



# THE ABSTRACT

*A Monthly Update from the Scientific and Technical Advisory Committee*

**July 2015**

*In scientific journals, the abstract summarizes the most important qualitative and quantitative items from an article, inviting readers to further investigate the topic(s). The Abstract will serve a similar purpose. This monthly newsletter will outline the most important updates for the Chesapeake Bay Program's Scientific and Technical Advisory Committee. It will invite readers to investigate the committee, its members, its findings and its on-going work. We hope you will enjoy reading The Abstract, and will find the newsletter both informative and inviting.*

## **Recent STAC News**

### **June 2015 STAC Quarterly Meeting**

**June 9-10, 2015  
Williamsburg, VA**

STAC held its June quarterly meeting (QM) on June 9<sup>th</sup> and 10<sup>th</sup> at the DoubleTree Hotel in Williamsburg, Virginia. STAC Chair, Kirk Havens (VIMS) led the committee in a successful two day meeting that included updates from the Chesapeake Bay Program (CBP), discussions of current and future STAC activities, and science needs relevant to the Chesapeake Bay. During introductions, STAC was informed that Chanceé Lundy (Nspiregreen LLC) was appointed to fill the gubernatorial vacancy for Washington, D.C.

The meeting featured presentations of STAC related business including: approval of Executive Board (EB) and March QM minutes, approval of Mark Luckenbach (VIMS) as the newest EB member, and discussion of a September STAC retreat. Important reasons for the upcoming retreat include: priorities when funding workshops, establishing big-picture issues, establishing STAC priorities, and STAC discussion about focusing topics outside of water quality in order to incorporate more living resources and social sciences back into Bay Program priorities. STAC members also received CBP updates from Nick DiPasquale (EPA) and FY15 STAC review updates from Gary Shenk (EPA-CBPO).

Additionally, Carin Bisland (EPA-CBPO) and a few Goal Implementation Team (GIT) Chairs were present to discuss lessons learned during development of the management strategies (MS) and STAC's role during development of workplans, indicators, and monitoring needs. Following this presentation there were a number of different discussions, including: Shenk's discussion of the CBP response to the STAC Phosphorus Review, Frank Coale (UMD) and Erik

Lichtenberg's (UMD) presentation of the Phosphorus Management Tool (PMT), Bill Ball's (CRC) presentation, prepared by Mark Wiesner (Duke), on the negative impacts to the aquatic environment caused by nanoparticles, and a STAC discussion of the draft CBP Best Management Practices (BMP) Expert Panel (EP) protocols.

The meeting concluded with Principals Staff Committee (PSC) Chair, Molly Ward (Virginia Secretary of Natural Resources) providing STAC with a presentation of the PSC goals, and how STAC currently provides information driving those goals. Ward wants to focus on achievable goals, mainly involving the Chesapeake Bay Watershed Implementation Plan (WIP). Ward also mentioned her continuous goal to make the scope of sea level rise and climate change more conceptual and understandable for people.

## **Comparison of Shallow Water Models for Use in Supporting Chesapeake Bay Management Decision-making**

**May 20, 2015**

**Virginia Institute of Marine Science (VIMS)**

STAC held the workshop, "Comparison of Shallow Water Models for Use in Supporting Chesapeake Bay Management Decision-making" on May 20<sup>th</sup> at VIMS. The objectives of this workshop were (1) to assess the relative skill of multiple linked hydrodynamic/water quality models in terms of their ability to reproduce observations of multiple variables at select shallow water sites in the Bay; (2) to compare the modeled Submerged Aquatic Vegetation (SAV) computed from an empirical SAV model for each participating hydrodynamic/water quality model; and (3) to compare results of nutrient reduction strategies applied to these multiple estuarine models at these select sites.

Some questions discussed at the end of the workshop were whether or not these models would be suitable for the entire Bay. Can these models provide reliable data even when there are extreme outliers or abnormal events? If a model is made to cover the entire Bay, three strategies emerge: 1) switch to a model with a grid that can structure the shallows, 2) ribbon model, and 3) model every tributary as a high resolution sub-model. A few participants believe that if what is happening in the Chester River is done in the Chesapeake Bay, there would be success. The model information is currently being written into a manuscript, awaiting atmospheric data. Marjy Friedrichs (VIMS), workshop lead, is in the process of drafting the workshop report. The proposed follow-up FY15 STAC workshop received funding and will occur before June 1, 2016.

