Bay Program Committee, Subcommittee, and Workgroup Activities for STAC
July 2006

Topics of Interest for STAC members:

Sediment Workgroup Meeting (April 27,2006)
All presentations can be found at:
http://www.chesapeakebay.net/calendar.cfm?EventDetails=6986&DefaultView=2

Lee Currey (MDE) presented the results of the April 11, 2006small working group discussion for the draft sediment sheds delineation. This is highlighted in the Nutrient Subcommittee workgroup plan for 2006 as an action item to define and delineate sediment sheds which will include a continued effort to interpret sediment science as it relates to the Bay watershed in a report by December 2006.
The newly proposed definition for sediment shed is an area, including upland, nearshore, and sub-aqueous with similar predominant sediment transport processes that directly influence water clarity in specific shallow water habitats. The specific shallow water habitats are the areas, excluding SAV no grow zones, where Bay water clarity standards must be achieved and are specific to each Bay water quality segment.
Sediment sources for upland include terrestrial, channel, and legacy. Whereas for the shoreline and Bay include tidal erosion, shallow water wave resuspension, deep water resuspension, and resuspended primary producers (dead) in the water column.
Sediment processes for the upland are watershed erosion, channel corridor erosion, and storage and trapping. Whereas, for the shoreline and Bay include tidal erosion (nearshore and fastland), shallow water wave resuspension, deep-water resuspension, and estuarine turbidity maximum. Also for sources there is an oceanic input and an oceanic transport with processes.
The April 11th meeting include the discussions on the following topics:

- Policy versus science for defining sediment shed boundaries
- Focus on what can be interpreted from the current state of the science only
- Boundaries defined using surrogates to bound a sediment transport process
- Scale of data will define the boundary and the boundary will define the process
- Interpretation of Chapters 5 and 6 of the sediment processes report by Langland and Cronin (2003)

Proposed surrogates for sediment transport processes include: ratio of FSS:VSS, estuarine turbidity maximum (ETM), sea level rise, and ocean input. The lead for the FSS:VSS ratio is Keely Clifford (EPA CBPO), leads for the ETM are Jeff Halka (MD Geological Survey) and Mike Langland (USGS), lead for the sea level rise is Jean Kupusnick (USACE Baltimore), and the lead for ocean input is Mike Langland (USGS).
Summary of surrogates:

- Each surrogate has caveats
- All can be confounded by other factors
- Best information to begin defining spatial boundary on processes
- Scale of data will define the level of detail for the boundary and the boundary will define the process
- Identifies limited amount of Bay wide data for this analysis

The sediment shed report outline is for an introduction and purpose, a one to two page explanation of surrogates, and a summary map including an overlay of process boundaries. The first draft to be completed by mid-May.

The purpose of the two STAC proposed workshops are for review of sediment shed methodology. The first would be in January 2007 with a small selected workgroup focusing on and reviewing the first stage of the sediment shed process and defining sediment sheds using data or surrogates for processes (independent of CBP model). The second would be held in January 2008 open to everyone with facilitated discussions and breakout sessions for complete review of the sediment shed methodology with inclusion of the new water quality model results. Currently the model is the only tool available that can connect the entire system.

Jeff Halka (MD Geological Survey) and **Kate Hopkins (UMCES CBPO)** reviewed the new tidal sediment deliveries for MD and VA and how these loads might be incorporated into the new CBP water quality model. The focus of this work is how much is eroded (fine suspended) and what impact on SAV. 36-56% of the sediment load in the Bay has been identified as fine suspended, with fastland erosion contributing 65% and nearshore erosion making up 35% of the sediment load.
The MD computation consisted of unprotected shorelines where eroded fastland volume equals shoreline length times elevation times erosion rate per day. The dry bulk density is equal to the silt clay percentage. Protected shorelines did not use fastland loading data, only nearshore loading. Utilized the most recent historical shoreline data (past 50 years) and eliminated protected segments. Fastland erosion was calculated from the remaining transects and determined shore elevation from topographic quads. Bank and bluff were separated from marsh shorelines. The MD data did not include small creeks or upper headwaters.
The VA data was based on the 1990 VIMS bank erosion study and reach rate including the main reaches but incomplete shorelines using 15 year old protection values. A hardening factor of 15% was assumed for this data set. For the lower Potomac River basin, VA and MD data were available (the main river reaches only with no creeks). Northeasters may be responsible for the erosion pattern differences in the Potomac (south bank eroding higher than north bank) as well as between western and eastern shores of the main stem Bay. The CBP water quality model needs to resolve the issue of fair weather effects versus short-term storm events (episodic) in the future.
Comparisons between the data sets for the two states show the following trends:

