



**Scientific and Technical Advisory Committee  
December 13-14, 2011 Quarterly Meeting Minutes  
Westin Annapolis Hotel - Annapolis, MD**

**December 13 Minutes**

**Attendance:**

**Members:** Charles Abdalla, Brian Benham, Charles Bott, Russ Brinsfield, Paul Bukaveckas, Randy Chambers (T), Carl Friedrichs, Marjy Friedrichs, James Glancy (T), Kurt Gottschalk, Kirk Havens, Carl Hershner, Robert Hirsch, Susan Julius, Mark Lukenbach, Poornima Madhavan, Jack Meisinger, Margaret Mulholland, Ray Najjar, Michael Paolisso, Jim Pease (T), Christopher Pyke, Marc Ribaud, Ali Sadeghi, David Sample, Dave Secor, Jeffery Skousen, Denice Wardrop, Lisa Wainger (T), Don Weller, Claire Welty, Gene Yagow, Weixing Zhu (A)

**Guests:** Jessica Blackburn, Sarah Brzezinski, Ryan Carnegie, Olivia Deveraux, Nick DiPasquale, Jennifer Faught, Michael Ford, Melanie Frisch, Rick Keister, Lewis Linker, Doug Lipton, Chad McNutt, Bruce Michael, Michael Naylor, Peyton Robertson, Gary Shenk, Jeremy Trombley, Julie Winters, Adam Young, Hank Zygmunt

**Administration:** Melissa Fagan, Natalie Gardner, Matthew Johnston, Kevin Sellner

**Announcements and Consent Agenda - Chris Pyke (USGBC)**

STAC Chair, Chris Pyke called the meeting to order shortly after 10:00 am. Following member introductions, Pyke began the meeting by requesting a motion to approve the September quarterly meeting minutes. A portion of the September quarterly meeting was closed to only STAC members and advisory committee staff. The closed session was a chance for STAC members to have an open and candid discussion on the findings of the LimnoTech report and of the CBP-STAC relationship.

Kirk Havens (VIMS) suggested several minor edits to the September meeting minutes in an email on December 12, 2012. Members agreed to the changes.

**VOTE: Pyke asked members for a motion to approve the September quarterly meeting minutes with the suggested change. Results: Motion carried - minutes approved.**

STAC Staff, Natalie Gardner (CRC) reminded members to fill out the survey titled "STAC Member Volunteer Hours September 1, 2011 to November 30, 2011." The survey is a simple way to track STAC member volunteer hours per quarter, contribution to the CBP, and easily calculate the quarterly "match" as required by STAC's EPA cooperative agreement..

Additionally, Gardner announced that long time STAC member, Ali Sadeghi (USDA-ARS), will be resigning from STAC after the December quarterly meeting. Members need to nominate a new member and submit their vote to STAC Staff before the end of the meeting. The two nominees for this open appointment are Steven Faulkner (USGS), and Michael Ford (NCBO).

Pyke then requested a motion to approve STAC's Executive Board (EB) minutes from a conference call on Friday October 28, 2011. Pyke discussed the EB's decision to approve an alternative disclaimer language for STAC reports and reviews. The disclaimer language will protect STAC and STAC members from all liabilities.

**VOTE: Pyke asked members for a motion to approve the October EB minutes. Results: Motion carried - EB minutes approved.**

### **NCBO Recent and Future Research Plans - Michael Ford (NCBO)**

Ford recently began serving as the Manager of Ecosystems Science at NOAA's Chesapeake Bay Program Office (NCBO). The Ecosystem Science (ES) Branch of NCBO conducts the following activities: collects buoy observations; conducts habitat assessments; runs ecosystem models; collects satellite remote sensing data, and synthesizes scientific and technical information. Ford gave an overview of current and future scientific efforts within NCBO. Ford received input from STAC on these efforts, along with suggestions for future collaboration between the Committee and NCBO. NCBO is currently working on pre- and post-restoration habitat assessments, integrating observations of the Bay, and summarizing the incident response successes which occurred following Hurricane Irene and Tropical Storm Lee.

Part of what NCBO's buoy system is able to do is analyze Bay conditions, and publish them to the web as the season progresses. In the future, NCBO plans to use the buoy system data in a regular, iterative process to help describe changes within the Bay such as temperature, salinity, and dissolved oxygen. Additionally, NCBO plans to move beyond simple pre-restoration mapping, and into comparative studies/analysis for oysters, etc. NCBO also hopes to update information for ecological thinking, models, connecting the primary productivity to upper trophic levels. The most important gap that needs to be addressed in the Bay is the plankton survey. One key question NCBO is asking is: "What is the management utility of a zooplankton survey throughout the Bay?"