## **STAC's Involvement in Management Strategy (MS) Development**

**June 30, 2015**

Over the last year, STAC played a vital role during development of CBP MS supporting the new watershed agreement. The signing of the watershed agreement took place in June, 2014 and completion of MS happened on June 30<sup>th</sup>. Several STAC members provided guidance to the GITs on the adaptive management process, specifically emphasizing the need to identify all

factors influencing their ability to reach each outcome. STAC's role during the next stage in the process (workplan development, monitoring, and analysis) will also be critical. If you are interested in becoming involved in the process, please contact Natalie Gardner at [gardnern@si.edu](mailto:gardnern@si.edu). You can view the final MS by following this link: <http://www.chesapeakebay.net/managementstrategies>.

## Upcoming STAC Events

- **Executive Council Meeting**
  - **Location:** U.S. National Arboretum, D.C.
  - **When:** July 23, 2015 at 11:00 – 1:15 p.m.
  - **Details:** Key messaging will focus on the Watershed Agreement's goals, supporting MS, and next steps (workplans).
- **September 2015 STAC Retreat**
  - **Location:** TBD
  - **When:** September 8-9, 2015
  - **Details:** TBD

## Future STAC Discussion Issues

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

The issues below, identified by STAC members include:

- **Future STAC Suggested Topics**
  - Stream restoration effectiveness
  - Coastal acidification
  - Engagement in BMP verification activities
  - Conowingo research discussion
  - Ongoing climate change in the Chesapeake Bay watershed

Please submit additional suggestions to STAC Staff Renee Kelly ([KellyR@si.edu](mailto:KellyR@si.edu)) in the coming weeks.

## On the Horizon

- **STAC Reports**
  - Re-plumbing the Chesapeake Bay Watershed: Improving Roadside Ditch Management to Meet TMDL Water Quality Goals
  - Assessing the Chesapeake Bay Forage Base: Existing Data and Research Priorities
  - Evaluating Proprietary BMPs: Is it time for a State, Regional, or National Program?
  - Comparison of Shallow Water Models for Use in Supporting Chesapeake Bay Management Decision-making

- **CBP Partnership requested STAC sponsored independent scientific peer reviews**
  - 2015 Chesapeake Bay Criteria Addendum
  - Proposed revised James River chlorophyll *a* water quality criteria
  - Application of WRTDS to watershed WQ trend analysis and explanations and General Additive Models (GAMs) to estuarine WQ trend analysis and explanations
  - Chesapeake Bay Scenario Builder
  - Phase 6 Chesapeake Bay Watershed Model
  - Chesapeake Bay Water Quality/Sediment Transport Model (WQSTM)
  - Approach being taken to factor climate change considerations into the 2017 Chesapeake Bay TMDL Midpoint Assessment

## *Key Events*

- **July 2015 Stream Health Workgroup Meeting**  
**Date:** July 7, 2015  
**Time:** 9:00 a.m. – 11:00 a.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22808/>
- **July 2015 Wastewater Treatment Workgroup Conference Call**  
**Date:** July 7, 2015  
**Time:** 10:00 a.m. – 3:00 p.m.  
**Details:** <http://www.chesapeakebay.net/S=0/calendar/event/22310/>
- **July 2015 Partnering and Leadership GIT Meeting**  
**Date:** July 7, 2015  
**Time:** 1:00 p.m. – 3:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22254/>
- **July 2015 Toxic Contaminants Full Workgroup Meeting**  
**Date:** July 8, 2015  
**Time:** 1:00 p.m. – 3:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22296/>
- **July 2015 Management Board Meeting**  
**Date:** July 9, 2015  
**Time:** 10:00 a.m. – 3:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22168/>
- **July 2015 Modeling WG Conference Call**  
**Date:** July 9, 2015  
**Time:** 1:00 p.m. – 3:30 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22833/>

