Scientific, Technical Assessment and Reporting (STAR) Team Seminar
10:00 AM – 1:30 PM December 4, 2014
http://www.chesapeakebay.net/S=0/calendar/event/21554/

Participants:

Bill Dennison	Peter Tango	John Wolf
Mary Ellen Ley	Mike Mallonee	Kyle Hinson
Lea Rubin	Scott Phillips	Jennie Gunderson
Jennifer Griener	Nicole Leemer	Howard Wiemberg
Adam Riddley	Julie Winters	Mark Bennett
Lee Currey	Dave Montali	Doreen Vetter
Jim Hedrick	USFWS - NYFO	Gary Shenk
Emilie Franke	Greg Barranco	Samantha Watterson
Mark Bennett	Margaret Enloe	Stephanie Smith
Julie Walker		

Announcements

- Scott Phillips – GSA conference to be held in Baltimore, November 2015 – Approached to lead a Chesapeake Session
- Bill Dennison – Exelon funding for Conowingo research – data intensive effort
  - Joint presentation about what they're going to do… Joel Blomquist is involved;
  - Lew and Lee Currey have been in meetings with Exelon regarding monitoring. Part of the communications strategy moving forward is to be clear about what is going on. How do we use the mid-point assessment process to fully understand what the impacts are?
  - Bill Dennison – Tell the story as it is emerging rather than waiting until the work is completed
- Peter Tango – Inaugural Citizen Science Association Conference in San Jose, February 11th and 12th.
  - http://citizenscienceassociation.org/conference/citizen-science-2015/
- International Ocean Research Conference (One Planet, One Ocean) in Barcelona conveyed five central themes: plastics, technology, citizen science, fisheries, and science communication.

GIS Support – John Wolf

- An Overview of GIS support available to the GITs from the GIS Team was provided.
- There exists a geographical component to many of the indicators.
- GIS Team Leads to contact are listed in the powerpoint presentation, John Wolf for those outcomes that are not listed.
- Dynamic map for fisheries - http://gis.chesapeakebay.net/shadabundance/map.html
  - Indicator for American Shad: every tributary in every state in the watershed calculates relative abundance of shad in different way. Clicking on tributary will show relative abundance for that tributary
  - Similar type of application developed for Oysters
- Several databases concerning vital habitats (fish passage, brook trout, SAV, and others) have been compiled

- Contact the GIS Team for more details about what the GIS Team can do for each GIT
- Derived Prioritization Products: Potential for opportunities to collaborate across outcomes or goal teams
  - Resource lands assessment, Priority Forests, Showcase Watersheds, among others
- Excluding Virginia, each state in the Chesapeake Bay watershed has a GIS Data Resource database
  - Multiple ways to access VA data through different state agencies
  - Links to these GIS data resources are also located within the powerpoint presentation
  - ArcGIS Online has publicly accessible data sets
- Needs that exist across Goal Teams and across outcomes:
  - Examples provided in presentation, Esri access required
- Jennifer Griener: Derived Prioritization Products should include North Atlantic LCC, which has worked extensively with the contractor Wildlife Management Institute (WMI) preparing a synthesis of all action state wildlife plans in the northeast. This was discussed at the Fisheries GIT Meeting, concerning the Fish habitat outcome and which species are being discussed. DE determines this through the use of statewide wildlife action plans which is similar for many other state wildlife agencies, as many of the maps have been digitized creating an invaluable resource for the agencies.
- Story Maps
  - Place-based Federal Collaboration – Watershed Restoration
  - Geographic prioritization for restoration maps, can capture priorities geographically across outcomes.
  - Scott Philips - Decision tool to say where working together they create cross-overs.
  - Jennifer Greiner – That sort of thinking will be most useful in the January/February timeframe as far as guiding what is produced in drafting management strategies rather than waiting to see what is established in the development process and then looking for opportunities to overlap
  - Place-based Federal Collaboration – Land Conservation maps as well.
  - How can we have better cross over between management strategies?
    - Potential to look for possible correlations and then come to maps team to determine which data layers would be helpful to view together
  - A portion of the coordinators/staffers meetings should be allocated for collaboration and discussion of possible mapping coordination

