



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 1
1 Congress Street, Suite 1100
BOSTON, MA 02114-2023

July 29, 2009

Mr. Tom Danielson
Maine Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

Dear Mr. Danielson,

Thank you very much for the opportunity to provide comments on Maine's draft nutrient criteria rule. As you are well aware, excess nutrient enrichment is one of the most significant threats facing our nation's waters. Excess nutrients can be detrimental to aquatic life and can also present a public health concern. Over the past few years, more and more research has been conducted on the public health concerns from toxins that are produced by certain species of blue-green algae. This group of algae often dominates in over-enriched waters. The adoption of numeric criteria will set clear thresholds, which are long overdue and essential to the protection and restoration of waters in the State of Maine.

The U.S. EPA provides the following comments to assist in supporting final criteria recommendations. Although we expect divergent view points on the appropriateness of the recommended criteria, the EPA's role is to ensure that the final criteria are protective of designated uses and that adoption of criteria occurs as expeditiously as possible. Thank you very much for the tremendous effort on this project, and please let us know if we can provide further assistance as you continue to move forward.

Phosphorus Criteria

A total phosphorus criterion of 15 ug/L appears to be at the upper limit of values needed to protect designated uses in Maine lakes. In some cases, lower limits may be necessary. Other States, such as New Hampshire are considering separate numeric values of phosphorus for different trophic classes. The EPA along with the State of New Hampshire recently completed TMDL's for 30 lakes impaired by excess nutrient enrichment. The target for nearly all 30 lakes was 12 ug/L. Given the environmental and economic importance of Maine lakes, we encourage the state to consider the development of criteria by trophic class in the future, and to continue with a robust monitoring program to ensure that all lakes in the State of Maine are protected from excess nutrient enrichment.

Regarding derivation of Class B and C phosphorus criteria of 32 ug/L and 37 ug/L, it is highly likely that a more conservative criterion would be necessary if an index of biotic integrity were available for the algal/plant community as opposed to macroinvertebrates. Nutrient related impacts are typically manifested in the algal community first. It is also this community of organisms that has the most deleterious impacts on aquatic life in general and recreation in and on the water. Members of this community are also known to produce toxins that can be harmful to both people and animals. The EPA expects that the state will revisit these criteria when new information, including an algae model that is under development, is available.

Percent substrate covered by algal growth

For Class A waters, we understand the state's rationale for selecting the 90th percentile to derive a criterion of 20%. However, when looking at the data it is quite obvious that 87% of the reference sites have percent cover <11%; there are only four sites that exceed this value. Further, approximately 1/3 of the sites have values very close to 0%. We recommend reexamining the four sites above 10% cover to assure that these data points represent reference conditions.

For Class B waters, our understanding is that DEP selected the 90th percentile from a group of waters that meet Class B aquatic life uses based solely upon an index of biotic integrity for macroinvertebrates. Given that an index of biotic integrity is not yet available for the algal/plant community, we recommend that in the interim the 75th percentile is selected to be consistent with Maine's derivation of a phosphorus criterion for Class B waters. The EPA expects that the state will revisit this criterion when new information, including an algae model that is under development, is available.

For Class C waters, the lack of Maine data, introduces considerable uncertainty that a 40% threshold is adequately protective. For this criteria adoption action, we recommend reevaluation of this criterion in light of any adjustments made to the Class B algal growth criterion (see suggestion in the previous paragraph). Long term, we recommend data collection on Class C streams and the continued development of an algae model to assist in supporting any future criteria adjustments as warranted.

As the development of numeric nutrient criteria is a high priority for the EPA, we look forward to seeing Maine's final criteria recommendations soon.

Sincerely,

Stephen J. Silva
Chief, Water Quality Branch

Electronic cc:

Alfred Basile, EPA

Ellen Weitzler, EPA

Jennie Bridge, EPA