



THE ABSTRACT

A Monthly Update from the Scientific and Technical Advisory Committee

February 2016

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Recent STAC News

Recent STAC Workshops

Conowingo Infill Influence on Chesapeake Water Quality

January 13-14, 2016

Crowne Plaza Hotel – Annapolis, MD

Nearly seventy participants attended this workshop to discuss the issues of the Conowingo reservoir and sedimentation dynamics around the watershed, and elsewhere in the world. The objective of this workshop was to discuss the future status of the processes taking place in the Lower Susquehanna River reservoirs, so predictions can be made on how future watershed - or reservoir - management approaches will impact the attainment of the Chesapeake Bay water quality criteria. The workshop participants reviewed previous research, ongoing monitoring and modeling, and possible future approaches to modeling the process by which inputs to the reservoirs are transformed into outputs under past, current, and in future conditions. The workshop steering committee is in the process of drafting a workshop report.

For access to the agenda and presentations, please click [here](#).

Linking Wetland Work Plan Goals to Enhance Capacity, Increase Implementation

January 14, 2016

Smithsonian Environmental Research Center (SERC): Mathias Lab – Edgewater, MD

This workshop identified ways to enhance the capacity of the Chesapeake Bay Program (CBP) Wetland workgroup, to meet the goals identified in their two-year workplans. Workshop participants, including workgroup leads and other key stakeholders, participated in a solution-oriented facilitated discussion to identify key obstacles, potential opportunities to overcome those obstacles, and other parallel and related efforts in meeting the goals outlined in their draft workplan. The secondary objective of this discussion was to develop a pilot process on how other workgroups might similarly enhance their own capacity to meet and implement their 2-year workplans.

For access to the agenda and presentations, please click [here](#).

Assessing Uncertainty in the CBP Modeling System

February 1-2, 2016

Environmental Protection Agency (EPA) Offices – Arlington, VA

This workshop developed approaches to assess uncertainty in the suite of CBP models to support the Mid-Point Assessment of the Total Maximum Daily Load (TMDL). With practitioners from the CBP and experts in uncertainty from across the country in attendance, the workshop (1) explored and identified drivers of uncertainty in the Partnership's modeling system, structure, parameters, data, and assumptions; (2) assessed the available methods for conducting uncertainty analyses in the suite of models; and (3) developed recommendations and priorities for conducting uncertainty analysis of the models in support of the 2017 Mid-point Assessment model review.

For access to the agenda and presentations, please click [here](#).

Cracking the WIP: Designing an Optimization Engine to Guide Efficient Bay Implementation

February 17-18, 2016

O'Callaghan Hotel – Annapolis, MD

Through a series of breakout sessions and discussions, this two day workshop developed the requirements of an optimization engine, from the viewpoint of both modeling experts and local policy and planning representatives, to simplify and guide Bay jurisdictions' efforts to develop the Phase III Watershed Implementation Plans (WIPs). Optimization in a decision-support tool aims to minimize implementation costs while achieving the required reductions and maximizing co-benefits. The workshop generated recommendations for the best optimization method, key objectives, decision variables, an appropriate means of accounting for (i.e., modeling) the spatial and temporal interactions that will influence their effect on outcomes, the range of necessary constraints, and other data needs for a Bay optimization system. The workshop concluded with a list of action items to move the development of the optimization engine forward and meet set deadlines leading up to the development of the Phase III WIPs and 2017 Mid-Point Assessment.

For access to the agenda and presentations, please click [here](#).

March 2016 STAC Quarterly Meeting

March 15-16, 2015

Crowne Plaza Hotel – Annapolis, MD

STAC Chair, Lisa Wainger (UMCES) and the STAC Executive Board (EB) met on February 3rd to discuss the draft March quarterly meeting agenda and determine a meeting theme. As a result of the discussion, the underlying theme for the meeting became, “Humans influencing habitats”. The meeting will feature presentations from SERC on the effects of shoreline hardening in the aquatic environment, a discussion of the social elements that drive decisions protecting shorelines, a discussion of initial FY16 RFP scoring, updates from recent STAC activities, and discussions of alternative STAC activities/products. STAC staff is in the process of confirming guest speakers and finalizing the agenda.

