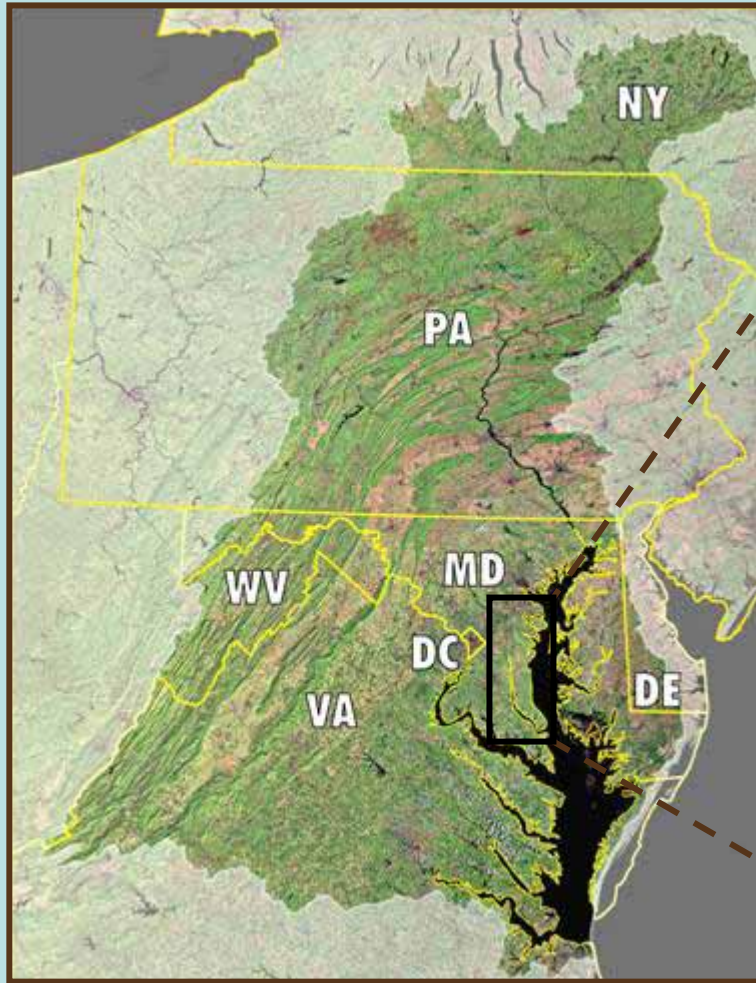


State of the Patuxent River Today

State of the River Summit - October 2007



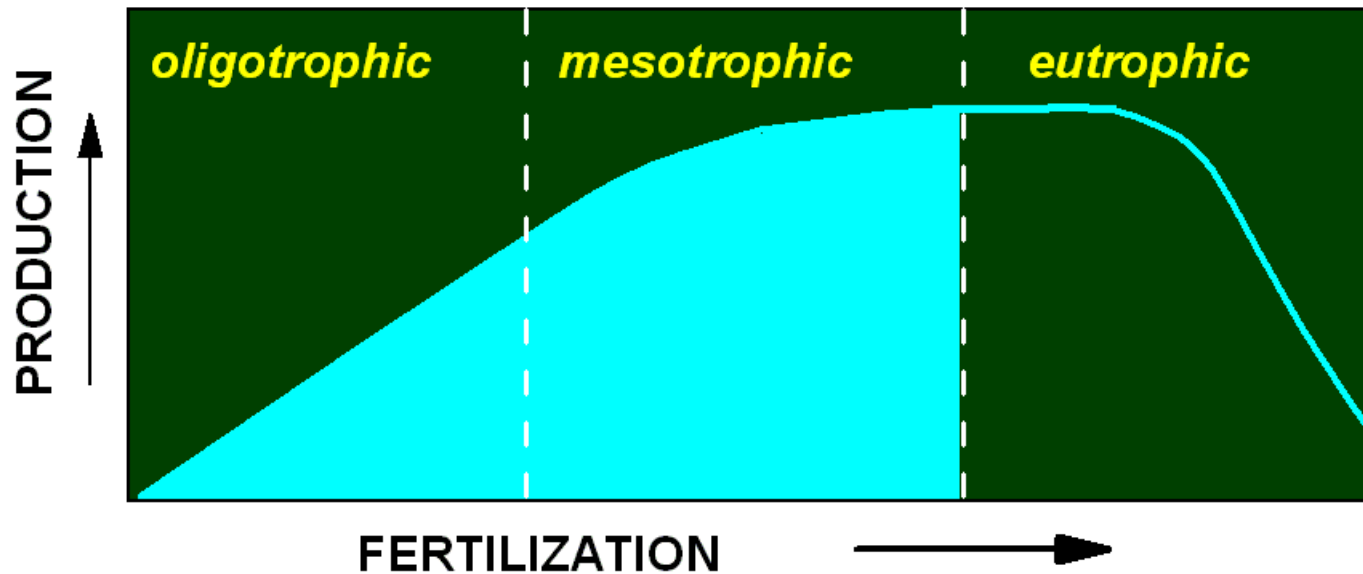
Major Points

- ***Status of the River and Estuary?***
- ***What's the report for 2006 and 2007?***
- ***Linkages to the Patuxent Action Plan***

