Message

From: Callaghan, Todd (EEA) [todd.callaghan@MassMail.State.MA.US]
Sent: 8/22/2017 5:43:34 PM
To: Kimberly Groff [Kimberly.Groff@state.ma.us]; Travers, Heidi (DEM) [heidi.travers@dem.ri.gov]; (stoffelh@hotmail.com) [stoffelh@hotmail.com]; Stover, Toby [Stover.Toby@epa.gov]; Voorhees, Jeanne [voorhees.jeanne@epa.gov]; Arsenault, Dan [Arsenault.Dan@epa.gov]; Candice Oviatt (coviatt@uri.edu) [coviatt@uri.edu]; Thursby, Glen [Thursby.Glen@epa.gov]; Jane Sawyers [Jane.Sawyers@DEM.RI.GOV]; Logan, John (FWE) [john.logan@state.ma.us]; Paul Stacey (FootprintsInTheWater@outlook.com) [FootprintsInTheWater@outlook.com]; Peter Tango (ptango@chesapeakebay.net) [ptango@chesapeakebay.net]; Colarusso, Phil [colarusso.phil@epa.gov]; Travers, Heidi (DEM) [heidi.travers@dem.ri.gov]
CC: Rebecca.Weidman@state.ma.us; Mayor, Anna (DEP) [anna.mayor@state.ma.us]; Carey, Richard (DEP) [richard.carey@state.ma.us]
Subject: RE: Draft Mount Hope Bay & Taunton River Saltwater DO Report - For Review

Hi Kim

I've reviewed the report and made a few comments in the margins using Track Changes (see link to Dropbox, below). In general, I think the report is well written and lays out three potential options for revising DO standards in Mt. Hope Bay. As I've written in my comments, there are aspects to the approaches that I like, but overall, the approach that I would recommend is not presented in the document.

My recommendation would be to use the most sensitive species/life stage to determine the acute and chronic standards in the four habitat types proposed. This approach has previously withstood legal challenge (e.g., Brayton Pt. Station NPDES permit) and is the most protective. Also, I do not agree with using the LC50 data directly to determine DO standards. I think it would make more sense to have a process that looks to have minimal effects on biota, not effects to 50% of a population. With that said, the LC50 data could be used to extrapolate up to the DO levels that are expected to have deleterious effects to only 5% of the population.

In relation to the short-term temporal component proposal, I think that any table of timeframes over which low DO levels are allowed should describe what is expected over those time frames. For example, if a certain DO endpoint such as <3.0 mg/l is allowed for no more than 24 hours (as in RI) the standards revision document should clearly state what is expected to occur over that 24 hours (e.g., < 5% of larvae will fail to recruit, or alternatively, state it the other way where < 3.0 mg/l DO for > 24 hours would be expected to prevent the successful recruitment of > 5% of the larvae in the area of interest).

In relation to the seasonal component of the proposal, I am not convinced that using seasonal DO standards is the best way to ensure adequate habitat. In my opinion, there are several reasons for not using seasonal DO standards. First, the LC50 data are derived from lab studies where conditions are tightly controlled and test organisms do not experience exacerbating factors (cumulative effects of multiple stressors) such as high nutrients, periodic droughts and freshets, wide changes in temperature, ice, etc. This argues against relaxing DO standards (i.e., allowing lower DO) in certain seasons in order to have some measure of safety to help protect sensitive species that are already stressed in this watershed with high intensity land uses. Second, we do not know if low DO levels are protective of food sources needed for the species of interest (lab test subjects are provided with food, regardless of DO). Thus, it is possible that relaxing standards in certain seasons could result in low DO that affects the developing food sources for the species we are concerned about. Lastly and perhaps most importantly, there are very obvious long-term temperature changes and shifts in species types and abundances as well as phenology, and these effects are much more pronounced since 2000 and even more so since 2012 and could not possibly be captured in lab studies. The seasonal occurrences of various species is shifting so it would be difficult to choose appropriate seasons, especially since the Taunton River/MHB system is at the northern-most edge of the Virginian Province. Many species are appearing in our region earlier than in the past and staying later than has been historically recorded.

In summary: my recommendation would be to use the most sensitive species in each of the four habitat types (i.e., Atlantic sturgeon in riverine and benthic habitats and American shad in shallow and pelagic habitats) and to use the DO level that ensures less than 5% mortality to any life stage in all seasons. I think we need more discussion on the method for determining the actual protective DO levels and the time periods over which they should apply.

Here is a link to my comments https://www.dropbox.com/s/ra4k0ybpks1ruaw/Draft%20FINAL%20Mt.%20Hope%20-Taunton%20River%20Estuary-8-16-17%20New%20Version.docx?dl=0.

Thank you for allowing me to be part of this process and allowing me to comment on this draft.

Todd Callaghan
CZM

From: Groff, Kimberly (DEP)
Sent: Wednesday, August 16, 2017 4:57 PM
To: (heidi.travers@DEM.RI.GOV); (stoffelh@hotmail.com); (Stover.Toby@epamail.epa.gov); (voorhees.jeanne@epa.gov); Arsenault. dan@epa. gov (Arsenault.dan@epa.gov); Callaghan, Todd (EEA); Candice Oviatt (coviatt@uri.edu); Glen Thursby (Thursby.glen@Epa.gov); Jane Sawyers (jane.sawyers@dem.ri.gov); Logan, John (FWE); Paul Stacey (FootprintsInTheWater@outlook.com); Peter Tango (ptango@chesapeakebay.net); Phil Colarusso (Colarusso.phil@Epa.gov); (heidi.travers@DEM.RI.GOV)
Cc: Weidman, Rebecca (DEP); Mayor, Anna (DEP); Carey, Richard (DEP)
Subject: Draft Mount Hope Bay & Taunton River Saltwater DO Report - For Review

Hello-Thank you for participating in the Technical Advisory Committee to conduct a review of the saltwater Dissolved oxygen criteria in Mount Hope Bay and The Taunton River Massachusetts.

I have uploaded the Draft report and species list to a dropbox folder and recently sent a link to the report for download. If you are not able to access the report please feel free to contact me.

We are requesting your review and comment on the draft report by September 25th, 2017. Please forward comments to me (Kimberly.groff@state.ma.us).

Again thank you for your assistance.

Regards, Kim

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