**Discussion:** Gary Shenk (EPA-CBPO) asked Ford who would be considered NCBO stakeholders. According to Ford, the stakeholders include other NOAA entities, institutions and the academic community, and of course, the Bay Program and STAC. One member questioned if Ford's position at NCBO is going to be filled after Ford completes his rotation and returns to NOAA's Silver Spring office. Ford was not sure if the position would be filled or not, but explained that NCBO sees the role as critical. Sellner wondered if NCBO would consider keeping Ford in his current position at NCBO. STAC wrote a letter to NCBO and NOAA to request that Ford's position remain funded.

### **CAST Demonstration - Olivia Devereaux (ICPRB)**

The Interstate Commission on the Potomac River Basin (ICPRB) recently completed the development of the Chesapeake Assessment and Scenario Tool (CAST). CAST is an online tool to help localities and states test the effects of different scenarios (or combinations of best management practices, also known as BMPs) on reducing loads into the Chesapeake Bay. Maryland Department of the Environment requested the development of a similar tool, specifically tailored to the state of Maryland, to facilitate the development of their Phase II Watershed Implementation Plan (WIP). One goal of the CAST developers was to make sure

each county would have “ownership” over its WIP plan, and understand how to reduce pollution to meet its required reduction goal. It was important to develop a tool that had calculations that were consistent and reputable, and that matched the logic of the Chesapeake Bay Program’s (CBP) Watershed Model and Scenario Builder tool. CAST was designed to be a planning tool, not for reporting BMP progress data. Results that come from CAST are approximations, with the idea to give a quick estimate of what the loads will be if a jurisdiction implements a particular set of BMPs. These estimates are not meant to be used directly in the state WIPs. It is up to each jurisdiction to determine how it is used, and for what purpose. Devereaux then demonstrated how CAST can be used, and discussed the future changes to the system. You can access CAST by visiting: [www.casttool.org](http://www.casttool.org)

### **NIDIS Chesapeake Bay Workshop Proposal - Chad McNutt (NOAA)**

The National Integrated Drought Information System (NIDIS) is an effort led by NOAA to study drought, and management decisions related to drought, in a few pilot study watersheds throughout the country. NIDIS managers are now seeking to conduct a similar pilot study in the Chesapeake Bay Watershed. McNutt explained how a STAC workshop, or support, would help NIDIS's effort within the Chesapeake Bay Watershed.

Several test cases have been conducted to analyze communication with communities at risk of drought. NIDIS plans to conduct three pilots: Apalachicola-Chattahoochee-Flint (ACF) River Basin, Colorado River Basin, and California. NIDIS chose the Apalachicola-Chattahoochee-Flint River Basin for several different reasons. One reason being that there are already several projects on the river, so it's a heavily managed area. Another reason is because there is not a strong understanding of the basin, or what the whole basin’s communication network looks like. In contrast, NIDIS would like to study the Chesapeake Bay watershed because of the large amount of available information and its large communication network. McNutt would like STAC to advise a study of the Chesapeake Bay Watershed through participation at the upcoming workshop in late spring, early summer of 2012.

**Discussion:** Havens asked McNutt if he had plans to produce a workshop report. McNutt indicated that there are plans to produce a formal report. Ray Najjar (PSU) asked McNutt why NIDIS chose the Chesapeake Bay for this pilot. McNutt indicated that since the Chesapeake is the largest estuary in the United States, the Susquehanna is shared by five states, and the amount of information outlets involved within the watershed is overwhelming. This type of coordination is what NIDIS hopes for in the ACF River Basin. Additionally, NIDIS does not want to study an area that currently has major problems, McNutt wants to learn how certain institutions like the Susquehanna River Basin Commission (SRBC) are dealing with current issues.

**Action:** STAC members that are interested in participating in the NIDIS Chesapeake Bay Workshop should contact Chad McNutt, [chad.mcnutt@noaa.gov](mailto:chad.mcnutt@noaa.gov).

### **Chesapeake Bay Program's Implementation of the Decision Framework and Adaptive Management - Carl Hershner (VIMS)**

Hershner gave a presentation on the ongoing effort at the Bay Program to implement the decision framework and adaptive management. Since leaving STAC, Hershner has been involved with activities that study ecosystem management, and large environmental restoration programs. In particular, Hershner was asked to be one of the reviewers of the recent NAS report, *Achieving*

*Nutrient and Sediment Reduction Goals in the Chesapeake Bay: An Evaluation of Program Strategies and Implementation.*

According to Hershner, the CBP has been ineffective at implementing adaptive management. As a result, Hershner has worked with various entities within CBP to develop an adaptive management implementation strategy known as the “decision framework”. Hershner feels that STAC has a unique capability, and can play a significant part in the implementation process. The CBP’s goal implementation teams (GITs) have been challenged to go back and look at their goals, in an observable and measurable way. Once the GITs establish their goals, they have been asked to go back, and identify which factors within the system are the most critical to be managed in order to achieve their goals. Hershner believes that STAC is the perfect outlet to give expert advice to CBP and the GITs on this process. Hershner would like to engage STAC members in an ad-hoc advisory process to make sure the GITs are making progress, and help them design the metrics that would reduce uncertainty in understanding how their goals could be achieved within the system.