- **July 2015 Water Quality Goal Implementation Team Conference Call**  
**Date:** July 13, 2015  
**Time:** 1:30 p.m. – 3:30 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22318/>
- **July 2015 Data Integrity Meeting**  
**Date:** July 14, 2015  
**Time:** 10:00 a.m. – 3:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22859/>
- **July 2015 Trading and Offsets Workgroup Conference Call**  
**Date:** July 15, 2015  
**Time:** 10:00 a.m. – 12:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22343/>
- **July 2015 Agriculture Workgroup Conference Call**  
**Date:** July 16, 2015  
**Time:** 10:00 a.m. – 12:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22596/>
- **July 2015 Wetland Workgroup Meeting**  
**Date:** July 16, 2015  
**Time:** 1:00 p.m. – 3:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22766/>
- **July 2015 Modeling Workgroup Quarterly Meeting**  
**Date:** July 21, 2015  
**Time:** 10:00 a.m. – 3:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22834/>
- **July 2015 Urban Stormwater Conference Call**  
**Date:** July 21, 2015  
**Time:** 10:00 a.m. – 12:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22422/>
- **July 2015 Land Use Workgroup Conference Call**  
**Date:** July 23, 2015  
**Time:** 10:00 a.m. – 12:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22603/>
- **July 2015 Executive Council Meeting**  
**Date:** July 23, 2015  
**Time:** 11:00 a.m. – 1:15 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22858/>

- **July 2015 Local Leadership Workgroup Kick Off Meeting**  
**Date:** July 29, 2015  
**Time:** 1:00 p.m. – 3:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/22841/>
- **July 2015 Scientific, Technical Assessment and Reporting (STAR) Team Meeting**  
**Date:** July 30, 2015  
**Time:** 10:00 a.m. – 1:00 p.m.  
**Details:** <http://www.chesapeakebay.net/calendar/event/21561/>

\*Please see the Chesapeake Bay Program Calendar for more specific event times and CBP conference line information: <http://www.chesapeakebay.net/calendar>.

### ***STAR Updates***

The Scientific, Technical Assessment and Reporting (STAR) Team held a meeting on June 25<sup>th</sup>. The meeting discussed what STAR leadership has learned meeting with outcome leads and the development of the two-year workplans. After the meeting it was decided that STAR will notify the Communications Workgroup of upcoming publications and projects from now on.

The Indicator Assessment (IA) Team has been holding weekly meetings. After meeting with half of the MS leads, it was determined that development of the monitoring programs has varied. Some outcomes have well-established monitoring, including the Water Quality and Protected Lands outcomes. Few have plans for monitoring, but do not have identified indicators, and others are only in the preliminary stages of a monitoring plan. STAR plans to meet with the GIT Chairs to prioritize their needs and determine how best to assist Goal Teams moving forward.

The Integrated Trends Analysis Team (ITAT) held a meeting on June 1<sup>st</sup> at the United States Geological Services (USGS) Water Science Center. Some of the topics discussed were: lessons learned from comparing watershed model results with observed trends in load, reduced complexity models as an alternative approach for ecosystem analysis, Delmarva Whole System Regional Conservation Partnership Program, and linking nutrients, algal blooms, and impairments in the tidal fresh segment of the James River estuary. The ITAT has also produced maps illustrating trends in nitrogen, phosphorus, chlorophyll-a, and water clarity all from long-term monitoring stations.

If you have any questions regarding STAR activities, please contact STAR Coordinator Peter Tango at [ptango@chesapeakebay.net](mailto:ptango@chesapeakebay.net).

## ***GIT Updates***

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

### **Sustainable Fisheries Goal Implementation Team (GIT 1)**

The Sustainable Fisheries GIT met on June 1<sup>st</sup> and 2<sup>nd</sup> at the Chesapeake Bay Foundation's (CBF) Brock Environmental Center in Virginia Beach, VA. The meeting addressed priorities of the GIT including: striped bass, forage, habitat, and blue crabs. MS were also a topic of discussion, focusing on next steps for developing workplans. The meeting featured two project updates: development of a striped bass health indicator and development of forage indicators. During the meeting, Sonja Fordham (Shark Advocates International) requested the Fisheries GIT support a workshop to discuss the best available science on cownose rays. The National Oceanic and Atmospheric Administration (NOAA) Fisheries has written a letter on this issue to Congressman Wittman focusing on concerns over developing a fishery for cownose rays based on their life history and ecology. The Fisheries GIT agreed to review a workshop proposal from Fordham. The Chesapeake Bay Stock Assessment Committee (CBSAC) met in-person on May 15<sup>th</sup> where they discussed the Winter Dredge Survey results and drafted the 2015 Blue Crab Advisory Report. This report was presented to the Fisheries GIT on June 2<sup>nd</sup>, and is now in the process of being finalized. The Fisheries GIT Executive Committee will have their monthly conference call on Monday, July 20<sup>th</sup>.