Take-Home Messages

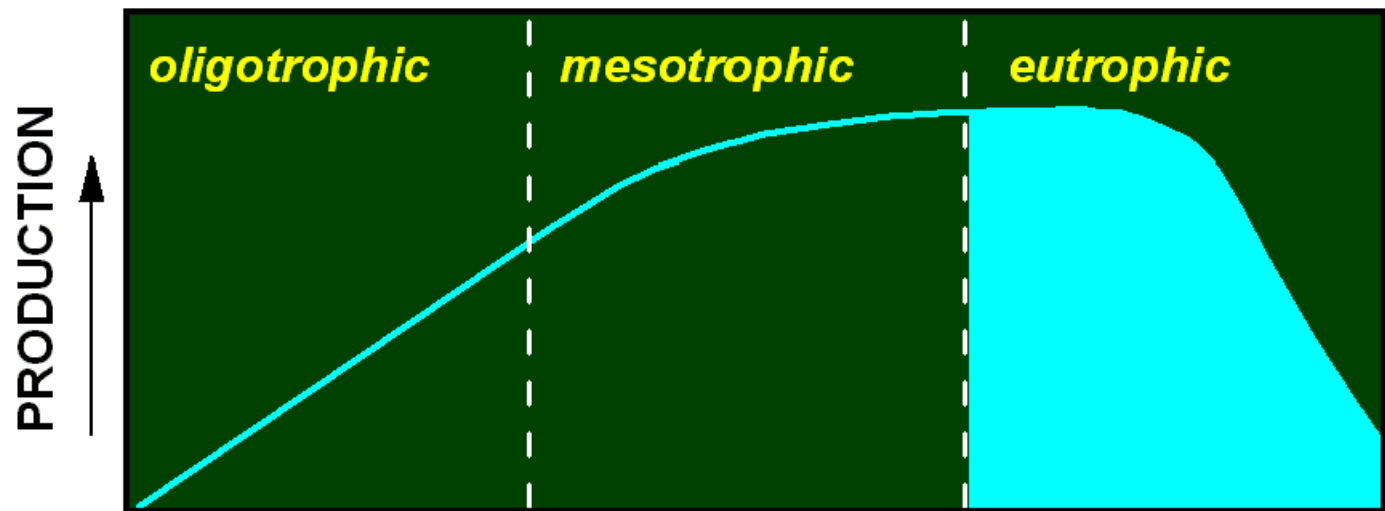
- Patuxent has a **NUTRIENT OBESITY** problem that can be solved
- Both **DIFFUSE** and **POINT** sources of nitrogen are important
- **MAJOR PROGRESS** made with point source reductions and more is possible
- Diffuse sources remain a **HUGE CHALLENGE**
- Evidence indicates Patuxent will **RESPOND RAPIDLY** to nutrient input reductions

POSITIVE EFFECTS



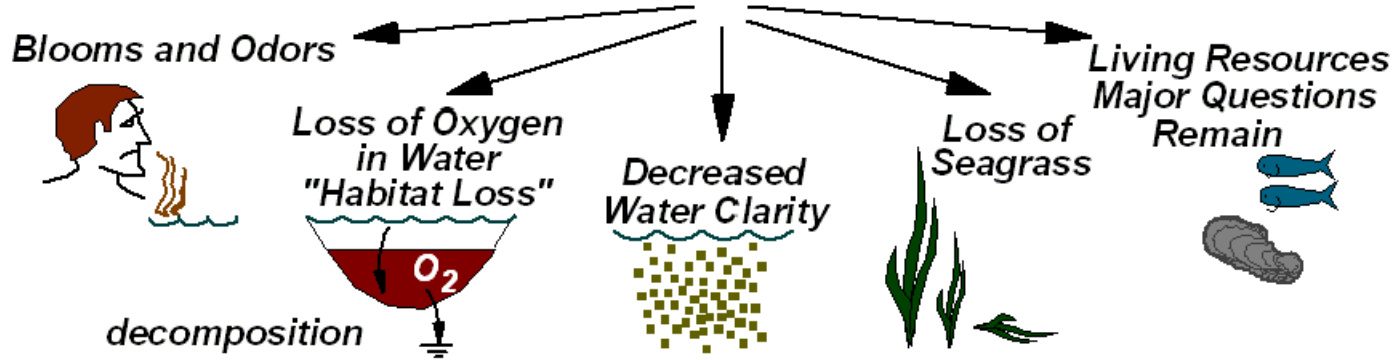
- Essential for plant growth. In most estuaries and the open ocean microscopic plants provide the basic food supply.
- Within limits, increased fertilization increases food supply and production of other organisms.