Hershner also suggested that STAC members become proactively involved with the current CBP discussions regarding the role of an independent evaluator. By developing an independent evaluator function within the CBP, managers hope to protect the CBP against the kind of reviews that the Congressional Budget Office and the EPA inspector general might perform. Maintaining a constant independent evaluator function might also mean the CBP will not need to request costly evaluations from outside entities such as the National Academy of Sciences.

Finally, Hershner is concerned with the alignment between the 2010 Executive Order and the Chesapeake 2000 Agreement (C2K). For example, the states are busy responding to the TMDL and the EPA's regulatory pressures, so the federal agencies are driving the program outside of the TMDL. It is important for everyone in the partnership to understand what the CBP has accomplished, and what it can accomplish in terms of water quality improvements. Hershner believes it is important to define what the practical and realistic future of the Chesapeake Bay is. STAC should take a proactive role in defining what that future might be. Hershner proposed that a small group of STAC members take on this charge, and begin to develop the new vision of what the future Bay looks like.

**Discussion:** Denice Wardrop (PSU) asked what building blocks STAC might use to help the GITs assess their goals. Hershner suggested that a forward-looking activity similar to the development of Chesapeake Futures would be the best driver for this activity. According to Hershner, it is essential to identify the reasonable and practical potential outcomes from our management efforts. Wardrop believes this exercise would wrap together the issues that we have already worked on, and it should tie in current issues like Marcellus Shale gas development, and the economic and social scenarios. Hershner suggested STAC's first step be an in-depth analysis of the GIT goals. Michael Paolisso (UMD) pointed out the link between the environmental social sciences, and the future for regional and local goals. Wardrop suggested that STAC spend one meeting as a retreat on this topic. Pyke asked members what they thought about using the March meeting to explore this topic. No members objected to using the March meeting to explore this issue.

**Action:** Carl Hershner is working with the Bay Program on the ongoing implementation of the decision framework and implementation of adaptive management. If you are interested in helping this effort, please contact Carl Hershner, [carl@vims.edu](mailto:carl@vims.edu).

**Action:** Carl Hershner will lead a group of STAC members and interested parties to include Denice Wardrop, Kirk Havens, Kevin Sellner, Marc Ribaud, Weixing Zhu, Charles Bott, Michael Paolisso, and Susan Julius in developing, and updating STAC's Chesapeake Futures report. STAC staff will also work with these members and the Executive Board to coordinate a “retreat” to work on the project. Other members that are interested should contact Carl Hershner, [carl@vims.edu](mailto:carl@vims.edu) and [johnstonma@si.edu](mailto:johnstonma@si.edu).

### **CRC Staffer Presentation**

Sarah Brzezinski (CRC) is the current staffer for GIT 5, Foster Chesapeake Stewardship. Brzezinski graduated with a BS in Environmental Science, with a minor in Biology from Dickenson College. During her studies, Brzezinski participated in a program that conducted a comparative study of the Chesapeake Bay and the Mississippi River watersheds. The program gave students the opportunity to travel to the two watersheds. Brzezinski also got a chance to study abroad at the School of Field Studies in Mexico. Brzezinski also had the opportunity to study at the University of Queensland in Australia. Brzezinski has been employed at San Diego Zoo, Institute of Conservation Research, Chesapeake Bay Foundation (CBF), and various animal hospitals and veterinarian clinics throughout her career.

GIT 5 is composed of five implementation workgroups: Education Workgroup; Chesapeake Conservation Corps; Master Watershed Stewards; Land Conservation Priorities; and Public Access Planning. Each workgroups currently has individual projects that all align well with the Executive Order goal to expand citizen stewardship supporting strategy, and to conserve land and increase public access. In addition to assisting those projects, Brzezinski works on the Bay Backpack, a CBP teacher resource website. Brzezinski acts as a content manager for the website and is responsible for editing the blog and managing social media promotion. Additionally, Brzezinski has furthered her education through Chesapeake Research Consortium's (CRC) Career Development Program. Sarah was able to attend different conferences and symposiums that were of personal interest in her career development. Looking ahead, Brzezinski hopes to attend graduate school, and eventually pursue a career that combines research and education.

