



# Bay Restoration Fund

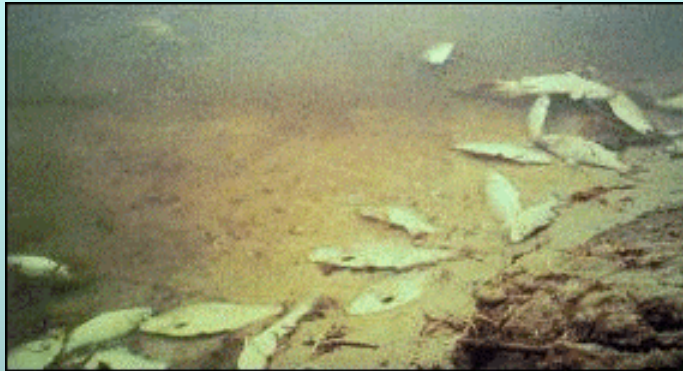
*Robert M. Summers, Director*

*Water Management Administration*

*Maryland Department of Environment*

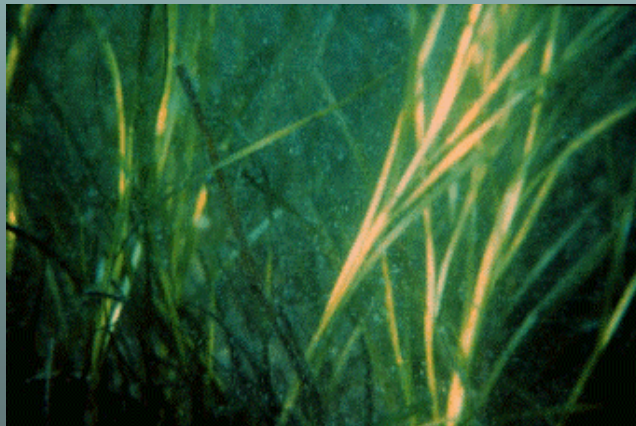
# Chesapeake Bay Water Quality Problems

Algae blooms and depleted oxygen levels are caused by nutrient pollution.



When the algae die and decompose, they use up oxygen needed by other plants and animals living in the Bay's waters.

Poor water clarity is caused by algae blooms and sediment pollution.



Algae blooms and sediment cloud the water and block sunlight, causing underwater bay grasses to die.

# 2000 Chesapeake Bay Agreement

## Bay and River Water Quality Commitment

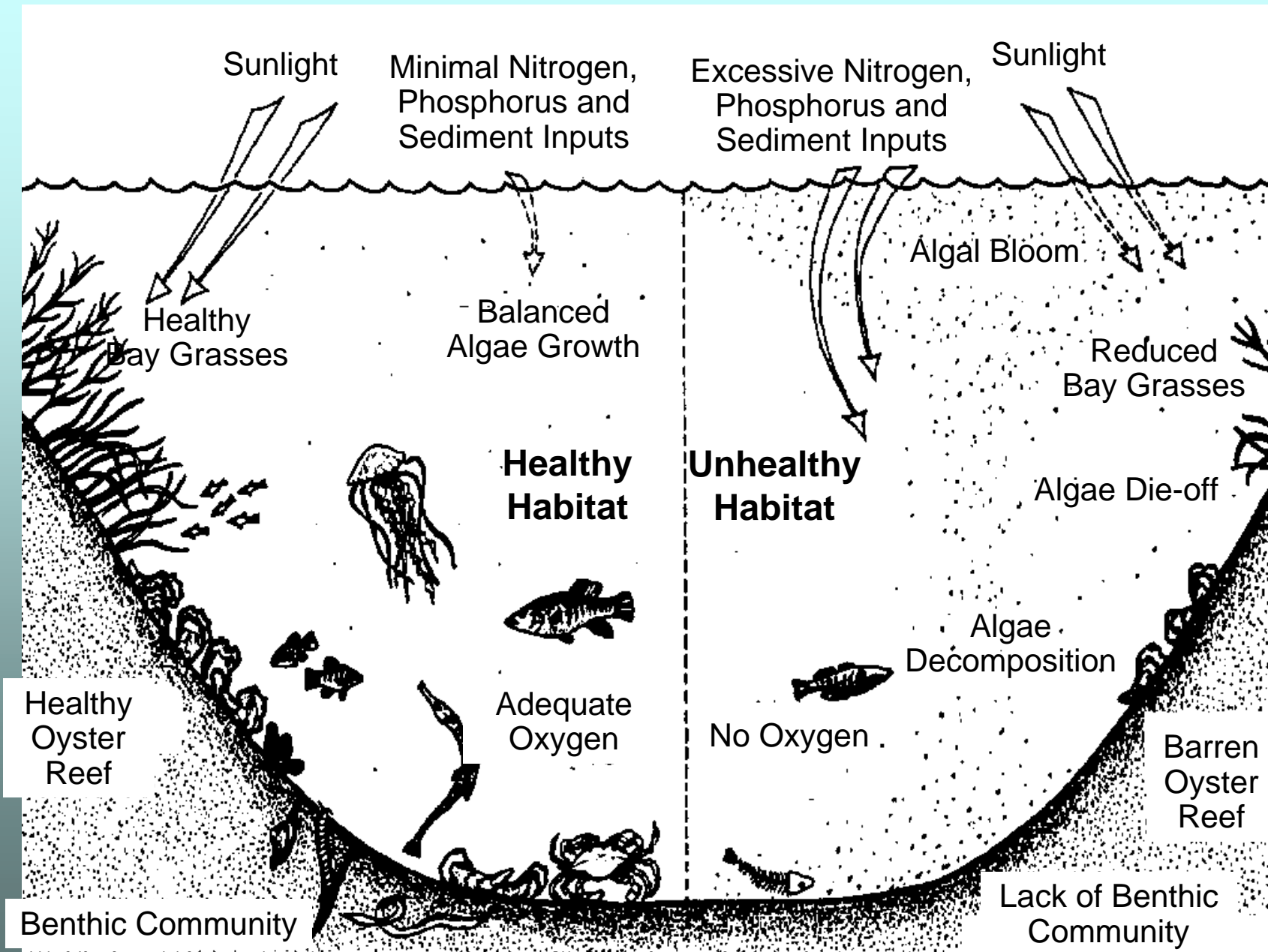
*By 2010, correct the nutrient- and sediment-related problems in the Chesapeake Bay and its tidal tributaries sufficiently to remove the Bay and the tidal portions of its tributaries from the list of impaired waters under the Clean Water Act.*

