Scientific and Technical Advisory Committee
March 10th and 11th, 2015 Quarterly Meeting Minutes
Sheraton Hotel - Annapolis, MD

Tuesday, March 10 Minutes

Attendance:

Members: Alix D. Dowling Fink, Andrew Miller, Bill Dennison, Brian Benham, Carl Friedrichs, Carl Hershner, Charles Bott, David Newburn, Denice Wardrop, Donna Bilkovic, Gene Yagow, Glenn Moglen, Hamid Karimi, James Glancey, Joshua Behr, Kathleen Boomer, Kirk Havens, Kurt Gottschalk, Lisa Wainger, Marc Ribaudo, Marjy Friedrichs Maria Herrmann, Mark Lukenbach, Michael Ford, Robert Hirsch, Susan Julius, Thomas Ihde, Weixing Zhu, Zachary Easton.

Guests: Amy Freitag, Andrew Turner, Bruce Michael, Christopher Brosch, Dan Mallarkey, Emilie Franke, Garrett Gee, Gary Shenk, Jack Frye, James David-Martin, Jenna Valente, Jeni Keisman, Karl Blankenship, Lea Rubin, Louis Linker, Machelle Simmons, Margaret McGinty, Melinda Ehrich, Mike Allen, Peter Tango, Rebecca Murphy, Rich Batiuk, Samantha Watterson, Scott Philips.

Administration: Bill Ball, Kevin Sellner, Melissa Fagan, Natalie Gardner, Rachel Dixon, Renee Kelly.

Call to Order- Kirk Havens (STAC Chair/Virginia Institute of Marine Science - VIMS)

Havens called the meeting to order shortly after 10:00 am, followed by member and participant introductions. The new Chesapeake Research Consortium (CRC) Director, Bill Ball introduced himself and provided information on his future plans for STAC and CRC. Ball is expected to be the full time CRC Director by July 2015, while continuing to donate twenty-five percent of his time to Johns Hopkins University. Newly appointed STAC member, Zachary Easton (VT) also provided a brief introduction, including career experience and expectations for STAC. New STAC staff member, Renee Kelly (CRC) introduced herself and provided information on her education and roles as STAC staff. Havens followed with a reminder for all STAC members to complete their volunteer hour survey by March 20th. Following introductions and announcements, Havens requested a motion to approve the December 2014 quarterly meeting (QM) minutes before Friday, March 13th. After a short discussion, members agreed to approve the minutes before Friday. Additionally, Havens discussed the Executive Board (EB) decision to approve the budget expansion for the two remaining FY14 workshops and transfer the remaining funds to the FY15 workshop budget to accommodate the increase in workshop proposals. If approved, the FY15 workshop funds will increase by $9,300. Havens requested a motion to

DRAFT

approve the EB minutes and consent agenda. Members approved the minutes and the request to delegate funds to FY14 and the remainder to FY15 workshop budgets.

VOTE: Havens requested a motion to approve STAC consent agenda including budget expansion. Result: Motion carried – STAC consent agenda approved.

VOTE: Havens requested a motion for the approval of the December QM minutes before Friday, March 13th unless further edits and contributions are made. Result: Motion carried – December 2014 meeting minutes were approved on Friday, March 13th.

Long-term Jellyfish Data and What It Means To The System – Mike Ford (National Oceanic and Atmospheric Administration; NOAA)

Ford opened his presentation with a brief overview of jellyfish taxonomy and ecology. The presentation focused on the importance of jellyfish blooms and the potential for severe impacts affecting other organisms and trophic levels. According to Ford, jellyfish can specifically have major impacts on fisheries, sometimes clogging fishnets making it impossible to fish. Ford stated that last year's jellyfish season was an anomaly due to the high rates of jellyfish deaths and lack of sea nettle presence. Conservation of living resources is critical in the Bay, and jellyfish sometimes negatively impact those resources. Ecosystem based fisheries management (EBFM) approaches incorporate the predatory nature of jellyfish and other important factors. A vast amount of work is currently taking place in the upper Bay, facilitating jellyfish research into EBFM approaches. According to Ford, the amount of available data is not large enough to form diagnostics and thresholds which could be applied to the management discussion. There is now new technology called "Zoovis" which is a towed device capable of collecting a more comprehensive view of jellyfish in the Bay. The overall hope would be to incorporate any findings in jellyfish data into EBFM approaches to maintain sustainability in the Bay, specifically helping fisheries take precautionary measures if jellyfish populations seem problematic.