### **STAC Market Transformation Workshop Proposal - Chris Pyke (USGBC)**

Pyke presented a proposal for a STAC-funded workshop to investigate the state-of-the-science, and the state-of-practice with respect to market-based mechanisms in Bay restoration. Pyke explained that there are currently two dominant strategies the CBP uses to encourage implementation. There is the use of regulations such as the TMDL, and there is the use of incentives or awards to partners who exhibit good behavior. Both have limitations, but a market-based approach could possibly be an alternative for CBP to take, and could alter the behavior of large numbers of firms or individuals. The goal for this workshop is to develop a broad-based dialog regarding the utility of market mechanisms to Bay restoration. The proposed workshop will convene a broad-based discussion of the state-of-the-science and the state-of-practice with respect to market-based mechanisms in Bay restoration. An ad hoc steering committee has been formed to begin planning for this workshop, and the members of the committee recommended a

focus on factors contributing to both the supply and demand for environmental services across the Bay region. The workshop seeks to:

- Create a framework to describe circumstances where specific market mechanisms are more (or less) effective.
- Describe boundary conditions and circumstances contributing to the success (or failure) of specific mechanisms.
- Understand model programs with respect to this framework, boundary conditions, and circumstances.
- Share practices regarding program evaluation and assessment.

**Discussion:** One member asked what "market transformation" actually means. Pyke responded that a market is a distribution of behavior in the marketplace. The goal is to determine the interventions that we can make in a market, such as education, pricing, labeling, and other incentives that change the performance and prevalence in a market. In layman's terms, how do you change the nature of a market or how do you intervene, and shift the market. Najjar asked Pyke to give an example of market transformation in action. Pyke responded with an example from urban stormwater. With urban stormwater, people elect to do things a certain way, and currently there are two options to change the prevalence of the decisions that people make with urban stormwater: (1) regulations or (2) pay them to do it a different way. Those two options is what the workshop plans to change. Susan Julius (EPA) asked Pyke if he plans to cover all the topics listed in the proposal because the list is extremely large. Pyke agreed that the list of topics is huge, and impossible to cover in one day. Pyke pointed out that these are just topics that STAC has the ability to cover.

<p><b>Action:</b> If STAC members are interested in participating in STAC's Market Transformation workshop, please contact Chris Pyke, <a href="mailto:cpyke@usgbc.org">cpyke@usgbc.org</a>, or Matt Johnston, <a href="mailto:johnstonma@si.edu">johnstonma@si.edu</a></p>
---

### **Monitoring and Modeling Workgroup Update - Kevin Sellner (CRC) and Marjy Friedrichs (VIMS)**

At the September 2011 STAC quarterly meeting, STAC came up with a series of recommendation for CBP regarding future modeling strategies. STAC provided recommendations that were consistent with the STAC/CCMP Hydrodynamic Workshop that took place in June 2011. STAC hopes the CBP will consider the recommendation of multiple models as we make a transition to potential new models, or adjust existing models. Sellner discussed recent updates from the CBP modeling workgroup, and a presentation given by Carl Cerco (ACE). Carl recommended the CBP undertake a demonstration or pilot project to test the ACE's shallow-water hydrodynamic model, either in Gunston Cove or the Gunpowder River. STAC recommended that any future modeling choices should be made only after considering multiple models, ensemble modeling, skill assessment, and peer review to determine the most appropriate model or suite of models. STAC also recommended the CBP incorporate the larger scientific community in its modeling decisions to ensure that all modeling options are considered. Furthermore, Sellner stated that if there the CBP would be funding any sort of demonstration project, STAC would like the CBP to consider all of the committee's recent recommendations regarding multiple models and model choice.

**Discussion:** Lewis Linker (EPA-CBPO) described the process that the modeling workgroup must go through to get this ball rolling. Sellner hopes the modeling workgroup will begin addressing how to implement multiple models in the Chesapeake Bay model by spring 2012. Linker does not foresee multiple models gaining attention from the partners until after the Phase II WIPs are submitted. Marjy Friedrichs (VIMS) explained the amount of attention stakeholders throughout the watershed are giving this issue. Friedrichs reached out to several modelers, and asked if they would be ready to write a proposal for a hydrodynamic and water quality model in less than 3 meters of water. Friedrichs received a rapid amount of responses from the modeling community that modeling teams were ready to propose a model of this nature if a demonstration project was developed and data was made available for their models. STAC decided to continue corresponding with the CBP managers, partners and modelers to reiterate the committee's recommendations.

