



**Scientific and Technical Advisory Committee
September 13-14 Quarterly Meeting Minutes
Sheraton Annapolis Hotel - Annapolis, MD**

September 13 Minutes

Attendance:

Members: Charles Abdalla, Brian Benham, Donna Bilkovic, Charles Bott, Russ Brinsfield, Bill Dennison, Carl Friedrichs, Marjy Friedrichs, Greg Garman, Kurt Gottschalk, Kirk Havens, Robert Hirsch, Susan Julius, Doug Lipton, Poornima Madhavan, Jack Meisinger, Margaret Mulholland, Ray Najjar, Michael Paolisso, Vikram Pattarkine, Jim Pease (remote), Christopher Pyke, Marc Ribaud, Ali Sadeghi, David Sample, Denice Wardrop (remote), Lisa Wainger, Don Weller, Claire Welty, Gene Yagow (remote)

Guests: Michael Barnes, Rich Batiuk, Jessica Blackburn, Anna Stuart Burnett, Kevin DeBell, Pat Gleason, Rick Keister, Victoria Kilbert, Lewis Linker, Jamie Mitchell, Gary Shenk, David Simpson, Tim Wilkie, Karl Blackenship, Hank Zygmunt

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

Announcement of Closed Session

STAC Chair, Chris Pyke (USGBC), called the meeting to order shortly after 10:00 am. Following member introductions, Pyke began the meeting by requesting a motion to approve a closed session for the first hour of the STAC meeting. The closed session offered 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. Given the nature of these issue, Pyke suggested that only STAC members and advisory committee staff remain in the room or on the phone for the LimnoTech presentation and discussion by Don Weller (SERC) and the “STAC’s relationship with the Chesapeake Bay Program” discussion.

Vote: Pyke asked members for a motion to approve a closed session for the first hour of the September quarterly meeting to discuss the LimnoTech report findings and the CBP-STAC relationship. Results: Motion carried - closed session approved.

Vote: Pyke asked members for a motion to end the closed session. Results: Motion carried - end closed session approved.

LimnoTech Review Update - Don Weller

Weller explained that the LimnoTech report contained a number of false expectations about what watershed models should be able to do. For example, LimnoTech stated that:

- We must ensure that the CBP Watershed Model is “correct” before moving forward with the Total Maximum Daily Load (TMDL).
- Different watershed models should use the same input data, make the same key assumptions, and use the same algorithms and modeling frameworks.
- Differences between the models should be resolved before the TMDL moves forward.

Weller also explained that the LimnoTech report incorrectly compared nutrient and sediment loads between the USDA's Conservation Effects Assessment Project (CEAP) model and the CBP Watershed Model. According to the review committee, there are two types of loads in question for this analysis. There are background loads which represent the nutrients that would runoff the land if there was a mixture of unmanaged grass and forest, and there are controllable loads which represent additional nutrients that would runoff the land if the land came under agricultural cultivation. Thus the watershed's total nutrient load is more correctly represented as the background load plus the controllable load. However, LimnoTech chose to compare the total load from the CBP Watershed Model to only the controllable load from the CEAP model. Additionally, LimnoTech compared 2009 CBP Watershed Model results to 2003-2006 CEAP model results. According to the review committee, if you compare total loads from the 2005 CBP Watershed Model results to total loads from the 2003-2006 CEAP model results, you will find the loads are much more similar than LimnoTech claimed.

Based on these and other findings, the review committee recommended the following to the CBP:

- Do not delay implementation of the TMDL.
- Implement the TMDL in an adaptive management framework.
- Employ a multiple modeling strategy.
- Integrate knowledge from the CEAP project into the CBP Watershed Model for future model changes.
- Enhance comparability of all Chesapeake Bay Watershed models by: standardizing some fundamental data inputs; understanding uncertainty of models; improve access to critical data; improve model accounting for lag times; use the CEAP model to test best management practice (BMP) efficiencies.
- Subject all models to regular peer review.
- Compare models to data, not to each other.
- Promote a more realistic understanding of the uncertainties associated with watershed models.

For a complete list of the review committee's findings and recommendations, please refer to the review report which is available at:

http://www.chesapeake.org/pubs/255_CommitteefortheANPCLimnoTechReview2011.pdf.

Discussion: Bob Hirsch (USGS) pointed out that the review committee found many ways to improve the CBP Watershed Model, but the reviewers were unanimous in their opinion that the TMDL should not be delayed as these improvements are made.

