

Chesapeake Bay Challenges and Solutions

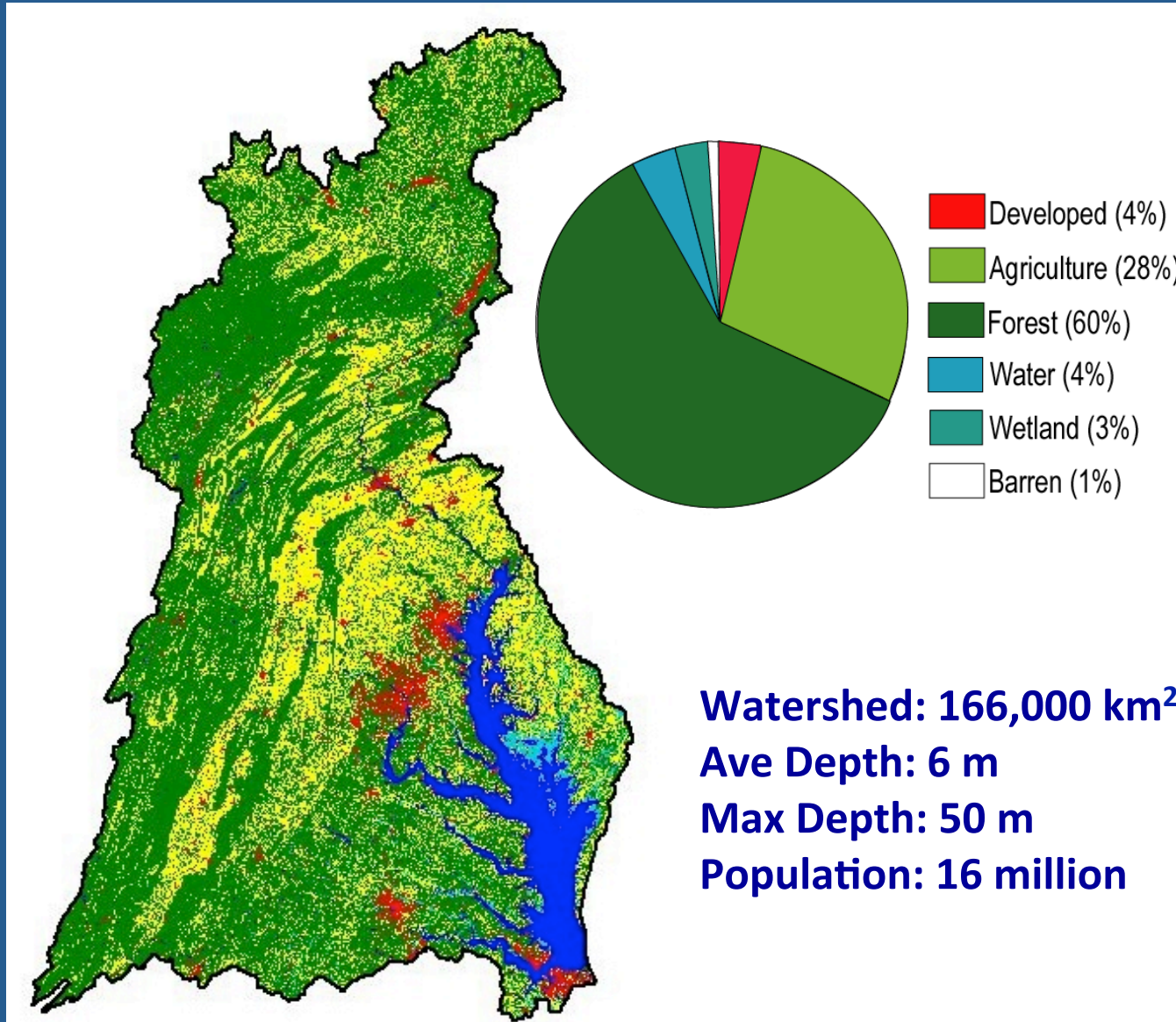
Dave Nemazie and Sarah Lane

University of Maryland Center for Environmental Science

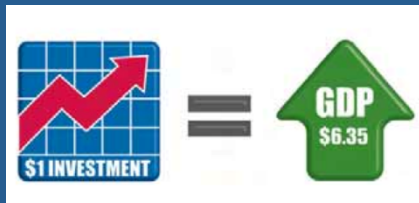
Dr. Tom Simpson

Aqua Terra Science

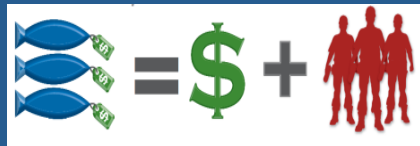
A Shallow Bay with a Large Watershed



The Chesapeake Bay is the Economic Engine of the Region



INVESTMENT: \$1 of water and sewer infrastructure investment increases private output (Gross Domestic Product) in the long term by \$6.35.



