Scientific and Technical Advisory Committee
Quarterly Meeting Summary
March 14-15, 2006
Radisson Hotel, Annapolis, MD

March 14, 2006

Attendance

Members:	Joe Bachman, Holly Bamford, Don Boesch, Ted Graham, Dave Hansen, Kirk Havens, Mike Kemp, Ron Korcak, Jonathan Kramer, Doug Lipton, Nancy Love, Gary Matlock, Saied Mostaghimi, Ray Najjar, Michael Paolisso, Jim Pease, Scott Phillips, Chris Pyke, Cliff Randall, Larry Sanford, Kevin Sellner, Tom Simpson, Jeff Skousen, Mark Walbridge, Don Weller, Claire Welty
Guests:	Rich Batiuk, Steve Giordano, Jim Hart, Lewis Linker, Brent McCloskey, Bruce Michael, Connie Musgrove, Mike Naylor, Jennie Niewood, Cynthia Suchman
Staff:	Melissa Fagan, Dan Gustafson

Call to Order
Doug Lipton, STAC Vice Chair – UMD, called the meeting to order at 10:00 AM. After introductions of members, guests, and staff, the December meeting minutes were approved.

STAC Membership
The committee addressed several membership issues. There is still one vacancy on the STAC Executive Board. Saied Mostaghimi was nominated by the Executive Board for this position and approved by the full membership. Additionally, with the reorganization several years ago and updates to the bylaws, two issues have presented themselves. Due to the maximum term length of 8 years (2, 4-year terms possible) and the assumption that the Vice Chair will go on to Chair the committee, it is likely that the Vice Chair's term limit would be reached before or during their tenure as Chair. The membership discussed the issue and agreed to allow term extensions for members serving as Vice Chair or Chair. This same exception will not apply to a member serving the in the Past Chair capacity. It was also noted that in June, the directors of VA and MD Sea Grant will reach the end of their terms in STAC. After discussion from the membership, it was decided that the Sea Grant Directors will not receive extended terms, but will be included on all STAC correspondence and will be able to participate in STAC activities. Finally, it was suggested at the December STAC meeting that a membership committee be formed to direct the nomination and selection of new members to the committee. The Executive Board recommended that they serve as the membership committee and the recommendation was approved by the full STAC.

Action: Carl Hershner, STAC Chair, will send nomination instructions to the committee in April for election of new At-large members at the June meeting.

CRC Subcommittee Support Staff Presentations

Dan Gustafson, CRC Subcommittee Support Staff Coordinator, introduced the two staffers giving updates on the activities of their subcommittees and workgroups. Brent McCloskey discussed his three workgroups under the Living Resources Subcommittee (LRSC). The Wetlands Evaluation Taskforce conducted an evaluation in 2005 and developed new tracking definitions, data reporting standards, and functional and acreage gains. In 2006 the taskforce will be working on developing a new reporting form. The Fish Passage workgroup met their *Chesapeake 2000* goal and are working to develop a new goal. The Stream Restoration workgroup is in the process of developing a stream restoration goal with input received from an earlier STAC workshop. Each jurisdiction is in charge of developing their own goals; however, some jurisdictions have indicated that their goal is actually already incorporated into their tributary strategies. Brent also assists the Mid-Atlantic Regional Panel (MARP) which includes 8 states and oversees 6 invasive species management plans. Brent concluded by noting that the LRSC is developing an overall strategy and work plan for the subcommittee as a whole as well as the individual workgroups. Jim Hart then updated the committee on the activities of the Modeling Subcommittee (MSC). The subcommittee has been focused on updating the watershed model from Phase 4.3 to Phase 5. The Phase 5 update will include more segments, land uses, calibration stations, and simulation years. The subcommittee is also working to develop automated calibrations instead of the current manual calibrations. The update will also incorporate data from all of MD, VA, and DE.

Climate Change Advisory Panel

Chris Pyke, US EPA, briefed the committee on a program sponsored by the Global Change Research Program, part of the Office of Research and Development for the National Center for Environmental Assessment. The program operates under the assumption that climate change is inevitable and attention should be paid to adapting to climate change instead of mitigation. Program goals include: 1.) identify important, climate-sensitive management decisions; 2.) target climate-sensitive decisions likely to benefit from research and development activities; and 3.) conduct research that helps achieve environmental management goals under changing climatic conditions. These goals will be achieved through the use of a decision assessment tool which evaluates environmental information, analytical tools, and decision attributes through the use of a decision inventory. This inventory examines decision characteristics such as cost, frequency, and reversibility; decision context such as rules, regulations, dependencies, and technology; and decision impacts such as economic, organizational, and environmental. All of this information will be used to identify relevant decisions, adaptive opportunities, and management actions. The Global Change Research Program is looking to conduct a pilot program in the Chesapeake Bay to examine climate-sensitive issues such as water quality BMPs and living resource protection and restoration activities. Chris is looking for interested STAC members and their colleagues to participate in the pilot program by serving on an expert panel which will help to understand climate-sensitivity of water quality BMPs and living resource practices, describe management alternatives, identify implementing organizations, and provide knowledgeable points of contact for researchers. Tom Simpson, UMD, is also looking at BMP efficiencies and cautioned the reasoning that climate change is beyond our control

as there are still things that can be done. Mitigation and adaptation should be linked, not separated. It was also questioned weather we should even resist climate change by trying to keep the Bay's ecology the same or just allow the environment to adapt naturally.