Many members expressed concern that the language in the recommendations was too strongly worded and could be viewed as policy and regulatory recommendations while historically, STAC has not advocated policy. Weller explained that many of the recommendations listed in the presentation were excerpts from paragraphs within the report that better qualified each recommendation. Weller agreed to consider slightly different language and alter the placement of the recommendations within the report.

STAC's Relationship with the Chesapeake Bay Program - Chris Pyke

Pyke transitioned from Weller's presentation into a broader discussion regarding STAC review protocols and CBP-STAC communication issues that were highlighted by the LimnoTech review process. Pyke explained that when EPA first requested the LimnoTech review, no EPA representative notified STAC that this review would be used as supporting evidence in an ongoing legal case. Many STAC members became concerned when they were made aware that the review would be used in such a matter. Additionally, Pyke explained that many members were concerned that the LimnoTech review request came from a single CBP partner (EPA), rather than being submitted by the entire Partnership. This presents a problem for STAC reviews because STAC is an independent advisory committee to the entire Partnership and reports directly to the CBP Executive Council, rather than to individual members.

Discussion: Kirk Havens (VIMS) explained that STAC's findings are seen as much more powerful when it responds to the entire partnership and the Executive Council. Kevin Sellner (CRC) clarified that requests from the Partnership typically identify an individual group or organization making the request, and that STAC has historically responded to the individual group or organization. There was also discussion regarding whether or not STAC should allow individual governors to request STAC reviews, as each governor represents a partner jurisdiction on the Management Board.

Pyke reiterated that the LimnoTech review provides an example of the type of contentious issue STAC may be asked to weigh in upon in the future. Members agreed that STAC should consider changes to its review protocols to clarify who can request STAC reviews.

End of Closed Session

Announcements and Consent Agenda - Chris Pyke

Following the re-opening of the STAC meeting, Pyke asked if they had any announcements to make. No members had announcements at that time. Pyke then asked members if they had comments or revisions to the June meeting minutes. Havens requested that Donna Bilkovic (VIMS) be added to the attendance record for the June quarterly meeting.

<p>VOTE: Pyke asked members for a motion to approve the June quarterly minutes with the suggested change. Results: Motion carried - minutes approved.</p>
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Rich Batiuk (EPA-CBPO) announced that he will be stepping down as the liaison between STAC and CBP. Gary Shenk (EPA-CBPO) will replace Batiuk following this meeting. Shenk will now be STAC's direct contact, not only to the CBP, but also the entire Partnership.

Sellner announced the multi-state/academic/agency sampling effort currently taking place across the Chesapeake Bay Watershed as a result of Hurricane Irene and Tropical Storm Lee. Sellner agreed to discuss the ongoing basin-wide monitoring effort in a five minute discussion that will take place later in the meeting.

Pyke then reviewed the Executive Board (EB) discussions that occurred between the June and September quarterly meeting to give the Committee an opportunity to discuss and approve the

EB's decisions. All motions were individually discussed, and STAC members did not express concerns with the EB's decisions (also known as: the consent agenda).

**VOTE: Pyke asked members to vote to approve or reject the EB's consent agenda.
Results: Motion carried - consent agenda approved.**

Outstanding Reports

Matthew Johnston (CRC), STAC Coordinator, updated STAC members on the Cover Crops and Goal Line Report. Jack Meisinger (USDA - ARS) plans to get the Goal Line Report out to STAC members in the next couple of weeks and the Cover Crops report should not be far behind.

STAC Membership Needs

Long-time STAC member, Doug Lipton (UMD), will no longer hold a spot on the EB following the September meeting. Johnston asked STAC members to review the EB nominees, vote, and return the ballot to STAC Staff before the end of the meeting on Wednesday. Johnston also encouraged STAC members to participate as "liaisons" on various CBP Goal Implementation Teams (GITs) and workgroups. Following the meeting, STAC Staff forwarded a list of STAC liaisons to the staffs of each GIT and workgroup.

Hydrodynamic Modeling Workshop Update - Marjy Friedrichs

On June 9-10, 2011, STAC partnered with the Chesapeake Bay Community Modeling Program (CCMP) to host a workshop investigating potential future uses of hydrodynamic models by the CBP. Marjy Friedrichs (VIMS) presented the workshop steering committee's final recommendations to the CBP. By 2015 the CBP plans to have a new, fully calibrated and functional Chesapeake Bay model. As a result, Friedrichs suggested now was an ideal time for the modeling community to come together and discuss the next generation CB model. The objective of this workshop was to compare the CB model to several other hydrodynamic models and determine each model's strengths and weaknesses in hopes that this information could inform the next generation of CB models. The workshop focused on six models, three of which are being used in the Chesapeake Bay. Some recommendations from this workshop included: run multiple models, and be able to easily switch between them; establish a Chesapeake Modeling Center to help enable all recommendations; establish a CBP ad-hoc advisory committee.