NEGATIVE EFFECTS



FERTILIZATION →

High levels of NUTRIENT ADDITIONS



Housing Developments



Treatment of Wastes



Power Generation



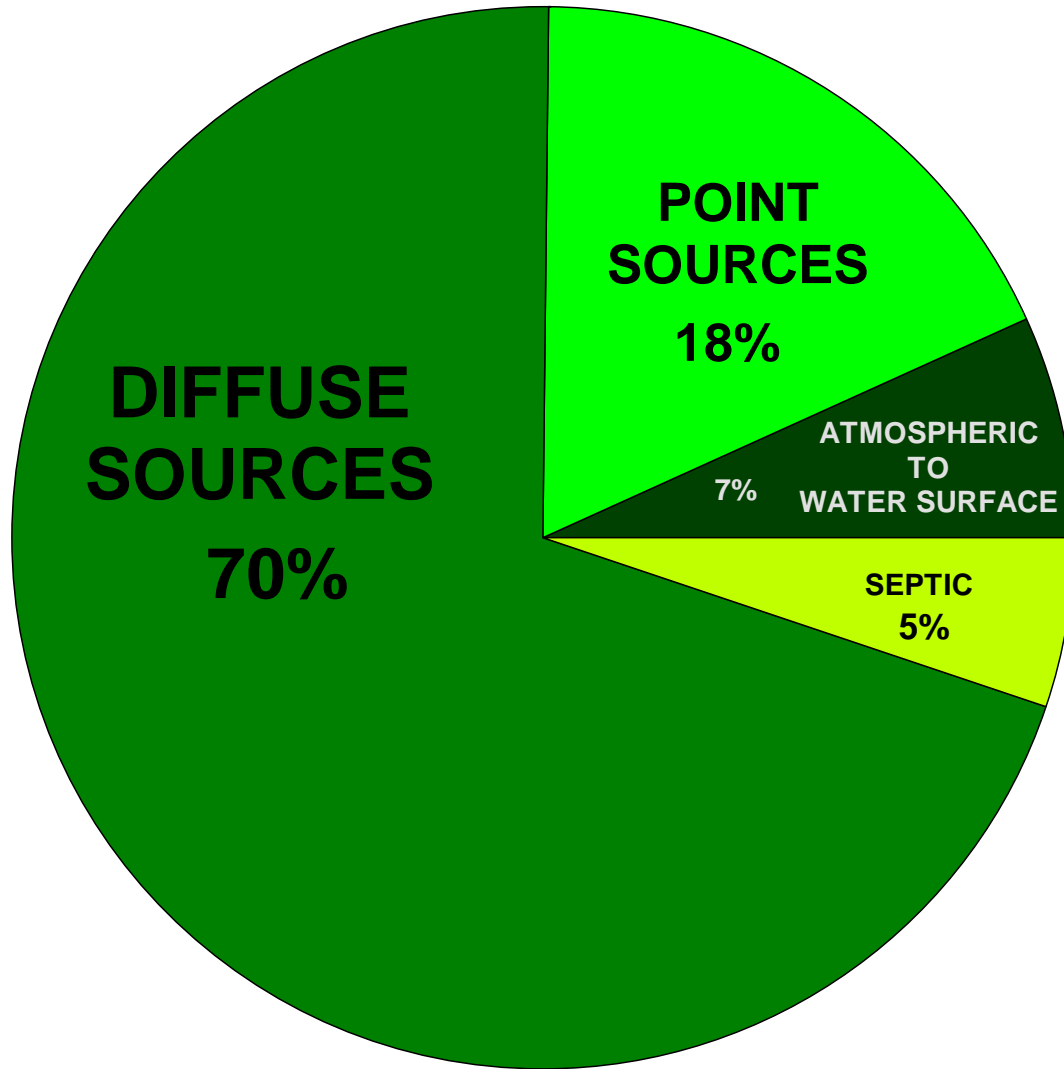
Agricultural Uses



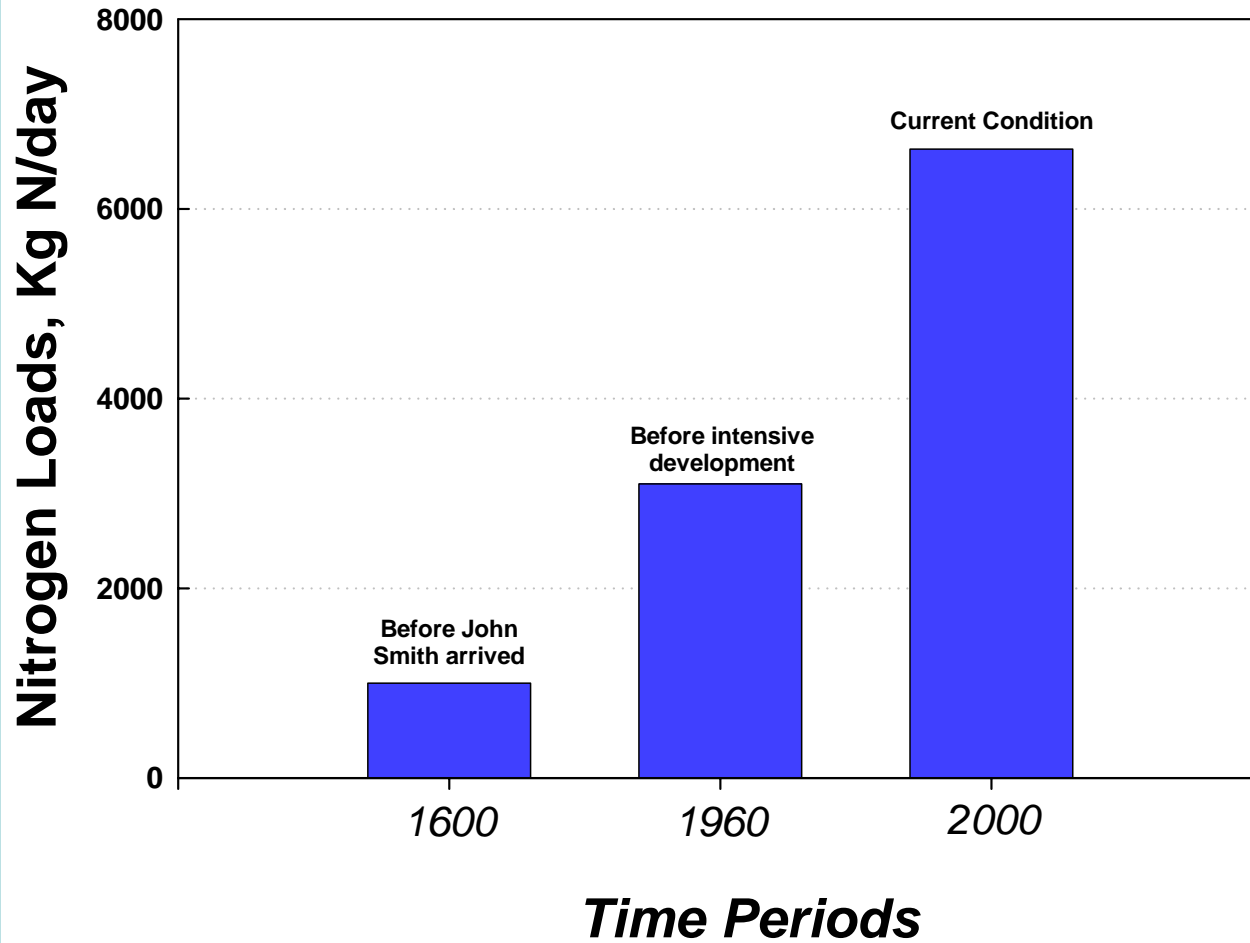
Forests have a strong ***buffering*** effect between the land and River

