



**Scientific and Technical Advisory Committee
Current Statement of Priority Scientific and Technical Issues**

Report to the Chesapeake Bay Executive Council

A number of cross-cutting themes have been identified by the scientific community as being critical to the success of the restoration effort: monitoring, climate change, and integration of social sciences into the Chesapeake Bay Program. We have chosen these three as the basis of our comments for the following reasons:

- They provide basic and necessary elements of an adaptive management approach
- They play a major role in accountability of the Bay Program
- They require integration into all elements of the restoration effort
- Their presence and articulation, to date, in documents prepared in response to the Executive Order has been inadequate
- They are particularly vulnerable in times of resource constraints, particularly at the state level

Monitoring

In 2005 the Bay Program was called to task for apparent discrepancies between reported progress and monitored conditions; monitoring and its role in the Bay Program have thus become the center of the accountability discussion. In March 2008 the CBP recognized that monitoring was not functioning as an integral part of an adaptive management process and potentially needed re-aligned with restoration program objectives, and requested the assistance of STAC in designing and executing a process to do so. As a result of a year-long effort, the Management Board was able to recommend significant changes in the monitoring program in November 2009. STAC will continue to monitor the CBP's fulfillment of the Management Board's recommendations, as well as the continued iteration of the monitoring review process on a two to three year interval. This regular iteration of the alignment of monitoring with CBP program objectives and commitments is critical to the Program's accountability.

Despite the sophistication of the modeling capabilities for the system, there remains a significant level of uncertainty about the efficacy of many of the management practices that are being used in the restoration effort. Determining the impacts of these efforts on the complex biology of the estuary is a significant additional challenge. In this light, the following are immediate and critical needs:

- Adequate spatially-explicit information on the location of best management practices in small watersheds, in order to be able to utilize existing and planned data to assess the effectiveness of management practices
- Increased funding of monitoring efforts in both the tidal and watershed portions of the Basin, especially in light of the high vulnerability of these programs in times of state budgetary crises

Monitoring information needs to be utilized in the management of public expectations, especially in light of two-year milestones and the potential existence of thresholds, or tipping points, in the ecosystem. STAC remains committed to tracking the Program's use of monitoring as both a scientific and accountability tool.

Climate Change

The new Chesapeake Bay Strategy (Section 203) mirrors STAC's findings: "*Climate change is the one of the most significant challenges to successful restoration and protection of the Chesapeake Bay and its watershed....expected impacts to the Bay and watershed include sea-level rise; increases in water temperature, acidity and salinity; changing rainfall patterns and increases in rainfall intensity; and changes to freshwater flows with corresponding significant impacts to water quality and habitats.*"

STAC communicated these findings to Bay Program leadership in September 2008 along with a set of specific recommendations to ensure the success of Bay restoration under changing climatic conditions. STAC has continued to work and present this information to Bay Program leaders. STAC's recommendations have consistently included action to: (1) hire and empower a qualified climate change leader within the Bay Program, (2) develop and deploy new strategies to expand consideration for climate change in decision making, and (3) provide direct and indirect support for targeted research and development.

Today, we are still waiting for substantive responses to these recommendations. We are waiting for action. It is important to note that STAC's recommendations are not limited to research and development. STAC's recommendations start with personnel and accountability for the incorporation of climate change into critical decision making, such as the establishment of the TMDL and Bay-wide monitoring systems. STAC is committed to evaluating Bay Program responses to these recommendations and climate change-related actions described in the Bay-wide Strategy. STAC is ready and willing to continue its work on this topic, if and when Federal agencies decide to step up.

Social Science

STAC urges the Chesapeake Bay Program to invest in effective integration of the social sciences across its restoration activities. Given the human impact on Chesapeake Watershed health, and the lack of progress in connecting to the 17 million residents that reside within its boundaries, investments in the science disciplines that aim to enhance understandings of the human dimension are needed now more than ever. The social sciences, which include the disciplines of economics, anthropology, political science, sociology, and psychology, among others, are critical for connecting and guiding communication between the science entities, management decision-makers, and the region's stakeholders. They are also the key to addressing questions about stakeholder motivations and values, how to influence behavior change, and how to harness political and economic drivers that impact watershed health. The Chesapeake Bay Program must build the capacity to incorporate social science as a cross-cutting theme within their program in order to connect to the people impacting Bay health and ultimately ensure progress towards restoration goals.

STAC is committed to assisting the Chesapeake Bay Program in integrating the social sciences across its programs. Steps are already underway within STAC to develop a process to identify priority social science research needs. Findings from this effort will be presented in a workshop in the Fall of 2010, through which the Committee will offer recommendations for addressing those research needs and social science capacity-building within the Chesapeake Bay Program. We ask that the Executive Committee commits to working with STAC to ensure that social sciences become integral to the Chesapeake Bay Program goals.