GITs Round Robin Discussion – GIT Coordinators/Staffers

Habitats GIT

- Jennifer Griener explained where GIS could help with Habitats GIT: There are challenges in narrowing focus on two large lists of management approaches and geographical locations. Knowing where actions may be complementary to other actions could significantly help in this process.
- The Fish Passage strategy is well underway, and the first draft should be completed by the end of 2014.
- The SAV strategy has been slightly delayed while the search for a new chair to replace Lee Karrh is underway.

- Wetlands – Erin McLaughlin is working as the co-chair and the team is in development forming the drafting team
- Black Duck – Just starting, FWS coordinating and leading the effort and is looking for drafters
- Stream Health – Neely Law is the point person and has formed a drafting team of five from workgroup members and a few other interested parties and is looking to add a couple more. The team will meet on December. 9.
- Brook Trout – Well organized and making progress. Good team. (Point person – Steve Perry?) An outline has been drafted that pulls from individual state brook trout strategies and has been distributed to the team for review.
- Fish Habitat – Shared with the Fish GIT, the kickoff call was held a couple of weeks ago and some drafts objectives that were outlined were vetted with the Fish GIT members on December 2.
- NEEDS: Indicators for Black Duck and Brook Trout, questions about addressing climate resiliency, blue carbon (mangroves, seagrasses, and salt marshes are potential sinks for atmospheric carbon, Bill Dennison's video) should be addressed by the wetland strategy, GIT received funding ($40k from GIT funding made available through the EPA) for brook trout monitoring which needs to be distributed to EBTJV (don't have ability to take EPA money) or the five states in the watershed that have brook trout for electro-Brook trout fishing and monitoring in select streams. Talk about this offline.
    o **ACTION**: Peter Tango will talk to Jennifer about the distribution of money

Fisheries GIT

- Forage Fisheries, recommendations related to monitoring:
    o Need for more shallow water, near shore fish visualization and fish habitat monitoring as well as zooplankton surveys.
    o Extent to which the fisheries group should delve into the issue of climate as it relates to species' responses to induced perturbations such as acidification and sea level rise is unclear. That which will be addressed in the climate resiliency management strategies should be relayed to the Fisheries GIT and others in order to ensure congruity and efficiency.
    o Peter Tango - Counting blue crabs, suites of indicators are they going to happen within the Goal Team?
    o Bill Dennison – Recently published paper describes how ocean acidification may be enhanced by eutrophication. Important to recognize overlapping challenges between increasingly correlated groups such as the fisheries and water quality groups. Climate group may bear the responsibility of finding links among different workgroups.
    o Climate Change Meeting – Address specific parameters that goal teams have identified and determine what monitoring is in place.
    o At some point, the communications team needs to be brought into the management strategy writing process.

<u>Water Quality</u>

- Discussion involving the use of the WQ mapping tools to meet some of the needs of the other goal teams.
- Discussion of utilizing WQ modeling efforts to support other GIT outcomes.

<u>Stewardship</u> – No representation

<u>Healthy Watersheds</u>

- Management Strategy scheduled for December 16, to be assisted with the help of Renee Thompson.

<u>Climate Resiliency</u>

- Discussion about creating a climate change category to begin crafting GIS data to assist in developing strategies for other outcomes, need to identify and gather tools/data resources/GIS climate information.

Intelligent Monitoring Product Update – Lea Rubin

- Lea Rubin in cooperation with the CBP Communications Team is developing trifold as an executive summary to the Global Seminar Series that STAR hosted as part of phase II of the BASIN review process.
- The draft version of the product presented contains draft text and placeholder graphics. – Draft version (link)

Innovative Monitoring Approaches Workshop – Peter Tango

- Workshop is in coordination with STAC will look at assessing Bay Water Quality Standards, Monitoring Program that is currently in place provides an adequate representation of data needed
- Workshop will examine new methods of data collection and data analysis.
- Workshop will seek to identify ways to reduce uncertainties in assessments of water quality to better understand standards assessment and evaluate progress over time.
- Agenda

Climate Change WG. – Mark Bennett

- First meeting will focus heavily on the beginning process of the two management strategies for climate resilience: Adaptation and Monitoring & Assessment
- Ray Najjar – video seminar from UMCES – (link)
- Expected outcome: Have liaisons from climate workgroup to other workgroups as strategies are being drafted.
- Climate Coordinator is being brought on from NOAA.