Action: Marjy Friedrichs will send the Hydrodynamic Workshop report to STAC Staff by September 19, 2011.

State Nutrient Trading Programs Review Update - Pat Gleason

Pat Gleason (EPA) updated STAC on the progress of EPA's State Nutrient Trading Programs Review. Gleason explained that the EPA expects that each jurisdiction will account for new loadings in nitrogen, phosphorus, and sediment through offsets such as credits generated by other sources, and consistent with the Clean Water Act (section 10, Appendix S of the TMDL). Section 7 of the Clean Water Act states that the EPA will ensure the implementation of the TMDL through trading and offsets programs. To accomplish this, EPA recently began a program review of each jurisdiction's nutrient trading program. The reviews were designed to

be minimally burdensome to the states. Each jurisdiction received a questionnaire in late 2011. The program review team then collected and analyzed the surveys, conducted face-to-face and phone interviews, and corresponded through email with trading experts and managers from each jurisdiction.

A draft of the EPA's program review was recently sent to all jurisdictions. Jurisdictions will be submit recommendations by October 15, 2011, to ensure the jurisdictions have time to consider the program review for their Phase II watershed implementation plans (WIPs). STAC will also be given a chance to comment on the draft report. Additionally, Gleason suggested that STAC be involved with the Phase II WIPs stakeholder meetings and advisory groups. More importantly, it is recommended that STAC participate in and be involved with the Chesapeake Bay Offset Trading workgroup (formally named Water Quality Trading Forum). Gleason asked Victoria Kilbert (CRC) to add all STAC members to the group's distribution list.

Discussion: Russ Brinsfield (UMD) asked if the EPA was overwhelmed with how states planned to do credit calculations, accountability, tracking, and verification. Kilbert discussed how Maryland separates the trading programs and how it looks at agriculture differently than stormwater. Kilbert also explained that jurisdictions have representation from Maryland on the Agriculture Workgroup and the Stormwater Workgroup.

CRC Staffer Presentations - Michael Barnes, CRC

The Science, Technical Analysis, and Reporting (STAR) Team staffer, Michael Barnes (CRC), presented an overview of his team's most recent activity. Barnes discussed his work as a staffer and his future career development and long-term plans. Barnes gave an overview of STAR's role within the CBP. Barnes explained that STAR provides the science needs for all GIT teams, and explained his involvement supporting other teams including the modeling team and the watershed technical workgroup. STAR is currently working on a STAR indicators workgroup topical meeting, which will assist the CBP as it plans for this year's assessments, accountability and outreach, including the indicator framework. Barnes is current working with the USGS, STAC, and PSU to determine how changes in climate will affect the CBP Watershed Model. He is also working existing open source software tools to enhance the ability to visualize and retrieve the output of sediment transport data. Barnes plans to attend graduate school, work as a hydrologist in the future, and continue with environmental education through volunteering.

Discussion: Havens asked what Barnes believes the differences are between STAR and STAC. Barnes responded that the difference between the two is that STAR is a science provider and STAC is a science advisor. Barnes also thinks that STAC is seen as looking into the future and conducting long-term science. Additionally, some members were interested in becoming more involved in STAR activities and requested they be added onto its interested parties list. Finally, Pyke questioned the reasoning behind having a STAR group since STAR is ultimately responsible for each GIT. Members weighed in on Pyke's comment, and Peter Tango (USGS) explained the difference between an advisory committee and involvement in day-to-day operations.

CRC Staffer Presentation - Anna Stuart Burnett, CRC

Maintain Healthy Watersheds GIT staffer, Anna Stuart Burnett (CRC), presented an overview of her team's most recent activity. The GIT is currently working with STAC to organize a workshop to investigate if nutrient retention capacity of existing landscapes can be credited in the CBP model. The GIT is also working on developing fish indicator of stream health with the help of STAC member, Greg Garman (VCU). Additionally, the GIT is working with STAC member, Carl Hershner (VIMS) to develop an adaptive management decision framework.

Burnett also gave an overview of her educational background and work experiences related to environmental issues. Burnett has also taken full advantage of CRC's career development program by attending seven career development activities and an Across Borders Fellowship that took place in the Middle East, where she studied trans-boundary resource management. Burnett plans to attend graduate school at Johns Hopkins University, work for an environmental consulting company, and explore the world.

