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NJ Water Monitoring Council

Measuring What Counts for Clean & Plentiful Water

May 22, 2019
MEETING MINUTES

Member Attendees

NJDEP – *DWM&S*: Leslie McGeorge, Alena Baldwin-Brown, Bruce Friedman, Helen Pang, Vic Poretti
DWS&G: Jeff Hoffman *DSR*: Nick Procopio, Rob Newby *DWQ*: Marzooq Alebus

NJDOH –

NJDMAVA – Sara Helble

USGS – Bob Reiser, Heather Heckathorn, Pam Reilly

DRBC – John Yagecic

EPA R2 –

IEC – Evelyn Powers

NJ Pinelands Commission –

NJ Water Supply Authority – Heather Desko, Angela Gorczyca

Rutgers (Coop Extension Service) –

Rutgers (IMCS) –

Rutgers (Env. Bioengineering) – Eric Vowinkel

Montclair University –

Monmouth University/Urban Coast Institute –

Stockton University –

NJ Sea Grant Consortium –

Meadowlands Environmental Research Institute –

NOAA –

Monmouth County Health Dept. – Dave Sorensen

Barnegat Bay Partnership – Jim Vasslides

The Watershed Institute – Nik Hansen

Musconetcong Watershed Association – Nancy Lawler

Raritan Headwaters Association – Kristi MacDonald

Great Swamp Watershed Association –

American Littoral Society -

NJ Harbor Dischargers – Greg Alber

Brick Township MUA – William Ruocco

Guest Speaker/Discussion Leaders

Dean Bryson - DEP/BFBM

Kimberly Cenno – DEP/DWM&S

Glenn Hodgkins – USGS/New England Water Science Center

Amy McHugh – USGS/NJ Water Science Center

Chris Milly – USGS/NOAA Geophysical Fluid Dynamics Lab

Dave Robinson – State Climatologist

Christine Schell – DEP/Air Quality, Energy & Sustainability

Amy Shallcross - DRBC

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Other Attendees

Michael Allers – Musconetcong Watershed Association
Kimberly Cenno – DEP/DWM&S
Fanghui Chen - DRBC
Debbie Kratzer – DEP/DWM&S
Jenna Krug – DEP/DWM&S
Chris Kunz - DEP/DWM&S
Paul Morton – DEP/DWM&S
Christa Reeves – Musconetcong Watershed Association
Megan Rutkowski – DEP/LUM
Sara Sayed – AmeriCorps NJ Watershed Ambassador
Zoltan Szabo - USGS/NJ Water Science Center
Mara Tippet – Raritan Headwaters Association
Brett Wiley – DEP/DWM&S
Kevin Zolea - DEP/DWM&S

- **Council Business** (Copies of the agenda, minutes and many of the information updates and presentations are or will be available on the Council’s webpage, under “Meeting Information” - <http://www.state.nj.us/dep/wms/wmccmeetinginfo.html>)
- Minutes from the 02/06/19 Council meeting were approved
- The next meeting will be September 18, 2019 at DRBC. The topic recommended by the Council for the September meeting is monitoring for Harmful Algal Blooms.

Information Updates, Presentations and Announcements:

1. Announcements –

- Nick Procopio (DEP/DSR) announced that DEP had proposed a Per- and polyfluoroalkyl substances (PFAS) rule on April 1st that included MCLs and Ground Water Quality Standards for PFOA/PFOS and other provisions. The comment period for the rule would close on May 31. Nick also shared that Phase 2 of the PFAS water, sediment and fish tissue project is now underway [Note: the Council heard a summary of Phase 1 at the February 6 meeting] and that the DEP is considering developing a comprehensive PFAS monitoring strategy. Leslie McGeorge also announced that the Association of Clean Water Administrators (ACWA)/Association of Safe Drinking Water Administrators (ASDWA) Contaminants of Emerging Concern report, which includes PFAS, is now available (<https://www.acwa-us.org/documents/recommendations-report-contaminants-of-emerging-concern/>). Leslie is a member of the Workgroup that developed the report.
- Kimberly Cenno (DEP/DWM&S) briefly summarized the DEP’s Surface Water Quality Standards’ Category One rule proposal. She reminded the Council what criteria are needed for C-1 designation, summarized the potential C-1 upgrades contained in the proposal, the effects that will occur in the event that these upgrades are adopted, as well as the Department’s timeline with regards to this rule proposal (including close of comment period on June 3) and its anticipated fall 2019 adoption. Additional information about the proposal is available at <https://www.state.nj.us/dep/wms/bears/swqs.htm>
- Bob Schuster (DEP/DWM&S) provided a summary of the marine microplastics work being done by Scott Gallagher (Woods Hole Oceanographic Institution) including their fate in the ocean as well as their human health and ecosystem impacts. He also mentioned an upcoming workshop on this topic, scheduled for Oct 15-18 in Woods Hole, MA, as well as the microplastics conference held at Rutgers in late March (information from this, including the agenda and requests for presentations, is available at <https://cues.rutgers.edu/microplastics-conference-2019.html>).
- Pam Reilly (USGS) announced that the USGS NJWSC has recently redesigned its website. She also shared several new USGS publications including “Assessing the Lead Solubility of Untreated Groundwater of the

