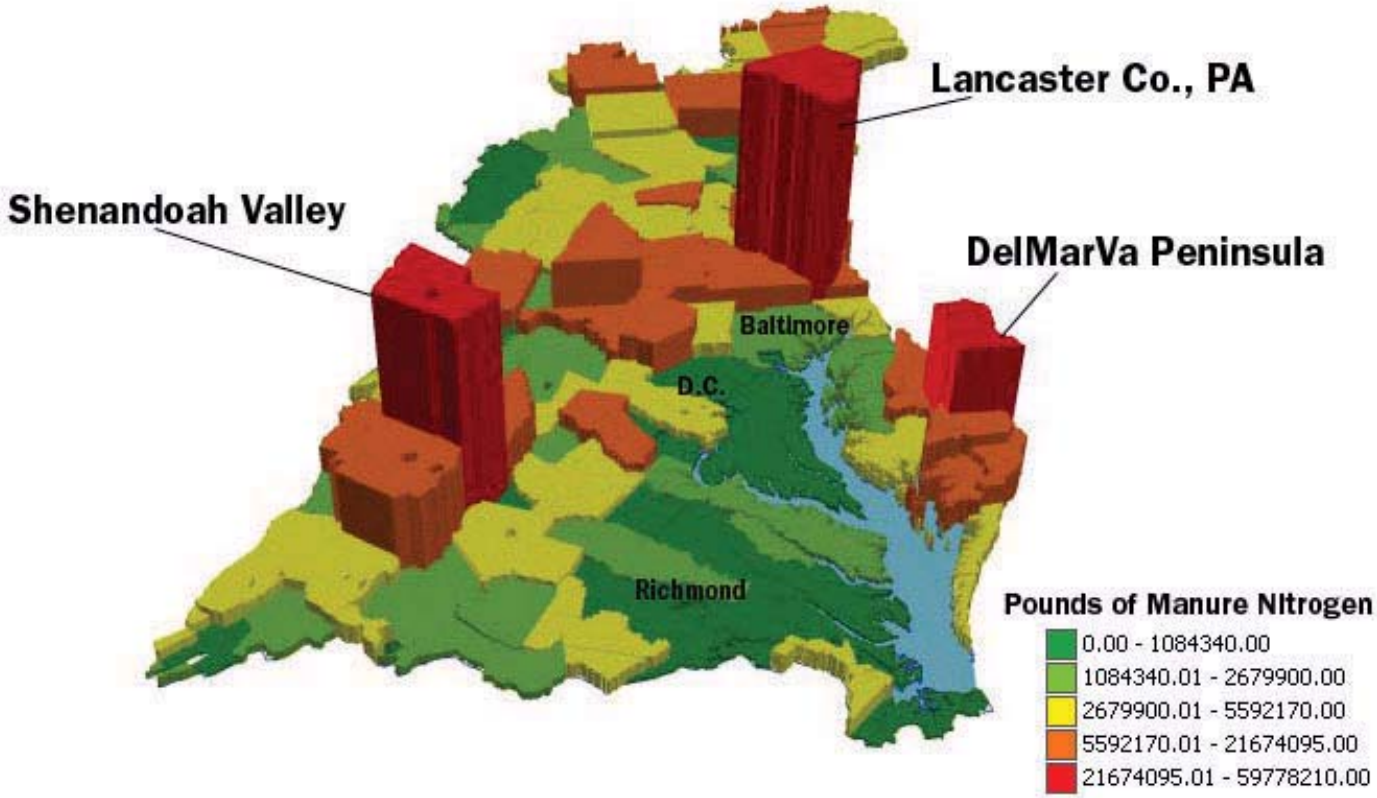
Strategies for Managing Nutrients and Non-Point Source Pollution



II. Reaching farmers through education and outreach tools:

- Farmer to the Bay trips
- Herd health and stream fencing
- Field days and forums
- Marketing materials

Total Manure Nitrogen in Chesapeake Bay Watershed Counties



Source: EPA Chesapeake Bay Program

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Strategies for Managing Nutrients and Non-Point Source Pollution

III. Researching and piloting innovative approaches:

Virginia Waste Solutions Forum:
Agriculture and Environmental Solutions for the Shenandoah Valley

Poultry Litter to Energy through Pyrolysis

Strategies for Managing Nutrients and Non-Point Source Pollution

IV. Practical approaches to prevent and address pollution concerns:

Virginia Pollution Abatement Act

Virginia Agriculture Stewardship Act

Restoring the Chesapeake Bay will Require a Partnership with Agriculture

= remainder of pollution if everything funded *("Gap")*

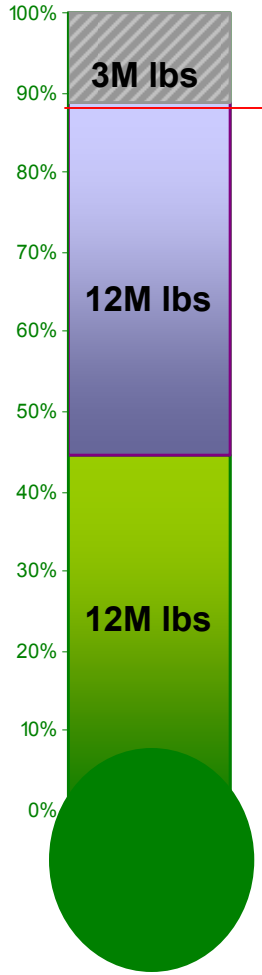
= agricultural reductions

(5 priority BMP practices)

= already funded

5M lbs are funded agricultural reductions

7M lbs are funded point source reductions



ACHIEVES 90% OF VIRGINIA'S BAY RESTORATION GOALS

Virginia has set a specific goal of reducing nitrogen pollution to the Bay and its rivers and streams by 27 million pounds.