# Restored Water Quality Means:

- Fewer algae blooms and better fish food.
- Clearer water and more underwater Bay grasses.
- More oxygen and improved habitat for more fish, crabs and oysters.

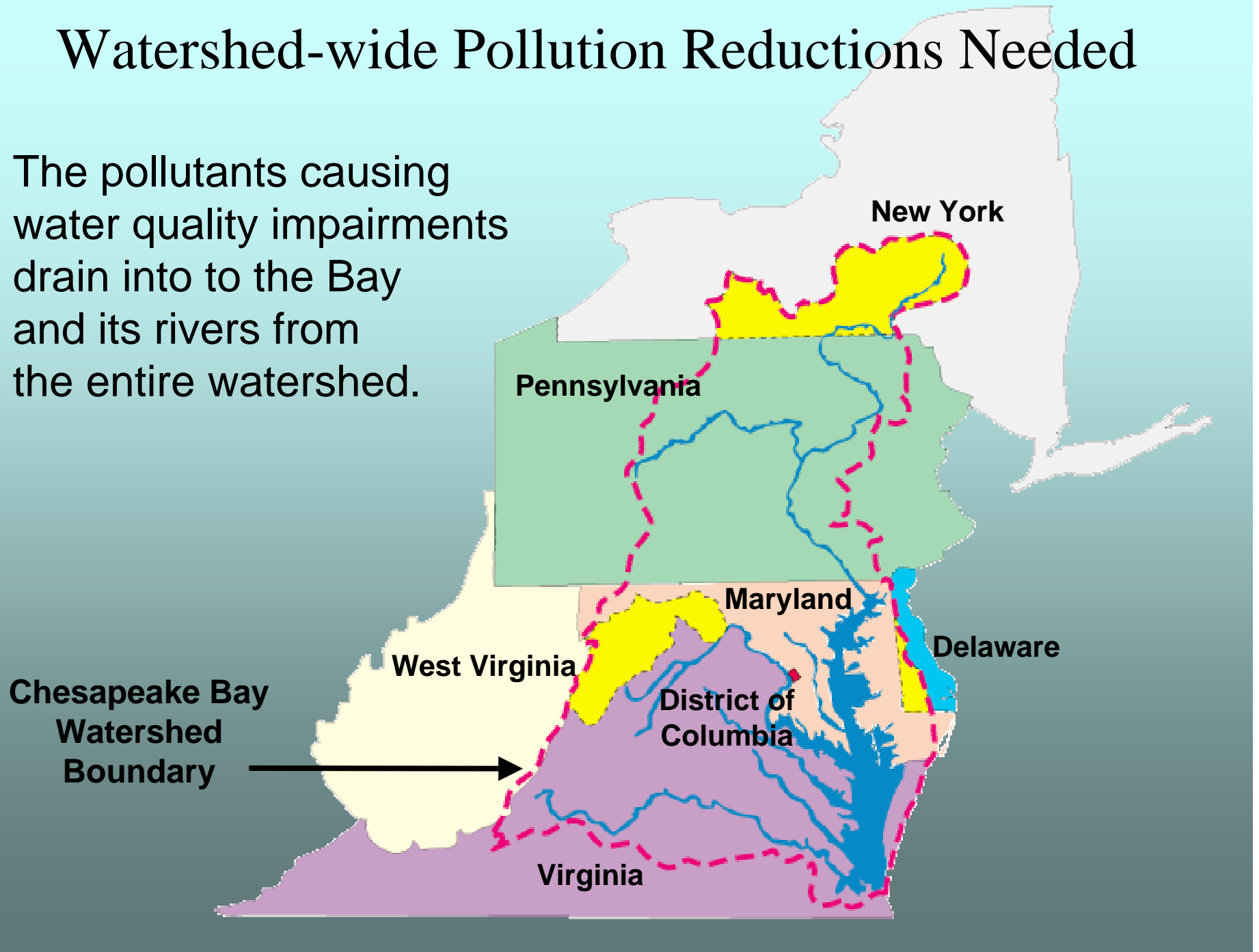


# Healthy vs. Unhealthy Water Quality



# Watershed-wide Pollution Reductions Needed

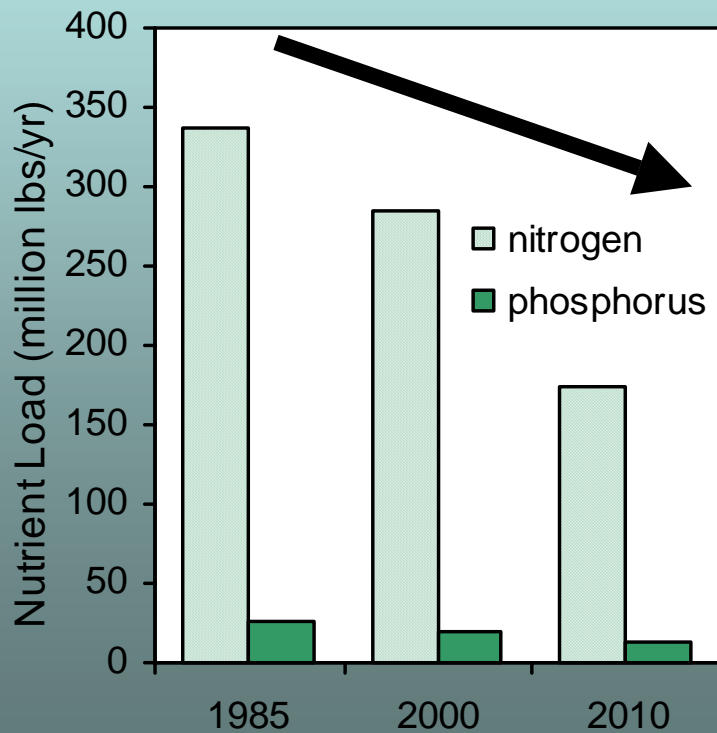
