Contaminants Workgroup Meeting

Albemarle-Pamlico National Estuary Partnership

1:00pm
April 23, 2015

Via WebEx

Draft Meeting Notes

Members Present: Anna Cornelius (EPA), Anne Coan (NCFB), Clifton Bell (Brown and Caldwell), David Springer (Greenville Utilities Commission), Jing Lin (DWR), Keith Larick (NCFB), Lauren Petter (EPA), Marty Lebo (AquAeTer), Nathan Owen (NASA), Rhonda Evans (EPA), Sandy Mort (DHHS), Sara Collins (NCLM), Sharon Fitzgerald (USGS), Steve Kroeger (DWR), Tim Spruill, Tom Augspurger (USFWS), Amy Ringwood (UNCC), Jim Hawhee (APNEP), Dean Carpenter (APNEP)

Welcome and Introductions: Jim Hawhee

Jim Hawhee convened the meeting and asked workgroup members to introduce themselves. Jim noted that it has been six months since group has fully met. However, the Metals & Emerging Contaminants subgroup has met several times via telephone in the interim.

Workgroup Logistics: Jim Hawhee

Jim Hawhee noted the challenges in convening the workgroup given a divergence between nutrient-related and other contaminant-related initiatives. He also noted that many workgroup members seemed to have a primary interest in one topic or the other. He asked whether the group would be amenable to a split. No objections were made, with support indicated by Sara Collins, Anne Coan, and Amy Ringwood.

Jim Hawhee stated that, based on no objections, he will take steps to separate the workgroups and provide APNEP support for each.

Nutrient Criteria Plan Development Update: Steve Kroeger

Steve Kroeger noted that over last few months the Science Advisory Council (SAC) identified in the Nutrient Criteria Development Plan (NCDP) has been formed. The first meeting will be held in Raleigh, North Carolina on May 6 from 9:00am-3:00pm. Steve also informed the group that the Criteria Implementation Committee (CIC) nominations had been forwarded. Workgroup members that would like to remain informed about these proceedings were asked to send Steve an email to be added to the email distribution list. The High Rock Lake technical advisory committee (TAC) also planned to meet on April 29 from 1:00-4:00.

Jim Hawhee reminded the group that APNEP is working on the Albemarle Sound as one of the three pilot areas delineated in the N.C. Nutrient Criteria Development Plan. The other two pilot areas are High Rock Lake and the Cape Fear River.

NASA DEVELOP Project Summary and Findings: Nathan Owen

Nathan Owen presented a PowerPoint Presentation to the workgroup about the NASA Applied Sciences' DEVELOP National Program. He discussed the nine application areas for the program which includes agriculture, climate disasters, ecological forecasting, energy, health and air quality, oceans, water resources, and weather. He also discussed the dual-capacity building which accommodates both participants and end-user organizations. The APNEP project is a water resources project that consists of a five-person team who has since dispersed. The project began as a USGS project with Michelle Moorman and APNEP joined later as a partner. The project sought to evaluate the use of remote sensing data to detect and measure chlorophyll a in Albemarle Sound as a proxy for algae. Nathan spoke about the MODIS sensor on the AQUA satellite as well as in situ water quality data. He then went on to describe the project methodology. SeaDAS was found to be generally is poor at sensing in shallow areas. He also noted that the algorithm used delivered poor correlation to water quality samples collected in the field (R^2 value = 0.0196). Nathan concluded by stating the benefits of the research which was that MODIS provides a larger picture, which could mean improvement of the algorithm. Nathan's interests for future work include DEVELOP partnering with other organizations to explore beta-test approaches for a 10-week project.

Anne Coan asked what the time-lapse video of MODIS data was in regards to what is depicted. Nathan Owen confirmed that MODIS is vastly overestimating Chlorophyll a.

Tim Spruill asked if there are any publications or summaries of this project. Nathan Owen informed Tim that a report will be available next week. Jim indicated he would share these with the group once they became available.

Jim Hawhee thanked Nathan on his nice first attempt. Nathan Owen mentioned that he is working with APNEP on a new wetland project as well.