Ecosystem Based Fisheries Management – Amy Freitag (VIMS)

Freitag provided a presentation about EBFM approach, which includes interactions involving humans and all species and services within an ecosystem. Freitag intends to carve out an initial path to EBFM. There are three key parts of the process: connectivity (how humans and nature are connected), cumulative impacts, and multiple objectives. Most approaches place humans as a top predator in the food web. Freitag proposed that rather than being considered a primary consumer, humans can also provide services to the ecosystem. Freitag discussed work looking at the Rappahannock and Choptank rivers indicator development of what a healthy oyster looks like, identifying first policy steps, and small scale steps. Freitag chose these two rivers because of low representation of oysters in each river. There are no concrete priorities of EBFM, but the new Chesapeake Bay Watershed Agreement, Fisheries Ecosystem Plan, and specific oyster-related goals are good indicators of these priorities. Indicators will also come from a literature

review and what stakeholders think will make good indicators (survey of researchers, managers, watermen, aquaculturists, and nonprofits). Freitag currently has a survey out to the previously mentioned group of stakeholder. The priorities of oyster EBFM are to improve system resilience, oyster health, oyster habitat, improve water quality, support the economy, maintain cultural heritage, and retain healthy relationships between parts of the watershed. Freitag is asking participants in her survey to provide their ideas on what priorities are most important. A part of the survey will also discover what the popular indicators in regards to these selected priorities are. Upon completion, the survey results will be ranked for their importance in regards to the community. The next steps discussed were identifying the first policy steps by looking at network analysis (who are the surveyors contacting with oyster questions) and a policy analysis (identifying where existing legislation or code already supports EBFM and identifying where the indicator list will be useful). There are already 342 regulations in the six counties and two states that border her study rivers relating to oysters, and twenty of them could help EBFM. Most of the current regulations focus on harvest control and property rights. Freitag plans to have small scale community based tests: finding data sources for indicators and testing their integration. The overall goal is to have a EBFM roadmap for species other than just the primary fish focus. The final outcomes will be a list of socioecological indicators, map-based data integration tool, decision-support tool, and policy suggestions to better support EBFM that Freitag hopes will benefit others making EBFM decisions.

CRC Environmental Management Career Development Program

CRC's Environmental Management Career Development Program provides early career professionals with a stepping stone to a future career in the fields of environmental science, policy and management, and outreach and education. Staffers provide technical and administrative support to the various Chesapeake Bay Program partnership committees, teams, and workgroups and not only gain a solid professional foundation from which to build their careers, but also individualized development and career exploration opportunities. The Communication staffer, Jenna Valente (CRC) and the Fisheries Goal Implementation Team (GIT) staffer, Emilie Franke (CRC) provided an update on current team activities, as well as their own work and future plans.

Discussion of STAC FY15 Workshop Proposals

Havens guided a discussion of the STAC FY15 workshop proposals, where twelve proposals were proposed for the upcoming STAC fiscal year. STAC members heard brief presentations on each of the twelve proposals and engaged in an open conversation on each proposal. STAC staff provided a ranking sheet listing each of the twelve proposals directing members to rank each based on high priority and relevance to STAC.

Workshop proposals were presented using slides featuring the requested budget, timeframe and purpose. The discussion prompted many questions from members with a large portion focused

DRAFT

on budget and protocols. Members suggested that an *ad hoc* group should form to re-examine the workshop protocols and request for proposals (RFPs) to discuss ways to clarify the requirements. The STAC EB will meet following the meeting to determine if the proposed revisions are the most efficient way to conduct this process. STAC members also decided that due to the overwhelming variety of funding requests, guidelines need to be reinstated regarding what STAC is willing and able to fund.

Kevin Sellner (CRC) introduced the microplastics workshop emphasizing that this issue is becoming an emerging issue in the Chesapeake Bay. Ann Swanson (Chesapeake Bay Commission; CBC) provided a detailed overview of the microplastics workshop proposal, while stressing that the issue is moving forward whether the science is there to support it or not. This topic has been previously brought up at STAC meetings and as expected, provoked a lot of discussion and interest. Due to the overwhelming amount of workshops and the need to gain further research on microplastics, STAC members alternatively suggested that a white paper or review might be more appropriate for this topic. STAC staff will reiterate this idea when reviewing the rankings and look into funds for whitepaper/review support.

STAC members were provided hard copies of ranking sheets to be returned to STAC staff, Rachel Dixon, by Friday, March 13th. Members decided it was appropriate to rank a proposal "no" if funding didn't seem appropriate. STAC staff will follow up with ranking results, incorporating budget and timeline, as well as obtaining approval from STAC leadership.

ACTION: Havens requested that a subset of STAC members re-examine the workshop protocols and RFP's to discuss clarifying the requirements. The STAC EB will determine if the proposed revisions are the most efficient way to conduct this process.

