



Chesapeake Bay Program
SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEE
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August 18, 2020

Hon. Larry Hogan, Chair
Chesapeake Bay Partnership Executive Council
Maryland Office of the Governor
100 State Circle
Annapolis, Maryland 21401-1925

Dear Governor Hogan and Distinguished Members of the Executive Council,

The Chesapeake Bay Program (CBP) partnership is globally recognized as a model for the management and restoration of large aquatic ecosystems. The Scientific and Technical Advisory Committee (STAC) is a network of volunteer scientists from academic institutions and public agencies that routinely bridges political and geographic boundaries to bring the best available science to the restoration effort. Last year STAC members volunteered more than 5,000 hours (valued at more than \$500,000) in service to the partnership.

STAC plays a vital role in the partnership's commitment to developing evidence-based policy and implementing effective management, through a number of tools including technical reviews, workshops that convene scientific experts and stakeholders, and synthesis projects. STAC workshop reports published in the last year have addressed critical emerging issues that have important implications for achieving the goals of the Bay watershed agreement, and also for human health and social and economic well-being. Among these are

- the October 2019 report on Microplastics in the Chesapeake Bay and its Watershed, some of whose recommendations have already led to action by relevant working groups within the Bay Program;
- the February 2020 report on targeting as a means of increasing effectiveness and reducing cost of nonpoint source Best Management Practices implemented to meet TMDL requirements; and
- A March 2020 workshop report that investigates the possibility of characterizing nutrient species through "eutrophying units" based on effects that are most harmful to the Bay ecosystem rather than focusing only on Total Nitrogen and Total Phosphorus.

In January of this year, STAC submitted a formal comment on the Exelon agreement for relicensing of Conowingo Dam. Based on recent trend analysis of samples processed by USGS between 1985 and 2018, we recommended that the State of Maryland consider using some of the available funds from the agreement to undertake new programs of monitoring within Conowingo Reservoir and its environs. Such monitoring will allow better understanding of trends affecting the flux of dissolved nutrients, and particularly dissolved phosphorus, to the upper Bay.

While these efforts integrate science into the program in "real time", STAC also has ongoing efforts, two of which are described below, that will inform long-term decision-making by the watershed partnership.

One ongoing effort involves two science synthesis projects that seek to shed light on challenges associated with achieving Bay restoration goals under a changing climate. The two projects are investigating: (1) the impacts of climate change and eutrophication on the dynamics of dissolved oxygen on shallow waters of Chesapeake Bay, and (2) climate change impacts on watershed processes, nutrient delivery, and BMP performance. These projects are supported with funds from the CBP and a cooperative agreement between EPA and Virginia Tech, respectively. We anticipate delivery of the completed reports by early 2021.

The second STAC effort is a comprehensive evaluation of system response to measures taken to meet Bay water quality standards through implementation of watershed implementation plans and Best Management Practices. The purpose of this effort is to better understand and guide response to uncertainties in complex system behavior associated with watershed processes, estuarine dynamics, and response of living resources to environmental change. This requires collaborative efforts from most of STAC's membership and will synthesize understanding. We anticipate the completion and publication of the report by the end of 2021.

A full list of STAC's activities and products from this past year is provided as an attachment to this letter.

STAC members have spent time over the last few months thinking about responses to the COVID-19 pandemic and implications for the watershed partners and the Bay restoration effort. STAC is very much in favor of the decision to have this year's Executive Council meeting focus on the challenges and opportunities presented by this issue. STAC's leadership has consulted with the leadership of the other two Advisory Committees to develop the following statement on behalf of STAC, CAC and LGAC:

Bay resiliency is fundamental to the resiliency of the entire social-ecological-economic system on which we rely, and supporting that resiliency requires innovative science-based strategies to keep promoting activities that maximize returns on all of these elements. The three Advisory Committees to the CBP have a long history of providing guidance and support to the watershed partnership on behalf of the ongoing restoration effort. We stand together in offering our continuing support during the COVID-19 crisis as challenges and new opportunities arise. As important decisions are made we hope that the watershed partnership will continue to draw on our collective expertise to maintain and continue progress toward an environmentally and economically sustainable bay with clean water and abundant life, conserved lands and access to the water, a vibrant cultural heritage, and a diversity of engaged citizens and stakeholders.

STAC members have also discussed, and offer their collective support of, the proposed endorsement by the Executive Council of the CBP Diversity, Equity, Inclusion and Justice (DEIJ) Statement. Although this statement has been under development for some time, recent events have only made it more clear that it is long past time to recognize and act on the principles and commitments articulated in the endorsement statement and in the CBP DEIJ statement. STAC recognizes the value of new knowledge and the role of science in advancing human and planetary well-being, and we remain committed to making the world a better place for all. STAC recognizes the need to ensure diversity among researchers to achieve the best comprehensive science to inform Bay recovery.

We applaud the resolve of the watershed partners, articulated at the May 2020 PSC meeting, to remain committed to the 2025 Bay restoration goals even as we confront the considerable economic challenges associated with the COVID-19 crisis. STAC thanks the partnership for its ongoing commitment to using scientific evidence to design and implement effective management of this valuable ecosystem and its watershed. STAC looks forward to working with you, the Executive Council, and the rest of the partnership to continue to apply sound, independent science to effectively restore and conserve the Chesapeake Bay for the benefit of its myriad stakeholders.

Sincerely yours,



Andrew Miller

Chair, Chesapeake Bay Program's Scientific and Technical Advisory Committee
Professor, UMBC Department of Geography & Environmental Systems

Attachment

Summary of STAC Activities June 2019- June 2020

STAC-sponsored Scientific and Technical Workshops (4)

- Increasing Effectiveness and Reducing the Cost of Nonpoint Source Best Management Practice (BMP) Implementation: Is Targeting the Answer?
- Linking Soil and Watershed Health to In-field and Edge-of-field Water Management
- Exploring Satellite Image Integration for the Chesapeake Bay SAV Monitoring Program
- Incorporating Freshwater Mussels in the Chesapeake Bay Partnership

Planned Activities June 2020 – June 2021

STAC-sponsored Scientific and Technical Workshops (3)

- Understanding Genetics for Successful Conservation of Restoration of Resilient Chesapeake Bay Brook Trout Populations
- Advancing Regenerative Agriculture: Exploring Barriers and Incentives to BMP Adoption
- Overcoming the Hurdle: Addressing BMP Implementation Through a Social Science Lens

Reports Published by STAC June 2019 – July 2020 (8)

Links to reports are available on STAC's website at chesapeake.org/stac

- *Revisiting Coastal Land-Water Interactions: The Triblet Connection*
- *Understanding and Explaining 30 Years of Water Clarity Trends in the Chesapeake Bay's Tidal Waters*
- *Chesapeake Bay Program Modeling in 2025 and Beyond: A Proactive Visioning Workshop*
- *Legacy Sediment, Riparian Corridors, and Total Maximum Daily Loads*
- *Microplastics in the Chesapeake Bay and its Watershed: State of the Knowledge, Data Gaps, and Relationship to Management Goals*
- *Establishing Multifunctional Riparian Buffers: How do we accelerate riparian buffer plantings across the Chesapeake Bay with the greatest economic, social, and environmental impact?*
- *Increasing Effectiveness and Reducing the Cost of Nonpoint Source Best Management Practice (BMP) Implementation: Is Targeting the Answer?*
- *Integrating Science and Developing Approaches to Inform Management for Contaminants of Concern in Agricultural and Urban Settings*
- *Assessing the Environment in Outcome Units (AEIOUS): Using Eutrophying Units for Management*