Project Update: NOAA ECOHAB Proposal: Jim Hawhee

Jim Hawhee informed the group of the proposal status in regards to the opportunity to study nutrient bloom dynamics. Due to comments on the pre-proposal, workgroup members declined to submit a full proposal. For now the proposal is on hold.

Project Update: Analysis of Historical Data Sets: Sharon Fitzgerald

Sharon Fitzgerald is taking over the USGS Albemarle Sound monitoring study until its completion this year, as Michelle Moorman accepted a position with the U.S. Fish and Wildlife

Service. In this study they repeatedly sampled 23 constituents at eight representative sites in 2013 and 2014. They also conducted a small quality assurance study.

Jim Hawhee asked that Sharon please talk about time frame of historical data analysis. Sharon replied that the data analysis time frame is only between 2012 and 2014. Jim Hawhee expressed that the need for historical data is important to support the reference method and indicated he would work with DWR to conduct these analyses.

Anne Coan asked about Sharon's use of the term "exceedance" for some nutrient-related parameters. Sharon stated these were derived from NOAA guidelines and are not exceedances as defined by the Division of Water Resources. Anne Coan noted that North Carolina does not have TP, TN standards.

Clifton Bell asked whether the study measured cyanobacteria biomass or count and whether or not is makes a difference. Sharon mentioned the World Health Organization guidelines for cyanobacteria.

Amy Ringwood asked if there was any empirical ability to measure toxins. Sharon replied that some calculations were made based on algal species' theoretical ability to provide toxins and but actual toxin measures were generally low during the study period.

The issue of the study boundary arose. Jim Hawhee reminded the group of its decision in the past meeting that, as a pilot effort, recommendations would be for the Albemarle Sound SB boundary. However, a broader area may be examined in the meantime to inform these recommendations.

Project Update: Correlational Statistics, NSTEPS Proposal: Jim Hawhee

Jim Hawhee worked with Steve Kroeger on the proposal and reviewers submitted positive feedback. Jim asked if there were any general impressions on the proposal.

Anne Coan expressed her concern in regards to the timeline as the September 30 deadline in the NCDP appears to leave a short time frame for completion. Lauren Petter pointed out that the EPA already has in-house contractors. It was also noted that the deadline has some flexibility and was set for planning purposes.

Jing Lin brought up that there is no table of parameters included. Lauren Petter stated that the response parameters are noted in the NCDP. The causal parameters are TN and TP.

Steve Kroeger suggested using the term "algal blooms" rather than "harmful algal blooms" unless demonstrated otherwise.

Jin Ling suggested that the literature review project (discussed below) might precede the data analysis project.

Anne Coan asked if there was EPA Region funding available. Lauren Petter answered that the sooner the proposal is in the queue, the better chance it is to get annual allocation.

Marty Lebo asked if the data analysis will expand beyond TN and TP to specific parameters such as total vs. particulate vs. dissolved. He suggested that to get at causality, you need to go beyond total measures. Sharon stated particulate vs. dissolved is a necessity. Steve Kroeger said that we don't presently measure dissolved phosphorus. Marty Lebo: P just total? Steve Kroeger: Correct, just TP on a monthly basis.

Tim Spruill brought up that the state measures turbidity. Steve Kroeger confirmed that DWR measures turbidity. He brought up the issue with assuming biological response with additional nutrients, when it really depends on light-limitation. He also suggested that turbidity and secchi depth should be included in the analysis. Sharon asked if there was any evidence that the Albemarle-Pamlico estuary has ever been light limited. Tim Spruill suggested that major storms could cause light limitation. Thinking more upstream, in a watershed you may not impair water at the point but it's added to the load downstream. Jing Lin agreed with Tim's point. This is important for algal blooms as well as SAV. Marty Lebo stated that in Albemarle Sound, the light limitation concerns are not for algae but for SAV. Including turbidity and secchi depth is fine but this will make interpretation more challenging.

Amy Ringwood asked if diurnal highs and low had been collected. Steve Kroeger said data loggers will be used.