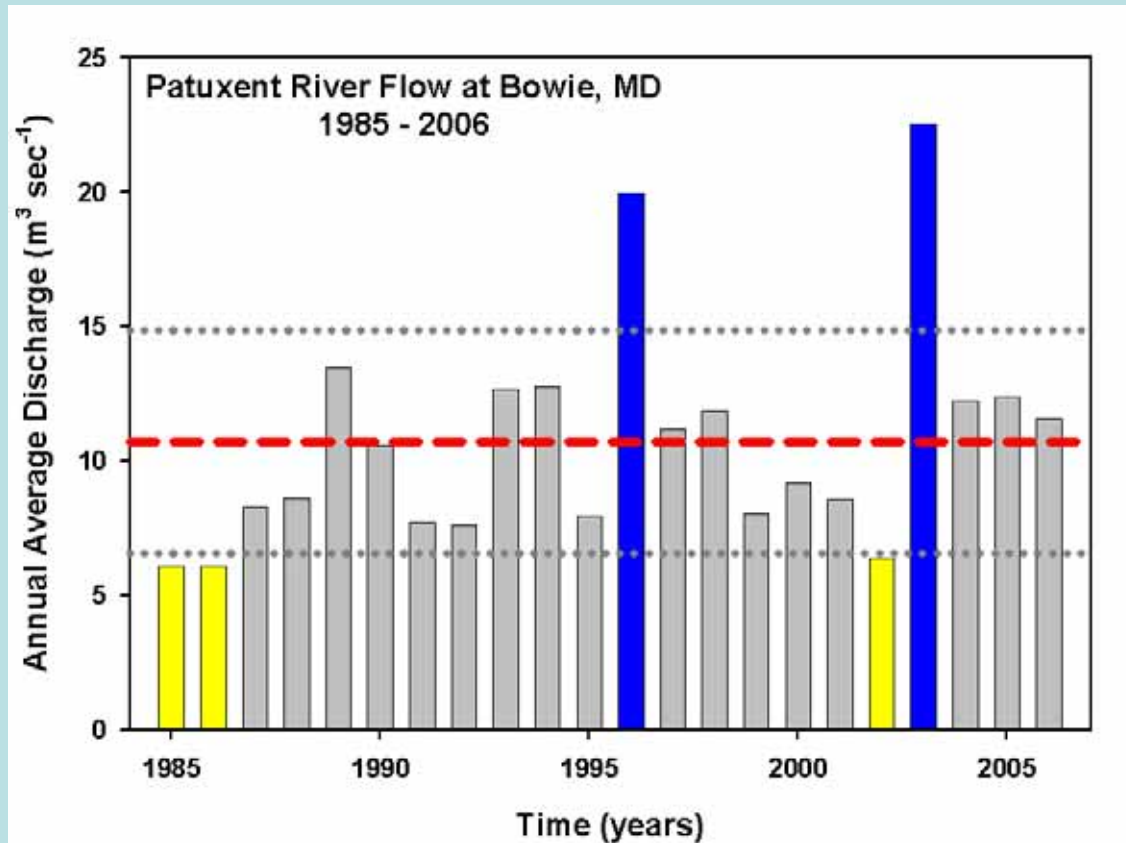


CURRENT NITROGEN SOURCES TO THE PATUXENT RIVER ESTUARY



Historical and Current Nitrogen Loads to the Patuxent River Estuary

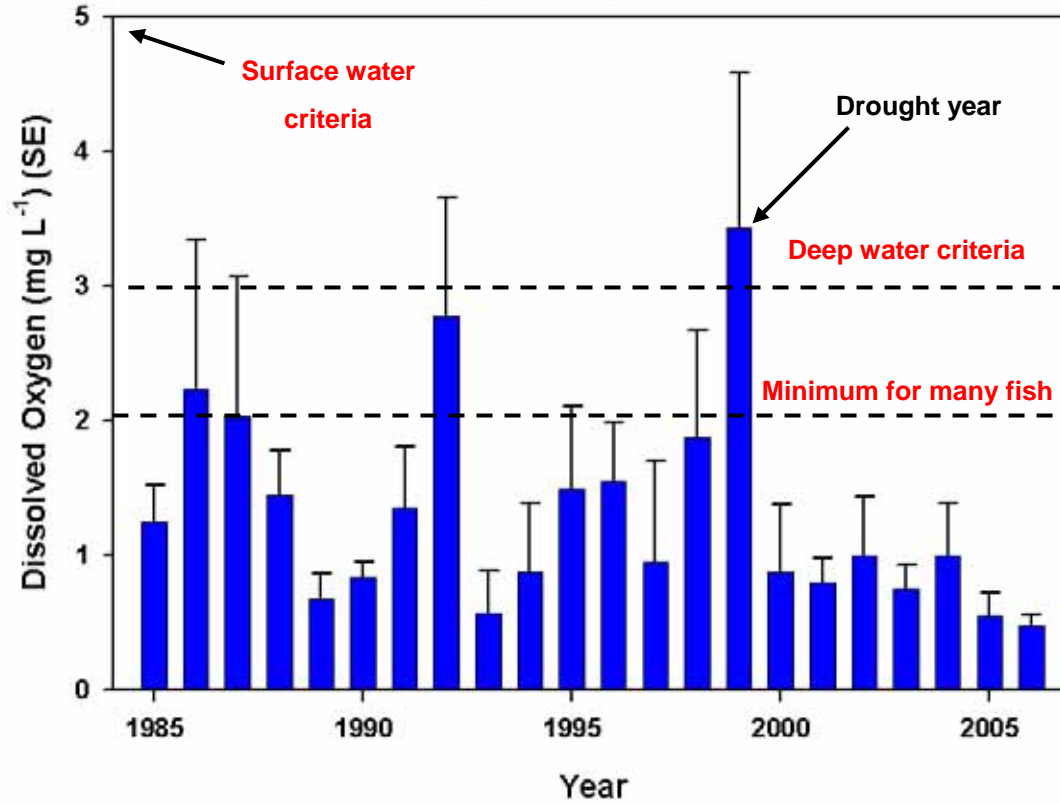




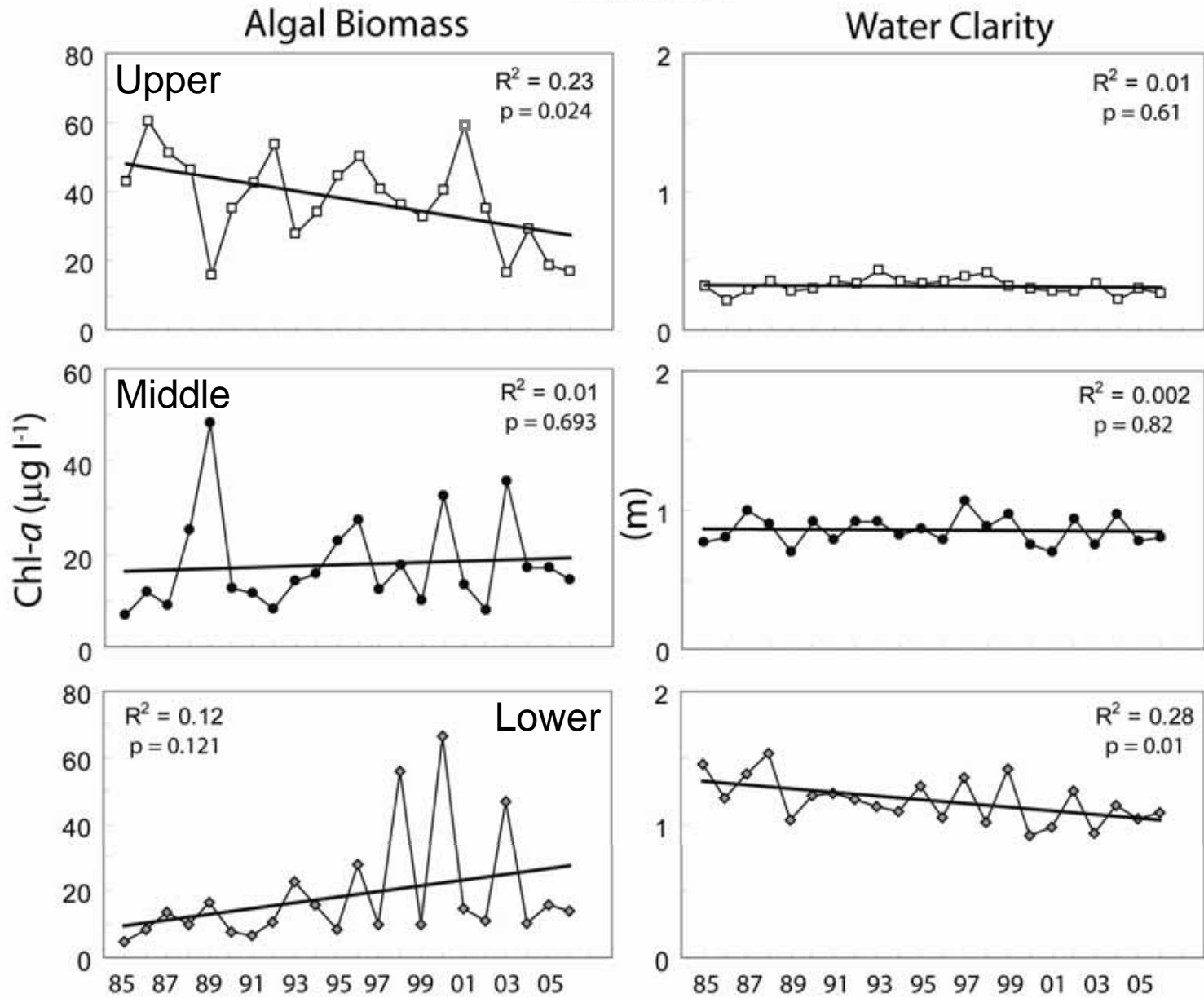
A time series of annual average (calendar year) river flows measured at the fall line (Bowie, MD) of the Patuxent River. The red dashed line represents the 22 year average flow and grey dotted lines represent one standard deviation of the mean. Yellow bars show very dry years and blue bars very wet years. Data taken from USGS (2007).