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US” and “Grand Challenges in Assessing the Adverse Effects of Contaminants of Emerging Concern on Aquatic Food Webs”, among others. These publications can be found online at the USGS publications warehouse <https://pubs.er.usgs.gov/>.

- Melissa Riskin (USGS) gave a brief recap of how the Water Quality Portal was used to pull large data sets that were needed for the updated national water quality trends study. As part of this effort, more than 112 million records were pulled (2 million of that from New Jersey) from more than 2 million sites. New Jersey data came from 19 different contributors.
- Christine Schell (DEP/AQES) summarized DEP’s climate change-related priorities including reengaging in the Regional Greenhouse Gas Initiative (RGGI); engaging in a new Energy Master Plan that integrates transportation as well as energy; and focusing on inland and coastal flooding, drought and increasing heat. She also shared that the new Division of Clean Energy, Climate and Radiation Protection is primarily responsible for the department’s climate mitigation activities including updating the Greenhouse Gas Inventory. Additional information about the division is available at <https://www.nj.gov/dep/dess>. In addition, she announced that Dave Rosenblatt has been named the department’s Climate Resiliency Officer overseeing the new Office of Climate Resiliency, which is responsible for adaptation activities. Visit the Department’s climate page at <https://www.nj.gov/dep/climatechange/> for more information.
- Nick Procopio also announced that climate change has now been added to the 2nd iteration of the New Jersey Wetlands Protection Plan (2019-2022), which is available online at https://www.nj.gov/dep/dsr/wetlands/New%20Jersey%20Wetland%20Program%20Plan%202019-2022_Full%20Report.pdf

2. Presentations:

- **National Water Monitoring Council and Conference** – Leslie McGeorge - a National Council member - along with several other attendees, provided a recap of the highlights from the 2019 National Water Monitoring Conference held in Denver March 25-29 including attendees (~850 + 400 on webinars), significant session topics (e.g., cyanohabs, CFCs/PFAs, nutrient monitoring, water quality data assessment, etc.), focus on National Aquatic Resource Surveys (sessions and training) and a brief summary of Council-member presentations and participation. Approved presentations are available on the National Council’s website at <https://acwi.gov/monitoring/conference/2019/index.html>.
- **Decontamination Protocols Workgroup Update** – Heather Desko (NJWSA) summarized the ongoing activities of the Decontamination Workgroup’s efforts to draft a set of protocols for use by NJWMC member organizations to reduce the spread of aquatic invasive species. She described the structure of the document, status of each section, next steps for the overall effort and solicited Council feedback on existing categories (e.g., watercraft, personal gear, sampling equipment) as well as need for additional categories (e.g., heavy equipment, diving, portable pumps, etc.). She also shared the discovery (by Nancy Lawler, MUA) of the New Zealand Mudsnail in the Musconetcong River and information on the NJWSA Boat Steward Program at Manasquan Reservoir.

Session – Climate Change and Effects on Water Quality/Quantity

- A. **Atmospheric Conditions and General Climate Systems as Related to NJ** – David Robinson (Rutgers, NJ State Climatologist) provided an overview of atmospheric and climate conditions in general as well as how NJ is seeing climate-related impacts. David explained the various climate variables such as temperature, precipitation, and the jet stream that define New Jersey’s climate. He also discussed local and global human activities that impact the climate system. He provided examples of various types of extreme weather that NJ has experienced since 1999 as well as records showing the long-term upward trend in NJ’s annual temperature and precipitation since 1895. He shared that NJ can expect to continue seeing rising temperatures, steady or increased precipitation, increasing variability and extremes in weather events (e.g., storms, floods, drought, heat, etc.) as well as rising sea level. He also shared ways in which citizens can acquire as well as contribute to weather related data – njweather.org (Rutgers NJ Weather Network and cocorahs.org (Community Collaborative Rain, Hail & Snow Network).