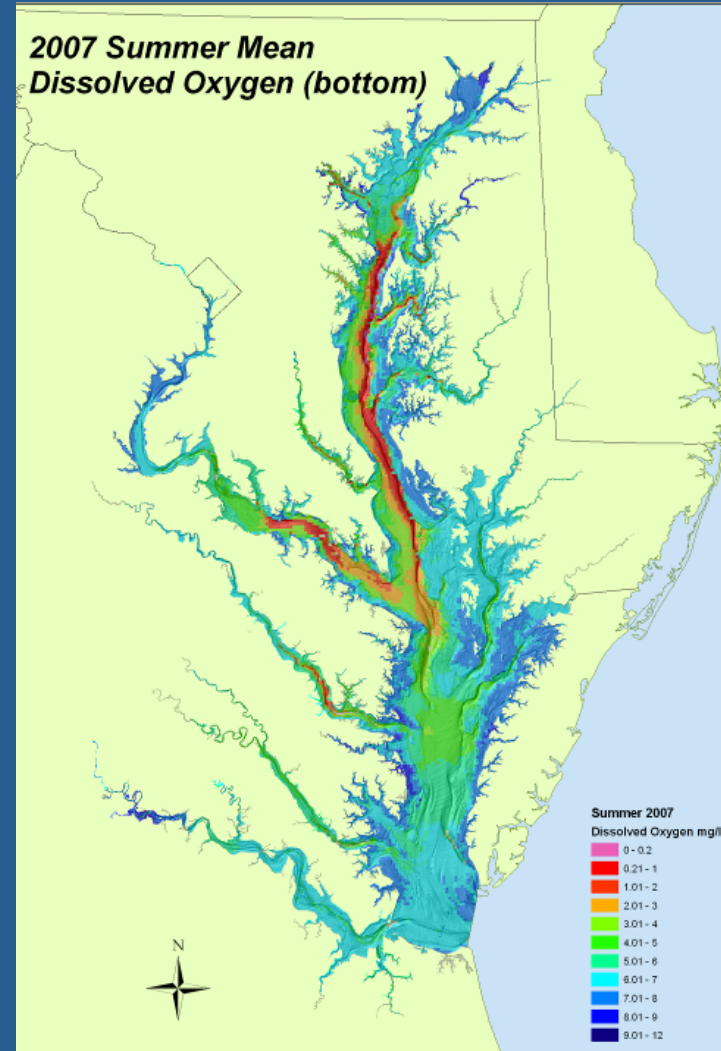
FISHERIES: Commercial seafood industry in Maryland and Virginia contributed \$3.39 billion in sales, \$890 million in income, and almost 34,000 jobs to the local economy. (2009 Fisheries Economics of the U.S. report)



PROPERTY VALUES: An EPA study indicated that clean water can increase the value of single family homes up to 4,000 feet from the shoreline by up to 25 percent.

Chesapeake Bay Challenges

- water quality impaired by pollution
 - Extensive low to no summer dissolved oxygen conditions
- historic overfishing
- population growth
- poor land use management
- loss of habitat
- invasive species
- climate change and sea level rise



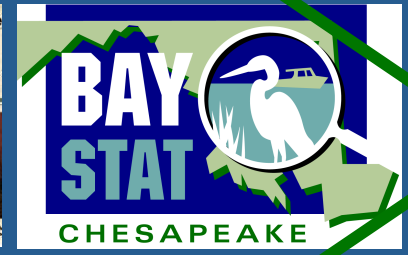
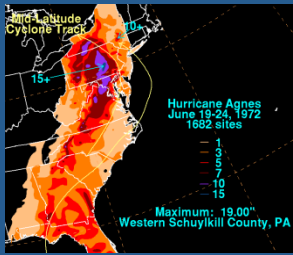
Chesapeake Bay Management: 25 Years