Action: Any STAC members interested in participating on the Chesapeake Bay pilot program's expert panel, or members with other expert contacts, should contact Chris Pyke (pyke.chris@epa.gov).

Action: Chris Pyke will send the pilot programs lists of BMPs and living resource activities to STAC for feedback and additional expert identification.

Nutrient Trading

Doug Lipton updated the committee on nutrient trading developments. STAC submitted comments to PA on their draft nutrient trading plan. PA's response to the STAC comments acknowledged that STAC's concerns were similar to others comments received and that PA is committed to addressing these comments in the redraft. A statement was also sent to members of the Chesapeake Bay Program (CBP) Executive Council (EC) and the Implementation Committee (IC) which describes STAC's reservations about nutrient trading in general. Doug also summarized the outcomes of a national meeting of the Environmental Trading Network. He noted that many regions around the country are also struggling with similar issues regarding trading and only a handful of places have active programs. There is an ongoing battle between the people who want to pilot these programs as a way to answer some of their questions and the people who want to learn as such as possible before program implementation. Doug concluded by saying that the Chesapeake Bay region is right in line with other regions and the struggle is finding the balance between research and implementation. Cliff Randall, VA Tech, discussed VA's implementation plan that is being finalized. At a VA trading meeting he attended in March, several issues were discussed such as how and when credits can be generated for both point and non-point, what size plants will be included in the program, time and geographic restrictions, point to non-point trading, monitoring requirements, and enforcement. The plan is available and will be out for public comment later this month.

Improving Coordination of Federal Agency Science Efforts

Scott Phillips, USGS, updated the committee on meetings and discussions held by a STAC panel focused on improving coordination of federal agency science efforts. One of the GAO recommendations was that the Bay Program needed a comprehensive restoration plan. STAC felt it was important that a science component be included. This restoration plan is organized into pillars and the Bay Program is currently finalizing a restoration plan for each pillar which includes a science component based on the STAC Scientific and Technical Needs assessment. The panel is now working with members of the CBP's Federal Agencies Committee (FAC) to organize federal activities under each of the pillars and will be looking to the STAC membership for additional feedback. Eventually, the panel would like to include academic institutions in the matrix and begin to identify gaps in monitoring, modeling, research, and assessment. This information will be available through the CBP web as part of their larger restoration strategy matrix.

Chesapeake Bay Program Updates
Rich Batiuk, US EPA-CBPO, updated the committee on CBP activities and outlined current and future requests for STAC assistance. He began by reviewing a handout listing requests from the CBP that STAC is currently responding to, items that the CBP will definitely be requesting from STAC in the future, and activities that the CBP might be requesting in the future. As he went through each item, the committee had an opportunity to ask questions and provide additional feedback. He also noted that Congressional hearings regarding the reauthorization of the Bay Program are scheduled for April. Additionally, the Principle Staff Committee (PSC) is begining to strategize how the CBP should respond if/when the goals outlined in the *Chesapeake 2000* agreement (C2K) are not met in 2010. STAC needs to begin thinking about a potential role in the process providing scientific information on natural processes, lag times, progress estimates, etc.

STAC Review of Responsive and Proactive Workshop Proposals
The committee reviewed 10 workshop proposals. Representatives supporting each proposal were present to provide a brief overview and answer questions from the membership. After discussing individual proposals, the committee decided to rank them since it is unlikely that STAC will have enough funding to support all of them. The proposals for stream protection/restoration and enhanced wetlands will be merged since both are focusing on nutrient and sediment reduction as an end result. STAC members will rank proposals by the end of the day and a discussion of the resulting rankings will occur at the opening of tomorrow's session. Members should consider all comments and suggestions from today's discussion.

Action: Members will submit their ranking sheets to Melissa Fagan by the end of today's session (3/14). Melissa will compile the results overnight and present the final rankings during tomorrow's (3/15) session.

