THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

Meeting Minutes for December 10, 2020

100 Cambridge Street, Boston, MA, 1:00 p.m.

Minutes approved _____

Members in Attendance:

Vandana Rao	Designee, Executive Office of Energy and Environmental Affairs (EEA)
Linda Balzotti	Designee, Department of Housing and Community Development (DHCD)
Anne Carroll	Designee, Department of Conservation and Recreation (DCR)
Kathleen Baskin	Designee, Department of Environmental Protection (MassDEP)
Hotze Wijnja	Designee, Department of Agricultural Resources (DAR)
Todd Richards	Designee, Department of Fish and Game (DFG)
Thomas Cambareri	Public Member
Vincent Ragucci	Public Member
Kenneth Weismantel	Public Member
Samantha Woods	Public Member

Members Absent

Todd Callaghan	Designee, Massachusetts Office of Coastal Zone Management (CZM)
Marcela Molina	Public Member

Others in Attendance:

Vanessa Curran	DCR, Office of Water Resources
Marilyn McCrory	DCR, Office of Water Resources
John Scannell	DCR, Division of Water Supply Protection
Jennifer Pederson	Massachusetts Water Works Authority
Duane LeVangie	MassDEP
Katie Ronan	Massachusetts Water Resources Authority
Sara Cohen	DCR, Office of Water Resources
Erin Graham	DCR, Office of Water Resources
Viki Zoltay	DCR, Office of Water Resources
Lexi Dewey	Water Supply Citizens Advisory Committee (WSCAC)
Jennifer Sulla	EEA
Kathy Baskin	Mass DEP
Andrea Donlan	CT River Conservancy
Kate Bentsen	DFG Division of Ecological Restoration
Andrea Downs	Wastewater Advisory Committee
Rebecca Quiñones	Mass DFG

Rao called the meeting to order at 1:07 p.m.

Agenda Item #1: Welcome and Introductions

Rao welcomed everyone and reviewed the rules of engagement for this virtual meeting held in MS Teams for the first time. She asked everyone to put their name and affiliation in the chat

window for our records. Rao requested that everyone use the chat window for questions or comments as she can only view nine people on her screen.

Agenda Item #2: Executive Director's Report

Rao reported that conditions have been improving everywhere due to quite a bit of rain. Rao then turned it over to Erin Graham to give an update on hydrologic conditions.

Agenda Item #3: Hydrologic Conditions and Drought Status

Graham summarized that November was normal to good. Starting with precipitation she noted several 1-month indices tripped. However, some of the rainfall that fell on Nov 30 will be counted with December. Streamflow improved compared to earlier in the fall and no drought levels tripped. Groundwater was mixed. Some wells still below normal, some steady, some improving. Some drought levels tripping at level 1. Lakes and Impoundments still on the low side but starting to recover. Reporting water suppliers replied that they were encouraged by the recent rains. November temperature was on the warm side, ranking 7th warmest for MA. Drought Monitor has been showing improved conditions throughout November. Short- and long-term outlook are for above normal temperatures. Drought Outlook shows improvement. Graham introduced a cumulative precipitation graph beginning in January 2019.

Weismantel stated that his memory of Professor Bout's statement at a previous WRC presentation was that evapotranspiration has a big impact on groundwater levels. Also, forests have increased in MA compared to historical tree cover. Ken asked jokingly whether if we wanted to increase groundwater would we cut trees. Zoltay responded that paving increases contribute significantly to runoff. She would love to see research on effects of land use change vs climate change. It is multifactorial. Rao added that Bout's research highlights the need to protect upland areas for recharge. Any potential "forest" factors are being dampened by our land use changes which appear to have much greater impacts.

Wijnja commented that the cumulative graph was helpful. Cohen confirmed Weismantel's original point that clearing trees will lead to increased streamflow but not healthier streamflow due to all the other factors. Weiskel added that removal of trees does reduce evapotranspiration. He further noted that recharge is a function of temperature and other factors. Richards noted that there are many other benefits of vegetative cover, but Bout did clearly state that rain in the non-growing season contributes to recharge but rain in the growing season very rarely does.

Agenda Item #4: Vote on the Minutes of October 8, 2020

Rao invited motions to approve the meeting minutes for October 8, 2020.

V O T E	A motion was made by Weismantel with a second by Ragucci to approve the meeting minutes for October 8, 2020, as amended. The vote to approve was unanimous of those present by roll call vote.

Agenda Item #5: Vote on the WRC Annual Report, FY2020

Carroll stated that we did not receive any comments on the annual report since the previous meeting. She highlighted again major accomplishments including the Drought Plan update, many applications under the ITA, and huge progress on the water conservation website. Carroll noted

that last month we received very kind words towards staff, and in turn she thanked all of our Commissioners, stakeholders and other agency staff for their support, all the work they do, and for their participation on the Commission. While we do not always agree, we are united by water. Ragucci commented that we have come to expect outstanding and we did not disappoint. Pederson noted that the last page cut off at the bottom when she printed. Rao noted that we will file the annual report with the Secretary of State and will share the final version broadly.

V O T E	A motion was made by Ragucci with a second by Richards to approve the Water Resources Commission Annual Report for Fiscal Year 2020. The vote to approve was unanimous of those present by roll call vote.