**Action:** Please forward names of colleagues who have operationally ready models that could be used to inform the next generation of the Chesapeake Bay Program's Watershed Model. Please forward these names to Kevin Sellner, [sellnerk@si.edu](mailto:sellnerk@si.edu) and Marjy Friedrichs, [marjy@vims.edu](mailto:marjy@vims.edu).

## Oyster Restoration Panel

### Oyster Metrics Team Report - Mark Luckenbach (VIMS)

The portion of the Executive Order that pertains to oysters states the CBP needs to restore native oyster habitats and populations in 20 tributaries by 2025. Luckenbach recently chaired a workgroup within the CBP's Protect and Restore Fisheries GIT that was charged with developing common bay-wide restoration goals, success metrics and monitoring and assessment protocols to determine if progress is being made toward achieving a sustainable oyster population that will ultimately provide increased levels of ecosystem services throughout much of the Bay. However, the workgroup only did this for sanctuary reefs. It was important for the workgroup to determine what constitutes a restored oyster reef, a restored tributary, and what the timeline would be for assessing restoration success

Luckenbach explained that there are many agencies, and institutions working on oyster restoration, and all implement restoration differently. Because of this, the group felt it was important to develop one set of metrics for everyone to follow. The group determined that a main problem with oyster restoration is that true success can only be measured over time. Currently, there is a lack of both a theoretical and empirical basis for determining the operational targets that would achieve functional goals. Additionally, the focus on sanctuary reefs alone in tributary-level restoration fails to account for other actions that may affect recovery of wild oyster populations, such as improved fisheries managements and aquaculture. Furthermore, the effects of sanctuary reefs will likely extend beyond the sanctuaries themselves.

**Discussion:** A member asked Luckenbach to define what "restored" meant. According to Luckenbach, restored meant (1) an adequately firm bottom, (2) independent of disease pressure, and (3) independent of recruitment. The member also asked if the bottom has been covered or removed and Luckenbach said that both occur.

## **Disease Resistance in Bay Oysters - Ryan Carnegie (VIMS)**

Carnegie recently co-authored an article entitled, "Declining impact of an introduced pathogen: *Haplosporidium nelsoni* in the oyster *Crassostrea virginica* in Chesapeake Bay." Carnegie clarified the difference between resistance and tolerance in oyster populations. For example, resistance strategies limit infections (colonization, proliferation), while tolerance strategies limit infection, but not the "fitness" portion thereof. Carnegie's charge question for this research was: "Why would resistance not develop in the Chesapeake Bay?" One reason might be that there are weak or inconsistent selective pressures on part of the pathogens, which may be part of the problem in the Maryland and Virginia portions of the Bay. Another reason why the Bay does not have significant resistance to diseases today is because the only oysters reproducing are the ones living in low salinity waters. The oysters in high salinity waters are often too sick to reproduce.

Carnegie explained that research now shows very few cases of MSX (*Haplosporidium nelsoni*) disease in wild oysters. Thus, MSX might be a juvenile oyster disease. Additionally, Dermo (*Perkinsus marinus*) appears to be slightly less acute in nature. These two findings suggest that oysters in the less saline portions of the Bay may not be fully exposed to MSX or Dermo, and thus may be extremely susceptible to the disease once their offspring migrate to the more saline portions of the Bay. Oysters in the saline portions of the Bay likely have developed resistance to the diseases because they have been exposed to them for generations. Thus, Carnegie recommends that restoration activity take place in higher salinity waters because oysters in higher salinity waters cannot possibly be sustained entirely by recruitment coming down from low salinity.

## **Future Oyster Restoration Plans - Peyton Robertson (NCBO)**

Robertson is Chair of the CBP's Protect and Restore Fisheries GIT. Robertson discussed how the GIT plans to use the findings discussed in the previous two presentations to inform future oyster restoration efforts. Robertson briefly discussed the Executive Order Strategy related to restoring the oyster population, and then individually discussed each of the five action plans associated with that outcome. The first action plan was to launch a Bay-wide oyster strategy using scientific support for decision making. This strategy has strengthened the federal partnership between NOAA and the ACE, as well as coordinated federal and state planning for oyster restoration activities. The second action plan dealt with restoring priority tributaries. To help execute restoration in priority tributaries, agencies will be providing high resolution mapping of the Bay floor to inform tributary selection. Action three hopes to expand commercial aquaculture partially by providing funding assistance to support watermen, and training and extension services. The fourth action is to develop an oyster data tool that can be a spatial visualization of oyster data (population, surveys, harvest, disease, habitat, and restoration activities, etc.). The fifth action is to use science to evaluate progress. This can be achieved by measuring common success/performance metrics via the recently formed Bay-wide interagency Oyster Metrics Team. All agencies involved on the team will have common functional and operational goals to help them be successful in oyster restoration. Robertson then explained his GIT's plan to adaptively manage the restoration of the oyster population in the Chesapeake Bay.



