

Environmental Monitoring Collaborative (EMC): Fall Meeting
RI Department of Environmental Management, Room 300
Meeting Minutes and Notes
November 18, 2014

Members Present: Nicole Rohr, Sue Kiernan, Tom Uva, Kathy Crawley, Chuck LaBash, Tom Borden, John King, Matt Ladewig, Jim Boyd, Tom Kutcher (for Marci Cole-Eckberg), Elizabeth Herron (for Linda Green)

Attendees: Pam Reitsma, Ames Colt, Courtney Schmidt, Eivy Monroy

Nicole Rohr opened the meeting by welcoming the EMC participants and thanking them for their participation. She then initiated a round of introductions followed by discussion on: (1) comments and feedback from the 2013 Annual Report; (2) updates on the 2014 sampling season and preparation for the next annual report; and (3) discussion on a comprehensive environmental monitoring strategy.

Comments and feedback on the 2013 Annual Report

Generally, there was positive feedback on the 2013 Annual Report. It was noted that we do not have a system to receive feedback from persons/organizations that received hard copies of the report. It was noted that there were concerns about the various years that are covered in the report and how to best convey when the data was collected while allowing newer summaries of events and initiatives to still be included. This is a continuing issue and is one that will be focused on when writing/editing the 2014 report.

We also reiterated how priority areas are decided. Some priority areas are enumerated in the law itself while others have been included for relevance to management decisions on a consensus basis.

Updates on the 2014 sampling season

Elizabeth Herron reported that Watershed Watch just finished its 27th monitoring season. Of particular interest for analyses are changes in temperatures and chlorophyll levels (algal blooms)--one observation from a general trend analysis is that water temperatures are not getting as low in May to November timeframe as they have in the past. This could have potential biological consequences.

Watershed Watch will continue their monitoring efforts in future years but did note that it is starting to see drop-offs in local sponsorship, which may continue as more communities and nonprofits are not able to continue monitoring water quality.

The Watershed Watch database is not nearly complete for internal use. Most of the data is in the database, which has made data sharing and analysis more efficient. The ultimate goal still is to host the database on the website so that it can be accessible by anyone from anywhere but that is beyond the current fiscal constraints.

URI has had a coastal erosion monitoring program since 1963, that looks at beach volumes on the South coast of RI using traditional survey methods. However, a team of researchers including John King, has procured \$1.4M in post-Superstorm Sandy money to expand this program by acquiring equipment to start a statewide coastal erosion monitoring program. This will include tide gauges, a weather station, Doppler bathymetry, and terrestrial LiDAR system to complement aerial LiDAR. This will provide RI with a system that it can own and run.

There is enough funding to get this effort underway plus a few years of operation and maintenance, but then there will need to be a plan in place for future funding. The tide gauges may be run by USGS for \$20,000 to \$30,000 a year and graduate assistantships can provide baseline support. However, there will be additional ongoing costs and it is currently difficult to raise money on an annual scale.

A point was raised that the cost for an online data host should also be considered. The USGS livestream was highlighted as a good site for consideration.

Tom Uva and Pam Reitsma reported that both Narragansett Bay Commission treatment plants are meeting their nitrogen permit limits: Field's Point was at 3.4mg/L and Bucklin Point was at 4.0mg/L, which is an 81% decrease from 2003.

NBC monitoring efforts showed that nutrients in the Bay are some of the lowest to date; it was a dry year, which comes into play. The Bullocks Reach station of the fixed site network showed less than one day where the average dissolved oxygen level was not meeting the 2.9mg/L limit. There were some dissolved oxygen issues in the Seekonk River that resulted in anoxia in early August and a small fish kill.

NBC continued to collect seabird profiles and all of the data is on the NBC Snapshot website. Pathogen monitoring continues to evaluate the success of the NBC's CSO Abatement Program. Plankton samples were collected twice a month following the same protocol used at GSO; this was the third year for the plankton monitoring and NBC will begin to analyze the data for trends.