- VA has more shoreline than MD
- MD has more protected shoreline than VA
- Fine grains much higher in MD than VA
- Coarse grains much higher for VA than MD
- Total loading per year about equal for both states

Grace Brush (JHU) presented an overview of the historic sedimentation rates in the Chesapeake Bay. Using the indicators of presence or absence of chestnut or ragweed pollen grains in sediment cores can be analyzed for a change in land use/vegetation and create a time line of events in the Bay using carbon 14 dating techniques. The Back river area of Baltimore were used as study areas for this study (Furnace bay, Magothy and Nanticoke Rivers).

Time horizon could be constructed based on these pollen grain data:

- Pre-European (before 1634) was dominated by Indian agriculture
- 1634-1720 less than 20% of land cleared for tobacco farming
- 1780-1840 about 40-50% land cleared
- 1910 showed the decline of the American Chestnut because of disease
- 1930 showed the demise of the American Chestnut

Assumptions upon which the method is based:

1. The source of most pollen is independent of the sediment source
2. The influx of pollen is uniform during periods of similar land use
3. Transport behavior of pollen is similar to that of fine particles
4. The majority of pollen in estuarine sediments is preserved

Next step was to calculate settling velocities of individual pollen grains comparing the pollen grain diameter to quartz equivalent for willow, oak, ragweed, and hickory species. The settling velocity model was based on a wastewater example.

The *Chenopodium* pollen was used to study the Port Tobacco estuarine system. It was found that by calculating sedimentation rates from 200 cm cores dating back to 226AD that there was a 75% sediment loss 1.8km downstream and that increased over total distance measured.

Pollen relationships reflect land use very well with two to ten fold increases in sedimentation rates post European. Shoreline of main stem Bay is of Meiocene age (no ragweeds) and derived from agriculture sources. However, floodplain pollen disappears due to oxygenation (not preserved), able to date 1824-1854 using chromium as a marker. Majority of pollen deposition occurs through the atmosphere and the 1880-1890's showed the highest concentrations of pollen due to land clearing. Large peaks occur during construction and quarrying activities in recent times as a sign of urbanization in the Bay watershed. Local effects can be seen very well in cores but main stem Bay less because it is far removed from the source.

Sedimentation became a problem when 40% of the land cleared and landscape mosiac patterns mimic with 20% of the land cleared. Coastal plains are high today versus the piedmont, which is slowing down. Over geologic time is the Chesapeake Bay switching from a more benthic to planktonic Bay? What are the tipping points for erosion and sedimentation rates in the Bay; salt marshes related to sea level rise or fresh water marshes related to sewage treatment areas?

<u>Wetland Evaluation Taskgroup Meeting</u> (May 2, 2006)

Patmarie Nedelka (Coastal America) presented an overview of the organization Coastal America and about their unique partnership of federal agencies, state and local governments, and private organizations. The partnership works together to protect, preserve, and restore our nation's coasts. Coastal America has a three tier organizational structure that includes: policy formulation, planning process, and project implementation. On a national scale, they identify and resolve policy issues and support regional action through existing programs and authorities. At a regional scale, regional principals and implementation teams develop regional strategies and joint action plans as well as resolve

regional issues and concerns. While on the local level, local project teams combine financial resources, technical expertise, and legislative authorities to implement collaborative restoration and protection projects. There have been over 1,000 projects in 26 states with over 1,000 non-federal partners participating. They also have 22 ecosystem learning centers around the country and these are used to increase public awareness of critical coastal issues and encourage involvement in activities that benefit coastal ecosystems. For more details please visit: http://www.coastalamerica.gov

John Balletto (Corporate Wetlands Restoration Partnership) presented an overview of this restoration program that is a collaborative effort between the federal government, state agencies and private corporations and non-profits. Companies contribute funds and services to match funding for aquatic habitat restoration, education and research projects. CWRP includes over 230 corporations, 13 federal and 27 state agencies, and over 125 non-governmental organizations as well as Coastal America and United Nations Foundations. They have completed over 160 projects with outstanding benefits to both the government and private sector. Benefits to government agencies include matching funds for federal dollars, the promotion of environmental awareness in the private sector, the building of trust and working relationships and expansion throughout the public-private partnership. Benefits for private corporations and companies are significant environmental returns, positive public relations, enhanced community involvement, improve communications with other agencies and more efficient administration.