Please view the [draft agenda](#) for more detailed information about the upcoming meeting.

Noteworthy Climate Change Research

At the December quarterly meeting, STAC members were asked to provide any climate change research/publication/activities for inclusion in the STAC newsletter.

STAC member, Gene Yagow (Virginia Tech) shared an article entitled, “Liberals: Stop Your Climate Change Hectoring.” Yagow shared this article to display a more societal view of climate change. The article gives an overview of what some researchers believe is, “stopping the public from caring more about global warming.” Click [here](#) to view the full article.

Upcoming STAC Quarterly Meetings

- **2016 STAC Quarterly Meeting Dates**
 - March 15-16th
 - June 7-8th
 - September 13-14th
 - December 6-7th

Scientific Issues for STAC Discussion

STAC staff would like to hear from you on emerging scientific issues for (1) inclusion in the newsletter, (2) discussion at future STAC meetings, and/or (3) other CBP-related meetings.

- **Suggested Priority Scientific Issues for Future Proactive Efforts**
 - Climate change and its effect on restoration goals and actions
 - Adaptive management, including promoting innovation and addressing uncertainty
 - Assessing multiple stressors on living resources
 - Human dimensions, including improving communication of benefits
 - Emerging issues & potential for innovation in nutrient management

Please submit additional suggestions to STAC staff, Renee Kelly at (KellyR@si.edu).

On the Horizon

STAC Fiscal Year 2015 (FY2015) Workshops

Planning for three additional STAC workshops has been underway for several months. The workshops below will take place before May 31, 2016.

- 1) The Development of Standardized Climate Projections for Use in CBP Assessments – March 7-8, 2016
- 2) Integrating and Leveraging Monitoring Networks to Support the Assessment of Outcomes in the New Bay Agreement – April 12-13, 2016
- 3) Comparison of Shallow Water Models for Use in Supporting Chesapeake Bay Management Decision-making – April 20-21, 2016

For additional information about the workshops above, contact Rachel Dixon at dixonra@si.edu or visit the [STAC workshop webpage](#).

STAC Reports

Each STAC workshop must result in the completion of a written report. These reports are developed by the workshop steering committees, published by STAC, and submitted to the CBP to advise management and restoration decisions.

Upcoming reports:

STAC staff is in the process of finalizing three workshop reports. Below is a list of reports that STAC plans to distribute in the coming weeks.

- 1) Re-plumbing the Chesapeake Bay Watershed: Improving Roadside Ditch Management to Meet TMDL Water Quality Goals.
- 2) Evaluating Proprietary BMPs: Is it time for a State, Regional, or National Program?
- 3) Comparison of Shallow Water Models for Use in Supporting Chesapeake Bay Management Decision-making.

Update on STAC Peer Reviews

STAC is currently sponsoring two reviews and planning for approximately six additional reviews. Details of those reviews are listed below:

- 1) Microbeads/Microplastics in the Chesapeake Bay

At the request of the Chesapeake Bay Commission (CBC), STAC sponsored a technical review panel to identify (1) sources of microplastics in the Chesapeake Bay, (2) known impacts of microplastics on aquatic life and human health, (3) data gaps, and (4) policy actions to reduce microplastics. The review panel has been gathering data and drafting a review report since early November. Due to new federal legislation, the review panel recently modified the scope of this review to further emphasize the issues. Former STAC Chair, Kirk Havens presented the preliminary findings to the CBC on January 7, 2016 at their quarterly meeting. A final report will be distributed mid-February. STAC can expect to hear a presentation regarding this technical review process at the upcoming quarterly meeting.