**Discussion:** Luckenbach, Carnegie, and Robertson answered several questions that STAC members had regarding oysters. One interesting question from Sellner was if the pre- and post-monitoring would include abundance and biomass testing, as well as disease infection analyses. Luckenbach answered that no one is ignoring disease. Another member wanted to know how to know if oyster restoration is successful or not with the current design. Luckenbach and Robertson plan to use the Harris Creek restoration project and the Choptank restoration project as examples to determine future restoration locations.

**Action:** Any STAC member that is interested in participating on the Oyster Metrics Team, a workgroup under GIT 1 (Sustainable Fisheries), should contact Peyton Robertson, [peyton.robertson@noaa.gov](mailto:peyton.robertson@noaa.gov)

### **December 14 Minutes**

#### **Attendance:**

**Members:** Charles Abdalla, Brian Benham, Charles Bott, Russ Brinsfield, Randy Chambers (T), Carl Friedrichs, Marjy Friedrichs, James Glancy (T), Kurt Gottschalk, Kirk Havens, Carl Hershner, Robert Hirsch, Susan Julius, Mark Lukenbach, Poornima Madhavan, Jack Meisinger, Margaret Mulholland, Ray Najjar, Michael Paolisso, Jim Pease (T), Christopher Pyke, Marc Ribaud, Ali Sadeghi, Jeffery Skousen, Denice Wardrop, Lisa Wainger, Don Weller, Gene Yagow, Weixing Zhu (A)

**Guests:** Greg Allen, Jessica Blackburn, Melanie Culp, Margaret Enloe, Rick Keister, Scott Philips, Gary Shenk, Hank Zygmunt,

**Administration:** Melissa Fagan, Natalie Gardner, Matthew Johnston, Kevin Sellner

#### **Bay Journal Update - Margaret Enloe (Alliance for the Chesapeake Bay)**

Enloe is the Director of Communications for the Chesapeake Bay Program. She is also Chair of the Bay Program's Communications Workgroup. The communications workgroup is comprised of representatives from federal agencies, state agencies, and all their communications directors. That workgroup oversees and sets the vision for the CBP's Communications Office. The Communications Workgroup is currently trying to build relationships with the GITs, and the advisory committees. The workgroup exists, in part, to provide communications advice for everyone within the Partnership.

At the 2011 Executive Council (EC) meeting, Enloe realized that STAC did not receive the proper feedback from the EC. In an effort to change that for the 2012 EC meeting, Enloe

suggested that STAC, CAC, and LGAC submit an article in the Bay Journal, before the EC meeting, to get a cohesive message out to the public. Enloe hopes the article will develop an overarching theme for the 2012 EC meeting.

**Discussion:** Pyke asked why the intended message from STAC to the 2011 EC was disconnected from the messages in the press conference, and communication from CBP before and after the EC meeting. Pyke also asked how STAC can work together, and be a part of the communication strategy for the entire event. Enloe responded that STAC's message will be much stronger if it is developed well in advanced. Pyke then discussed the LimnoTech Review, and the experience STAC had with the press engagement portion. STAC set a series of release dates, one being on a Friday. STAC was advised that releasing any press on a Friday is a bad communications strategy. However, STAC's intention was to get the final product out as soon as possible, and not to make a big media splash. Following the LimnoTech review, Johnston and Enloe talked offline, and developed a better strategy to deal with any, and all press matters, including upcoming report releases. Russ Brinsfield (UMD) commented that the LimnoTech Review was an excellent example of how STAC can be relevant on key issues within the scientific community. Overall, Enloe's message to the committee was that she is here to help STAC get our message out.

<p><b>Action:</b> Members think STAC's message will be received better by the Executive Council if the other CBP advisory committees have a similar message. STAC staff will meet with Margaret Enloe, LGAC, and CAC to develop a common theme for the Executive Council meeting in 2012.</p>
---

### **Technical Analysis of Water Quality Crediting Procedures for Manure Conversion - Charlie Abdalla (PSU) and Kurt Stephenson (VT)**

Abdalla discussed an upcoming workgroup, funded by the Mid-Atlantic Water Program in collaboration with CBP partners. This workgroup is developing a nutrient credit calculation framework and assessing what is known about the science supporting crediting procedures for manure conversion projects. The framework is being developed, in part, due to the pressures placed upon states to reduce nutrients in the TMDL. As a result of these pressures, jurisdictions are increasingly looking toward nutrient trading to meet their reduction goals. According to Abdalla, manure-to-energy conversion will condense nitrogen and phosphorus into a simpler form that could be removed more easily. Stephenson and Abdalla hope to look at the technologies, how the new technology would get credited, and then develop a framework for how those technologies should be developed. Abdalla hopes that STAC will be involved in the commenting process, reviewing process, and provide feedback/recommendations on engineers to develop the technologies. A technical group will be developed of engineers, economists, etc. The output will be a resource document, detailing those technologies, nutrient crediting procedures, and what we know about how the nutrient reductions will be credited.