Brent McCloskey (CRC fellow) presented wetland protection data collected and mapped thus far in this workgroup's effort to approximate the amount of wetlands that are in protection either through protected federal, state, public and/or private lands. The best comprehensive wetland data that this workgroup can obtain is the national Wetland Inventory (NWI). This data layer was overlaid the national protected lands data layer and with this be able to spatially show where wetlands are in protection. The goal of this project is to gain a clear picture of wetlands protected throughout the watershed as well as incorporate state wetland protection data. Incorporating state protection data will help fill in the gaps where national data is lacking.

Kelly Neff (MDE) provided an overview of MDE's effort to identify priority wetlands for restoration and preservation in MD. The purpose of this targeting tool is to help summarize existing targeting efforts, find high-functioning areas for restoration/protection, identify areas that will meet other management goals, meet goal of MD wetland conservation plan, and to identify key wetlands for preservation under the Chesapeake 2000 agreement. Much of the GIS data that was collected to help compile this comprehensive priority wetland targeting tool included: soil surveys, wetland data, sensitive area data, stream and scenic river data, stream corridor assessments, green infrastructure, protected lands data layers, and development risk data. Five maps were created for each county in MD were split into two categories. The first category is restoration which included three maps: biodiversity based, water quality based, and protected lands. The second category is preservation which included two maps: private and protected lands. Each county map generated for MD can be easily edited to meet the needs of the specified county. Next steps in the wetland targeting process is: more

detailed analysis for specific areas, establish more partnerships, consider requests for proposals, target for mitigation requirements and MDE wetland compensation funds, and also TMDL implementation plan. To view this presentation please check out the following website: http://www.chesapeakebay.net/calendar.cfm?EventDetails=7292

Christine Mazzarella (EPA Region III) gave an overview of targeting wetland restoration opportunities in EPA Region 3. The overall goal of this targeting exercise is to strategically restore wetlands to enable the greatest improvements to wetland resources, stream quality, and watershed health. Region 3 expects the following outcomes from this targeting exercise: reverse historic wetland loss, reduce nutrient and sediment loadings to streams, aid in removal of impaired water bodies from the 303d listing, and other outcomes such as habitat, flood control, and carbon sequestration. Region 3 also identified five initial targeting criteria: historic wetland loss, agriculture runoff potential, percent agriculture land cover, nutrient and sediment impaired streams. Region 3 has produced spatial maps of agriculture runoff, nutrient impairment and hydric soils. Region 3 has done field validation to improve the accuracy of the scores and locations provided by the models, reviewed photographed sites to document conditions and landscape positions, recorded latitude/longitude for further analysis and compared these models with existing NWI recorded wetlands and PWR sites. Although Region III's targeting tool relates closely with MDE's targeting tool, EPA's method is directed toward more intensive investigations, field verification, and analysis of runoff. MDE will be working with EPA to ensure that these methods are not duplicated but are complimentary to one another. To view this presentation and contact information please visit: http://www.chesapeakebay.net/calendar.cfm?EventDetails=7292

Living Resources Subcommittee Meeting (May 25, 2006)

Bob Wood (NOAA Oxford) provided an update on the menhaden recruitment model. The model analyzes fluctuations in the number of young menhaden within Chesapeake Bay using both menhaden spawning stock and striped bass predation potential to account for 70% of the variability observed in menhaden recruitment. This ongoing work will examine whether consideration of weather patterns can improve the model. This approach appears to have the potential to support ecosystem based management for the Bay's menhaden and striped bass fisheries.

Ben Longstaff (NOAA/UMCES) provided an update on the tentative launch of the redesigned Bay Program website for January 2007. The new framework for indicators needs to be implemented on the website. This features all reporting level indicators, plans for creating links to diagnostic indicators from the reporting level indicator pages and the retirement of indicators that are not related to reporting level indicators or are no longer being updated by the subcommittees. He also discussed the timeline of the proposed schedule for the Implementation Committee and you can view this timeline and long-term plan for implementing the Bay Program integrated communication strategy and indicators framework at:
http://www.chesapeakebay.net/calendar.cfm?EventDetails=6638.