2) Chesapeake Bay Water Quality Criteria Addendum

The CBP's Criteria Assessment Protocol workgroup (CAP WG), under the Scientific, Technical Assessment and Reporting Team (STAR), requested a STAC review of the technical report "Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll *a* for the Chesapeake Bay and Its Tidal Tributaries 2015 Technical Addendum." The recently formed review panel, consists of the following members: Marjy Friedrichs (STAC Lead-VIMS), Mary Christman (U of FL), Ken Moore (VIMS), Malcolm Scully (WHOI), Jian Shen (VIMS), and Steve Weisberg (SCCWRP). On February 12th, an information session was held for the review panel and participants. Peter Tango (USGS-CBPO) provided necessary background information, as well as a content overview of the addendum. An updated review timeline was also provided. The review is scheduled to be completed in early 2016.

Click [here](#) for access to the information session presentations and specific information about this review.

Additionally, STAC is working closely with CBP representatives to plan for the upcoming CBP Partnership requested STAC-sponsored independent scientific peer reviews. The remaining review requests are expected in the coming months. These STAC reviews will help inform the Partnership's 2017 Mid-Point Assessment.

1. Proposed revised James River chlorophyll *a* water quality criteria
2. Application of WRTDS to watershed WQ trend analysis and explanations and General Additive Models (GAMs) to estuarine WQ trend analysis and explanations
3. Chesapeake Bay Scenario Builder
4. Phase 6 Chesapeake Bay Watershed Model
5. Chesapeake Bay Water Quality/Sediment Transport Model (WQSTM)
6. Approach being taken to factor climate change considerations into the 2017 Chesapeake Bay TMDL Midpoint Assessment

For additional information regarding the reviews above, contact Natalie Gardner at gardnern@si.edu or visit the [STAC review webpage](#).

Key Events

There are a number of relevant conference calls and meetings that STAC members should pay special attention to. All upcoming CBP related events can be found on the [CBP meeting calendar](#). Each listing provides logistical information and meeting materials, when available.

STAR Updates

STAR leadership in collaboration with the Integrated Networks workgroup (INWG), is coordinating with STAC on the planning of the "Integrating and Leveraging Monitoring Networks to Support the Assessment of Outcomes in the Networks" workshop scheduled for April 12-13, 2016. The goal of this workshop is to develop approaches and recommendations on how to leverage existing CBP and partner monitoring networks, filling data gaps and creating efficiencies for measuring and reporting outcomes in the new Bay Agreement. An effort to pilot a small region integrated monitoring plan as a template to addressing multi-indicator needs over the whole watershed is the focus of this upcoming workshop. Additionally, STAR recently submitted three responsive workshop proposals to STAC for

FY16, entitled 1.) An Analytical Framework for Aligning Chesapeake Bay Program Monitoring Efforts to Support Climate Change, 2.) Understanding and Explaining 30+ Years of Water Clarity Trends in the Bay's Tidal Waters, and 3.) Quantifying Ecosystem Services and Co-Benefits of Nutrient and Sediment Reducing BMPs.

STAR is planning to review feedback from the Management Board (MB), as well as the outputs of one or more of the upcoming STAC workshops that will update the list of science needs highlighted by the GITs and determine which science needs will require additional focus by STAR and its workgroups in the future. Click [here](#) to view the list of priority science needs highlighted by the GITs. STAC members should continue to help identify additional science providers who might be interested in collaborating on these issues.

The Citizen Science Project Team has developed a 3-tiered data classification framework over the last 6 months for use with citizen science and non-traditional partner data by the CBP. The framework was supported by the Data Integrity workgroup, INWG, and STAR. It was developed to help provide additional cost-effective data and information that supports shared decision-making and adaptive management by the CBP partners focused on restoration of the Chesapeake Bay and its watershed. The tiered framework identifies categories of data quality and their associated end uses. Broad data quality requirements for each category are identified. This framework also provides recommendations of existing resources to inform data production protocols.