**Discussion:** One member wanted to know if Abdalla and his team have already selected the technologies. Abdalla answered that discussion of the technologies had begun, but no specific technologies have been selected. Abdalla asked STAC if anyone knew any engineering experts. Members made one or two suggestion on experts, and were then asked to follow-up with Abdalla and Stephenson if other suggestions arise.

**Action:** A regional workgroup is developing a nutrient credit calculation framework and assessing what is known about the science supporting crediting procedures for manure conversion projects. Members that are interested in participating should contact Charlie Abdalla, [cabdalla@psu.edu](mailto:cabdalla@psu.edu)

### **Chesapeake Toxics Contaminants Report - Scott Phillips (USGS) and Greg Allen (EPA-CBPO)**

The Executive Order Strategy required that several federal agencies work with state and local governments, and stakeholders, to expand their understanding of the extent and seriousness of toxic contaminant problems in the Bay and its watershed, and develop contaminant reduction goals by 2013. The CBP plans to complete a report by November, 2012 that describes the extent of toxic contaminants within the Bay and its watershed. According to Phillips and Allen, the CBP has continually reported on toxics. The CBP's Bay Barometer has historically published at least two indicators related to toxics contamination. However, the CBP has not completed a synthesis of the level of toxic contamination Bay-wide.

In October, 2011, the Chesapeake Bay Toxic Contaminants Workgroup held a workshop to discuss how to approach the toxic contamination issues, and how to complete a toxics contaminant report by November, 2012. Workshop participants determined that the target audience for this report would be the Water Quality, Fisheries and Habitat GITs. Participants also agreed the report should both define the extent and seriousness of the impact of toxic contaminants in the Chesapeake Bay and its watershed, and identify "newer" toxics that could pose a threat to the Bay and its watershed. In the months leading up to the report, STAR has agreed to establish an action team, and a draft will be developed by Spring of 2012. Phillips and Allen hope that STAC will give peer input throughout the process, and perhaps conduct a peer review of the final draft report.

**Discussion:** Wardrop asked if the action team was going to be broken up into smaller "teams" for specific contaminants. Allen and Phillips hope to summarize different classes of compounds in different portions of the report. Additionally, Weixing Zhu (Binghamton University) brought up that shale gas drilling development in Pennsylvania may be a potential source of toxic contaminants in the future. Zhu wanted to know how this report was going to address that issue of shale gas development in the headwater states. Phillips mentioned that the report outline does have a section addressing this issue. Sellner suggested that Allen and Phillips create a one-pager to outline specifically what action team hopes to accomplish, and how STAC could be involved in the report process including the final review. Pyke suggested that this is not STAC's area of expertise; however, STAC does have a connection to the broader science community. Overall, STAC needs a better summary of the details behind this report, and Allen and Phillips agreed to come back to STAC with a review charge, including the areas of expertise that were mentioned. Then STAC can evaluate if it is the correct facilitator of this activity.

**Action:** Matt Johnston will work with Scott Phillips and Greg Allen to develop a review charge for CB Toxic Contaminants Report.

### **Point Source N Removal - Charles Bott (HRSD)**

Bott discussed how new research in the Chesapeake Bay region into removing nitrogen from wastewater streams may revolutionize the wastewater treatment industry. According to Bott,

research and development in point source removal technologies has increased significantly, and is allowing large wastewater treatment plants to test groundbreaking technologies. Bott gave with an overview of how the wastewater treatment industry has traditionally removed nitrogen, and discussed specifically how Hampton Roads Sanitation District (HRSD) historically handled nitrogen removal. Bott then discussed the upgrade that HRSD plans to implement at the Chesapeake-Elizabeth WWT plant. This upgrade will help it meet TN concentration of approximately 5 mg/L, at the cost of \$125-150 million in capital upgrades. One main difference in this new technology is that the plant will add a two- or three-stage process treatment process with both anaerobic treatment and deammonification. The new technology is extremely challenging, and there is a possibility that it may not work. However, if it is successful, the upgrade will dramatically improve wastewater treatment technology across the region and perhaps even nationally.