Cost-Benefit Analysis of the TMDL Update - Kevin DeBell/David Simpson

At the last two STAC meetings, the Committee requested that Kevin DeBell (EPA-CBPO) and David Simpson (EPA) return to discuss EPA's progress in analyzing costs and benefits associated with the Chesapeake Bay TMDL. DeBell began the presentation with an overview of how the analysis has progressed since the last STAC quarterly meeting. According to DeBell, progress has been made in the last three months. Team members have put together a set of draft unit costs for best management practices (BMPs) that were submitted in the Phase I WIPs. Essentially, a series of spreadsheets have been developed that identify all of the agricultural BMPs, and provide unit costs for each BMP along with supporting information that explains for how those costs were derived. Twenty-seven BMP spreadsheets were developed, and DeBell hopes these spreadsheets will be improved over time with input from jurisdictions. The Water Quality GIT has received the agricultural BMP information and should already be working with jurisdictions to determine areas for improvement. The project has reached out to several stakeholder groups and DeBell anticipates that this will continue throughout the life of the project. DeBell hopes to have some part of the benefit analysis completed to be released in conjunction with the cost analysis.

Discussion:

Multiple members questioned if the EPA planned to break certain BMPs into different scales of implementation and identify separate unit costs for each scale. DeBell explained that unit costs are assigned per BMP and per state. Pyke suggested that declining or non-linear cost curves with scale of deployment would be most helpful to the governors. STAC members requested that DeBell summarize the cost study's methods in a document for STAC.

Action: Lisa Wainger will work with Kevin DeBell to summarize the EPA's Chesapeake Bay cost study methods and will distribute this summary amongst interested STAC members. If you would like more information regarding the cost study, please contact Lisa Wainger, wainger@cbl.umces.edu
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David Simpson (EPA) presented an update on the National Center for Environmental Economics (NCEE) project on estimating the benefits of improving water quality in the Chesapeake Bay

Watershed. Simpson explained that the standard evaluation methods for the benefits analysis would be an orthodox approach using standard tools of environmental economics. Simpson also pointed out that this is one of the largest research projects he has seen in the last several years at NCEE. Simpson also reminded STAC members that a workshop would be conducted in six weeks on cost and benefit work in the Chesapeake Bay in an effort to better organize the two studies and gain input from experts.

Discussion: Carl Friedrichs (VIMS) asked Simpson if he was aware of any precedents for environments that have undergone similar analyses, such as the Florida Everglades. Simpson was not aware of any precedents. Pyke wanted to know if Simpson could speak to any coordination to the Chesapeake Bay Commission's (CBC) work on costs and benefits of nutrient trading. Pyke also wanted to know if NCEE planned to coordinate with the CBC study. According to Simpson, NCEE will be excited to see what the CBC comes up with, but there will be no coordination between the two studies. Wainger asked how NCEE is planning on connecting the known ecological endpoints and human benefits. Simpson responded that improvements in commercial fisheries, recreational fisheries, water quality, and reductions in sedimentation are already in the work plan. Simpson also said that NCEE is doing its best to minimize any overlapping of values or double counting.

Action: STAC Staff will send around David Simpson's summary of NCEE Chesapeake Bay valuation study proposal.

Action: STAC Staff will continue to coordinate with Kevin DeBell and David Simpson to receive updates on the Chesapeake Bay valuation studies. STAC Staff will consider inviting Kevin and David to a later STAC meetings.

National Climate Assessment Update - Susan Julius

The National Climate Assessment (NCA) is considering the Chesapeake Bay as a case study area. Susan Julius (EPA) briefly described the NCA's study, and then led members in a discussion of what STAC's role should be regarding the study. NCA is collecting expressions of interest from scientific experts throughout the region. These expressions of interest should indicate known research related to climate assessments in the region. The NCA hopes to release a draft report in June 2012, and a final copy is due in 2013. If STAC is interested in participating, a response is due on October 1, 2011, and a final response is due March 1, 2012. If any STAC member has relevant research, they are asked to submit the work to Julius by October 1, 2011. If a STAC member has completed work related to climate change that can be applied to this case study, also forward that work to Julius.