Deep Water Dissolved Oxygen

Patuxent River Station LE1.1
Average Summer (July-August) Bottom Water DO



Summer



Year

Solomons Island SAV - 1933



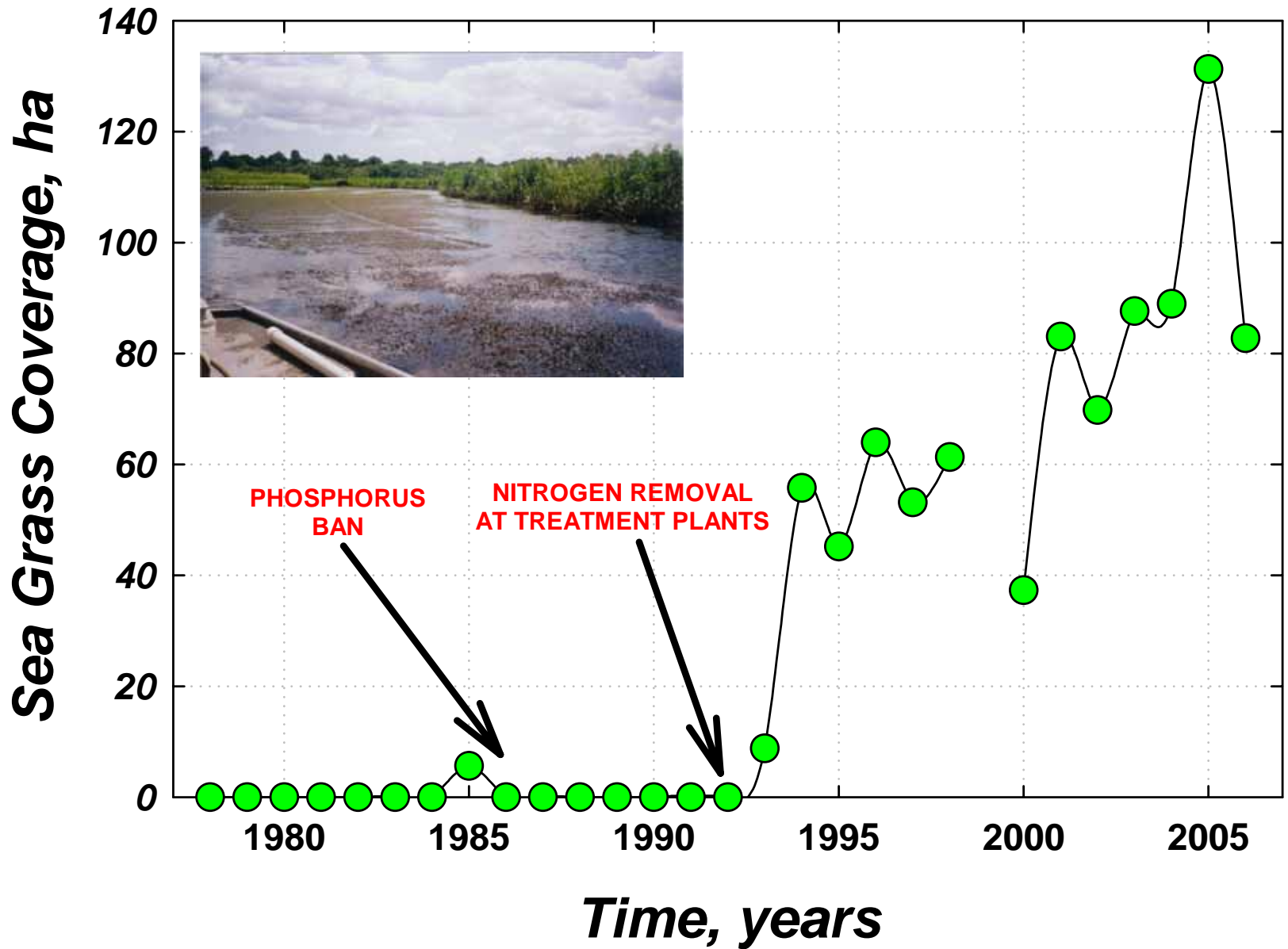