The pollutants causing water quality impairments drain into to the Bay and its rivers from the entire watershed.



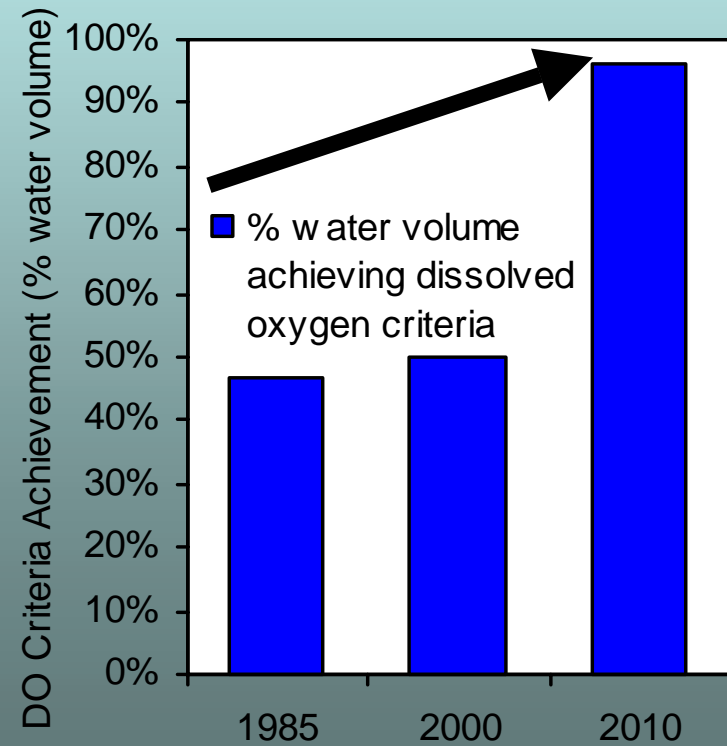
# Reduce Nutrient Pollution Loads

In order to achieve the water quality conditions necessary to protect aquatic living resources, certain amounts of nitrogen and phosphorus reductions need to occur.