Discussion: Pyke asked Julius how the NCA planned to fund expressions of interest. Julius explained that if you submit an expression of interest, they will not have funds to sponsor it. Ray Najjar (PSU) suggested that the most cost effective way to handle this would be to synthesize the material, which was recently done 2008, and again one year later it. Najjar suggested that Julius condense the information and have it be part of the report. Another member said that STAC has already put a ton of resources into this topic and that we should use the current information STAC already has. At a minimum, Julius suggested STAC should summarize what work STAC has completed related to climate change.

Action: Chris Pyke, Ray Najjar, and others will put together annotated bibliography and cover letter regarding recent climate change research. Susan Julius will work with this group and forward this information to National Climate Assessment. If you are interested, please contact Susan Julius, julius.susan@epa.gov

Marcellus Shale Workshop Proposal - Kurt Gottschalk

Kurt Gottschalk (USFS) presented a two-part workshop proposal that will allow STAC to first identify the state-of-the-science surrounding Marcellus shale drilling, and then gather stakeholders and Citizen Advisory Committee (CAC) members to discuss water quality and policy ramifications. Gottschalk explained that the objective of the first workshop will be able to identify the specific research gaps and impacts that natural gas drilling will have on water quality in the Chesapeake Bay. Gottschalk indicated that many agencies, including EPA, USGS, and USDA, have been involved in conducting research natural gas drilling, along with many universities, state government, and industry. However, there is still a real need to bring all parties together to collaborate and compare notes. Gottschalk found a USDA funded meeting headed by Jim Grace (PSU) titled "Ecological Stewardship of Gas and Oil Development." This meeting is temporarily scheduled to take place at Penn State University (PSU) in early Spring of 2012. The steering committee decided to try and "piggyback" this meeting, so it can bring together all the experts in the field. This one-day STAC workshop will take place in State College, PA, close to PSU campus. The steering committee plans to invite thirty participants and has an estimated budget of \$7,500.

Discussion: Johnston introduced Jessica Blackburn (Alliance for the Chesapeake Bay) who discussed the CAC's future involvement and interest in this workshop. Blackburn hopes the CAC can be involved on a second phase of this workshop that will focus on policy recommendations. Gottschalk explained that STAC needs to get an idea of where the state-of-the-science is first, before it starts discussing policy. Najjar asked for clarification between the PSU and the STAC workshop. Gottschalk said that the first meeting is to try and bring together all the experts doing research on the impact of natural gas drilling. Members suggested adding "environmental" to the proposal title to make it read "Exploring the Environmental Impacts of Natural Gas Drilling in the Chesapeake Bay Watershed Workshop." Havens pointed out that the workshop report completion date should be June 2012 instead of August 2012, if the steering committee holds the workshop in March. Sellner recommended that Gottschalk cut back on the steering committee because too large of a steering committee can slow the report down. All members agreed with Sellner's recommendation to keep this (and future) steering committees around 4-5 members.

CBP's Response to the NAS Review - Julie Winters, Jeff Horan, and Rich Batuik

The CBP's Independent Evaluator Action Team has prepped a response to a recent NAS study titled, "Achieving Nutrient and Sediment Reduction Goals in the Chesapeake Bay: An Evaluation of Program Strategies and Implementation." Jeff Horan (MD DNR) gave an overview of the report, explained why it was needed, and the science-based conclusions that came out of the report. The action team developed 25 science-based conclusions - not to be confused with recommendations - that the CBP can take from the report, and implement into its internal functions.

Horan explained that the NAS was asked to identify problems with the CBP's tracking and accountability methods, including the tracking of two-year, jurisdictional milestones. The NAS report criticized the CBP adaptive management or lack thereof, and noted that the CBP might lose flexibility in its adaptive management as the TMDL progresses. Horan continued to highlight other areas of concern in the report like climate change, public perception, and establishing a modeling laboratory. The CBP responded to all of these concerns, and Horan requested STAC's input on the CBP response.

Julie Winters (EPA-CBPO) followed Horan's presentation by describing how the Partnership plans to implement the NAS report's recommendations. The Principals' Staff Committee (PSC) asked the action team to develop formal recommendations for how the Partnership is going to act and respond to the 25 recommendations found in this report. The PSC also requested the action team recommend a path forward for an ongoing "independent evaluator." The formal response is tentatively set to be a two-part report; one section will be a "road map" addressing the 25 recommendations from the report and the second section will be the key challenges, or the three main recommendations from this report which are BMP verification, Adaptive Management, and a Modeling Laboratory. The action team recommends that the PSC develop an independent evaluation advisory committee for the CBP that will look at the entire program and be responsible for understanding what internal and external evaluations have been done, where the gaps are, and what the program might want to do to address those gaps. Additionally, as soon as the CBP starts implementing adaptive management, evaluation and independent evaluation, the quicker it will become a stronger component in adaptive management credibility. Goal teams and action teams are expected to respond by late September and will then be sent back out to the program for comments. The report is set to be complete by November 4, 2011.