Solomons Island SAV - 1963



Dramatic Loss of SAV from Many Areas of the Bay

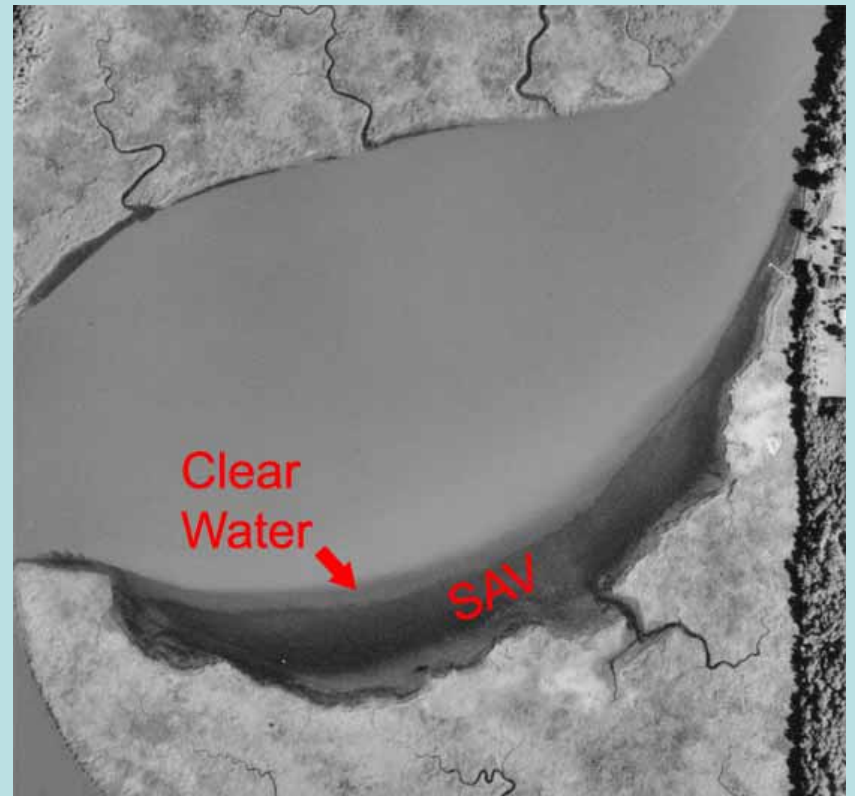
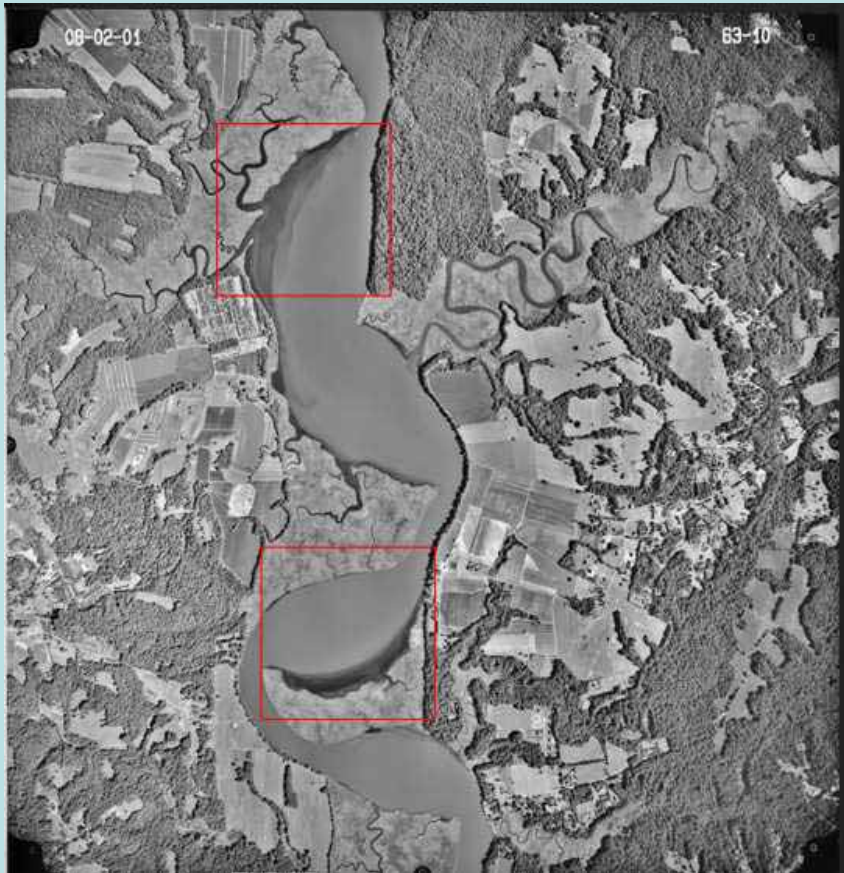