Maryland Department of Natural Resources is moving forward on recommendations regarding Enhanced Monitoring Strategies within Maryland. The CBP is moving in parallel and developing its strategy document to support the existing and planned uses of high frequency monitoring for the Bay and watershed health metric and indicator assessments. STAR's INWG is continuing to evaluate the range of objectives for inclusion or modification before inclusion in the wider, CBP enhanced monitoring strategy in tidal and nontidal waters. In addition, the INWG held a joint meeting with the CBP Coordinators/Staffers on January 2nd to discuss plans to have as many indicators as possible updated with 2013 data prior to May 2014 and also discuss needs/plans related to development of any new/revised indicators for New Agreement Outcomes (and Management Strategies).

Finally, STAR welcomed new Chesapeake Research Consortium (CRC) Staffer, Melissa Merritt and Environmental Indicators Program Manager, Laura Free (EPA) who will work closely with the Status and Trends workgroup of STAR.

The next STAR meeting is scheduled for February 25th. If you have any questions regarding STAR activities, please contact STAR Coordinator, Peter Tango at ptango@chesapeakebay.net or visit [STAR's webpage](#).

GIT Updates

***The following updates are provided by the CBP. Some GITs do not have recent updates to provide at this time.**

Update: Public Input Sought on Draft CBP Watershed Workplans

On January 22nd, the CBP partnership released draft workplans for public input pursuant to the Chesapeake Bay Watershed Agreement signed in 2014. The two-year workplans succinctly summarize the specific commitments, actions and resources each self-identified signatory and stakeholder will do

individually and collectively reach two-year targets for each outcome identified in the Agreement. The partnership's GITs have been crafting the workplans since the July 2015 release of their management strategies (MS) which give insight and provide broad, overarching direction to the partnership's plans for reaching each outcome by 2025. The 45-day public input period ends March 8th. The draft workplans are available [here](#).

Sustainable Fisheries Goal Implementation Team (GIT 1)

The Fisheries GIT held an Executive Committee meeting on February 1st; full details of the meeting can be viewed [here](#). In addition, the Fisheries GIT and National Oceanic and Atmospheric Administration (NOAA) Chesapeake Bay Office completed a comprehensive workshop [report](#) from the Cownose Ray workshop held on October 22nd, 2015. The workshop brought together scientists, fisheries managers and other interested parties to characterize what is known about the life history and population dynamics of Cownose rays in the Chesapeake Bay. A summary of the research, implications, and recommendations can be found [here](#).

Tetra Tech recently completed a review and synthesis project on the habitat requirements for 13 lesser-studied fish and shellfish species as part of the Fish Habitat MS. This project directly supported actions outlined in the Fisheries GIT workplan. The Fish Habitat Action Team is designing a project to build on previous work by Tetra Tech including more habitat information and identifying major stressors to fish habitat in the Chesapeake Bay watershed.

More information on the Fisheries GIT can be provided by Bruce Vogt (NOAA) at bruce.vogt@noaa.gov or on the [Sustainable Fisheries GIT webpage](#).

Habitat Goal Implementation Team (GIT 2)

The Habitat GIT recently announced the nomination of a new Vice Chair, Christine Conn (MD-DNR). Current Vice Chair, Jana Davis (CBT) will assume the role of Chair with the intent for Conn to transition into the Chair position near the end of April. David Whitehurst (VDGIF) was nominated for Vice Chair once the position opens at the end of April, pending approval from Habitat GIT members.

In addition, the 72nd Annual Northeast Association of Fish & Wildlife Agencies (NEAFWA) Conference will be held April 3-6, 2016 at the Westin Annapolis. On the first day of the NEAFWA conference, North Atlantic Landscape Conservation Cooperative staff will lead a workshop providing a hands-on introduction to information and tools developed by LCCs in the Northeast Region. [Registration](#) is now open.