Bill Lellis (USGS) presented his research on freshwater mussel and American eel interactions at the Northern Applachian Research Laboratory Leetown Science Center located in Wellsboro, PA. His studies have focused on the Delaware and Susquehanna Rivers. His research has focused on the reproductive techniques and the parasitic nature of the freshwater mussels. His research suggests that without the interaction of the American eel and other fish species, this parasitic relationship may not occur resulting in a decreased distribution and population of these freshwater mussels. Obviously a primary benefit to increased mussel populations is their ability to filter the water column multiple times daily.

Derek Orner (NOAA CBO) provided an overview of the two-day NOAA Integrated Science Symposium held on April 25-26 2006 in Williamsburg, VA. The event focused on several research topics including:

- Integrated assessment and restoration
- Observations and monitoring
- Habitat restoration including SAV and native oysters
- Multi-species management
- Trophic interactions
- Blue crabs

A follow-up report on the outcomes of this workshop will not be published this year. Alternatively, an executive summary will be developed in its place and will be available in the near future.

Living Resources Analysis Workgroup Meeting (June 6, 2006)

Mark Monaco (NOAA/NOS) discussed techniques for developing GIS-based habitat suitability models for use in bio-geographic assessments. These models require a breadth of physical, biological, and habitat distribution data to define geographies. Spatial data is usually rasterized or gridded due to data limitations, which is good for mapping coverage but less advantageous for biological data. He discussed the pros and cons of using geo-referenced point coverage, surface interpolation, or rasterized surface interpolation as well as the different pictures generated from looking at events (no smoothing) versus trends (smoothing).

Suitability index values are generated by running piece wise regressions on cumulative frequency distributions over gradients of salinity, depth, etc. as well as regression analysis on presence/absence data. An example of how these models can be used is as multivariate models to predict utilization patterns (e.g., essential fish habitat) and effects of management changes. This was observed in modeling the potential impacts of water diversions (reduced freshwater flow and change in salinity) on Appalachicola Bay, Florida oyster populations. Bio-geographic assessments can answer particular management issues like evaluating biological hotspots and suitable marine sanctuary boundaries.

Although this work has yet to be applied to the Chesapeake Bay, the following topics were highlighted as potential point of integration:

- Habitat suitability models for the five targeted species for ecosystem-based fisheries management for blue crabs, striped bass, menhaden, oysters, and alosids
- Defining important spatial areas in the Bay (scooping activity)

- Health of fisheries relative to habitat, disease range, migration problems, climate variability, etc.

Since this modeling relies on good monitored data, NOAA CBO's current design for Bay wide monitoring most closely resembles the adjacent systems validation approach with extrapolation to other tributaries. They plan to identify and focus on areas with extensive water quality data, areas with extensive biological data, and areas with overlapping data sets.

Carl Hershner (VIMS) presented a habitat use suitability model that takes available information on a variety of parameters to analyze use conflicts, the technical data can inform policy decisions. As an example, a tool he and his staff developed that ranks non-tidal wetlands according to three level of stress based on adjacent land use. The model assesses the probability of a suite of ecosystem services for any mapped non-tidal wetland. Wetlands were coded for habitat stress level within various land use categories. A habitat restoration potential score was generated to assess stressors affected by surrounding land uses but with potential for management action.
These types of models have a number of applications, from determining land use impacts on surrounding biodiversity based on sonic signatures to determining appropriate recommendations for shoreline modifications. This approach termed "integrated guidance" utilizes ecosystem service models across the terrestrial, inter-tidal, and sub-aqueous zones to estimate the capacity of a particular shoreline to provide habitat services or modify water quality. This type of information can inform county comprehensive plans.

Carl Bonzek (VIMS) explained the processes that control fish populations in the Chesapeake Bay. Current single species views consider natural mortality, recruitment, fishing mortality, and migration pattern but predator/prey relationships and multi-species linkages must be developed. Indicators often arise from biological reference points on a yield per unit effort curve.
Difficulties arise in attempting to separate the management range from the species range, especially related to stock assessments and their use in regulating fisheries. It might be beneficial to have a Bay ecological index that works with the coast wide index. This could be explored through the development of Chesapeake Bay stock assessments and coordination with the Atlantic States marine Fisheries Commission. The only species with a complete Bay wide stock assessment is the blue crab. However, the current indicator for blue crab addresses sustainable harvest rather than its ecological role.