**As we reduce  
nutrient loads...**

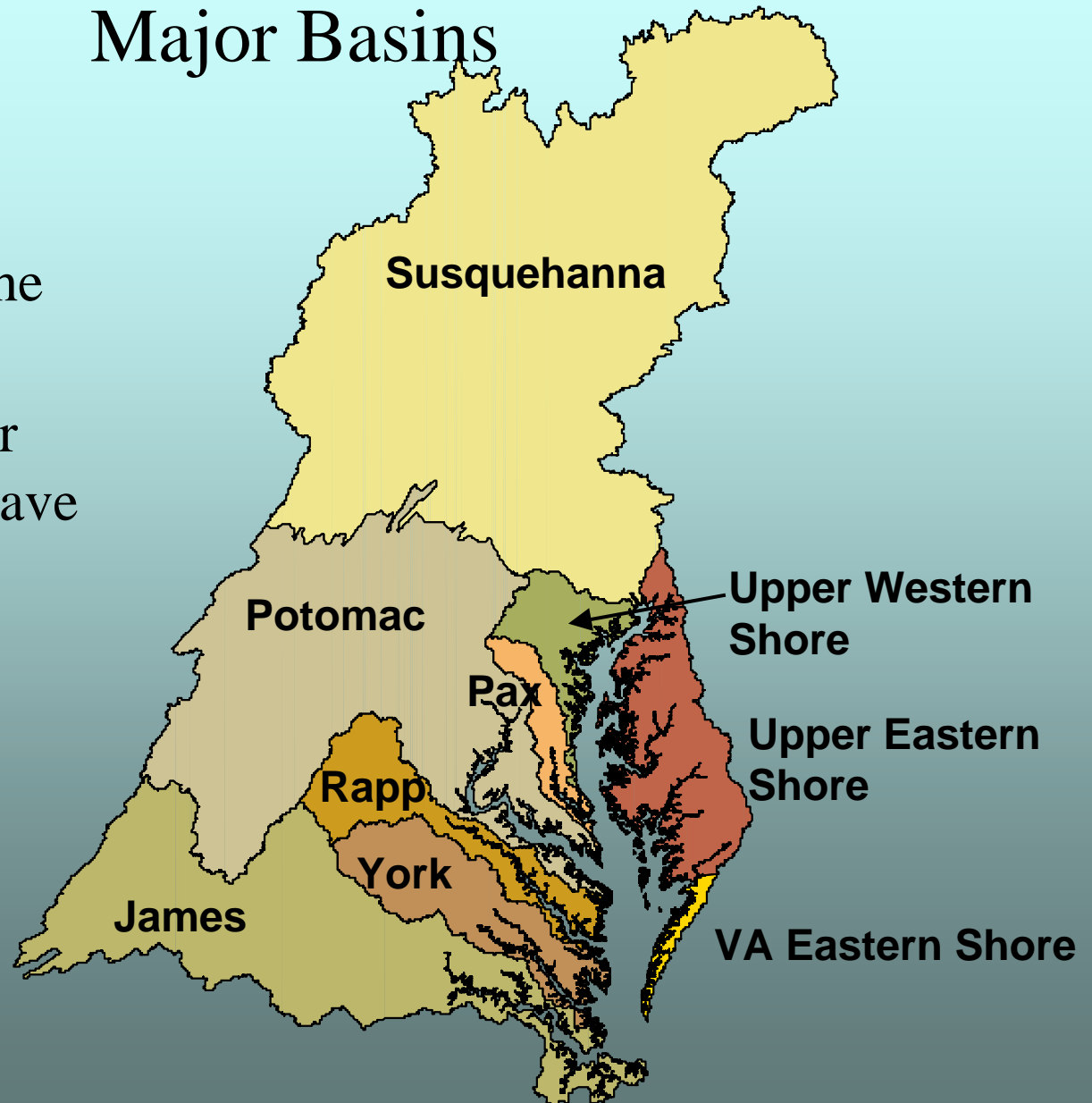


**...we improve water quality  
conditions.**



# Pollutant Load Allocations For the Bay's Nine Major Basins

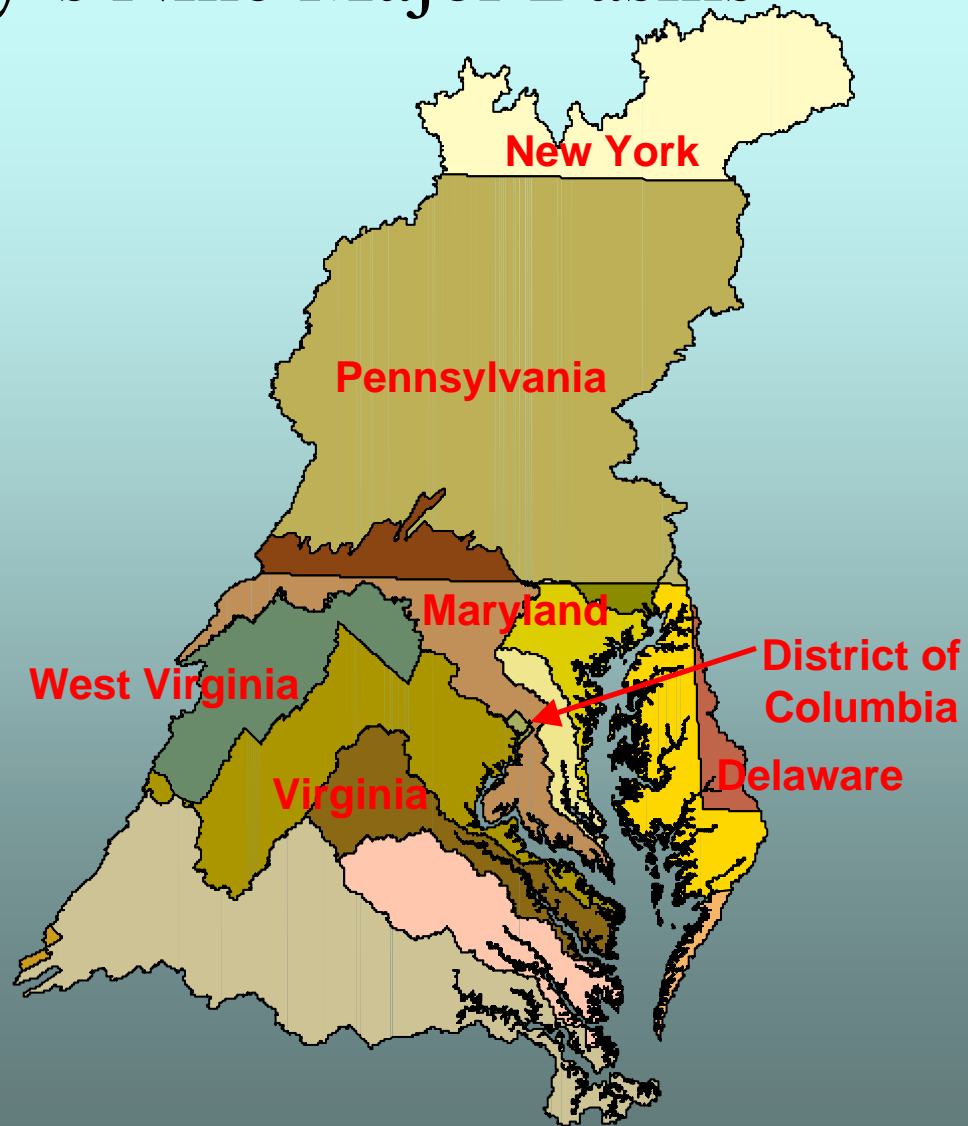
- The pollutant reductions need to occur throughout the entire watershed.
- Each of the 9 major watershed basins have been allocated maximum loads or “caps”.





