Integrated Trends Analysis Team Conference Call

March 17, 2015, 10:00AM-12:00PM

Location: 303 CBPO, 410 Severn Avenue, Annapolis, MD 21403
Adobe Connect: https://epa.connectsolutions.com/explainingtrends (enter as guest)
Conference Line: 866-299-3188 Password 267-5715
Event webpage: http://www.chesapeakebay.net/calendar/event/22558

Introduction and Announcements – Jeremy Testa and Joel Blomquist (co-Chairs)

Partnership Needs and Timeline – James Davis Martin, VADEQ

- James discussed the partnership needs and timeline, reiterating the importance of trends work in relating the effectiveness of management actions with respect to water quality and Bay health.
- Aligning trends analysis data with information from the modeling system could be very useful in helping to determine what practices are working for implementation throughout the watershed.
- What is the preferred medium that group members would like to receive information about trends work?
    - Interactive maps are a good product that could be shared prior to the next team meeting and could be followed by a presentation.
- John Wolf at the Chesapeake Bay Program is currently putting together maps that will provide users with an ability to drill into data points to get more information like the longevity of the trend and potential causal mechanisms.
- It may be helpful to get a representative or two from each jurisdiction to help map out what trends would be most useful. The next step would then be to get information and findings published so that they can be peer reviewed and be used with the Midpoint Assessment.
- The target audience should also be kept in mind, including agricultural constituents, managers, and the general public.

WRTDS Update/RIM Trends Map – Doug Moyer and Jeff Chanat, USGS
Attachment A, *Attachment B*

- Doug reviewed the latest load and trend information in the Bay tributaries from the 117 sites that comprise the nontidal network
- This information is being utilized to try and answer core questions about annual loads being delivered past these stations, changes in these loads over time, and explanations behind the changes.
- Yields may be normalized to better determine responses using Bob Hirsch's WRTDS method which better assesses flow normalized responses.
- There are new enhancements to the WRTDS method which include the ability to hypothesis test trends to determine with different certainties whether or not there are improvements in different basins across the watershed.

- Jeff Chanat is wrapping up a prolonged period of determining how to put out work about trends. There is work regarding refining the time period over which the results are being normalized so that they may better tie into the normalized model results.
    - Jeff is trying to take a SPARROW-like approach where a mass input is received from different sources and is then propagated down through different land segments into the river network to generate a load response. However, instead of using mass, Jeff is propagating change through the watershed to model the flow normalized response, studying P first to better determine what types of sources connect changes in the watersheds to changes in the riverine system.
    - With Bill Ball's JHU group DOGEE, Jeff is exploring how changes in the ratios between suspended sediment and both total phosphorous and orthophosphorus evolve over time. Further work is being investigated to determine whether these findings can be used as an indicator of changing processes or changing sources of P that may be occurring within the watershed.

Tidal Trends Maps – Rebecca Murphy, UMCES/CBPO
Attachment C

- Rebecca reviewed maps summarizing water quality trends computed by MD and VA state partners for the tidal waters. The maps present combined trends between states using the Seasonal-Kendall method.
- The overarching goal is to be able to explain these trends, particularly with an analysis of watershed loads.
- The results shown are preliminary, and notable patterns will be areas for future exploration.
- Further steps in the analysis involve performing regressions to better determine how the load trends in the watershed correspond to the observed trends in the tidal waters.
- Maps can be reviewed on the integrated trends website, under the "Projects & Resources" tab.

Survey Responses Discussion, May Meeting Topics – Jeni Keisman, USGS
Attachment D

- Jeni reviewed the survey results returned from ITAT members that will help determine how to best focus the efforts of the workgroup.
- Three general categories were identified from the survey as team goals
    - Making the links between activities in the watershed to nontidal water quality to tidal water quality.
    - Improving modeling tools to capture monitoring data trends.
    - Use the evaluation of trends in monitoring data to better inform management practices.
- Goals of the trends team also include the generation of peer reviewed publications and clear recommendations for management.