Discussion: Meisinger (USDA-ARS) wanted to know what kind of USDA interaction the study received. Rich Batuik (EPA-CBPO) mentioned that CBP approached the internal agricultural workgroups, and has separately reached out to other external groups, but unfortunately the communication between the two agencies is still poor and needs to improve. Havens would like to know how the new Independent Advisory Committee or Independent Evaluator (IE) will be able to identify as "independent" from the CBP. Winters and Batuik both agreed that the IE must remain independent from the CBP. Winters ended the presentation by telling STAC members that their comments on this report are appreciated and will help the process move forward. Finally, Batuik stated that STAC's voice on the Management Board is influential in the decision-making process, and he hopes STAC will continue to be a voice on this and other issues.

Action: Julie Winters and Jeff Horan will forward the Chesapeake Bay Program's draft response to the National Academy of Science report to STAC Staff. STAC Staff will distribute to members.

State of Maryland Market Transformation Workshop Overview - Chris Pyke

Pyke has been working with the State of Maryland to create a workshop proposal that will allow STAC to identify potential certification programs and other market transformation mechanisms that could encourage smart practices that protect water quality. Pyke described the reasoning behind the proposal, and how he hopes to permanently shift the distribution curve with different kinds of intervening. According to Pyke, there are three different ways to intervene in markets.

There are laws, regulations, and minimums. Pyke explained that producers can be penalized by violating a minimum standard, or receive monetary incentives to meet a higher standard (e.g. conservation funds for agricultural BMPs). The problem this workshop would like to address is the lack of a third option to affect the market. One charge question this workshop will ask is: "how do we use this market-based information to shift the distributional curve?" Through Pyke's experience, the industry tries to create a competitive advantage for the high performers, and essentially ignore or put the low performers at a disadvantage. In the past, STAC members have mentioned interest in investigating market mechanisms beyond direct payment incentives and options outside regulations. This workshop will be a chance for those members and other interested parties, to bring together a number of overlapping interests and topics for discussion. Governor O'Malley reached out to Pyke at the 2011 Executive Council meeting with the very same interests mentioned above. Pyke told O'Malley that STAC cannot solve this issue for him, but it can explore the options.

Discussion: One member asked Pyke for a real world example of the distributional curve shift. Pyke responded by describing the advances in energy efficiency of hot water heaters. Innovation and research and development within the hot water heater industry generated new technology that enabled manufacturers to apply for energy star recognition. The energy star label then separated the "good" producers from the "bad" producers. This resulted in the "good" producers receiving more business, and shifted the entire hot water heater energy efficiency distributional curve. Incentives can get costly, but they are designed to be cost effective and produce change. In response, members tossed around the idea of designing a rating system for various producers the Chesapeake Bay Watershed. Members were asked to contact Pyke and Johnston if they were interested in participating in this workshop, and possibly on the steering committee.

September 14 Minutes

Attendance:

Member: Charles Abdalla, Brian Benham, Donna Bilkovic, Charles Bott, Russ Brinsfield, Carl Friedrichs, Marjy Friedrichs, James Glancy, Kurt Gottschalk, Kirk Havens, Robert Hirsh, Susan Julius, Doug Lipton, Poornima Madhavan, Jack Meisinger, Margaret Mulholland, Ray Najjar, Vikram Pattarkine, Jim Pease (remote), Christopher Pyke, Marc Ribaud, Ali Sadeghi, David Sample, Lisa Wainger, Don Weller, Claire Welty, Gene Yagow (remote)

Guests: Kathy Boomer, Nick DiPasquale, Rick Keister, Jamie Mitchell, Gary Shenk, Ken Staver, Hank Zygmunt

