



## Scientific and Technical Advisory Committee 2009 Report to the Chesapeake Bay Program Executive Council

### ***Issue – Climate Change and Chesapeake Bay Restoration***

Is climate change going to be to Bay restoration success in 2020 and beyond what population growth has been to the lack of current success in achieving nutrient reduction goals? Although not perfectly understood at the time, it was clear that the way population was being added in the watershed would offset progress in meeting nutrient reduction goals. Failure to incorporate this knowledge of growth impacts into our models, and more importantly into our management actions, is partly why we are here today setting new two year milestones to meet the goals that have yet been obtained. As we focus on these shorter time periods, how will we incorporate climate change into setting the two year milestones while making sure that we achieve our restoration goals in the time period chosen?

Are we being as smart as we can be in capturing the multiple benefits that can accrue from action related to climate change? Can we design programs and policies related to climate change that maximize the net benefits for dealing with climate change and water quality? Biofuels is an obvious example where both issues can benefit, but are there others? Which programs and policies related to greenhouse gas reduction and adaptation to climate change and sea-level rise can be taken advantage of today? As we expand our outreach and technical assistance to local governments and watershed organizations through the “Circuit-Rider Program” and “Watershed Assistance Collaborative”, there is an opportunity to incorporate our response to climate change in decisions that are being made today.

### ***Issue – Chesapeake Bay Thresholds and Tipping Point***

The notion that the Chesapeake Bay ecosystem responds to pressures and perturbations in a non-linear fashion is becoming better understood among the management community. Action last year to maintain the blue crab female population above a scientifically defined threshold is an example of how management action was taken due to the concern that falling below this level could lead to a population crash that would be difficult to recover from. Thresholds also provide challenges in moving in the other direction towards ecosystem restoration. Increasing restoration activities at greater and greater expense may show little measurable response due to lag times and the need to achieve tipping points. To what extent has this dynamic been built into the two year milestones and the overall Bay restoration goal? How can we best communicate these issues to the public so they will understand the context in which progress is being made and continue to support Bay restoration activities? How will we maintain (or increase) the political will to continue to fund Bay restoration efforts to the level where we achieve thresholds and are able to demonstrate significant outcomes and accomplishments? In implementing our actions, are we targeting sufficiently in areas to ensure we achieve the necessary thresholds and demonstrate success?

***About STAC:***

The Scientific and Technical Advisory Committee (STAC) provides scientific and technical guidance to the Chesapeake Bay Program (CBP) on measures to restore and protect the Chesapeake Bay and its watershed. STAC uses a variety of tools to advise the CBP; these include workshops, expert reviews, technical committees, technical reports, and direct service from STAC members on CBP subcommittees and workgroups. Highlights of STAC activities for 2009 are listed below. Additional information about the committee and its activities can be found by visiting the STAC website at [www.chesapeake.org/stac/](http://www.chesapeake.org/stac/).

***Completed/On-going Activities:***

*Water Quality Credit Trading: Issues in Uncertainty, Evaluation, and Verification*  
(May 2008 – May 2009)

A small group of agricultural experts was convened in May 2008 to develop an outcomes-oriented trading evaluation framework for use by state program designers and managers to assess the relative performance of their nutrient trading programs. The framework will be presented in a white paper available in May 2009.

*Review of the Chesapeake Bay Program's Monitoring Program* (June 2008 – March 2009)

The review resulted in a repeatable, defensible, and collaborative process to assess, and if necessary, re-align the CBP monitoring program with the objectives of the CBP. STAC and the CBP partners' senior managers jointly developed an accompanying decision-rule to guide disinvesting and reinvesting decisions in future monitoring program assessments. A report summarizing the review results and the developed decision-rule was presented to and approved by the CBP in March.

*Oyster Environmental Impact Statement* (December 2008)

STAC coordinated two expert panels to review the ecological and socio-economic risk assessments of the Programmatic Oyster Environmental Impact Statement. A report of their recommendations, which strongly favored Alternative 8A, was endorsed by STAC and submitted to the Oyster Advisory Panel in December 2008 for their consideration.

*Chesapeake Bay Cover Crop Efficiency Conference* (December 2008)

STAC and the CBP Agricultural Nutrients and Sediment Reduction Workgroup (AgNSRWG) hosted a conference to promote information sharing on winter cover crops amongst agricultural conservation program staff, researchers, and policy stakeholders across the Chesapeake Bay watershed. Cover Crop Enhancement Workgroups were formed to develop state-specific cover crop implementation action plans to identify and address critical information gaps, financial and technical needs, implementation obstacles, and opportunities to enhance cover crop adoption within each state. Cover Crop Enhancement Workgroup efforts continue to be coordinated by the AgNSRWG appointed Cover Crop Enhancement Coordinator.

*Development of Habitat Suitability Models for Ecosystem Based Fisheries Management in the Chesapeake Bay (March 2009)*

A team of fisheries modelers and experts was convened to: 1) review and rank a range of approaches used for habitat suitability modeling for Chesapeake Bay living resource species; 2) develop feasible habitat reference points; and 3) formulate priorities for research and implementation of habitat suitability approaches, reference points, and management across pillar species. Resulting recommendations will be summarized in a workshop report and used to support Chesapeake Bay Ecosystem Based Fisheries Management.

*Developing 'Comparable' Small Watershed Monitoring and Assessment Protocols (April-May 2009)*

STAC is funding two workshops to develop small watershed selection criteria to enhance monitoring and assessment of the relation between implementation of management actions and water-quality response. The first workshop assembled individuals with small watershed monitoring design expertise to prioritize monitoring design, parameters, analyses, and data sets and formulate one or more monitoring assessment approaches. The second workshop, scheduled for late May, will guide monitoring stakeholders in implementing the developed monitoring assessment approaches.

***Upcoming Activities:***

*Tidal Sediment Workshop (May 2009)*

A small group of sediment experts, modelers, and managers will meet in May to discuss Water Quality Sediment Transport Model tidal sediment scenario runs. Vetting the scenarios, results, and any required course corrections at that point will keep the CBP on track towards the goal of making defensible recommendations for tidal sediment allocations by 2010. A larger workshop will be organized around workshop results.

*Monitoring Progress in Addressing Climate Change across the Chesapeake Bay Watershed (May – Summer 2009)*

A series of two workshops will be convened in the spring-summer 2009 to provide a framework to monitor CBP actions in implementing the STAC climate change report recommendations. The framework will be applied to assess progress to date and monitoring implementation activities during a 12 month period. The workshops also aim to maintain and focus public attention on climate change issues, and more specifically, on progress by federal, state, and local governments in implementing climate change plans and recommendations.

*Assessing the Social Science Research Priorities for the Chesapeake Bay Program (Fall 2009)*

STAC will convene a small group of eminent social scientists to identify priorities and opportunities for advancing the contribution of social science research to Chesapeake Bay restoration. Discussions will additionally emphasize ways to integrate research activities across social science sub-disciplines. A white paper will be generated to identify social science research priorities, their importance to Bay restoration efforts, and resource needs.