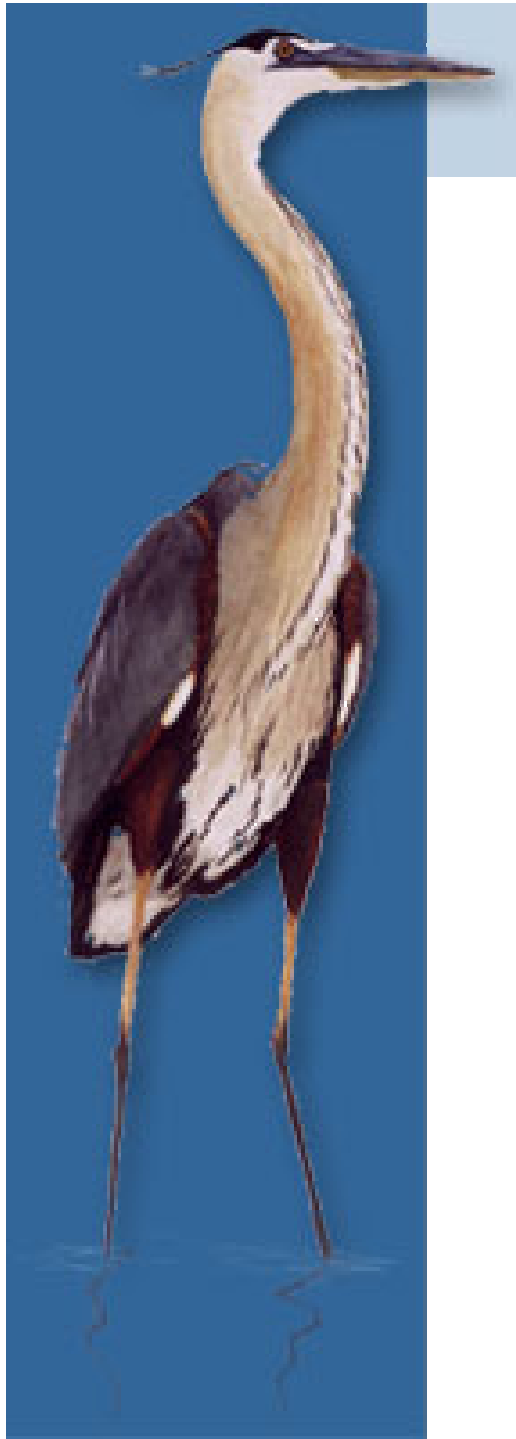
# Pollutant Load Allocations For Each State in the Bay's Nine Major Basins

- Further allocations have been made to each jurisdiction within the 9 major watershed basins.



## Cap Load Allocations by State

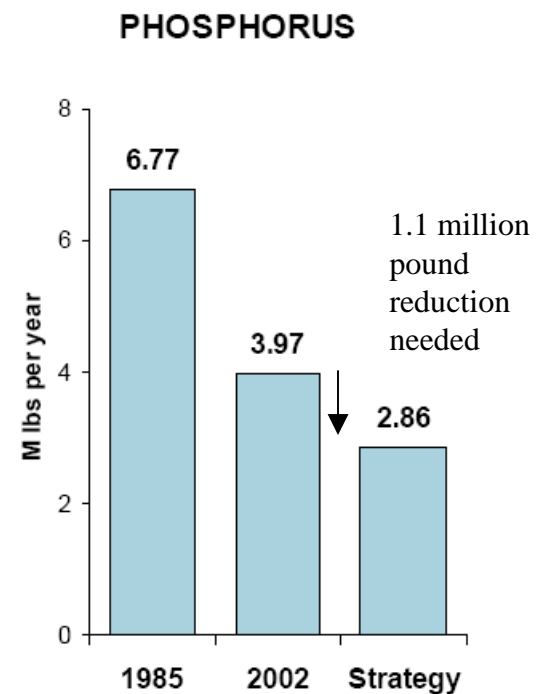
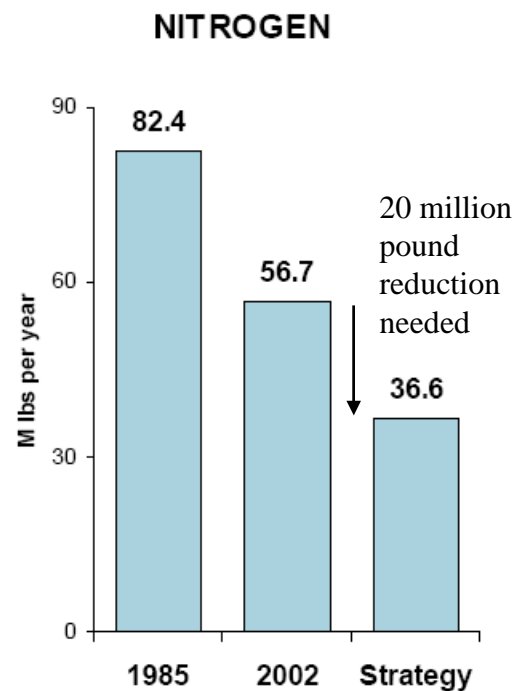
	Nitrogen Allocation (million pounds/year)	Phosphorus Allocation (million pounds/year)
<b>PENNSYLVANIA</b>	<b>72</b>	<b>2.3</b>
<b>MARYLAND</b>	<b>37</b>	<b>2.9</b>
<b>VIRGINIA</b>	<b>51</b>	<b>6.0</b>
<b>DISTRICT OF COLUMBIA</b>	<b>2</b>	<b>0.3</b>
<b>NEW YORK</b>	<b>13</b>	<b>0.6</b>
<b>DELAWARE</b>	<b>3</b>	<b>0.3</b>
<b>WEST VIRGINIA</b>	<b>5</b>	<b>0.4</b>
<b>SUBTOTAL</b>	<b>183</b>	<b>12.8</b>
<b>CLEAR SKIES REDUCTION</b>	<b>-8</b>	
<b>BASIN-WIDE TOTAL</b>	<b>175</b>	<b>12.8</b>



