

Draft Northeast Regional Mercury TMDL Response to Comments

Prepared by NEIWPCC, CT DEP, ME DEP, MA DEP, NH DES, NYS DEC, RI DEM, VT DEC

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The Northeast States and NEIWPCC received comments from 14 different groups on the draft Northeast Regional Mercury TMDL. The draft TMDL was released for public comment on April 11, 2007 with a public comment period ending June 8, 2007. The comments received and their responses have been organized in accordance with the sections of the draft TMDL. The number at the end of each comment corresponds to the list of commenters, which can be found at the end of the document.

In addition to a number of specific comments on the TMDL, the states and NEIWPCC received many comments that were generally supportive of the TMDL effort. The states and NEIWPCC are appreciative of the support for this effort. Comments of general support are grouped together and listed at the beginning of the document. Supportive comments that pertain to a particular section of the TMDL are listed under that section with no response given. All questions and recommendations are listed under the corresponding TMDL section with the response below. In some cases, comments are grouped together and one response is provided for this group.

General Support for TMDL

Comments:

- We hope that EPA views the Northeast Regional TMDL as a unique collaborative effort which eliminates the duplication of resources that would have been necessary if each state drafted, and EPA reviewed, individual TMDLs. This truly groundbreaking effort should be used as a model of cooperation for future similar endeavors¹.
- The Adirondack Council fully supports the proposed TMDL as presented by the Department of Environmental Conservation¹.
- CCE applauds New York State, as well as the other participating states and the NEIWPCC for drafting a plan to reduce mercury in the waters of New York State and New England to eliminate fish consumption advisories caused by mercury air deposition².
- The Northeast Environmental Organizations therefore strongly endorse the States' ultimate goal to control *all* sources of mercury by implementing existing reduction control technologies on upwind out-of-region sources³.
- I would like to applaud your efforts in taking a concerted approach with other Northeastern States⁴.
- Overall, the Onondaga Nation strongly supports the recommendations of the draft TMDL⁵.
- The Fish and Game department is in support of the regional TMDL approach in reducing mercury in the environment⁶.
- The MWRA supports this TMDL, which addresses the most significant source of mercury to Massachusetts lakes and ponds: atmospheric deposition. MWRA supports the efforts of the Northeast

states to require more stringent levels of mercury control in power plants emissions than is achievable by CAMR⁷.

- The Northeast Environmental Organizations agree the States have made "nationally significant reductions to in-state sources of mercury as a result of their regional action plan." The Mercury TMDL is therefore the most effective strategy to reduce the ongoing wide spread mercury contamination across the Northeast, and is legally mandated by section 303(d) of the Clean Water Act³.
- As described in our letter of May 31, we support the efforts of NEIWPCC and the northeast states to coordinate in developing an innovative TMDL approach for mercury-impaired waters. With a large number of mercury-impaired waters in the region, an approach which can most efficiently address those impairments appears to be most appropriate.⁸
- We look forward to working with NEIWPCC and the northeast states regarding how best to address our comments in order to strengthen the TMDL. We would be happy to provide technical advice or assistance where appropriate.⁸

Comments and Responses Organized by Draft TMDL Section

2 Background

Comment:

- Multi-state or regional TMDLs are clearly contemplated by EPA under section 303(d) of the Clean Water Act to address atmospheric deposition. The need to address the widespread impairment of the States' waters by mercury from upwind out-of-region sources calls for such a multi-state, regional approach. The States have undertaken substantial efforts to control mercury loadings from in-state sources; the Mercury TMDL demonstrates unequivocally that waters will continue to be impaired for mercury, however, as a result of upwind out-of-region emissions. The Clean Water Act provides for a regional approach to address precisely this situation; indeed, the States are obligated to submit proposed loadings that require reductions from such upwind out-of-region sources³.

Comment:

- Include Connecticut River Fish Tissue Contaminant Study in list of TMDL references⁹.

Response:

Information from this report will be added to the background information in the TMDL document and a reference to the study will be added to the list of references. However, it should be noted that the data collected as part of the Connecticut River study were not included in the fish tissue dataset used for developing the TMDL. The Connecticut River data lacked sufficient georeferencing to be included in the NERC dataset that was used for TMDL development. The fish tissue concentrations for smallmouth bass and yellow perch measured as part of the Connecticut River study aligned with the concentrations found in the NERC dataset. Inclusion of these data in the calculations of the 80th to 90th percentile existing fish concentration would not have resulted in an appreciable difference in the TMDL baseline or targets.

2.3 Massachusetts TMDL Alternative and EPA Justification for Disapproval

Comment:

- EPA's June 21, 2006, response to the TMDL Alternative proposed by Massachusetts in 2004 is significant in the context of the Mercury TMDL for the following reasons. First, EPA confirms that atmospheric deposition causes a significant portion of the mercury impairment in Massachusetts waters. Second, EPA concludes that the fact that Massachusetts has in place an effective and comprehensive management plan to address in-state sources of mercury does not remove Massachusetts's obligation to submit draft TMDL loadings that address sources beyond its borders. Third, EPA acknowledges that other pollution control requirements required under either state or federal authority are insufficient to achieve applicable water standards for mercury in Massachusetts. As a result, in order to fulfill its TMDL obligations relating to mercury impaired waters, Massachusetts must undertake a broader assessment and propose loadings for out-of-state sources. As these same obligations apply to the other New England states and New York, EPA's statements confirm the validity of the approach taken by the Mercury TMDL³.

