



U.S Geological Survey Chesapeake Bay Science Program Coordination and Integration

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Principle Investigator(s):

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Collaborators: Chesapeake Bay Program (over 25 Federal Agencies, 6 States, the District of Columbia, and numerous local customers and partners)

Statement of Problem: The Chesapeake Bay, the Nation's largest estuary, has been degraded due to water-quality problems, loss of habitat, and over-harvesting of living resources. The Chesapeake Bay Program (CBP), a multi-agency partnership which includes the Department of Interior (DOI), completed Chesapeake 2000, a new agreement that revises and establishes restoration goals for the next 10 years in the Bay and its watershed. To support the expanded technical needs of Chesapeake 2000, the USGS has the critical role to provide unbiased scientific information that is utilized to help understand and restore the Bay and its watershed.

Objectives: In order to support the expanded technical needs of Chesapeake 2000 and DOI partners, the USGS Chesapeake Bay Studies revised its overall objective and associated scientific goals in FY01 and increased the involvement of USGS National programs and projects. The overall objective of the USGS Chesapeake Bay Studies is to provide resource managers with the critical scientific information necessary to understand the complex relation between human-induced influences (population growth, land-use change, and restoration efforts) and natural controls (climate variability and environmental framework) on water quality, vital habitats, and living resources in the Bay and its watershed. The primary science topics to be addressed are:

- a. Sediment, water clarity and submerged aquatic vegetation
- b. Prediction, monitoring, and understanding of nutrients and contaminants
- c. Factors affecting the health of fish, wildlife and their habitats
- d. Enhanced land cover, watershed data, and data delivery.

This objective is carried out through coordination with multiple USGS programs and approximately 30 USGS investigations. Results from investigations are integrated to meet the needs of different target audiences.

Approach: The USGS Chesapeake Bay Studies meets its objective through a combination of research, monitoring, modeling, and interaction with the partners in the CBP and DOI.

The primary approach to coordinate the studies and integrate the results for different target audiences is based on Critical Success Factors (CSF) and associated Strategic Objectives (SO) that must be achieved for the USGS Chesapeake Bay Studies to succeed. These are:

CSF 1: Develop a science plan that addresses the critical science needs for the protection and restoration of the Chesapeake Bay and its watershed.

SO 1: Obtain stakeholder input on issues and associated technical needs of Chesapeake 2000.

SO2: Develop a science plan and program to meet the science needs of Chesapeake 2000 that builds on the strength of USGS capabilities.

CSF 2: Coordinate among USGS Programs and Scientists.

SO1: Establish USGS science teams to help coordinate projects within USGS science goals. Have leaders as members of the USGS Interdivisional Technical Team (IDTT).

SO2: Maintain a USGS Interdivisional Technical Team (IDTT), which is chaired by the USGS Chesapeake Bay Coordinator, to coordinate studies among science goals.

SO3: Have USGS Regional Executive and USGS Chesapeake Bay Coordinator continuously engage USGS National Program Managers to focus long-term resources in the Chesapeake Bay.

SO4: Update USGS Chesapeake Bay Science Plan to reflect annual accomplishments and work for following year.

CSF 3: Ensure that USGS information is used to help guide the protection and restoration of the Bay and its watershed.

SO1: USGS scientists have active involvement in CBP subcommittees and associated workgroups.

SO2: Enhance integration of USGS information delivery and decision-support tools with the CIMS.

SO3: Show that USGS information is being used to protect and restore the Chesapeake Bay and its watershed, and the information is being applied to other areas of the country.

The science plan was developed in FY01 for the period FY01-06. Projects to carry out the plan were implemented mostly by FY02. For a majority of the projects, fieldwork is being conducted in FY02-04, with interpretation and report writing in FY05. Planning for a revised science plan (for the period FY06-FY10) will begin in FY04. Results are integrated in papers and articles prepared jointly by investigators. A summary report of studies is planned to be begun in FY05 and completed in FY06.

USGS results are disseminated to the CBP through interaction of scientists in subcommittees, published reports and journal articles, and integration of selected results for different target audiences. The USGS investigations will result in the improvement of predictive tools to plan restoration strategies during 2002-2005 and help evaluate ecosystem improvement by 2010.

Selected Reports and Other Products:

Report, Delivered: Phillips, S.W., The U.S. Geological Survey Chesapeake Bay Science Program, 2001, USGS Fact Sheet FS-125-01, 4 p., USGS

Report, Delivered: Phillips, S.W., The Relation Between Nutrient Trends in Rivers and Management Actions in the Chesapeake Bay Watershed, American Geophysical Union Spring Meeting, May 28-31, 2002, Washington, D.C., AGU

Report, Delivered: Phillips, S.W., Editor., The U.S. Geological Survey and the Chesapeake Bay-
-The Role of Science in Environmental Restoration: U.S. Geological Survey Circular 1220, 32 p. (2002), USGS, Circular Series

Report, Delivered: Phillips, S.W., Preston, S.D., Langland, M.J., and Brakebill, Nutrient Delivery and Trends in the Chesapeake Bay Watershed: American Water Resources Association 2002 Annual Water Resources Conference, Abstract Proceedings, Nov 3-7, Philadelphia, PA, AWRA

Relevance and Benefits: The Chesapeake Bay Program uses USGS research, monitoring, and predictive models about the Chesapeake Bay and its watershed to help formulate and evaluate restoration strategies. USGS Chesapeake Bay science information also has critical relevance for the restoration of ecosystems throughout the United States. Therefore, multiple approaches and the associated infrastructure are used to provide information not only to the CBP, but also to other target audiences that include scientific organizations, representatives of Congress, the DOI, and the USGS.