Solomons Island 1999

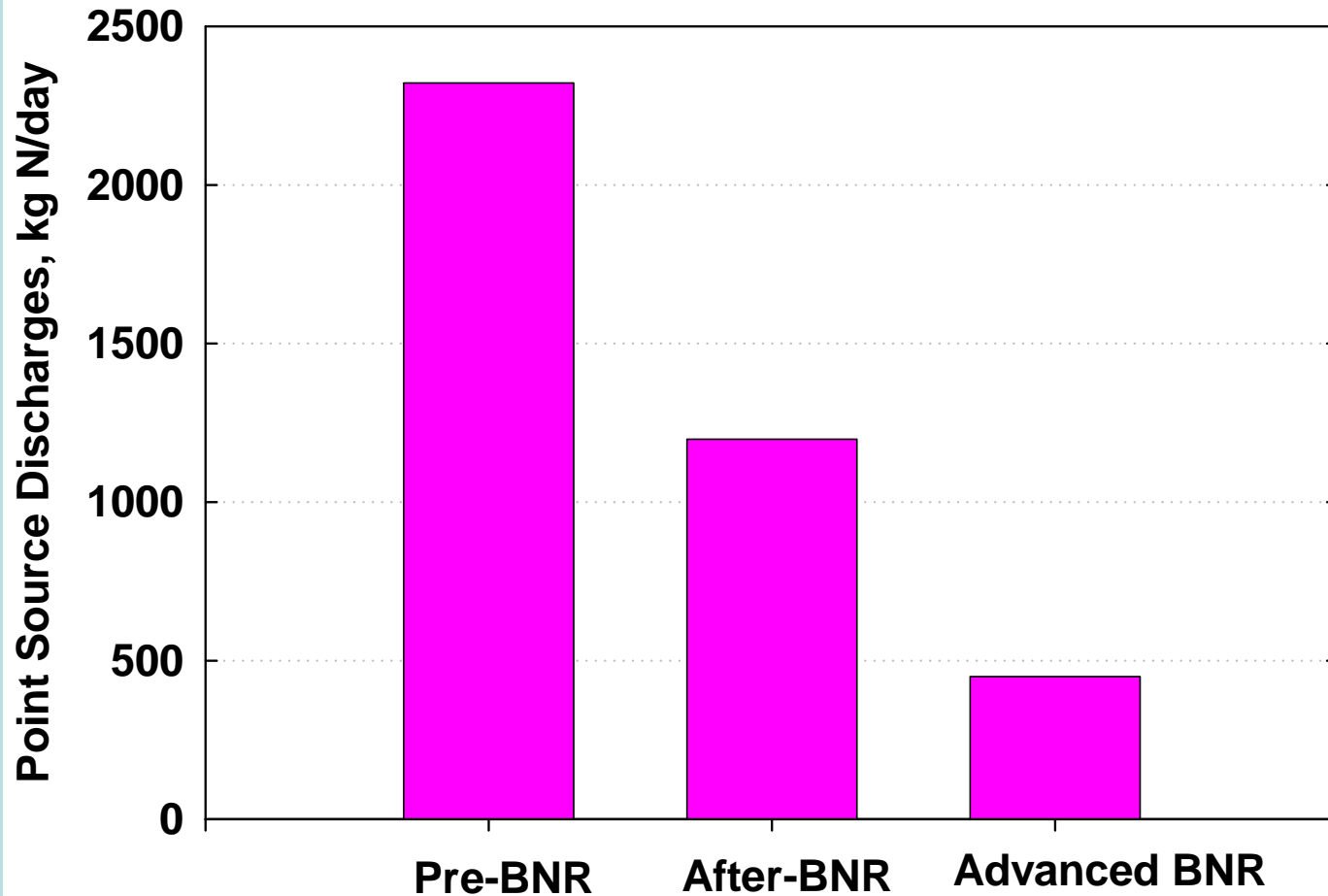


Positive SAV Effects

Upper Patuxent River



Wastewater Treatment in the Patuxent River Basin



Patuxent River Estuary

Circa 1832

- So transparent are its waters that far out from shore you may see, in the openings of the sea-weed forest, on its bottom the flashing sides of the finny tribe as they glide over the pearly sands.”

The Old Plantation by Hungerford (1859)

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