David Wilcox (VIMS) explained the annual aerial survey process from obtaining images to product delivery for the SAV monitoring program. The survey is Bay wide rather than random sampling due to high inter-annual variability on small spatial scales and lower variability on a Bay wide scale. The survey team just completed the first two flight lines for this year.

Implementation Committee Meeting (June 15, 2006)
All handouts can be found at the following:
http://www.chesapeakebay.net/calendar.cfm?EventDetails=6660&DefaultView=2

Frank Dawson (MD DNR) identified two possible sets of dates for the next Executive Council meeting, either September 21-22 or September 28-29, 2006. MD is proposing a two-day event beginning late afternoon the first day and ending by noon the second day. MD's Bay Cabinet will be meeting to discuss possibilities for the EC meeting and details will be forthcoming.
Frank commented that the theme for this meeting ought to be how are we accelerating restoration of the Chesapeake Bay. This would allow for celebration of what has been achieved thus far, market the new directives and initiatives the Bay Program is taking to help speed up the restoration and allow the individual signatories to lay out what they are planning to accelerate implementation within their own jurisdiction with future initiatives. Part of the theme is re-stating that the Bay Program has identified the right goals through sound science and governance and the meeting is an opportunity not to create new goals but focus on how existing goals and strategies are being implemented. This approach would give the public an idea of what the Bay Program is currently doing to restore the Chesapeake Bay.

Frank Dawson outlined the draft Executive Council directives:

1. **2007 Farm Bill** relates to increasing technical assistance. There would be an endorsement of increased technical assistance and farmer testimonials about what they are doing to implement restoration activities. Pat Stuntz (CBC) added that this is an opportunity to show that focusing on our science and technical assistance can accelerate implementation (can be tied to dairy feed management from past directives).
2. Tom Simpson (UMD) outlined the **Reduced Phosphorus Memorandum of Understanding** establishing **"The Healthy Lawns and Clean Waters Initiative"** between the Chesapeake Executive Council and Responsible Industry for a Safe Environment (RISE), the lawn fertilizer industry association. The commitment is for the reduction of the phosphorus content in the retail lines of Scott's Turf Builder products in the Bay jurisdictions by 50% by 2008. Followed by discussions to recommend changes in nitrogen content or form that will result in comparable reduction in nitrogen losses from homeowner application practices using a pollution prevention approach.
3. **Training for Watershed Organizations** was another item highlighted for possible directive action. Carin Bisland (EPA CBPO) provided a list of what is currently happening across the watershed in terms of training opportunities for watershed organizations: PA DEP Watershed Academy, VA DCR/DEP trainings and workshops, 2006 Chesapeake Watershed Conference, Center for Watershed Protection Watershed Institute, and EPA Watershed Academy. The possible option for Bay Program involvement would be whether or not want to create some kind of scholarship for local governments to attend existing training programs.

4. **Executive Council Challenge: Land Conservation Draft** is a way to develop new ways for the EC meeting to have impact if the Bay Program does not want to continue developing new commitments each year. Conserving lands to protect Chesapeake water quality and natural areas occurs at the local level with active involvement of local governments and citizen-based watershed organizations and sound analysis to guide strategic planning of the most important areas on which to focus. This could be targeting areas as the Implementation Committee has suggested and then having the Executive Council challenge the Program partners to work towards meeting this challenge in the coming years. The annual challenge idea would also provide continuity from year to year and has a built in component of accountability.

The following presentations can be found at:
http://www.chesapeakebay.net/calendar.cfm?EventDetails=6660&DefaultView=2

Pat Buckley (PA DEP) presented new program initiatives and coordination for PA's tributary strategy. PA Chesapeake basin projected nutrient source loads based on 2002 reported implementation are for nitrogen 46% agriculture and 21% forest and for phosphorus 58% agriculture and 22% point source. PA's reduction of 14% nitrogen and 22% phosphorus for point source are through sewage treatment plants and industry, whereas for non-point source reductions of 86% nitrogen and 78% phosphorus through agriculture and urban BMP's.
The Chesapeake Bay Tributary Steering Committee for PA has had five meetings since January 2006 and formed six workgroups: nutrient trading, point source, agriculture, stormwater, development, and legacy sediment.
PA's point source tributary strategy includes:

1. All existing point sources > 2000 gallons per day (gpd) will be allocated on annual TN and TP cap loads.
2. Significant facilities cap load allocation based on 2010 flows projection at 8 mg/L TN and 1 mg/L TP.
3. Non-significant facilities cap load allocation based on design flow projection at existing TN and TP.
4. Zero reserves TN or TP loads are available for new facilities or new land development discharging to existing facilities. These new loads must be offset.
5. The aggregate load from all industrial discharges will be held to no more than existing, measured loading plus a 10% reserve.
6. After August 2005 nutrient limits to be included in NPDES permits as they come up for renewal.