The Narragansett Bay Estuary Program hired a full-time staff scientist over the summer and is now fully focused on the Status and Trends report for the entire watershed with a target date of December 2015 for the full draft. John King is the newly appointed chair of the Science Advisory Committee, which is serving the Bay Program as well as the Coordination Team.

Jim Boyd said that, complementing John King's report, CRMC continues work on the Shoreline Change SAMP. It is updating the wet/dry line on the beach over time with data through 2005/2007 on the CRMC website and will soon have the update complete with data through this year.

CRMC continues salt marsh rapid assessments using protocol developed by Save The Bay and others, and has been looking at changes on the marshes over the last several years.

CRMC recently completed a project looking at projected changes and new maps that reflect this will hopefully be adopted in the next week for use in planning. NBNERR, CRMC, and other are submitting proposals for longer term vegetation composition monitoring in salt marshes to validate the SLAMM projections.

CRMC also continued a number of freshwater and marine invasives initiatives including assessments at docks and shrimp monitoring, with the addition of work focused on colonial species this year. An annual report on invasives is currently being compiled.

The URI Environmental Data Center facilitates geospatial data analysis and distribution for RIGIS with about 100 online map services at arcgisonline.com. Chuck LaBash reported that the EDC is currently waiting for USGS to send LiDAR data from overflights that collected data from most of the south shore and some of the coastal ponds. Some NSA aerial photography that was taken this spring and coordinated through USGS should also be available soon.

There may be some 4-in. resolution imagery coming from DOT with another potential collection this spring. This will be primarily for emergency response applications.

EDC also updated dam coverage maps in collaboration with DEM and SLR inundation maps for NRCS, and participated in a statewide planning program with DOT for statewide transportation assets that identified state roadway segments, bus stops, railroads, and airports that will be impacted through different SLR scenarios.

It was added that Malcolm Spaulding is looking at storm surge specifically associated with hurricanes using a different methodology than that for the FEMA NFIP flood maps, and the RI Safe Water Program recently looked at the impacts of expected climate change on precipitation and extent of inland flooding.

Tom Kutcher reported that Save The Bay finished up the RI salt marsh assessment of 39 marshes plus coastal marshes. A common observation has been that the marshes are drowning due to lack of accretion. There is no trend data because it lacks a baseline but may have some basic comparisons between the upper and lower Bay. This data will likely serve as the baseline for future years. STB is still determining the sample size and interval but it will likely be 35 marshes every 5(?) years.

STB is particularly interested in determining the functions and values of a salt marsh compared with a fringing marsh, etc. and assessing the changes and trends. This should be useful when making land preservation decisions.

STB also supports David Murray and the Brown Insomniacs with dissolved oxygen measurements. Kutcher also made note of the unusual fish kill in the Seekonk River with qualitative evidence that it was due to low oxygen. There is not a reliable count of the number of fish that died but hearsay ranges from a few hundred to a thousand. STB also assists with urban beach monitoring, especially at Sabin Point.

There is no continued funding to the RI Salt Marsh Assessment, eelgrass monitoring was discontinued this year due to the loss of funding for the staff position, and funding to assess recruitment levels of oyster spat is also gone.

The spatial survey group coordinated by David Murray, conducted five dissolved oxygen surveys this summer but has no funding to do anything with the data. Except for some low DO levels in the Seekonk River in early August and a corresponding fish kill, there were no prolonged periods of low DO in the Upper Bay this past summer. Unfortunately, the person at Brown who was responsible for the website and some data processing is gone due to funding constraints, so the future of new data and maps distributed via the Insomniacs website is uncertain.

A data set of dissolved oxygen, temperature, salinity, and density profiles interpolated at half meter intervals from 2005-2013 spatial surveys is now available. A QC effort is still needed to include chlorophyll data. The project by a Brown undergrad to correct the chlorophyll data and compare with corresponding buoy data should be completed in January 2015. Warren Prell along with Murray also supervises an undergraduate student who is working on diatoms in the water column from URI/NBC samples and sediment samples from cores taken in the Bay.