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

New CBP Director Introductory Remarks - Nick DiPasquale

Nick DiPasquale (EPA-CBPO) became the new CBP Director in July, 2011. DiPasquale described his professional experience in environmental policy which included time spent working with state governments, conservation organizations, nutrient management boards, and the private sector. DiPasquale also explained that he views the TMDL as a game changer, and emphasized he believes it is important for CBP managers to find creative ways to make the TMDL successful. DiPasquale feels that trading programs are the perfect opportunity to help push the restoration process along. DiPasquale also explained that he met with Pyke, Johnston,

and Gardner over the previous week to discuss STAC's role as an independent advisory committee, future interests in restoration efforts, and the essential need to have STAC involved in all aspect of CBP. He described a few key challenges he sees facing the CBP such as: developing an independent evaluator; incorporating adaptive management into decision-making; and addressing climate change in all programs. In DiPaquale's first few weeks at CBP, he has observed a ton of talented individuals dedicated to Bay restoration. Additionally, he believes the CBP is on the leading edge of future ecosystem restoration efforts, which made this position attractive to him. DiPasquale concluded his remarks by saying that clean water and water quality cannot be the only issues CBP focuses on, conservation issues need to be included in CBP efforts as well.

Discussion: Pyke suggested that members go around the room, introduce themselves, and describe their areas of expertise so DiPasquale could have an idea of the broad areas of expertise existing within the membership. Following introductions, DiPasquale said that he was impressed with the range of knowledge and talent on STAC. Members began the question session following DiPasquale's presentation with a clarification of what he meant by "clean water is important, but we don't want to forget about conservation." DiPasquale clarified that the TMDL is descriptive and focused on achieving the clean water goals, but he does not want us to forget about other activities out there that are focused on habitat and other restoration issues. He also thinks our focus should not be TMDL deadlines, but rather looking for things on the horizon that might affect our ability to get the job done, such as natural gas drilling.

STAC Membership Needs

Pyke began the meeting by reviewing the workshop proposal that he briefly discussed the previous day. Johnston suggested the committee vote on withholding funds of \$7,500 for the Market Transformation workshop with the understanding that Pyke will bring a present a full workshop proposal at the December quarterly meeting. If the proposal is not approved, STAC will release the \$7,500 for other purposes.

<p>VOTE: Pyke asked members to vote to approve or reject holding \$7,500 of workshop funds for the Market Transformation workshop to take place in Spring, 2012. Results: Motion carried - funds approved.</p>

Future Chesapeake Bay Model(s)

Sellner started a discussion about a letter that Friedrichs, Sellner, and Najjar plan to send to the CBP. Sellner explained that EPA plans to move forward with a single model for regulatory. Sellner and others hope to convince the CBP that multiple models are necessary for regulatory decisions. The proposed letter from STAC requests the CBP release an RFP for any future models. The letter also included the following two recommendations: (1) that STAC assist the Bay program in selecting any future hydrodynamic models and that the models be selected through a quantitative skill assessment, using some tools to say how representative the model output is to data; and (2) decisions on any future regulatory model be done with independent peer review. Additionally, they encouraged the CBP to direct a portion of its funds to provide the multiple model output. Overall, the letter represents an attempt to get independent peer review

into the process and an opportunity to not only have verbal support from CBP, but also have a portion of the CBP annual budget dedicated to model development and assessment.

Discussion: Havens expressed his interest in this undertaking. Havens wanted Sellner to clarify who would be receiving the letter. Havens thought it should go to the Partnership and Sellner agrees, but hopes it will make it to DiPasquale, the rest of the CBP administration, the Management Board, and then all the partners. Sellner explained that local governments do not have any money for modeling efforts, but that they need to be confident in the modeling approach going forward.

Action: Kevin Sellner and Marjy Friedrichs will draft a letter recommending an RFP for the future Chesapeake Bay Program model(s). STAC Staff will work with Kevin and Marjy to edit and distribute amongst STAC members.

VOTE: Members were asked for a motion to accept the CBP model recommendations. Results: Motion carried - recommendations accepted.

Announcements

GIT Liaisons

Johnston suggested that the best way for STAC members to become liaisons for the GIT is to volunteer to be on distribution lists for the workgroups. Members had several questions the day before about what liaisons actually need to do. Havens pointed out that STAC members get a lot of attention at CBP meetings. Havens suggested that just having STAC members at meetings or on conference calls can give CBP workgroups access to a wide scientific community that can help answer fundamental technical questions. Sellner added that the additional value is that members can bring information back to STAC.

STAC Volunteer Contribution Survey and 2012 Meeting Dates

Gardner reminded everyone about the request that STAC members made at the 2010 March quarterly meeting. Members requested that STAC Staff track individual member contributions to STAC and the monetary value these contributions add to STAC. Gardner developed a survey that will be sent to members every quarter. The survey asks each member to relate how many hours he or she contributed to certain STAC items, and place a dollar amount he or she feels appropriately reflects his or her time.