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- B. ***Streamflow in a Changing Climate*** – Chris Milly (USGS/NOAA Geophysical Fluid Dynamics Lab) presented information on the effects of climate change on streamflow and how that will, in turn, potentially affect water quality. Chris explained the dynamics of streamflow change as it relates to precipitation and temperature and the role that evaporation plays in the mix. He also provided an example using discharge trends in the Delaware River Basin.
- C. ***Historical Changes in the Hydrology of the Northeast During the Last Century*** – Glenn Hodgkins (USGS NEWSC) provided information on historical trends and variability in the northeast over the last century. This included lake ice, timing of snowmelt-related runoff, low stream flows, groundwater levels, and flood flows. These variables show a mix of multi-decadal patterns and long-term trends. Snowmelt runoff has become earlier, likely due to the increase in winter/spring air temperature. In addition, increased heavy precipitation has driven increased minor flooding in the Northeast. Increased urbanization and reservoir regulation have also affected streamflow trends. While the gauges used for analyzing snowmelt-related runoff were primarily located in the New England area, the summary conclusions are applicable to the northern portion of New Jersey.
- D. ***USGS/NJGWS Streamflow Characteristics and Trends Study*** – Amy McHugh (USGS NJWSC) shared information from a project that has just gotten underway which is designed to compute streamflow statistics in the state using water year data 1897-2017. These statistics are periodically computed to support water management efforts. The goals of the project include analysis of flow characteristics at both continuous and partial record stream gauges, analysis of observable trends in these flows, creation of a geodatabase of sites with results, comparison of the new results with the previous study (data through 2001) and then development of a summary report and data release (which will include story maps).
- E. ***Monitoring to Detect Changing Baselines in Freshwater Resources, Including Implementation of the Regional Monitoring Network in NJ*** – Dean Bryson (DEP/BFBM) summarized the existing temperature-related monitoring in rivers and streams currently conducted by the DEP Bureau of Freshwater and Biological Monitoring. He also explained EPA's Regional Monitoring Networks (RMNs) including the primary goals, where these data are being collected nationally, targeted data collection and how this effort relates to climate change. He then provided details on NJ's participation in this program including the three chosen sites (Mossmans Brook, Dunnfield Creek and Primrose Brook), temperature and macroinvertebrate monitoring methods used, examples of temperature results, as well as some recent and proposed future enhancements to the program. He also described BFBM's collaboration with EPA in the development of a potential Lakes RMN.
- F. ***Potential Climate Impacts on the Occurrence of HABs*** – Rob Newby (DEP/DSR) provided information regarding how climate change can potentially impact the increased occurrence of Harmful Algal Blooms (HAB). This included adaptation of cyanobacteria to warmer temperatures, weather extremes and the resulting effects on both HAB formation and water temperature as well as how these changes can affect nutrient releases into the water (which also affect HAB formation). He also shared references for a variety of studies that have been done to support this assertion.
- G. ***Coastal Water Quality Data Available to Evaluate the Impacts of Climate Change*** – Bob Schuster (DEP/BMWM) summarized the available marine water data related to assessing potential climate change. These include continuous water quality monitoring, ambient nutrient monitoring (1898-present), National Coastal Condition Assessment (2000-present), and the slocum glider data, combined with previous helicopter data. Most of this information is available from the BMWM website (<https://www.state.nj.us/dep/wms/bmw/index.html>). Other available data include NOAA National Weather Service's air temp and precipitation data (1895-present) – available at <https://www.weather.gov/> - and the DEP rainfall database (2000-present) – available at <http://njdep.rutgers.edu/rainfall/#data>.
- H. ***Evaluating Impacts of Climate Change on Delaware Basin Water Resources*** – Amy Shallcross (DRBC) detailed information about a study done at DRBC to evaluate the risks of climate change on the Delaware River Basin which is important because DRBC's goal is to keep the salt line below river mile 98 (Camden) and so tries to manage the flow in an attempt to push back the salt front. The study focused on evaluation of trends in climate, precipitation, evapotranspiration, snowpack and seasonality in the Delaware River Basin. It looked at reservoir inflows throughout the Basin, days in drought, as well as sea level rise and its effect on the salt front. Conclusions include the expectation that average annual flows will increase slightly, seasonality of flows will likely shift (esp. winter-spring), snowpack will likely be reduced, sea level rise

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actually poses a greater impact to salinity in the estuary than flows, and additional storage may be needed to offset sea level rise impacts.

➤ **Topic(s) for Next Meeting**

Harmful Algal Bloom Monitoring

➤ **Next Meeting**

September 18, 2019 at DRBC [Note: location moved to NJ DOH Public Health, Environmental and Agricultural Laboratories Auditorium]

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Monitoring Gaps and Needs

- Additional research is needed on the impacts of sea level rise to salinity in the Delaware Estuary
- Need to find the best way to assess climate change-related data
- What additional parameters need to be measured?
- Need to add dissolved inorganic carbon to list of marine water-related parameters being measured
- Need statewide type of work similar to scope of Regional Monitoring Networks
- Looking to upgrade NJWxNet Stations in North Jersey