Scientific, Technical Assessment and Reporting (STAR) Team Meeting
10AM – 1PM September 27th, 2012

http://www.chesapeakebay.net/calendar/event/18390/

MINUTES

Participants

Bill Dennison – USGS/STAR Chair	Mark Bennett – USGS/STAR Vice Chair	Peter Tango – USGS/STAR Coordinator	Amanda Pruzinsky – CRC/STAR Staffer
Mike Fritz – Maintain Healthy Watersheds GIT Coordinator	Jennifer Greiner – Habitat GIT Coordinator	Scott Phillips – USGS	John Wolf – USGS
Ward Sanford – USGS	Nita Sylvester – EPA/CBPO	Katie Foreman – UMCES/CBPO	Liza Hernandez – UMCES/CBPO
Brianne Walsh – UMCES/IAN	Mike Land – NPS	Bruce Michael – MD DNR	Doreen Vetter – US EPA
Michael Douglas – Charles Darwin University	Ken Staver – UMD	Kevin Sellner – CRC/SERC/STAC	Jack Meisinger – USDA-ARS/STAC
Bill Angstadt – DE MD Agribusiness Association			

Welcome Introduction and Updates – Bill Dennison (STAR Chair), Mark Bennett (STAR Vice Chair), Peter Tango (STAR Coordinator)

- **Next STAR meeting is November 5th, 2012 10AM - 1PM in the Fish Shack CBPO.**

- Maintain Healthy Watersheds Goal Implementation Team
  - John Wolf compiled state data layers
    - Future work: Analyzing protection and identifying protection gaps
  - Submitted STAC report for approval "STAC Workshop on the Role of Natural Landscape Features in the Fate and Transport of Nutrients and Sediments" September 13th, 2012
    - Three new land use classifications should be immediately identified and mapped: riparian forest, forested floodplains, and other wetlands. The potential value of identifying additional new land classes that also demonstrate a greater functional capacity for retaining nutrients and sediments should be evaluated.
    - Loading rates for the new land use classes should be adjusted based on spatially explicit landscape attributes, including directional connectivity, multi-direction flow fields, and flow path analysis.
    - http://www.chesapeake.org/pubs/293_2012.pdf

- Brook Trout Action Team
  - Working on the outcome statement including indicator metrics, monitoring, and geographic targets.
  - Data has been obtained from Mark Hudy.
  - **ACTION:** Contact National Park Service for data

    - Brook Trout Action Team, EBTJV, and Mark Hudy to demo and explore the data with states and other stakeholders
        - Date: November 29th, 2012
        - Location: Cacapon State Park, Berkeley Springs, West Virginia
        - **ACTION:** STAR offered to help find funding options for this meeting and is encouraging STAR members to attend the meeting.

- STAC Workshop: Lag Times in the Watershed and Their Influence on Chesapeake Bay Restoration
    - Date: October 16th, 2012 – October 17th, 2012
    - Location: Sheraton Annapolis Hotel 173 Jennifer Road Annapolis, MD
    - For more information: http://www.chesapeake.org/stac/workshop.php?activity_id=214

- MD Governor requested that the Chesapeake Bay Report Card be expanded to include fish, flow, nutrient, and stream data.

Where we are – Updating Indicators and Indicator Framework – Nita Sylvester

Nita Sylvester discussed the status of indicators and the indicator framework addressing Management Board requests to STAR/GITs from the April 2012 Management Board meeting.

For more information:
http://www.chesapeakebay.net/channel_files/18390/status_of_cbp_indicators_092012.pdf

This presentation is available at:
http://www.chesapeakebay.net/channel_files/18390/plans_for_rest_of_2012_and_2013_092712_star_pres_v_092112.pdf

Discussion and Questions

- Utility Phytoplankton indicator update
    - MD samples were collected even though the funding for analysis is currently unavailable.
    - TMAW is writing a letter to NOAA, EPA, and USFWS for funding.
    - Update the need for funding to the Management Board.
        - **ACTION:** Bill Dennison and Bruce Michael to present to the Management Board at their December 12th, 2012 meeting. Contact Walter Boyton for support.