ACTION: An *ad hoc* group of STAC members will collaborate to discuss STAC's role in assisting the Bay Program. Mark Lukenbach (VIMS), Carl Hershner (VIMS), Susan Julius (EPA), and Marjy Friedrichs (VIMS) volunteered to lead this effort.

ACTION: STAC members who did not submit their FY15 workshop funding priority ranking sheet should submit it to Rachel Dixon (CRC) at dixonra@si.edu by COB Friday, March 13th. Following the meeting, STAC staff will meet with STAC leadership to review funding and staffing needs based on review and workshop timelines to determine if additional funding is needed.

Update from STAR's Indicator Action Team – Peter Tango (USGS-CBPO)

Tango provided STAC with an update on the first meeting regarding indicators and associated monitoring supporting progress in tracking outcomes. This presentation was a reflection of work from STAR on the support for the new Chesapeake Bay Agreement. The Indicator Assessment (IA) team developed indicators to track progress, goals, and outcomes. Tango discussed the decision framework and the next steps which will be monitoring of outputs and outcomes, assessment as an accounting tool, and look at what is in the management strategies and how the

IA team can fit those into the next steps. The IA team has an outcome support process for reviewing the management strategies (MS), which includes reviewing the MS for indicator status, gaps, action items, and defining a timeline for addressing the needs/gaps and updating the indicator framework documentation. The product will include an indicator support document that will show management strategy outputs to see what the data is, how to monitor and analyze, and coordinate with the communications group and Chesapeake STAT.

Opportunities for STAC member involvement – Kirk Havens (VIMS)

Havens reminded STAC members about upcoming opportunities for member engagement during the monitoring and data analysis phase of the CBP management strategies implementation. Havens believes STAC can provide guidance on uncertainty, data analysis, and monitoring for this stage in the management strategies. STAC Staff will send links of the management strategy outcomes to STAC when finalized.

ACTION: STAC staff will distribute links to the CBP management strategies once finalized. STAC members will volunteer to assist the GITs, based on expertise, during the monitoring and analysis portion of the development process.

STAC Members Work Session (previously called Proactive Workgroup Discussions)

The committee broke out into groups for proactive workgroup discussions. Members could participate in the group of their choice. This was an opportunity for members to discuss certain topics such as the best management practice (BMP) panel protocols, social science, Bay Journal articles, microplastics, or STAC's workshop protocols.

Wednesday, March 11 Minutes

Attendance:

Members: Alix D. Dowling Fink, Andrew Miller, Bill Dennison, Brian Benham, Carl Friedrichs, Carl Hershner, Charles Bott, David Newburn, Denice Wardrop, Dona Bilkovic, Gene Yagow, Glenn Moglen, Hamid Karimi, James Glancey, Joshua Behr, Kathleen Boomer, Kevin Sellner, Kirk Havens, Kurt Gottschalk, Lisa Wainger, Marc Ribaudo, Maria Herrman, Marjy Friedrichs, Mark Lukenbach, Michael Ford, Robert Hirsch, Thomas Ihde, Weixing Zhu, Zachary Easton.

Guests: Brent Robinson, Bruce Vogt, Christopher Brosch, Congressman Rob Wittman, Dan Mallarkey, Gary Shenk, Jeni Keisman, Jennifer Walls, Kari Cohen, Peter Tango, Scott Philips.

Administration: Bill Ball, Kevin Sellner, Melissa Fagan, Natalie Gardner, Rachel Dixon, Renee Kelly.

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CBP response to the STAC workshop recommendations: Invasive Catfish Task Force (ICFT) Review Report – Bruce Vogt (NCBO)

Vogt began his presentation with an overview of the invasive catfish issues facing the Chesapeake Bay. Vogt explained that blue catfish are considered apex predators and have a broader habitat range with a greater chance of interactions with other species and organisms, while flathead catfish have a restricted habitat. The main concern involving these catfish is that they have high fecundity, no real predators, they are long-lived, and compete with native species as their diet shifts to piscivory around age 4 to 6. Large amounts of money are being spent in the Bay to protect the many species that the catfish prey on, making these efforts less effective. It is unknown how many catfish are out there, but the biomass could be upwards of 75% in some waters. The ICTF wants to improve its understanding of these fish and have already looked at other studies. The ICTF formed a workgroup in 2012 under the Fisheries GIT and was responsible for coordinating the best available science while developing management recommendations to mitigate invasive catfish from spreading, while also minimizing their impact on native fish species. The ICTF released a report in 2014 and included seven suggested recommendations. STAC conducted a review of the report and provided recommendations for the ICTF. The next steps are to revise the ICTF report to include STAC comments while also including more discussion of uncertainty, updating findings from ongoing research, and focus on setting goals and objectives for the fishery. It was suggested that invasive catfish should be incorporated into MS and two-year workplans. STAC strongly recommended a comprehensive management plan for invasive catfish, but the ICTF does not plan to develop that management plan. Vogt plans to push harder to implement the comprehensive management plan recommendation.