**Discussion:** Brinsfield asked Bott what happens to phosphorus in this process. Bott answered that nothing happens to phosphorus in this new process. However, HRSD does have other plants that have a physical chemical process that recovers struvite, which opens up the opportunity to reduce the phosphorus content from bio-solids. Additionally, Havens asked Bott if this technology will make the output less. Unfortunately, HRSD does not get to choose the performance it wants to meet, it just has to meet a certain concentrations. The main benefit to this new technology will be the dramatic change in operating costs to HRSD. Bott announced the upcoming STAC workshop on May 16, 2012 titled "Enhancing the World We Live In - Exploring Cutting Edge Waste Water Treatment Technologies." This is a one-day workshop that will be held in Richmond, Virginia.

**Action:** STAC is holding a Sustainable Wastewater workshop on May 16 in Richmond, VA. This workshop will be closely related to the annual Virginia Water Environment Association workshop which be held at the same location on May 17. Both workshops will research and discuss the new technologies in wastewater treatment plants. Members that are interested in this topic should participate in the May 16th workshop. Contact Matt Johnston, [johnstonma@si.edu](mailto:johnstonma@si.edu), if you would like to attend.

### **Phosphorus Workgroup Update - Russ Brinsfield (UMD)**

Brinsfield updated STAC on the phosphorus (P) Workgroup's progress thus far, and the workgroup's future plans. At the September, 2011 quarterly meeting, Brinsfield and Ken Staver (UMD) gave a presentation on the current understanding of how the Watershed Model deals with P. As a result, Brinsfield and Staver created an ad-hoc workgroup to investigate the way in which the Watershed Model deals with P. The primary objective of this workgroup is to gain an in-depth understanding of how the Watershed Model currently simulates P loads from cropland, and whether the current simulation approach is consistent with the latest scientific consensus regarding P transport mechanisms. This workgroup also plans to develop recommendations regarding how the CBP modeling approach should be restructured to more accurately reflect the latest research findings regarding P transport processes, and what data inputs will be needed to support calibration and verification of a restructured modeling approach. The P Workgroup plans to meet in February with steering committee members, Gary Shenk, and Lew Linker from CBP. Brinsfield hopes that more STAC members are interested in being involved. The workgroup plans to complete its final report by April, 2012.

**Discussion:** One member asked if any of the Agriculture Workgroup members dealing with nutrient management would be involved in this effort. Brinsfield hopes that his workgroup would include people with expertise in P transport, or experts that deal with the fate and transport of P and how it moves around in a system. Finally, a major outcome that Brinsfield and this workgroup hope to achieve is the scientific communities access to collecting data that looks at P trends in soil over time. The workgroup plans to recommend that the EPA contact the states, and discuss making this information available.

**Action:** The phosphorus ad-hoc workgroup has been investigating how the Watershed Model deals with phosphorus. Russ Brinsfield would like members to participate in this workgroup that will review the model and make recommendations to correctly reflect phosphorus. Members that are interested should contact Russ Brinsfield, [russb2@umd.edu](mailto:russb2@umd.edu).

### **Executive Council Message - STAC Members**

STAC members had a thorough discussion about topics to include in the 2012 Executive Council Report. STAC members developed several topics for this message, and came up with the following four themes:

- Multiple Models
- Market Mechanisms
- Adaptive Management
- Non-Water Quality Outcomes

STAC Staff will work to combine all STAC members' thoughts in this discussion, and circulate the draft Executive Council report to STAC members.

**Action:** STAC Staff will have a draft to circulate to STAC and submit to Margaret by March 1st EB call for this is a deadline. STAC staff will meet with other advisory committees of CBP to discuss EC discussions

### **Maintaining a Scientific Expert within the NCBO Office - Kevin Sellner (CRC)**

Until recently, NOAA did not have a scientific expert based at NOAA's Chesapeake Bay Program Office (NCBO). Michael Ford (NCBO) gave a summary of collaborative science projects NCBO is currently working on, and the office's future plans. However, he will be going back to Silver Spring at the beginning of 2012. Several STAC members feel that STAC should encourage the progressive, active cooperation that we have seen from Michael Ford, and that it continues. Whether it's Ford or not, STAC would like NCBO to continue to fill the position so the committee can have a scientific expert as a point of contact at NCBO and so that NCBO can continue the collaborative projects Ford began.

**Action:** STAC members would like to send a letter to the NCBO or other NOAA office, encouraging the agency maintain a scientific expert within the Chesapeake Bay Program similar to the position currently occupied by Michael Ford. Kevin Sellner will work with STAC

members to draft a letter explaining this need. If you are interested in helping with this effort, please contact Kevin Sellner, [sellnerk@si.edu](mailto:sellnerk@si.edu).