- Determine if current mix of indicators in Watershed Health categories are sufficient.
    - **ACTION:** Joint meeting between Healthy Watersheds and Non-tidal in early December.
    - **ACTION:** Update Management Board at their January.
- Determine if current mix of indicators in Factors Impacting Health categories are sufficient.
    - Fisheries GIT may need to become involved to incorporate invasive catfish.

CBP Accountability and Communication to the Public – Nita Sylvester

Nita Sylvester discussed the status of where STAR/GITs/CWG are in implementing the 2012 plan for "How CBP Will Be Accountable and Communicate Assessment Information to the Public in 2012". Requested STAR input regarding a plan to be developed for 2013 related to two how CBP will be accountable and communicate assessment information to the public in 2013 and

how CBP will communicate information about the Bay that is not related to current GIT goals but of high public interest. Based on the input provided by the STAR the goal is to elevate to the Management Board at their Oct 10th conference call, with an ultimate goal of developing a plan for 2013 and presenting to the Management Board for their approval in November or December.

This presentation is available at:
http://www.chesapeakebay.net/channel_files/18390/plans_for_rest_of_2012_and_2013_092712_star_pres_v_092112.pdf

Discussion and Questions

- Examples of issues (not related to current GIT goals but of high public interest):
  - Beach closures due to bacteria counts
  - Flooding
  - Fracking
  - Environmental justice
  - Other aquatic and human health issues/stories

- All of these issues do not have to elevate to indicators.
  - Can provide links to current data and information.
  - STAR supports goal teams and could be used to facilitate a forum to discuss new items presenting threats to the ecosystem.
  - Can include stories that link the impacts of these issues to Chesapeake Bay Program goals.
  - Add an "issues page" to Chesapeake Bay Program website for some of these topics.

- **ACTION:** Reword – "News items to be story-based (not data-driven) and include indicator data if available" – It should be story-based, but data should be the driver and tie the story together. Without good data, the story doesn't have meaning.

- STAR can help assist the GITs to determine the quality of the data or source of information.

- Concern for mission creep that may consume scarce resources and to add a perception of accountability by Chesapeake Bay Program for things that we are not responsible for. Conversely, option to adjust Chesapeake Bay Program goals.

Using a New USGS Groundwater-Regression Model to Forecast Nitrogen Loading from the Delmarva Peninsula – Ward Sanford (USGS)

A Groundwater flow model has been constructed of the shallow flow system of the Delmarva Peninsula. Groundwater travel times from the model are used in conjunction with a nitrate-regression model in order to forecast nitrogen loading to the Chesapeake Bay from the Delmarva Peninsula. The model is used to quantify the effect of the lag

time between changes in management practices at the land surface and responses in nitrogen loading to the bay via streams.

Objectives

- To develop a groundwater flow model that can simulate return-times to streams (base-flow ages) on the Delmarva Peninsula.
- To explain the spatial and temporal trends in nitrate on the Delmarva Peninsula using a mass-balance regression equation that includes the base-flow age distributions obtained from the flow model.
- To use the calibrated equation to forecast total nitrogen loading to the Bay from the Eastern Shore.
- To forecast changes in future loadings to the bay given different loading application rates at the land surface.
- To develop maps that will help resource managers target areas that will respond most efficiently to better management practices.

Summary and Conclusions – To be provided upon publication.

Discussion and Questions

- **SUGGESTION:** Study the effects of sea level rise.

- What is the data source for fertilizer and poultry loads for mass balance?
    - Fertilizer loading data was assembled by the USGS NAWQA Program. State is from county by county fertilizer sales.