Kathy Crawley provided the update that the RI Water Resources Board continues to track water conditions on a monthly basis. It collects precipitation data by drought region and is a combination of data from weather stations in Kingston, T.F. Green airport, and the west side of the state. The WRB works with the water districts and USGS, but could be better at posting data to website for use by others.

The WRB observed a 73-year record low in water levels at the Pawcatuck/Wood River Junction gage but only hit 3 of the 4 drought triggers that would have initiated the drought response process. The WRB compiled water use data for the 2012 year and are currently conducting QA/QC. Soon it will be able to look at water use on both the watershed and municipal levels for surface water and groundwater supplies. The WRB works closely with DEM on stream gauge and groundwater networks and everyone is aware that funding has been a problem.

In response to questions, Crawley said that the WRB continues to see a dropoff in water usage overall but must consider that times when groundwater is naturally low coincide with times when residential and agricultural uses are high. She also highlighted that it was a very dry August and September but October was pretty much back to normal even though northwest Rhode Island is still below average.

Crawley said that the WRB continues to struggle to better convey the message of the importance of groundwater and how it impacts water management decisions. It has been a longstanding recommendation that improved reporting on water use and withdrawals is needed.

Ames Colt is working with State Rep. Art Handy to organize a hearing on the Coordination Team, at which Ames will bring up the Joint Funding Agreements with USGS and that these need to be revived so the CT can focus on other monitoring needs. Colt is also working with State Sen. Sosnowski to hold a parallel hearing in the Senate. It does look like it will be another tough budget year, but climate change is making monitoring even more important.

Sue Kiernan and the Office of Water are working on monitoring strategies that they will hopefully be able to share with the group soon. At our last meeting, we focused on the changes to the EPA Beach Program and what states must do to qualify for funding. RI is going to pursue funding and should be able to meet the new qualifications but it will require DEM to adopt certain standards so they are working out a strategy for that. However, as previously discussed, the changing standards does raise the potential for more closures.

DEM in coordination with DOH has increased capacity for fish tissue sampling with anticipated additional testing next summer. It will be analyzing mercury in freshwater fish and working with Dave Taylor at Roger Williams on marine fish. DEM is currently funding this effort with court settlement money but a plan will need to be in place for after that.

Collective negotiations with USGS did lead to some reductions in stream monitoring. Three months of monitoring at the mouth of the Wood-Pawcatuck River was eliminated because of costs. However, analysis was done before making this decision and it was determined that this cut had the lowest impact on data compatibility. It remains an ongoing concern that the Coordination Team is funding the majority of this monitoring effort.

DEM is also involved in two regional efforts to create monitoring networks. NERACOOS is an initiative with the sentinel network that will make monitoring consistent across all New England estuaries. USGS and EPA are also collaborating on a wadeable streams network with a plan on how to measure climate change in wadeable streams across New England, and possibly beyond. There are already a few sites from RI in that network.

DEM is required to enter all water quality and biological monitoring information on the federal government WQX (Water Quality Exchange) portal. The portal is being redesigned and enhanced and will impact how DEM interacts with federal agencies. WQX does not handle continuous data and a new site is being constructed for that purpose.

It was highlighted that there was a monitoring program inventory on the old Coastal Institute site but that is about 12 years old now. There are researchers looking for data sets and how that links to climate change but there is currently not a single place where all of this data can be found. Ideas for a future website were raised, such as a RI initiative similar to the whitehouse.gov climate change data portal, with the Coastal Institute as the potential host. Monitoring program inventory on old CI site. About 12 years old.

- Jim Boyd—people are looking for data sets and how that links to climate change. Right now there is not one single place where all of this data can be found.

- Future website? CI host? New whitehouse.gov federal portal for all climate change data. Replicate that in RI?

Discussion on a comprehensive environmental monitoring strategy

Nicole Rohr raised the issue of developing a comprehensive environmental monitoring strategy and circulated a rough draft of a concept. The allocated meeting time was up but Rohr did ask everyone to take a look at the document and provide feedback via email. A few comments were raised for others to think about including the scope of the report and how in-depth the report should be.

Meeting Adjourned at 5:00 PM.