Last, the Conservation Fund, a program focused on environmental conservation through environmental partnerships, is hosting a course focused on "Balancing Nature and Commerce in Rural Communities and Landscapes" at the National Conservation Training Center on May 3-5, 2016. During this 3-day course, community-based teams will focus on the economics, community character, natural resources, and partnership building skills necessary for creating sustainable communities. [The application deadline](#) is March 14th, 2016.

For more information regarding the Habitat GIT, please contact Kyle Runion (CRC) at Runion.Kyle@epa.gov or visit the [Habitat GIT webpage](#).

Water Quality Goal Implementation Team (GIT 3)

The Water Quality GIT meeting on January 29th was cancelled due to inclement weather. The Water Quality GIT conference call scheduled for February 22nd will discuss a subset of topics including: revision to the current tree canopy and forest mapping protocols, reviewing the street cleaning and storm drain cleaning BMP expert panel report, updates from the Oyster BMP expert panel on a potential crediting framework, and a proposed charge and schedule for convening an *ad-hoc* Task Force with cross-sector representation that will frame out the options for a Water Quality GIT recommendation regarding the development of local area targets from the Phase II WIPs.

In addition, anyone who would like to explore ideas for building technical capacity in support of agricultural conservation and the Agriculture workgroup, should be aware of the National Fish & Wildlife Foundation's (NFWF) request for proposals for its Technical Capacity Grants Program. It is part of the Chesapeake Bay Stewardship Fund and now posted [here](#). This program will provide technical services to "eligible beneficiaries". The first deadline is March 3rd and is devoted to agricultural conservation.

For more information regarding the Water Quality GIT, please contact Lucinda Power (EPA) at power.lucinda@epa.gov or visit the [WQGIT webpage](#).

Maintain Healthy Watersheds Goal Implementation Team (GIT 4)

The Healthy Watersheds GIT is currently reaching out to those who might be interested in providing feedback on the draft workplans. Public input is accepted through March 8th. In addition, the Healthy Watersheds GIT's two FY15 GIT funded project proposals – Demonstrating the Value of Retaining Forestland in the Chesapeake Bay Watershed (Phase II) and Evaluation of Land Use Policy Options, Incentives, and Planning Tools to Reduce the Rate of Conversion of Agriculture Lands, Forest and Wetlands – are currently being reviewed by select EPA administration. The Chesapeake Bay Trust (CBT) will complete the subaward process in the near future and GIT technical leads will meet with awardees to commence the projects.

For more information regarding the Healthy Watersheds GIT, please contact Tuana Phillips (CRC) at Phillips.tuana@epa.gov or visit the [HW GIT webpage](#).

Fostering Stewardship Goal Implementation Team (GIT 5)

The Citizen Stewardship workgroup is completing a field test index that will provide a metric for the Citizen Stewardship Outcome in the Bay Agreement. The workgroup will meet on March 1st to discuss preliminary results from the field test and discuss goals and directions for the workgroup.

The Environmental Literacy workgroup is planning an April meeting with the Chiefs of Education to discuss the importance of creating and sustaining high-quality environmental literacy programming as part of the ongoing education reforms across subject areas.

The Public Access team is continuing to make progress on the Public Access site development workplan, as well as preparing for the development of the Public Access Data Quality Assurance and Application Integration project. The team will be collecting data on new access sites developed in 2015 and is in the process of compiling the data to get a final indicator report.

The Land Conservation workgroup and several Partnership workgroups convened in January to discuss topics including land trust capacity building, developing a coordinated approach to address mitigation of

infrastructure projects, and developing landscape scale conservation goals. These meetings build upon progress generated at the Annual GIT meeting in October 2015.

For more information regarding the Fostering Stewardship GIT, please contact Amy Handen (NPS) at ahanden@chesapeakebay.net or visit the [Fostering Stewardship GIT webpage](#).