Project Update: Literature Review: Jim Hawhee

Jim Hawhee reported that the proposal was well received by the EPA. He opened the floor for feedback on whether the literature review should come before the analysis. Anne Coan suggested the literature review be in advance and Tim Spruill agreed. However, Steve Kroeger added that general causal relationships have been known for years. Anne Coan noted that there is not so much literature for the SE estuaries. Marty Lebo stated that both data sources are necessary and there is value in proceeding with both simultaneously. Steve Kroeger noted that the data provided are relatively clean. Jim Hawhee reported that currently funds are available for both efforts. Anne Coan suggested that it may require a second round of analysis for filling data gaps and there could be a need for additional funding.

Jing Lin asked, assuming both projects move forward together, if it would be possible to extend the time period of correlational analysis to ensure exchange. Lauren suggested it's better to go forward with projects then apply for subsequent analysis.

After this discussion, the group ultimately agreed to continue moving forward with both literature review and data review projects concurrently.

Project Update: Legal/Policy Analysis: Jim Hawhee

Jim Hawhee updated the group that the proposal was put through to get Duke MEM student interest but there has been no luck. He spoke with Lisa Schiavinato on the possibility for her team to work on this topic this summer. Tim Spruill expressed his support for the initiative. Jim Hawhee suggested it might be helpful to review work by other jurisdictions and Sharon Fitzgerald recommended the environmental law program. Lisa Schiavinato expressed her willingness to assist, said she will be discussing details with Jim Hawhee.

Anne Coan asked when to expect to hear about EPA proposals? Lauren stated there is no defined date from submission. Jim Hawhee stated he anticipates submitting by next week.

Jim noted that this was the conclusion of the nutrients portion of the agenda and gave people interested in these initiatives a few moments to disconnect from the call.

Metals and EC Initiatives

Metals and Emerging Contaminants Updates: Jim Hawhee

Jim Hawhee provided a recap of work on these initiatives to date. Tom Augspurger and Sid Mitra provided one-page summaries on metals and emerging contaminants, respectively. The subgroup has a couple of conference calls (mid-December and early March). Feedback: (1) good idea to follow-up with general literature review and synthesize a data analysis based on prior work. Also, field studies could help fill gaps. Jim asked for comments as to how the group might move forward and noted that APNEP had approximately $20,000 budgeted to support these efforts.

Jim Hawhee expressed interest in consolidating what we know and the field plan.

Tom Augspurger inquired about geographic areas of interests, contaminants of interest, time frame, and contaminant trends and other biota. Up from mouth, personal care products have generally not been evaluated.

Rhonda Evans suggested that the team might develop a white paper. Other National Estuary Programs (NEPs) have taken this course. Rhonda offered to research papers from other NEPs.

Anne Coan noted that there are over twenty municipalities on the Chowan River that do land applications of wastewater biosolids rather than discharge into waters. This began when Chowan started having issues in 1980s.

Sandy Moore stated that fish tissue analysis from estuaries is scarce and asked what the value of fish tissue data is in regards to human health. She also states that the NC Division of Public Health generally relies on freshwater fish consumption advisories.

Tom Augspurger inquired as to whether there are resources for mining databases to inform chemical use to make a list of compounds of concern? Potentially.

Anne Coan noted the Agricultural Health Study conducted in Iowa and NC and said there have been follow-up studies since data collection began around 12 years ago. Agricultural data and pesticide use data are difficult to derive from sales data.

Summary of Feedback Regarding Next Steps: Jim Hawhee

Jim Hawhee expressed interest in supporting a white paper to come up with a game plan. He noted that there is $20,000 available from APNEP to assist.

Rhonda Evans explained the upcoming Coastal Condition Assessment as a way to potentially collect additional field data in this area. However, at this time it appears unlikely that APNEP can supplement the effort or adjust monitoring protocols. Dean Carpenter noted that APNEP staff has requested these protocols for months.

Anne Coan explained that USGS NAWQA has been collecting contaminant data since 1991.

Tom Augspurger remarked that NOAA no longer has a regular survey. Chesapeake Bay Program contaminant of concern might be instructive. Look at toxics inventory by Toxics Release Inventory Program in the Albemarle-Pamlico estuarine system. He suggested taking $20K to display historical data in geospatially explicit form to help understand current coverages and identify a priority list of chemicals to study.

Jim agreed to work with the group to begin developing a scope of work for a synthesis of contaminants data.

Public Comments

There were no public comments.

Adjourn

The meeting adjourned at 4pm.