Shallow Water Monitoring Workshop Response
Bruce Michael, MD DNR, presented the CBP's response to the STAC Shallow Water Monitoring workshop recommendations. The workshop was held November 30 – December 1, 2004 in Annapolis and was attended by state representatives, academic partners, federal agencies, ICPRB, CRC, SERC, modelers, statisticians, and field staff. Overall, workshop participants endorsed the Chesapeake Bay 3-year combined spatially and temporally intensive Shallow Water Monitoring Program for meeting primary objectives and included several recommendations in the workshop report. Bruce reviewed these recommendations and provided responses from the Monitoring and Analysis Subcommittee (MASC). Bruce's presentation will be available on the STAC website. Bruce also commented on future directions for the Shallow Water Monitoring Program such as:

- Continue to work with STAC for direction and input;
- Identify additional resources/develop new partnerships;
- Continue integration with modeling and research communities; and
- Develop meaningful shallow water indicators that are understandable to managers and the public.

March 15, 2006

Attendance

Members/Alternates:	Joe Bachman, Holly Bamford, Denise Breitburg, Ted Graham, Tom Grizzard, Dave Hansen, Kirk Havens, Jonathan Kramer, Doug Lipton, Nancy Love, Gary Matlock, Saied Mostaghimi, Ray Najjar, Catherine O'Riordan. Jim Pease, Chris Pyke, Cliff Randall, Larry Sanford, Dave Secor, Kevin Sellner, Tom Simpson, Jeff Skousen, Mark Walbridge, Dick Weismiller, Don Weller, Claire Welty
Guests:	Rich Batiuk, Peter Claggett, Bill Dennison, Mark Mansfield, Menchu Martinez, Tom O'Connell, Robert Pace, Elgin Perry, Steve Preston, Cynthia Suchman, Rob Wieland
Staff:	Melissa Fagan

Call to Order

Doug Lipton reconvened the meeting at 9:00 AM.

STAC Review of Responsive and Proactive Workshop Proposals (continued)

Doug Lipton presented the results of yesterday's ranking of workshop proposals and opened the floor for comments. Holly Bamford, NOAA, decided to pull the Anacostia proposal from consideration at this time until a stronger science component and clear role for STAC can be established. She was encouraged to keep STAC informed of the planning progress and to use STAC as a resource for input. The committee agreed to rehear the proposal in the future if further development occurs. Tom Simpson commented on the proposal addressing innovative technical delivery systems and noted that it is a top priority area for the Bay Funders Network and that they would like additional input and expertise. Michael Paolisso, Jim Pease, Dick Weismiller, and Doug Lipton expressed interest in assisting Tom with this workshop. While the committee felt the proposal on nitrogen loads from air was important, they noted that the proposal may need some focusing. Additionally, it was recommended that the group looking at sedimentsheds review the USGS report and use the workshop to continue building off of USGS's findings.

Workshop Title	**Average Rank** (1 = High, 9 = Low)
Thresholds, Tipping Points, and Non-linear Pathways in Restoration Ecology STAC Reps: Mike Kemp, Denise Breitburg, Jonathan Kramer	**2.2**
Stream Protection/Restoration – Role of Enhanced Wetlands in Nutrient and Sediment Reduction STAC Reps: Ted Graham, Chris Pyke Other Reps: Menchu Martinez, Jennifer Griener, Matt Flemming	**2.9**
Developing Environmental Indicators for Assessing the Health of the Chesapeake Bay Watershed STAC Reps: Scott Phillips	**4.4**

Other Reps: Carlton Haywood, Matt Flemming	
Determining Primary Sediment Sources that Impact Chesapeake Bay Water Clarity STAC Reps: Tom Simpson, Larry Sanford Other Reps: Rich Batiuk, Keely Clifford	**4.5**
Submerged Aquatic Vegetation Reproduction STAC Reps: Mike Kemp, Ron Korcak Other Reps: Mike Naylor	**4.7**
Understanding Fertilizer Sales and Reporting Information STAC Reps: Tom Simpson, Jim Pease, Ron Korcak, Dave Hansen Other Reps: Tom Juengst	**5.6**
The Nitrogen Load from Air STAC Reps: Tom Simpson, Bob Howarth, Jim Lynch Other Reps: Ron Etringer	**5.8**
Sustainable Anacostia Summit STAC Reps: Holly Bamford, Ted Graham	**6.4**
Innovative Technical Delivery Systems for Agricultural Conservation STAC Reps: Tom Simpson Other Reps: Connie Musgrove	**7.4**

Action: Melissa Fagan will work with workshop proposal group to refine budgets and will submit revised information to the STAC Executive Board for final consideration.

STAC Activity Update
The committee received updates on several ongoing STAC activities.

