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Thank you for your response to my June 12, 2013 review of The MEP May, 2013 report on nitrogen loading to the Tisbury Great Pond/ Black Point Pond system, Chilmark and West Tisbury, MA.

Following are my replies to your comments by page and paragraph.

Page 2,P1; Figures 10 through 14 and tables III and IV of my upcoming revision of my "Hydrology of Tisbury Great Pond" are based on recently acquired data and illustrate the process and the amount of water that flows in and out through the coarse sand of the barrier beach under varying pond levels and varying wave run up.

P2,P2 My 2/22/13 prose and graphs don't contest the benthic release of nitrogen during the summer. I do suggest that the nitrogen released during the summer comes from nitrogen stored in the previous winter and spring and should not be counted twice in the yearly input to the estuary.

P3P1 I don't question the measurements made during the MEP study, however the conclusion that conditions have been getting worse in recent decades is not supported by measurements.

P4P2 Water Shed and Stream Flow. The MEP assumption of 28.7 inches (2.4 ft) of rain per year recharge of the water shed groundwater is based on one (USGS 2005) calculation. I and others (Strahler 1972, Spiegel 1971, Kelley 1987, Wilson & daCosta 1980, LeBlanc 1985) suggest that 1.5 ft per year is closer to the average. This large difference should be reconciled.

P5P1 Measurement of salinity changes is a valuable way to monitor fresh water input however all flows in and out should be considered.

P5P2 The fact that the MEP 2005-6 flow measured in The Tiasquam River is near a 15 year average does not explain the difference in flow measured that year by MEP (12191 m<sup>3</sup>/day) between the flow I measured that year (7500 m<sup>3</sup>/day) at a calibrated dam weir on the Douglas dam. See Fig. 1 of my study.

P5P4 I have enclosed, Fig.10 - 14, my measurements of water flow in and out through the sand of the barrier beach showing significant flow of ocean water in through the beach even when the pond is at +3.5' NGVD 1929.

P6P2 The 1996 measurements by Wm. Wilcox of nitrogen in the groundwater entering Tisbury Great Pond were reconciled with the values predicted by the MEP model. Obtaining field data to support the MEP nitrogen model is difficult, but it should be done.

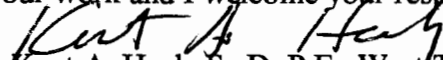
P6P4 I don't question the MEP measurements of nitrogen in the streams. The total input of nitrogen in the summer should be lower due to lower stream flow rates.

P7P3 The depth and width of the beach channel change with every tide and there is no "equilibrium size" Monthly air photos can document the channel size.

P8P2 The inflow through the barrier beach sand due to wave run up even when the pond is "high" must be considered in any dilution studies.

P8P4 Eel grass thrives in clean ocean water, I don't know how it does in water that is generally between ¼ and ½ the salinity of the ocean.

Thank you for your work and I welcome your response,

  
Kent A. Healy Sc.D. P.E. West Tisbury, MA

c. Chilmark & West Tisbury Conservation, Selectmen., Brian Dudley MA DEP