CBP response to the STAC workshop – Lag Times in the watershed and their influence on Chesapeake Bay restoration and Multiple Management Models – Gary Shenk (EPA-CBPO)

Shenk provided an update on the CBP response to the STAC Lag Times and the Multiple Models for Management workshop. Both responses have gone to the Management Board for review and this presentation was a preview of what the responses will be. The first recommendation to incorporating lag times into the CBP was to get better information on BMP maturation and effective operational periods. The BMP verification framework and expert panel review protocols have been modified to incorporate this recommendation. The second recommendation was to see BMPs react to precipitation and different landscapes. Data is a limiting factor with this recommendation but some landscape differences are already incorporated. Third, a comprehensive local inventory of BMPs was recommended and has been in the works for many years with help from USGS-USDA and other sources. Fourth, developing and applying supplemental models to inform the Chesapeake Bay Watershed Model on processes not currently simulated. Shenk mentioned a partnership with regional researchers to develop these models. A conceptual framework would need to be developed to encompass the interactions between

floodplains, stream channels, and sediment storages and the Phase 6 model has created room for this structure. Monitoring efforts to explicitly evaluate hypotheses have become a component of the workshop on water quality trends, as well as the designation of a USGS coordinator who is dedicated to this effort. Communication efforts for the public have also been put in place on what BMPs will do to water quality and the additional ecosystem benefits that will occur. Overall the CBP understands the issues/recommendations and the data/tools are being gathered to implement them.

Shenk then discussed the STAC recommendations and response to the multiple models for management workshop. The first recommendation was to implement a multiple modeling strategy for each major decision making model of the Bay. Shenk noted that the Airshed model was already complete and that others are in development (land use, watershed, and estuarine). The second recommendation was that CBP should exercise the new modeling systems developed to quantify model uncertainty and confidence in key predictions used in decisions-making, which is the objective of the STAC FY15 uncertainty workshop proposal. It was also recommended that CBP should estimate and better communicate the appropriate levels of spending on these models, which Shenk said is not easy to estimate but CBP could certainly aim to get a better understanding. Finally, it better communication on modeling, uncertainty, and multiple models for management was recommended. Shenk and the CBP agree that this is a crucial aspect of effective science-based management and once developed, uncertainty will be communicated. Shenk also mentioned that partners and decision makers are already effectively covered in the CBP participatory process and the public will be brought in as M3 influences decisions. Shenk ended by enlightening STAC that the CBP is making progress on multiple models, but will need help with applying uncertainty and collaboration on appropriate spending, and once that is complete, CBP will be in a good position moving forward.

STAC Review in Support of the 2017 CBP TMDL Midpoint Assessment – Rich Batiuk (EPA)

Batiuk provided updates, including the announcement of the Climate Change Coordinator position on March 12th, and review of the influence of STAC's involvement in CBP efforts and requests since 2006. Batiuk emphasized that many of the efforts over the years have provided strength and foundation to complete tasks at the CBP. Batiuk set the stage for the upcoming STAC reviews by describing the steps that got us to this point. Batiuk mentioned that he has been working directly with the previous and current CRC Director's, STAC staff, and STAC Chair to combine the reviews into a panel approach. Havens suggested an *ad hoc* group of STAC members meet to collate review panels, develop a plan forward, and discuss potential reviewers for the CBP requested STAC reviews. Batiuk will work with CBP leadership to develop specific questions for the reviewers and to determine how the review process will play out in 2016 and 2017. Batiuk suggested a panel, or series of panels, to work together so the sequence can flow easily starting in July 2015. Batiuk also noted that CBP needs to ensure the suite of tools is packaged correctly, which is why the timing for peer reviews is essential. Batiuk

promised to continue providing documentation for the review charge, conflict of interest, STAC recommendations, and CBP response to remain transparent and accountable.

ACTION: STAC staff will organize an *ad hoc* group of STAC members charged with collating review panels, developing a plan forward, and discussing potential reviewers for the CBP requested STAC reviews. Natalie Gardner (CRC) will schedule a conference call in the next two weeks with the following volunteers: Wainger, Hirsch, Wardrop, Ihde, Friederichs, and Luckenbach.