Enhancing Partnering, Leadership, and Management Goal Implementation Team (GIT 6)

The Enhancing Partnering, Leadership and Management GIT recently completed and posted the Local Leadership workplan for public comment by the GIT's Local Leadership workgroup. While the workgroup awaits comments, more planning is underway for coordinating with the other GITs to determine priority issues where local leader engagement is critical. In addition, the MB recently endorsed formation of a new Budget and Finance (B&F) workgroup. The GIT is planning to launch of the B&F workgroup soon so that work can begin to prepare for the financial reporting required by the Chesapeake Bay Accountability and Recovery Act due in fall 2016. The GIT is staying closely connected to the developing ChesapeakeStat suite of tools and participating in the design work, as well as helping to envision how the tools will be used to adaptively manage the CBP's strategies over time. Lastly, long-standing chair Mike Foreman (VaDEQ) announced he will step down in April. Efforts are underway to find a replacement.

For more information regarding the Partnering and Leadership GIT, please contact Greg Allen (EPA) at allen.greg@epa.gov or visit the [Enhancing Partnering, Leadership, and Management GIT webpage](#).

Continuing STAC Effectiveness: Feedback from STAC member Amy Collick!



At the September 2015 STAC quarterly meeting/retreat, members had the pleasure of welcoming a new member to the committee. Dr. Amy Collick, currently working with the United States Department of Agriculture-Agriculture Research Service (USDA-ARS), will begin a new position with the University of Maryland Eastern Shore (UMES) later this month. Collick, who was "surprised and pleased by the nomination," joined STAC to offer her hydrology and watershed management expertise and engage with researchers who have had a direct effect on decision makers.

Born and raised in Michigan, Collick spent many years fishing and hiking through woodland stream areas in the northern part of the state. With an upbringing like Collick's, it is no surprise that she began studying Forestry at Michigan Technological University. Collick's Forestry background put her on a pathway to the Peace Corps, where she spent nearly four years in Madagascar as an environmental/agroforestry volunteer. Her Peace Corps experience dealing with rice irrigation encouraged her to pursue and complete a Masters and PhD at Cornell University in Agricultural and Biological Engineering. While pursuing these degrees, Collick focused on *Cryptosporidium* in the New York City Watershed and watershed management issues in the drylands of Ethiopia. Collick continued her studies in Ethiopia as a post-doc, coordinating a Masters of Professional Studies in Integrated Hydrology to Ethiopian students. Over the past four years, Collick has focused mainly on watershed modeling at University Park, PA with USDA-ARS.

Before beginning work with the Center of Nutrient Solutions at Penn State, Collick had not heard of STAC. Collick has served on plenty of academic advisory committees over the years, but “nothing to quite this extent before.” In regards to the work that STAC focuses on, Collick mentioned her own projects related to the Bay, including modeling work on the Upper Manokin River watershed, solving coastal plain hydrology challenges, and trouble shooting the electrical resistivity tomography (ERT) experimental site at the UMES experimental farm. In addition, Collick happily announced her new faculty role at UMES, where she will be heavily involved with the university’s Chesapeake Water Quality Center.

At the STAC retreat, each STAC member was given the opportunity to discuss their personal backgrounds and current Bay related projects, making this one of the most beneficial first meetings for an incoming STAC member. Collick mentioned, “it was a real pleasure seeing how each person contributed.” STAC has been interested in finding ways to reach out to their network connections. Collick was impressed with this and mentioned that she “appreciated the efforts of STAC to reevaluate its mission and effectiveness and explore ways to enhance its capacity to integrate solid science with the protection of the Chesapeake Bay and its surroundings.”

As mentioned, Collick is currently transitioning into her new position at UMES, and she reiterated that she is excited to “examin[e] the ways that [she] may be more involved with STAC” and determine which STAC activities would be beneficial for UMES. STAC’s March quarterly meeting will be another great learning and sharing experience for Collick.