Agenda Item #6: Presentation: Tracking the Condition of Massachusetts' Large Rivers

Rao introduced Rebecca Quiñones from Mass Wildlife who will present on the conditions of large rivers across the state. Rao reminisced that when she first came to EEA almost two decades ago there was a lot of talk about the original target fish community (TFC) study conducted by Todd Richards. Todd's work over the years has greatly contributed to our knowledge of fisheries and everything associated with it including flow and habitat. Richards confirmed that the last iteration of the fish study was more than a decade ago. He praised the work of Quiñones and turned over the presentation to her.

Quinoñes introduced her project, which builds on the original TFC work by looking at additional sites and comparing two time frames (2006 vs. 2019) with the idea that fish assemblages can be used to evaluate habitat condition. Today the focus will be fish assemblages in large rivers. The presentation covers criteria used to define large rivers, previous and current methods of assessing fish assemblages, and what can be learned from this work. The work is used by DEP to determine aquatic life score for impairment. MassWildlife uses the work to target both location and type of restoration projects.

Quinoñes reviewed the methods used previously for TFCs and how they are used to create 3 scores reflecting the condition of the stream based on fish assemblages: Good, Fair and Poor. The scores were calculated again using additional survey data for the current study. The Charles improved from Poor to Fair in the new study, while the Housatonic slipped from Fair to Poor. The study also looked at guilds of fish that are more or less tolerant to pollution types. PERMANOVA and pairwise comparisons were applied to compare the older and newer fish data sets.

Questions and comments:
Donlan asked about the CT River and Merrimack. Quiñones responded that they are considered extra large rivers and cannot be sampled using the same methods employed for this study. Donlan then asked were migratory fish considered among the "target" species, and should we assume you collected data in a representative set of the entire watershed? (the Westfield has many hydro dams and 2 Army Corps flood control dams and 3 branches.) Quiñones replied that migratory (diadromous) fish and stocked fish are not included because they may not reflect the conditions in the stream. Richards added that both the CT and the Merrimack are extensively monitored but are not reflected here due to the constraints that Quiñones mentioned.

Additionally, migratory fish are also excluded because they may or may not be present during a survey. American eels are the exception to this because they spend 7 to 10 years in streams.

Donlan followed up by asking whether there were dams or impounded habitat in the areas where the surveys were conducted. Quiñones replied that surveys were only conducted in free-flowing sections with moving water. Impoundments were excluded. Dolan replied that this may skew the data away from showing the impact of dams, but Richards noted that the results show an impact from dams because they show a greater proportion of generalists than would be expected in a free flowing system.

Pederson asked whether when looking at potential impacts that could explain results the study looked at the type of Water Management Act withdrawal or just the volume? Quiñones responded that it was only volume at this point but that would be interesting to further evaluate with future analysis.

Agenda Item #7: Presentation and Discussion: Year-end Look-Back on Drought

Zoltay provided a summary of the 2020 Drought through November 2020. She discussed some characteristics of the drought onset including in early in 2020, above-normal temperatures and near-normal precipitation caused dry conditions on and off until a wet April, in May Precipitation dropped off (down to 56% of average) & continued into June. Streamflow dropped off in the 2nd half of May continuing into June and groundwater followed. Heat waves accelerated the deterioration of conditions. The first DMTF meeting called on 6/24/2020 and reviewed data mid-May through mid-June. Zoltay showed graphs of accumulated precipitation deficits starting from January 2020 which showed significant spatial variability, but all sites remaining well below to below normal by December 2020.

Zoltay highlighted that there were two periods within the drought that were characterized by rapid onset and some coined as flash droughts. The community is still evaluating the criteria to define a flash drought and whether it is the right terminology. MA certainly experienced rapid onset characteristics but may not necessarily meet the broader definition of a flash drought, which is also still being debated.

Zoltay compared the 2020 and 2016 droughts, which shared the following characteristics:

- Rapid onset/Flash drought characteristic,
- Augmented by mid-month occurrence - outside of monthly cycles of data processing,
- Rapid intensification of drought conditions and impacts in the Southeast, and
- Above normal temperatures with sudden and severe drop in precipitation followed by numerous heat waves and record setting temperature for the summer.

Pederson commented that she remained concerned about the quick onset and how to handle it with public outreach to avoid too frequent or conflicting messaging which could numb or confuse the public. Rao acknowledged that we need to be careful about our messaging to ensure effectiveness.

Meeting adjourned, 3:01 p.m.

Documents or Exhibits Used at Meeting:

1. WRC Meeting Minutes: October 8, 2020
2. Hydrologic Conditions in Massachusetts, November 2020 (available at https://www.mass.gov/info-details/water-data-tracking)
3. FY2020 WRC Annual Report (Final)
4. 2021 Meeting Schedule, Water Resources Commission
5. Interbasin Transfer Act project status report, November 30, 2020

Compiled by: (AC)

Agendas, minutes, and other documents are available on the web site of the Water Resources Commission at https://www.mass.gov/water-resources-commission-meetings. All other meeting documents are available by request to WRC staff at 251 Causeway Street, 8th floor, Boston, MA 02114.