ACTION: Batiuk will work with CBP leadership to start developing specific questions for reviewers, and work with GIT chairs to determine how the reviews process will play out in 2016 and 2017 (what the timing is on the management side and when the decisions will start being factored in).

ACTION: Batiuk will also continue to provide documentation for the review charge, conflict of interest (COI), the STAC recommendations, and CBP Partnership response to remain transparent and accountable.

ACTION: STAC members will share the Chesapeake Bay Climate Change Coordinator job posting with relevant applicants and interested parties. The application process is open March 12th -22nd and can also be found at this link: https://www.usajobs.gov/GetJob/ViewDetials/396696000.

USDA, EPA, and USGS Collaboration – Scott Philips (USGS), Kari Cohen (USDA), and Rich Batiuk (EPA)

Batiuk invited Cohen, representing Wayne Honeycutt (USDA), and Philips to participate in a panel discussion regarding the STAC memo "Requesting Enhanced Participation from Federal Agencies to Improve Chesapeake Bay Program Technical Basis for Pollutant Modeling and Accounting". The memo outlined specific requests, and a generalized request for these agencies to provide enhanced technical expertise to inform the CBP moving forward with the Chesapeake Bay Watershed Model (CBWM), and the use of a multiple-model approach and other decision making tools.

Batiuk began with a review of STAC's request to improve inter-agency communication and increase efforts to include technical support from these agencies for models and Bay restoration projects. Batiuk followed by naming off colleagues who would fit into the specified groups STAC is requesting support for. Batiuk assured STAC that there should be no problem involving a representative from the different agency in CBP efforts. Cohen noted that groundwork has begun and USDA is committed to helping with the next iteration with the CBWM, and midpoint assessment. Cohen also named contacts that will be suitable for certain modeling groups and discussed efforts that are already taking place. Cohen will provide the name of the USDA Chesapeake Bay Initiative Coordinator to STAC once it is available, and

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thinks this will be a suitable match for the Watershed Technical Workgroup. Philips follows by mentioning that although the memo focused on getting more modeling interactions, the modeling tools will help us explain water quality trends. Philips explained that USGS had a five year interaction with USDA on showcasing water quality trends. There still needs to be more data and research to allow better explanation of improvements and trends.

Havens opened up the discussion to members and essential points were brought up. Sellner reiterated the importance of having a representative present at the CBP modeling workgroup meetings so innovative approaches to modeling can be shared and implemented as early as possible. Additionally, a summary of USDA modeling efforts should be provided at the same meeting, along with contacts so research can easily be brought together. Batiuk committed to getting a formal response to STAC regarding the details outlined in the memo.

ACTION: EPA will commit, along with USDA, to provide a formal response to STAC regarding the memo requesting enhanced participation from federal agencies to improve CBP technical basis for pollutant modeling and accounting. STAC will follow Batiuk, Cohen and Honeycutt to ensure it moves forward.

ACTION: Cohen will provide the name of the USDA Chesapeake Bay Initiative Coordinator to STAC when available.

Chesapeake Bay Recovery and Accountability Act – Congressman Robert Wittman (VA-1st District)

Havens invited Congressman Wittman to present on the Chesapeake Bay Recovery and Accountability Act, focusing closely on the Independent Evaluator (IE). This act was originally introduced to STAC in December 2008 before it was brought into law. Havens provided a brief introduction before turning the floor over to Wittman. Wittman provided STAC with an overview of what the Chesapeake Bay Recovery and Accountability Act is, stating that the Act is meant to track where every penny goes in the Bay using a cross-cut budgeting approach, to ensure that resources are reaching the right people in the right places. Cross-cut budgeting will look throughout the federal budget whenever three-hundred thousand dollars or are spent on the Bay. The Act and the IE will be an important tool, utilizing STAC, CRC, and other resources. It needs to be a data-driven process that Wittman assured will close the gap between science and management, and will ideally lead to public policy and decision making based heavily on science and data. Wittman focused on the need to earn the trust of stakeholders and communities around the watershed to assure that the most accurate data is produced. The Office of Management and Budget (OMB) will conduct the cross-cut budgeting and will go to different organizations requesting an explanation on where money is being spent on different areas of Bay restoration.

Philips asked what top three items the IE would accomplish from the start. Wittman provided the top three items as: (1) laying out how programs are being resourced and managed, (2) figuring out the structure of how things work and asking why certain things are taking place, and

(3) deciding whether that is the best way to do it. Sellner suggested that STAC see recommendations stemming from an IE before decisions are made about how money is spent. Sellner emphasized that there is usually important history behind what independent scientists are doing which can be justified. Wittman agreed to this idea and would like to have STAC and CRC involved as much as possible in the process.

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