Gardner then announced the 2012 STAC meeting dates, based on the doodle poll responses. STAC meetings will take place on the following days in 2012:

March 27 & 28
June 19 & 20
September 11 & 12
December 4 & 5

Coastal Plain Nutrient and Sediment Fate and Transport Research - Ken Staver

Ken Staver (UMD) summarized what he and colleagues have learned about nutrient transport patterns and provided an assessment of adjustments needed in the current strategy to increase the likelihood that agricultural load reductions in the Coastal Plain are achieved. The Wye Research Center has been monitoring nutrients since the early 1980s. Staver's research has focused mainly on surface runoff. The strategy for this research was to look at the BMPs that were being implemented, and determine how well they worked at a commercial (farm) scale. Staver and his team conducted several different experiments over the years to see which BMPs worked and which ones did not. According to Staver, no BMP can really alter the volume of water running off a field. The key is to reduce the amount of nutrients that erode. Tilling practices causes significant soil loss. Additionally, there are several long-term issues with soil phosphorus. Current phosphorus and nutrient management plans allows for the build-up of phosphorus in the soil. Thus, the current policy is contributing to increased phosphorus erosion. Currently, phosphorus is not accounted for very well in the Bay model. Staver suggests long-term, soil testing for phosphorus, and tracking these tests in a systematic way.

Discussion: Brinsfield is hoping that STAC will consider taking action because of Staver's research. Brinsfield agrees with Staver that the model does not correctly model phosphorus. Brinsfield suggested that someone look at the CB model and see how it is treating phosphorus. Brinsfield also does not think it is right to wait until 2017 to address this issue. However, Brinsfield explained that there is likely to be concern amongst state partners if the model is changed to account for phosphorus because the WIPs are being created and investments will be made. STAC members agreed to develop an ad-hoc workgroup to investigate the phosphorus issue and make recommendations to the CBP. DiPasquale thinks it is more important to deal with how we account for phosphorus first before we worry about any trading issues. Members also think the workgroup should include non-STAC members such as state people that write the soil phosphorus (P)-index. This would be considered a proactive STAC activity.

Action: Russ Brinsfield will lead a group of STAC members and interested parties to include Brian Benham, Bob Hirsh, Ali Sadeghi, Marc Ribaud, Ken Staver, and Gary Shenk in discussion on best to incorporate recent soil Phosphorus research in the Chesapeake Bay model.

Modeling Nutrient Transport in Groundwater Review Update - Kathy Boomer

Kathy Boomer (SERC) conducted research to compare how different watershed models handle groundwater dynamics and nutrient transport in groundwater. In order to have an effect on water quality, it is important to place the BMPs in certain areas in the watershed. Younger groundwater can be found closer to the discharge zones while mineral rich groundwater is found deeper in the aquifer. Evidence shows that deeper aquifers have a stronger effect on water quality during dry events, but wet events have a stronger effect with younger water. Boomer explained that fertilizer application was a major factor introducing nutrients into the groundwater system. Additionally, the depth of the water table has a big influence on what portion of the nutrients are transferred to the groundwater. De-nitrification also affects nutrient transport. Most watershed models focus on shallow soil processes, driven by plants, which account for a large portion of the soil nutrient removal from the system. Once that amount of nutrients is delivered to the outflow, there is no more processing of that outflow. The length of vegetation along streams reduces the nitrogen concentration in a proportionate factor.

Boomer also addressed how individual models deal with groundwater. She discussed the SWAT model which divides the watershed into small areas and uses field-scale data to model nutrient transport. Another watershed model that Boomer described was the GWLF model, which includes different saturation zones within the water table. These models all have gaps in knowledge, including lacking many nutrient transport mechanisms, stream water discharge computations, and the ability to identify biogeochemical “hot spots,” or places where BMPs would be most efficient. Boomer hopes the CBP will consider a spatially explicit model that will provide better information to the managers.

2011 Event Response

Sellner briefly discussed the sampling effort that is currently occurring for the turbidity plume travelling down from the Susquehanna due to Hurricane Irene and Tropical Storm Lee. Hurricane Irene caused NOAA and CRC to mobilize sampling within the tidal areas of the Bay. A sampling strategy was quickly identified and intense sampling began, heavily focused on heavy discharge coming from the Eastern Shore and the Western Shore tributaries. Shortly after, Tropical Storm Lee hit the Bay, and overwhelmed the Bay with sediment. A number of vessels are set up throughout the Bay, and biological sampling is being done for the entire Bay. There is also a similar effort happening in non-tidal portions of the Bay.