

Follow-up information from DEP  
Ocean Acidification Commission  
Mtg. #4, 10/10/10

**From:** Brewer, Angela  
**Sent:** Thursday, September 18, 2014 3:14 PM  
**To:** Kavanah, Brian W; Miller, Susanne  
**Cc:** Witherill, Donald T; Dennis, Jeff  
**Subject:** RE: discharger lists with licensed flow

All, I wanted to follow-up on questions asked by the Commission this morning. Joe Salisbury asked what a typical N:P ratio is in wastewater. There are few marine dischargers for which I have P data, but for ballpark ratios, here are some means +/- 1 standard deviation:

- Primary treatment POTWs (Bucksport, Winterport): 10.0 +/- 5.05 (n=11) → Brian, I believe both of these facilities are undergoing upgrades to secondary treatment, but still interesting to note the primary treatment ratio
- Secondary treatment POTW (Warren): 3.69 +/- 0.53 (n=9)
- Paper mill (Verso Bucksport): 4.67 +/- 5.38 (n=14)

In all cases, the ratios indicate nitrogen deplete effluent relative to phosphorus. If Joe is interested in literature values, I can search for some, or we could also hold out for the freshwater discharger data and calculate from there.

Kathleen Leyden asked about EPA support for nutrient criteria advancement. In addition to my notation of the N-STEPS (Nutrient Scientific Technical Exchange Partnership) program--<http://n-steps.tetratex.com/> for which states are eligible upon application and acceptance, I should have additionally mentioned that EPA Region 1 completed research cruises along the coast of Maine during the summers of 2004, 2005, 2009, 2010, 2011 and collected vertical CTD profiles and nutrient grabs at multiple water column locations. Most of these data capture coastal "background" condition, but some interannual comparisons can be made. I am happy to provide more information about this work, if helpful.

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