Open Forum

- There was a suggestion to have members of the WQGIT help to refine the meeting topics outlined to ensure that we are addressing issues that state partners see as the most important.
- Rich Batiuk and others are working to put together a more holistic and comprehensive collection of SAV trends work that will complement the other tidal trends work (such as the maps presents by Rebecca Murphy). There are also efforts to reach out to colleagues working with benthic organisms to add more of a living resources component into work explaining trends. Lastly, there was a presentation to STAC requesting a set of peer reviews, two of which concerned the application of WRTDS and GAMs in trends analyses.
- Ken Moore referenced interest in using higher frequency data to assess trends, something in which Virginia has been particularly interested. As an example, there are research efforts to more effectively map chlorophyll concentrations on the James River in a more "real time" sense.
- Kathy Boomer discussed the NRCS Regional Conservation Partnership Program for the Delmarva, which is a collaboration of business and nonprofit partners collaborating on BMP implementation. The project seeks to work with agricultural business partners as well as local landowners to implement practices and combines this with a three pronged research approach:
    - The TNC is partnering with Tom Fisher's lab for the upper Choptank in order to study monitoring at different scales for edge of field.
    - Researchers across the Delmarva will also work to better determine the effectiveness of BMPs on loads over time.
    - Model comparison work is to be completed with downscaling to determine how each of the models under study influence the priority of BMP placement.
    - As of yet, this research approach does not have sufficient funding for the capacity to complete this work, though researchers are being contacted for collaboration.

PARTICIPANTS

Amin	Vimal	vamin@mde.state.md.us	MDE
Ball	Bill	ballw@si.edu	JHU
Batiuk	Rich	batiuk.richard@epa.gov	EPA/CBPO
Berger	Karl	kberger@mwcog.org	MWCOG
Blomquist	Joel	jdblomqu@usgs.gov	USGS/ITAT Chair
Boomer	Kathy	kboomer@TNC.ORG	TNC
Brush	Mark	brush@vims.edu	VIMS
Bukaveckas	Paul	pabukaveckas@vcu.edu	VCU
Chanat	Jeff	jchanat@usgs.gov	USGS
Currey	Lee	lcurrey@mde.state.md.us	MDE
Davis-Martin	James	james.davis-martin@deq.virginia.gov	VADEQ
Dennison	Bill	dennison@umces.du	UMCES

Friedrichs	Carl	marjy@VIMS.edu	VIMS/STAC
Friedrichs	Marjy	carl@VIMS.edu	VIMS
Garcia	Ana	agarcia@usgs.gov	USGS
Haklar	David	dhaklar@srbc.net	SRBC
Harris	Lora	harris@umces.edu	UMCES
Johnson	Cindy	cindy.johnson@deq.virginia.gov	VADEQ
Karrh	Renee	renee.karrh@maryland.gov	MDNR
Keisman	Jeni	jkeisman@usgs.gov	USGS/ITAT Coordinator
Lane	Mike	mflane@odu.edu	ODU
Llanso	Roberto	llansorob@versar.com	Versar
Mallonnee	Mike	mmallonee@chesapeakebay.net	ICPRB/CBPO
McGonigal	Kevin	kmcgonical@srbc.net	SRBC
Michael	Bruce	bruce.michael@maryland.gov	MDNR
Mirsajadi	Hassan	hassan.mirsajadi@state.de.us	DE DNREC
Moore	Ken	moore@vims.edu	VIMS
Moyer	Doug	dlmoyer@usgs.gov	USGS
Murphy	Rebecca	rmurphy@chesapeakebay.net	UMCES/CBPO
Parham	Tom	tom.parham@maryland.gov	MDNR
Parrish	Dave	parrishd@vims.edu	VIMS
Phillips	Scott	swphilli@usgs.gov	USGS
Pruzinsky	Amanda	pruzinsky.amanda@epa.gov	EPA
Robertson	Tish	tlrobertson@virginia.deq.gov	VADEQ
Romano	Bill	bill.romano@maryland.gov	MDNR
Shenk	Gary	gshenk@chesapeakebay.net	EPA/CBPO
Staver	Ken	kstaver@umd.edu	UMD
Sweeney	Jeff	jsweeney@chesapeakebay.net	EPA/CBPO
Tango	Peter	ptango@chesapeakebay.net	USGS/CBPO
Testa	Jeremy	jtesta@umces.edu	UMCES/ITAT Vice Chair
Tian	Richard	rtian@chesapeakebay.net	UMCES/CBPO
Trice	Mark	mark.trice@maryland.gov	MDNR
Zhang	Qian	qzhang19@jhu.edu	JHU