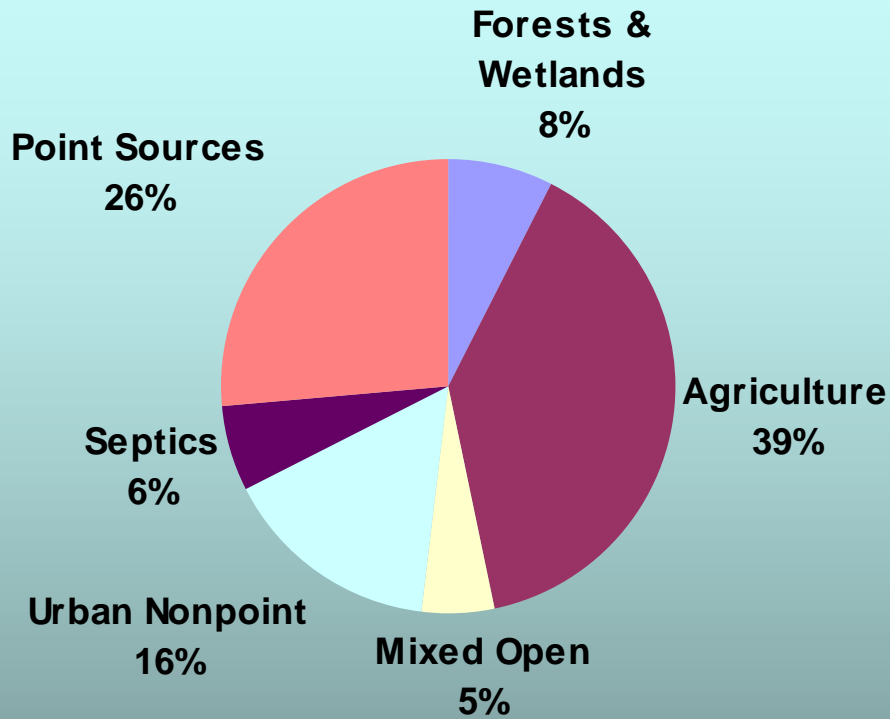
# Maryland Annual Nutrient Loading Cap

**Nitrogen – 37.25 Million LBS**

**Phosphorus – 2.92 Million LBS**

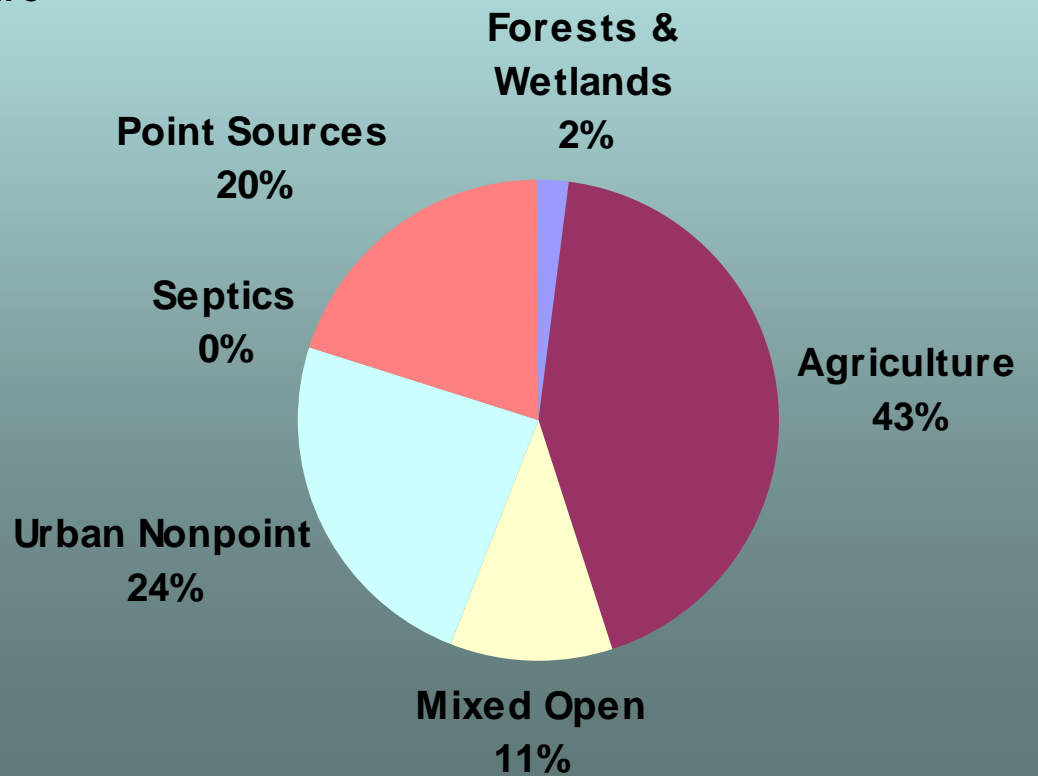


# MD Nutrient Sources (2002)



## Nitrogen

## Phosphorus





# Bay Restoration Fund

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- Senate Bill 320 (Bay Restoration Fund) will allow Maryland to achieve more nutrient reductions by:
  - upgrading wastewater treatment plants with Enhanced Nutrient Removal facilities,
  - upgrading septic systems in the Critical Area, and
  - implementing cover crop on agricultural land.



# Bay Restoration Fund

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- **Excess nutrients are the major cause of water quality problems that degrade the Bay and its tributaries.**