**Ches Bay Agreement:
1987-2000**

- Reduce nutrients by 40% from all controllable sources by 2000
- Focus on *modeling* and monitoring

**Accountability Phase:
2003-2008**

- Focus on *monitoring* and modeling
- Cost and nutrient reduction effectiveness assessments



**Governments Work Together:
1983 - 1987**

- Md, Pa, Va, DC, and USEPA
- Recognize degradation of Bay after Tropical Storm Agnes (1972)

Chesapeake 2000:

- 1987 nutrient goals remain unmet
- Begin Enforcement of TMDL in 2010
- Establish over 100 new goals – many unrelated to nutrients

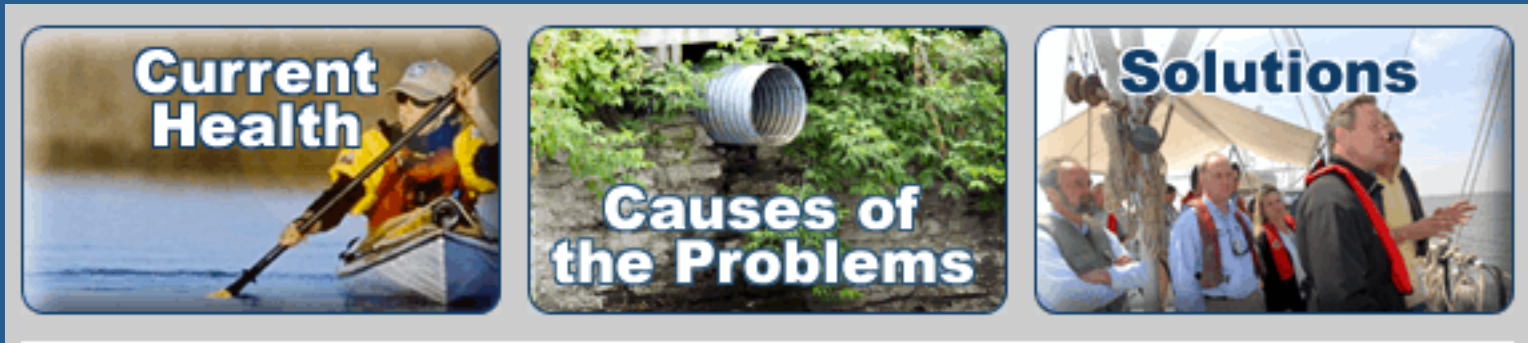
**Adaptive Management
2009 - Future**

- 2 Year Goals to hold politicians accountable
- Enforce TMDL beginning in 2011
- Target problem areas & focus on Bay response

Applying Adaptive Management Principles

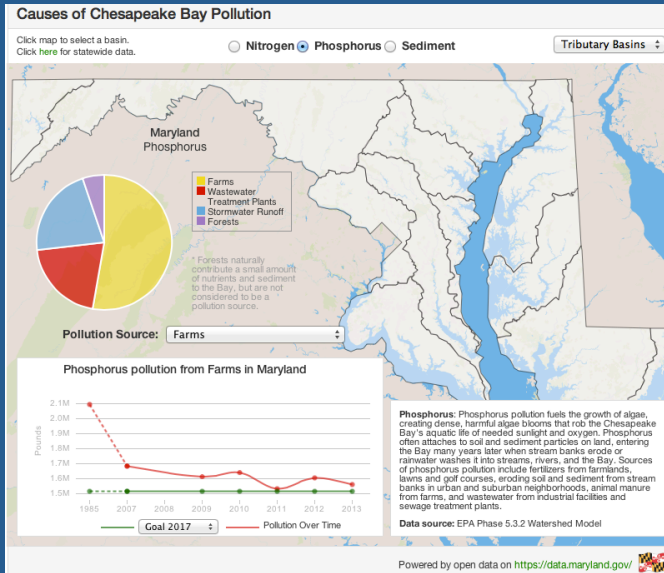
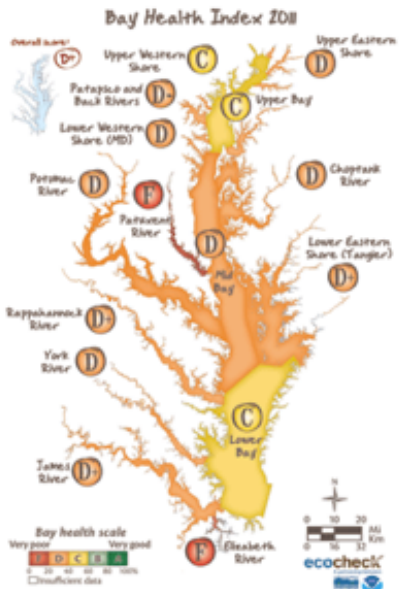