Alternate point source proposal:
Significant facilities: Cap load based on design flow at 6 mg/L TN and 0.8 mg/L TP

- Three phase 10 year strategy
- Cap load met in first five year phase (60 WWTP)
- Phase 2 (50 WWTP) and Phase 3 (70 WWTP) to maintain the cap load into the future as systems approach design capacity

Non-significant facilities: Cap load allocations based on design flow at 8 mg/L TN and 1 mg/L TP (200,000 to 400,000 gpd first)

PA Act 218 in 2004 provides $250M in new bond money for sewer and water infrastructure. March 2006 awards (Act 218 bond money and low-interest PENNVEST loans) allow 12 communities to receive $32.6M for nutrient reduction technological activities. Growing Greener program innovative technology grants award $5M per year. Growing Greener II funding is also available.

Non-point source tributary strategy for PA includes:

- New agriculture management practices – carbon sequestration, yield reserve, precision agriculture, mortality composters, horse pasture, advance no-till, precision rotational grazing.
- New BMP's for agriculture land use – precision feeding for dairy, phytase feed additive for swine, ammonia emission reductions for poultry, swine, and dairy.
- New BMP's for developed land use – urban street sweeping, dirt and gravel road improvements.

Counties are encouraged to develop implementation plans to support PA tributary strategy to be eligible for Bay Program implementation grant BMP funds. DEP regional office reorganization has established new watershed assessment and planning program to provide coordination for non-point source programs. Since 2000, Growing Greener program has provided funding to preserve farmland and protect open space, cleanup abandoned mines and restore watersheds, and provide new upgraded water and sewer systems. To date 439 projects have been funded at over $55M and in July 2005 Growing Greener II was signed by Governor, a voter approved plan for $625M over the next six years.

USDA CREP has expanded to all counties in PA to all Bay watersheds in 2003. PA targets DEP cost share funding to riparian forest buffers, wetlands, and natural re-vegetative buffers. PA is developing a conservation easement program to protect riparian buffers in perpetuity.

Agriculture, Communities and Rural Environment (ACRE) is a new farm management initiative legislation that includes:

- Farming operations required to implement nutrient management increasing from 810 to 5210
- CAFO's increased from 160 to 340
- Requires farms importing manure to have nutrient balance sheets and written agreements with exporters
- Focuses on water quality problems in agriculturally impaired watersheds
- Mandatory 100 ft manure application setback or 35 ft vegetative buffer along streams

Energy harvest grant program funds clean and renewable energy and projects that improve air quality, protect watersheds, and protect lands (since 2003 has awarded $10M). Enacted in 2004, PA's Alternate Energy Portfolio Standard ensures that in 15 years, 18% of all energy in PA comes from clean, efficient sources.

The agriculture program, First Industries Fund provides $100M for grants and loans to businesses and non-profit organizations for projects that promote and develop agriculture. In 2004 alone the total non-point source funding was approximately $75M for PA. Over $19M was invested in 2005 state funding to support agriculture water quality initiatives.

2005 Conservation Innovation Grants (CIG) for PA included projects on precision dairy feeding, environmentally sensitive maintenance on agriculture access roads, horse drawn no-till planters, and planting alternative dairy forages. PA has spent $1.1M in 2005 Bay small watershed grants. The 2006 Bay targeted watershed grants include:

- Regional nutrient use efficiency in lower Susquehanna River basin
- Park the plow for profit, continuous no-till transition program
- Paxton Creek watershed, stormwater management for PA communities

The Act 167 stormwater management act of 1978:

- Requires counties to adopt a watershed stormwater management plan for each watershed located in the county in consultation with the municipalities located in each watershed
- 398 of 1198 municipalities involved in ACT 167
- 189 municipalities are past due to enact ordinances

In third year of NPDES MS4 permitting; 277 are designated MS4's and 255 have MS4 permits.

Ann Smith (PA DEP) presented an overview of the PA state nutrient trading policy. In October 2005, nutrient and sediment reduction credit trading interim final policy and guidelines were published in PA. Comments collected until December 31, 2005. Comment response document will be drafted and revised final trading policy will be issued.