Modeling the Chesapeake Bay: 2010 and Beyond Workshop
Larry Sanford, UMCES, updated the committee on the most dominant recommendations from the workshop. The objectives of the workshop were to explore the challenges and opportunities likely to face the CBP modeling efforts in the next 5-10 years and to formulate recommendations to help CBP modelers plan for the future and maximize the utility and openness of CBP modeling efforts. The recommendations from the workshop will be outlined in a report due out this summer which will cover the following categories:

- better integration of modeling and monitoring;
- forecasting;
- TMDLs;
- multiple models;
- accessibility of CBP modeling and model data;
- model complexity;
- restoring living resources;
- improvement to the watershed model;
- improvements to the water quality and hydrodynamic models;
- improved ocean boundary conditions;

- improved estimates of meteorological forcing and atmospheric depositions; and
- structural changes in the CBP.

Developing Alternative Land Use and Nutrient Source Scenarios for the Chesapeake Bay Phase 5 Watershed Model Worksession

Peter Claggett, USGS-CBPO, updated the committee on the results of this worksession. During the meeting, participants received an overview of the GAMe and SLEUTH models. The CBP is looking to use output from GAMe along with additional information and feed it into SLEUTH. Information generated by SLEUTH would then feed into the Phase 5 model. After the presentations, participants broke up into topical groups to continue discussion. A report based upon 8 pages of raw comments is being generated and will be used to help guide the effort. It was also suggested that the CBP provide background information that documents how these two models were chosen and the development of the coupling approach. It will be important to review these materials and determine if these are the best models for this purpose and that they are being coupled correctly.

Assessing the Cumulative Impacts of Shoreline Modification Workshop

Holly Bamford, NOAA, updated the committee on the preliminary results of the workshop. The workshop objective was to examine how to assess the cumulative impacts of shoreline modification and focused using marginal principle to look at incremental changes as one potential method. It was concluded that you could use the marginal principle if enough information is available. The next step would be to develop a pilot project in an information-rich area to test the theory. Additional details and information will be provided in the workshop proceedings which will be available by the June meeting. It was also noted that the VA Coastal Zone Management program is hosting a living shoreline summit in December where this information might be useful.

Spatial Management Workshops: Parts 2 and 3

Chris Pyke gave a brief update on these workshops. The Spatial Management 2 workshop is scheduled for next week and will focus on developing criteria and site selection recommendations for spatially managed areas in various habitats. Later this spring, the steering committee will be organizing the third Spatial Management workshop which will focus on tools for planning and implementing spatially managed areas.

Revised Toxics of Concern List Review Workshop

Nancy Love, VA Tech, reported that progress was being made on the development of this workshop. A tentative date of May 17th has been set and the steering committee is currently contacting experts and securing their participation.

CFD/Interpolator Review

Dave Secor, UMCES, and Elgin Perry, consultant, updated the committee on the progress being made on the CFD and interpolator review. Elgin discussed the CFD and presented several issues that the reviewers are presently considering. Dave noted that the review team is still performing analyses and developing their recommendations. They plan to

wrap up their work over the summer and have final recommendations ready for review in the Fall.

Integration and Application Network (IAN)
Bill Dennison, UMCES, gave an overview of IAN. The Integration and Application Network is a collection of scientists interested in solving environmental problems. The intent of IAN is to inspire, manage and produce timely syntheses and assessments on key environmental issues, with a special emphasis on Chesapeake Bay and its watershed. Additional information on IAN can be found on the web at http://ian.umces.edu/. Bill also suggested continued communication between STAC and IAN as STAC might be able to use IAN's capabilities for future STAC activities and efforts.

US ACOE Activities and Oyster EIS Update
Mark Mansfield and Robert Pace, VA ACOE, presented a project matrix for all ACOE activities in Chesapeake Bay. A map highlights where these projects are occurring and a detailed table provides information about each project such as a project description, location, funding information, etc. The ACOE would like to engage STAC in these projects and return periodically to provide updates on efforts of STAC interest. They, along with Tom O'Connell, MD DNR, continued their presentation with a brief update on the *C. ariakensis* EIS process. ACOE was tasked as the lead agency in this effort by Congress and are partnering with EPA, NOAA, FWS, MD DNR, and VMRC. The focus of the EIS is on oyster restoration, both native and non-native. They suggested that STAC review and comment on the draft EIS once it is available for public comment. They noted that the research recommendations from the STAC workshop have been incorporated into the process. STAC will receive additional updates on the EIS process at future STAC meetings to keep members informed.

STAC *C. ariakensis* Research Survey
Denise Breitburg, SERC, updated the committee on an effort to follow-up on the recommendations from the STAC workshop "Identifying and Prioritizing Research Required to Evaluate Ecological Risks and Benefits of Introducing Diploid *C. ariakensis* to Restore Oysters in Chesapeake Bay." She will be surveying oyster researchers to determine what research has been, is being, and needs to be carried out to meet the needs identified in the STAC report, as well as the NRC report. A summary of these results will be produced and delivered to STAC and the EIS team by the June STAC meeting.