- **All nutrient sources need to be reduced to achieve our Bay water quality goals.**
- **Sewage discharges are a major source of these nutrients.**
- **Since the signing of the first Bay Agreement in 1983, Maryland has reduced the wastewater contribution to the Bay by 52% for nitrogen and 62% for phosphorus by upgrading wastewater treatment plants with biological nutrient removal capability.**



# Enhanced Nutrient Removal

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- An enhanced nutrient removal technology that is capable of:
  - *3 mg/l total nitrogen*
  - *0.3 mg/l total phosphorus*
  - *calculated on an annually averaged basis*
- Or, the lowest level the Department determines is practicable for a facility



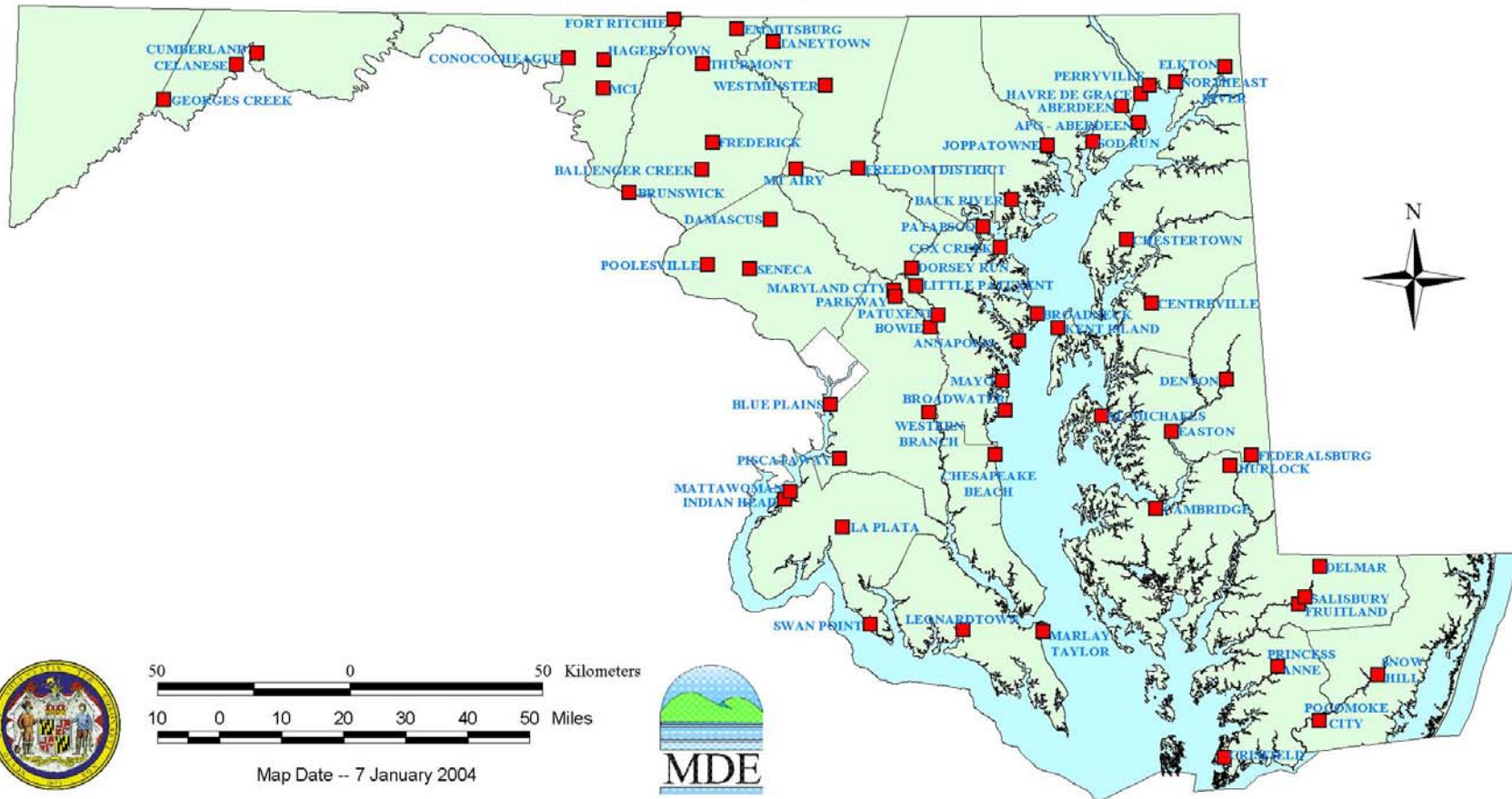
# Sewage Treatment Plant Upgrade Priorities:

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- 66 major plants discharging to Chesapeake Bay will be upgraded first to reduce the nitrogen loading to the Bay by 7.5 million pounds per year
  - *Over 1/3 of the additional reduction needed for Maryland to meet its Bay Agreement commitments*
- Other facilities may be upgraded later, based on consideration of:
  - *Cost effectiveness, water quality benefit, readiness to proceed, and nitrogen and phosphorus loading*



# Maryland's Major Wastewater Treatment Plants in the Chesapeake Bay Watershed





# Purpose of Senate Bill 320

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- To create a dedicated fund, financed by sewage treatment plant users, to upgrade Maryland's wastewater treatment plants to achieve enhanced nutrient removal (ENR)
- To create a dedicated fund, financed by users of onsite sewage disposal systems, to upgrade septic systems and implement cover crop activities to reduce nitrogen loading to the Bay



# Funding:

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- Supported by a \$2.50 per month per household surcharge on sewer bills
- For commercial and industrial users, \$2.50 per month per “equivalent dwelling unit” (EDU) based on wastewater flow
- \$30 annual fee for users of septic systems or holding tanks



# Exceptions:

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- Surcharge does not apply to facilities that:
  - *do not discharge nitrogen or phosphorus as determined by the department, or meet 3 mg/l nitrogen and 0.3 mg/l phosphorus treatment levels, **AND** did not receive state or federal grants*
  - *discharge non-contact cooling water, water from dewatering operations, or reclaimed wastewater from a facility whose users pay into the fund, and the discharge does not result in a net increase in nutrient loading.*



# Timing:

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- The surcharge on sewer bills and for septic system users that receive a water bill begins on January 1, 2005.
  - *Collected by the water or sewer authority*
- The surcharge for septic systems begins on October 1, 2005.
  - *Collected by county governments*



# Revenue and Financing:

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- Estimated to generate \$65 million annually from sewage treatment plant users
  - *Will be used to back over \$700 million in revenue bonds to partially fund close to \$1 billion in capital projects to upgrade 66 major sewage treatment plants. Maryland will continue to seek federal funding to cover funding gaps.*
- Estimated to generate \$12.6 million from septic system users
  - *60% to be used for septic system upgrades, 40% for cover crop activities*



# Eligible Uses of the WWTP Fund:

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- Up to 100% of the costs of planning, design, and construction of ENR upgrades for flows up to the design capacity
- Up to \$5 million per year for Combined Sewer Overflow abatement and existing sewer rehabilitation (Fiscal Year 2005-2009)
- After Fiscal Year 2009, up to 10% for ENR operation and maintenance costs



# The Grant Agreement and Permit:

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“Shall require an owner of a wastewater facility to operate the enhanced nutrient removal facility in a manner that optimizes the nutrient removal capability of the facility in order to achieve enhanced nutrient removal performance levels.”





# Septic System Upgrades

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- There are over 420,000 septic systems in Maryland
- State and local agencies to develop and implement an upgrade program
  - *Identify the owners' names and addresses*
  - *Establish education and outreach to explain the program and availability of funding*
  - *Develop regulations to govern program*



# Eligible Uses of the Septic System Fund

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- With priority given to failing systems in the Critical Area, up to 100% of the cost of:
  - *upgrades of existing systems to best available technology for nitrogen removal*
  - *the cost difference between a conventional system and a system that uses best available technology for nitrogen removal*
- Implementation of the cover crop activities by the Maryland Department of Agriculture



# Administrative Costs:

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- To carry out billing and fund management
  - *Comptroller's Office – up to 0.5%*
  - *Local governments/billing authorities – up to 5%*
- To implement the upgrade programs at the Department of the Environment
  - *up to 1.5% of wastewater treatment plant funds*
  - *up to 8% of septic system funds*



# Advisory Committee

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- Evaluate the cost, funding and effectiveness of the wastewater treatment plant upgrades
- Recommend future changes to the restoration fee, if necessary
- Consult with and advise the counties and the Department regarding the septic system upgrade program



# Advisory Committee Due Dates

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- January 15, 2005 – Report on methods of collecting fees from users of on-site sewage disposal system (OSDS).
- January 1, 2006 (and every year thereafter) – Report on findings and recommendation.
- December 31, 2006 – Report on administrative costs to local governments for collecting fees and the reasonableness of allowable reimbursement.
- December 31, 2006 – Report on implementation and costs of MDE's OSDS outreach and upgrade program.



# Maryland Department of Environment

For additional information

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