The voluntary trading program is an option for point and non-point sources that exceed their environmental obligations to earn credits that may be sold to others who desire nutrient reduction credits.

The program may be used by:

- Point sources to comply with a new permitted nutrient limit
- Non-point sources to implement additional BMP's that help reduce nutrient loadings
- Third parties that need to meet nutrient limits

What can be traded include: TP and/or TN credits, sediment credits, and all trading must involve comparable credits. Trading may occur among defined watersheds (Susquehanna or Potomac), defined area with TMDL approval, and/or other DEP approved areas (resulting from commitment such as the Bay agreement).

Thresholds of eligibility fro credit generation:

- Point source – discharge limit in NPDES permit
- Non-point source – approved and implemented nutrient management buffer for N + P with a minimum of 150ft setback for manure and 35ft vegetative buffer

New (being considered):

- Must be in baseline compliance and implemented 20% additional reduction, trades occur at 2:1 ratio until 60% reduction achieved then at 1:1 ratio
- For non-CAO or non-CAFO must be baseline by either 20% reduction or establishment of 35 ft buffer

Credits calculated for point source through monitoring requirements in NPDES permit. Credits calculated for non-point source through mass balance methods, information from sources such as Bay Program Water Steering Committee, and other measurement methods acceptable to DEP.

DEP may elect to establish a reserve pool of credits that would be available to compensate for unanticipated shortfalls in quantity of credits that are actually maintained. DEP is responsible for oversight and management of nutrient trading program. Recent trading grants total $1.8M.
Key issues are:

1. Agriculture baseline
2. Threshold and quantification
3. Point source allocation strategy
4. Process and flow of program

Seven proposals have been submitted to DEP and are still being reviewed.
In conclusion, there have been no trades made as of this presentation.

Diana Esher (EPA CBPO) outlined a proposal for the Implementation Committee to work collectively on acceleration of the rate of implementation through analysis of restoration activities sector by sector. This proposal is to help organize agenda items to ask questions and raise the common understanding of what is happening in the bay watershed. Another purpose is to consider a formal adoption of an adaptive management approach such as that used in the restoration activities on the Louisiana coast. Another goal is to potentially draft a sector analysis as companion to the jurisdiction's tributary strategies. This would in no way supersede the tributary strategies, but would rather provide analytical documentation of the issues discussed at IC meeting sector strategy discussions. The notion is to talk about the 1985-2011 projections and explore what the Bay Program can do to accelerate restoration.
The tentative proposed schedule is for the July 20th conference call to brief the IC on how the Bay Program office developed the projected timeframes for achieving SAV and DO restoration goals and nitrogen, phosphorus, and sediment caps. The first sector strategy could be scheduled for the August 17th meeting with the topic being on the status of WWTP's in the Bay watershed. Updates on permitting strategy, permit schedules, and forecast of impact on water quality of compliance of WWTP's to water quality standards by 2015. The next strategy could be agriculture on October 19th providing updates on the status of implementation of agriculture BMP's in the Bay watershed followed by forest buffers for the December 21st meeting.

Carlton Haywood (ICPRB) introduced an idea and a proposed schedule for work related to indicators for IC approval. Part of the goal is to get all of the indicators scaled the same way and looking the same way and address the need to fill the gaps from the 2005 health and restoration assessment reporting level indicators.
The indicator redesigned website has included the following features:

1. Featuring all reporting level indicators with new reporting/appearance indicators by filling the gaps.
2. Links to related/detail level indicators – farewell to laundry list appearances, subcommittees need to identify level indicators, work to update existing or create new level indicators, and mapping of geographic/spatial information on website in 2008.
3. Retirement of indicators – those that are not linked or no longer updated by subcommittees, fill gaps at reporting level or increase timeliness of updating

existing indicators, and subcommittees need to provide recommendations for removal.

4. Proposed schedule: June 2006, March 2007, and February 2008.

The redesigned website can provide the following:

- Improve accountability and understanding
- Developed annual communication cycle
- New indicators framework by topic which equals integrated assessment
- Lead to local mapping in the Bay watershed
- Monthly updates on new indicators to fill the gaps
- Retirement of indicators
- New appearance of reporting level indicators
- Watershed health indicators an issue and difficult to measure
- Linkage to related/detailed level indicators