Communications – Margaret Enloe

- Articles to be sent to Communications Workgroup could involve papers that are being read, such as Dennison's mention of the paper on Ocean Acidification
- USGS Reports
  - Increasing temperature in streams across the Bay Watershed (December 8 – press release) – Journal article
  - Eastern Shore Nitrogen Trends: Continuing Increases (January)
  - Michael Langland - Sediment Transport in Susquehanna – compilation of USGS data
- [Conowingo Resources](#)
- UMCES - IAN Website being launched soon which will augment the report card, entitled Chesapeake Bay Health Stories
- Hardened shorelines vs. natural shorelines and SAV response – Coasts and Estuaries Journal
- VIMS study concerning SAV density and blue crabs
- UMCES 90th anniversary 2015 (events being planned)
- Communications Office – Working on Bay Barometer (end of January publication)
  - Water Quality Standards Attainment Indicator – seen a down tick in the standards attainment, do a news release on that particular indicator but waiting on NTN info and will put out a full picture news release (before Christmas)

Wrap Up

- Next STAR meeting will be held January 22, 2015
- Beginning of alternating cycle between traditional STAR Meetings and STAR Leadership "Business" Meetings

SEMINAR

A view of stream habitat conditions in the Chesapeake Bay watershed through the eyes of brook trout
J. Todd Petty, Professor of Aquatic Sciences, West Virginia University

A recent assessment of stream habitat conditions was used to construct a model of brook trout distributions throughout their native range in the Chesapeake Bay. Our approach uses very large datasets and machine learning statistics to quantify conditions at the stream segment level (64,000 stream segments) and accumulated conditions at the watershed scale. Through this assessment we are able to quantify current conditions, likely historic conditions in the absence of stress, and stream-to-stream level measures of stress associated with mining, agriculture, and urbanization. Model results are then integrated into a web-based GIS modeling tool that can used for interactive visualization, conservation prioritization, and quantitative scenario analysis. When coupled with climate change predictions and large river species models, the brook trout model will provide a powerful means for optimizing restoration actions that will produce measurable benefits to stream habitats and fish populations throughout the bay watershed.

Dr. Petty is a professor in wildlife and fisheries resources at WVU. He received his BS in biology and environmental sciences at the University of Virginia and a PhD in ecology and forest resources at the University of Georgia. At WVU he teaches courses in freshwater ecology, environmental statistics, and animal population dynamics. Todd's research focuses on watershed scale processes and the effects of landscape change on fishes and aquatic habitats.

[Seminar Link](#)

Discussion

- July temperatures are used as proximal temperatures for brook trout stressors because they are easy to predict on the landscape.
  - Maximum 7-day moving averages were utilized
- Discussion of time series data sets
  - The models for brook trout did not incorporate temporal models.
- Discussion of representing groundwater's influence on stream temperature?
  - Ty Wagner at PSU – Groundwater model includes geology, but springs still present a problematic source of error.
  - Improved information on flow influenced by groundwater may help, but is difficult to map at any given point in time.
- BRT modeling allows for the construction of decision trees that determine relative weight of land use, although not on a per unit basis.
  - As an example, mining may make up a relatively small portion of the land use compared to agriculture, but in a particular area the impact of mining may be extraordinarily important and it may be captured in this model despite its relatively smaller geographic distribution.
  - Provides ability to identify targets for restoration, loss of habitats may be partitioned among different stressors and decisions about which stressors to target first may be made.
  - Potential to guide important triage decision points concerning restoration for degraded and destroyed habitat.