BayStat tracks health, pressures, and solutions



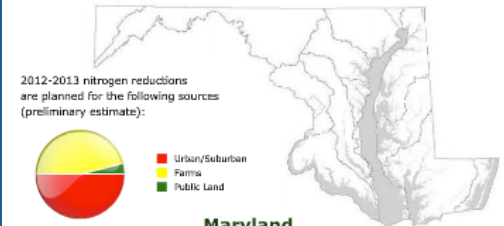
Current Health

Chesapeake Bay Habitat Health



One Goals and Progress Report

Click on the map to select a basin. Click [HERE](#) for statewide data.



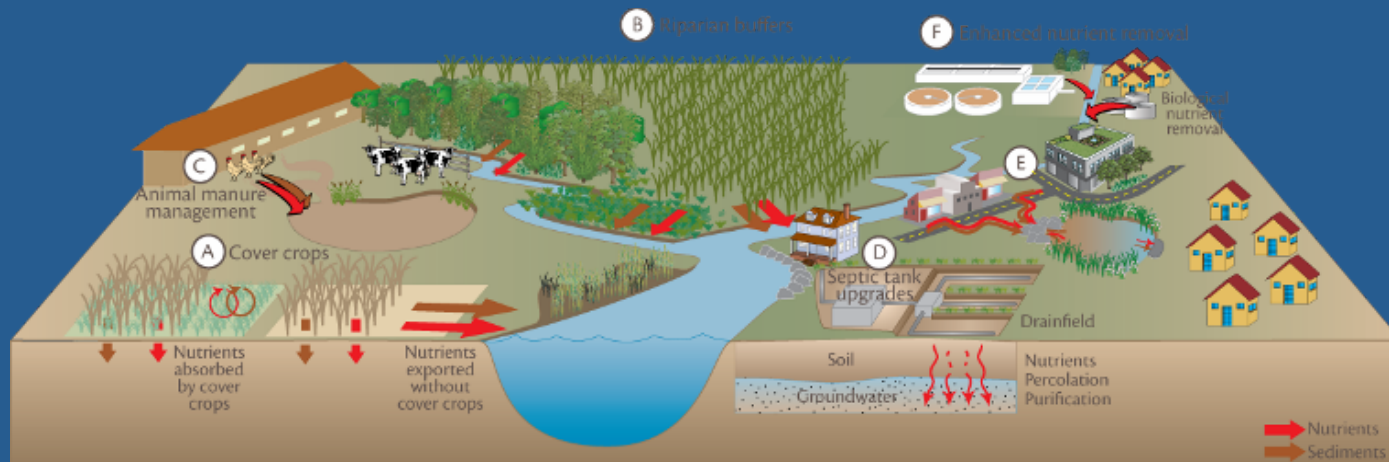
Maryland Cover Crops

Acres of harvested and unharvested cover crops certified each year



Solutions must also be diverse

- Critical Areas Law (1984) – protection of shorelines (revised in 2008)
- Phosphate Laundry Detergent Ban (1988) – reduced phosphorous loads
- Water Quality Improvement Act (1998)– nutrient management on farms
- Bay Restoration Fund (2005) – primarily for waste water treatment plant upgrades, also funds cover crops and septic upgrades
- Water Resources Element of Comprehensive Plans (2006) - ensure water and sewer capacity available for growth
- Chesapeake Bay 2010 Trust Fund (2008) – reduce non-point sources of pollution



Dave Nemazie – nemazie@umces.edu

Sarah Lane – sarah.lane@maryland.gov

Tom Simpson – tomwsimpson@verizon.net

Websites for more info:

www.baystat.maryland.gov

www.chesapeakebay.net

www.umces.edu