Northern Australia and Chesapeake Bay: Worlds apart, similar challenges? – Professor Michael Douglas (Charles Darwin University, Australia)

Professor Michael Douglas
Tropical Rivers and Coastal Knowledge Research Hub
Charles Darwin University. Darwin, Australia

Australia's wet-dry tropics cover an area about the size of California and Texas but are occupied by a population about the size of Hartford County. The region contains the world's largest are of good condition tropical savanna and the 55 river systems that flow through the region account for about half of Australia's total river flows. All but two of these rivers flow freely to the sea, unimpeded by dams. These rich and productive river systems are the lifeblood of the region, providing immense social, cultural and economic benefits. They are internationally recognized for their conservation values and most of the region's industries—grazing, mining, fishing and tourism–rely on clean water and healthy river systems. However, these river systems are under threat from increasing water resource development, land use intensification and sea-level rise. The Tropical Rivers and Coastal Knowledge Research Hub (TRaCK) was formed to improve the scientific knowledge to help managers respond to these threats. TRaCK is a consortium of more than 80 researchers from the ecological, economic and social sciences and over the past 5 years TRaCK's research has greatly increased our understanding of Australia's tropical rivers and the ecosystem processes that underpin them. TRaCK has forged new partnerships with government

policy makers, Aboriginal land owners and natural resource management groups. This presentation will describe how TRaCK's research findings are helping managers to examine the tradeoffs among different and often competing values in catchment management and planning. Michael Douglas is the Director of TRaCK and is based at Charles Darwin Univeristy in Darwin, Australia. He is currently on sabbatical at the University of Maryland hosted by the IAN until January 2013. He is supported by a Fulbright fellowship to collaborate with groups at UMD and Oregon State University while he develops a plan for the next phase of the TRaCK research program.

Discussion and Questions

- What is being done to prepare for the projected 7m sea level rise per year?
    - People are very considered about the flood plain areas. There are many case studies already, which allow us to show the public the need to act now.
        - Kakadu National Park
            - Many freshwater wetlands. Some models predict that in 70 years 50% of these freshwater wetlands will be gone.
            - In some catchments, there are as many as 200 small dams.
                - Hard to determine the future effectiveness of engineering efforts.
            - Must prioritize critical habitats from ecological and cultural viewpoints.
            - Must research the weeds and other threats.

- Developing management tools – Is the management community receptive?
    - Yes, Kakadu is an iconic area and very important to the public. The Federal Environment Administrator listed the flood plains of Kakadu as a high priority and the Kakadu Managers have an obligation to respond to this.
    - In the past, Kakadu managers have focused on one value (grazing purposes, biodiversity, etc.), but currently they are working towards focusing on many values to increase the stakeholders.

- More on water issues
    - There are de-salinization plants in South and some cities in Western Australia.
    - Often, there are plans proposed to build a canal to move water from the north to the south, but the cost is currently much too high.

- USFWS National Black Water National Wildlife Refuge is currently experimenting on management techniques for adapting to sea level rise.
    - **ACTION:** Jennifer Greiner will be providing contact information for Suzanne Baird to set up a tour for Michael Douglas.

- What amount of weight do the indigenous people have?
    - Often politically overlooked.
    - Very strong percentage of land ownership across the region, so they are important landowners and stakeholders from that sense.
        - The water that flows through their land is potentially very valuable, but it is owned by the Crown. They are currently pushing for water rights and planning.
    - Many of the indigenous people suffer from poverty, so there are a lot of social issues and the environmental concerns are often overlooked.
    - Started pushing their rights in the federal initiative of carbon farming.
    - Indigenous rangers employment effort.

- Economic Research
    - Economic models are very valuable for persuading politicians and managers.
    - Must be careful – Difficult to put a value on the cultural, social, ecological, and health benefits.

- Climate change
    - Extremely difficult to predict.
    - Certain: Temperature, water quality, dissolved oxygen, and sea level rise.
    - Not as certain about whether it will become wetter or drier.