



### Choptank River Watershed, Maryland: 2006-2011

An ARS Special Benchmark Watershed, one of 37 CEAP watershed projects.

(formerly an \*NRCS Special Emphasis Watershed)



### CEAP Assessment

Detect differences in nutrient concentrations in basins with similar amounts of agriculture but varying amounts of acres in Conservation Reserve Enhancement Program, cover crops, and Concentrated Animal Feeding Operations sites. Model nutrient transport from agricultural areas in the Choptank River watershed. Determine the effect of land application of poultry litter on stream water quality.

### Watershed Description

Located on the Delmarva Peninsula of the Chesapeake Bay.

- The poultry industry dominates this Maryland agricultural area.
- 580,000 acres
- 59% cropland and 33% forest land
- Choptank River is on the impaired water body list under the Clean Water Act for nutrients, Biological Oxygen Demand, and fecal coliform (proposed).

Issues: Accelerated eutrophication due to nutrients, seasonal hypoxia, soil management and carbon sequestration, air quality, and disappearance of submerged aquatic vegetation.

\*Natural Resources Conservation Service



Corn field equipped with tile drain located adjacent to a forested riparian system.

## Approach

Watershed Models: AnnAGNIPs (Annualized Agriculture Non-Point Source), REMM (Riparian Ecosystem Management Model)

Water Quality Monitoring: Nutrients, sediment

## Communicating Results

Compilation of historical database of land use and water quality-related information; database of existing and new land use, water quality, soil quality, and conservation programs; assessment of conservation practice effectiveness; and scientific papers, as well as national and international conference presentations.

## Collaborators

- USDA Natural Resources Conservation Service
- USDA Agricultural Research Service, Environmental Quality Laboratory
- University of Maryland Center for Environmental Science, Horn Point Laboratory
- Smithsonian Environmental Research Center
- National Oceanic and Atmospheric Administration
- Chesapeake Research Consortium, Inc.



Professor Tom Fisher of University of Maryland, Horn Point Laboratory, conducts a test of the Acoustic Doppler Current Profiler system to be used measuring stream flow in several areas of the Choptank River watershed.



Research Associate, Dean Hively, USDA-ARS, Environmental Quality Laboratory, collects surface water samples from the Choptank River for metals analysis.

- U.S. Environmental Protection Agency
- USDA Office of Risk Assessment and Cost Benefit Analysis
- Maryland Department of Natural Resources
- Maryland Department of Agriculture
- Wye Research and Education Center

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January 2007

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