### **Habitat Goal Implementation Team (GIT 2)**

The Habitat GIT (HGIT) held a call on June 17<sup>th</sup> where the workgroups began prioritizing items for workplans. Planning also began for the HGIT meeting in October, scheduled to focus on applying landscape-level science tools to help prioritize and target actions called for in the biennial workplans. The HGIT's Wetland Expert Panel is now back up and running due to efforts by Jeremy Hanson (VT) and analytical support from the CBP GIT Team (Peter Claggett (USGS) and Quentin Stubbs (USGS)); a panel reviewing wetland uptake efficiencies for three counties in preparation for making recommendations to the Land Use Workgroup model recalibration. The HGIT also prepared a response letter to STAC regarding the "Designing Sustainable Stream Restoration Projects within the Chesapeake Bay Watershed" report recommendations. The Submerged Aquatic Vegetation (SAV) Workgroup has two new Co-Chairs, Brooke Landry (MDNR) and Becky Golden (MDNR). Finally, Hannah Martin, the HGIT staffer, will be leaving her three year term position at Chesapeake Research Consortium this month. Martin's replacement will be announced in the coming weeks.

### **Water Quality Goal Implementation Team: WQGIT (GIT 3)**

The WQGIT held conference calls on May 11<sup>th</sup> and June 8<sup>th</sup> where an updates were received on the jurisdictional review period for the Phase 6 land use categories, as well as an overview of the overall timeline for land use decisions. At the June 8<sup>th</sup> meeting, the WQGIT approved the updated land use projections for 2015 and the Federal Facility Targets Protocol. Also on June



8<sup>th</sup>, the WQGIT received a briefing on the STAC peer reviews process, and an overview of the draft Ambient Water Quality Criteria Technical Addendum. Additionally, a call took place on June 22<sup>nd</sup> where the WQGIT sought approval of the revised WQGIT Governance Protocols, received updates on the Phase 5.3.2 Nutrient Management BMP expert panel report, and an update on the Building Environmental Intelligence Report. There was a webinar briefing on July 1<sup>st</sup> to provide a full report on the Nutrient Management Phase 5.3.2. Finally, Jeni Keisman (USGS) summarized the recommendations that emerged from the STAC Management Effects on Water Quality Trends (MEOWQT) workshop and provided information regarding activities in progress to address and implement those recommendations.

#### **Maintain Healthy Watersheds Goal Implementation Team (GIT 4)**

The Healthy Watershed GIT met on April 30<sup>th</sup>. This meeting included a discussion on some of the public and partner comments received on the Healthy Watershed and Land Use MS, followed by participant suggested edits to improve the MS. Participants also heard an update on the Landscape Pilot Forest Retention Demonstration project in the Rappahannock River basin, which will assess growth trends in the region and evaluate the spatial variability of forest ecosystem service value. The status of the Land Use MS was also discussed, focusing on the ongoing cross-GIT coordination efforts and the new vision of the GIT's Tracking Workgroup.

#### **Fostering Stewardship Goal Implementation Team (GIT 5)**

The Citizen Stewardship Outcome Team met on April 27<sup>th</sup> to work on development of an index providing metrics for the citizen stewardship outcome. Following that meeting, the group self-assigned themselves into smaller working groups, to focus on the different levels of citizen engagement in the engagement framework. These working groups met on May 14<sup>th</sup> to prioritize and discuss methods for collecting metrics.

The Education Workgroup met on May 8<sup>th</sup> to discuss MS updates and public comments, the draft agenda for the upcoming Environmental Literacy Summit, and the NOAA/Chesapeake Bay Trust (CBT) capacity building projects to support the environmental literacy goal and outcomes.

The Chesapeake Conservation Partnership, a task group of the Stewardship GIT, continues to advance key priorities including: streamlining online conservation mapping and analysis platforms, and exploring a coordinated mitigation approach to minimize the impact of infrastructure development on conserved lands. The Partnership will be preparing for the 2015 annual meeting to be held on October 5<sup>th</sup> and 6<sup>th</sup> at the National Conservation Training Center.

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

On June 2<sup>nd</sup> at the PSC meeting, updates to the Governance Document were accepted with a few additional editorial changes. The GIT plans to update the Governance Document and deliver it to the Management Board (MB) at its next meeting. An invitation is being sent to signatory representatives and other stakeholders to join the Local Leadership Workgroup to help develop



its workplan. The GIT had a meeting scheduled for July 7<sup>th</sup> to discuss: GIT 6 projects for FY15, Budget/Finance Workgroup, ChesapeakeSTAT, establishing a Local Leadership Workgroup, and opportunities to facilitate cross collaboration among MS. There is currently a kick off meeting scheduled on July 29<sup>th</sup> to discuss the Local Leadership Workgroup.

## ***STAC Welcomes newest member Chanceé Lundy!***



Chanceé Lundy is a community conscious engineer and co-owner of Nspiregreen LLC, a sustainability-consulting firm based in Washington, DC that provides environmental solutions, urban planning, and public engagement services. Lundy co-founded Nspiregreen LLC in 2009 where she is responsible for leading the company's environmental practice. She has spearheaded projects providing technical support and/or public outreach services to environmental clients on projects such as the District's Comprehensive Energy Plan, Solid Waste Management Study, and Consolidated Total Maximum Daily Load (TMDL) Implementation Plan. She is an environmental enthusiast who is passionate about preventing and reducing environmental inequities.

Before establishing Nspiregreen LLC, Lundy was an Environmental Specialist, at Texas Instruments Inc., where she was directly responsible for leading teams to reduce perfluorocarbon (PFC) emissions and other greenhouse gas emissions, managing environmental media programs including air quality, solid waste, stormwater management, and industrial wastewater treatment.

As a member of the STAC, Lundy comments, "I'm really interested in learning more about efforts to restore the Bay throughout the entire watershed and contributing valuable input in the process."

Lundy received her Masters in Civil Engineering (Environmental Concentration) from Florida State University and holds a Bachelor of Science in Environmental Science from Alabama Agricultural and Mechanical University. She is a member of the American Society of Civil Engineers, Water Environment Federation, Women's Transportation Seminar, and National Society of Black Engineers. In her spare time she enjoys cooking, volunteering, and exploring different cultures through international travel.

## *Focused on Science*

### “Greener Pastures” for Water Quality

**By: Rick Weidenbach, SWCD Executive Director**

The farming community in Delaware County is working hard to improve their water quality and they think they've got it right. The article, “Greener Pastures” for Water Quality presented in the special edition of the Soil and Water Advocate, focuses on the Conservation Reserve Enhancement Program (CREP). This unique program was created to improve water quality without harm to the economic viability of the already stressed industry. The program after only five short years, had moved 7100 dairy cattle, 275 horses, and over 1200 beef, goats and sheep to greener pastures, where they no longer depended on local streams and rivers as their primary source of water. The program also created over 140 miles of streambank buffers.

CREP is an enhanced version of the Conservation Reserve Program (CRP), which is a voluntary USDA program that protects environmentally sensitive land by placing it in an approved vegetative cover for a period of 10 to 15 years. Farmers, in return, are compensated for their time and efforts with annual payment and reimbursement for establishing recognized Best Management Protocols (BMPs). A state or city can specify a particular resource issue, which can be addressed by the CRP, and develop an enhanced program to address that concern. That issue is then offered more annual payment to compensate for the additional implementation processes to resolve the issue.

CREP offers continuous enrollment open year round, but to be eligible, cropland must have been planted to a commodity crop in four of the six years between 1996 and 2001 and be physically and legally capable of being cropped. The benefits of CRP/CREP include improving water quality, reducing erosion, decreasing fertilizer/pesticide runoff, removal of animals from streams, improve aquatic habitat, reducing thermal stress, establishing wildlife habitat, good farming practices, and the protection of public drinking water supplies.

Furthermore, this article goes on to provide success stories from local farmers, such as the Hoskings Family. They found CREP to not only improve the water quality, but also heard health on their farm. The Hoskings also reported the benefits of the program from a financial standpoint. Following CREP created feed shortage issues for their heard, but they were able to receive rental payments to rent bottom land growing more feed for their heard. The article also discusses how a CREP agreement can join partners to increase its effectiveness. The article specifically discusses the three-way partnership that made the Watershed Agricultural Program (WAP) a success. This type of plan seems manageable and successful at improving not only environmental issues, but also economic issues.