2.6 Control of In-State Sources not Sufficient to Meet Water Quality Standards

Comments:

- We commend New York State, the six New England states, and the New England Interstate Water Pollution Control Commission for developing a regional approach to reducing mercury emissions. We also commend these states for their efforts to significantly reduce their own mercury emissions - beyond what is required by federal law. However, we also recognize that even the crucial planned regional actions will not be enough to address the problem of mercury deposition and toxicity in the region. The TMDL strategy, in setting targets for reduction both within the region and outside the region, demonstrates the need for more aggressive action at the national level - a position that we fully endorse¹⁰.
- Agree with the statement and assessment in Section 2.6 that control of in-state sources is not sufficient. Northeast states have made very significant mercury reductions in the last decade and EPA should be actively supporting our efforts through grants and technical assistance⁹.

3 Applicable Water Quality Standards and Fish Tissue Criteria

Comment:

- Water quality standards: The TMDL currently does not clearly describe the individual water quality standards for mercury for each of the states, except for MA and ME, and whether the states have water column criteria. As one of the key elements of a TMDL, it is important that the regional TMDL describe for each state its mercury criteria, both water column and fish tissue. Where appropriate, the TMDL should indicate that a state is using narrative criteria to select a fish tissue criterion based on consumption advisories, and provide the state's rationale for such an interpretation. In addition, the TMDL should demonstrate that meeting the fish tissue criterion also assures that the water column criterion is met in each state⁸.

Response:

Table 3-1 of the TMDL will be revised to include each state's water column criteria for mercury. Calculations will also be shown to demonstrate that meeting fish tissue criteria will ensure that water column criteria are met. Because fish tissue criteria account for bioaccumulation, they are more protective than using water column concentrations. In Connecticut, the fish tissue concentration is

not a criterion that is part of the state water quality standards, but the water quality standards contain a narrative standard for protection of human health that relies on the Department of Public Health's fish tissue guidance value and fish consumption advisories. The language of the narrative criteria is provided in Appendix B of the TMDL.

4.1 Fish Tissue Monitoring Dataset

Comment:

- We support the use of the NERC dataset as appropriate for the development of the draft TMDL³.

Comment:

- Fish Tissue Data: We recommend that the TMDL provide additional information on the rationale for using smallmouth bass to calculate the necessary reductions in mercury loadings for the region. The TMDL indicates in Table 4-1 that there is data showing that the concentrations in smallmouth bass are highest. The TMDL should describe what data is available on each species, numbers of samples, and how that data is distributed geographically across the states. The purpose of such information is to demonstrate that there is sufficient fish tissue data coverage for the entire region, such that it is reasonable to use the 80th-90th smallmouth bass fish tissue concentration as representative of all seven states⁸.

Response:

The regional fish tissue dataset that was used in the TMDL analysis contained 867 datapoints for largemouth bass, 342 datapoints for smallmouth bass, 71 datapoints for walleye, and 2,527 datapoints for yellow perch. Smallmouth bass was selected as the target species because it was the species with the highest mercury concentration for which there were a reasonable number of datapoints available. We did not feel that there was a sufficient number of walleye datapoints and use of largemouth bass or yellow perch would have resulted in a less protective TMDL.

4.2 Areas of Elevated Concentration

Comments:

- We recommend that the plan explicitly recognize that areas of elevated concentration can result from a combination of greater sensitivity, due to local and upstream factors such as acidification and the presence of conditions that promote the formation of methylmercury, and greater local or upstream deposition. We also strongly recommend that the plan call for appropriate, and spatially specific reductions in mercury deposition to address these specific problematic conditions, not only locally but upstream within the watersheds of these areas of elevated concentration¹⁰.
- Plans to meet the TMDL goals should take into account the varying susceptibility of different locations to mercury deposition and the varying vulnerability of different species and ecosystems to the formation and biological accumulation of methylmercury. We recommend that the plan develop stringent goals for reducing exposure of mercury among these most vulnerable species and ecosystems¹⁰.

Response:

Because some areas and species are more sensitive to mercury pollution, these areas and species may also be more sensitive to reductions in mercury emissions and deposition. Therefore, these areas and species may actually respond more quickly to decreases in mercury deposition. However, the exact response of these areas and species is not known. Therefore, these areas are targeted to be more

closely monitored during the TMDL implementation period. If monitoring results indicate that more specific reduction strategies are necessary for these areas and species, they will be implemented at that time. The adaptive implementation approach will allow for changes in the approach to addressing sensitive areas if necessary. Although the necessary reductions are not known for non-fish species, implementation of the TMDL should result in significant reductions for these species. In addition, for this TMDL a high trophic level predator was chosen as the target species and use of 80th – 90th percentile size adjusted values provides a margin of safety. So, while exact calculations for these species are outside the scope of this TMDL, implementation of the TMDL will have beneficial effects for these species.

Some areas that have been identified to have high local deposition, such as Southeast New Hampshire/Northeast Massachusetts are already being addressed through strict reductions targets on nearby coal-fired power plants, municipal waste combustors, and medical waste incinerators. It is expected that these existing controls, in conjunction with more stringent controls on out-of-region sources, will result in these areas meeting the fish tissue target concentration. Re-evaluation of the TMDL at the end of Phase II will allow for further reductions to be implemented if necessary.

Comment:

- The states need to consider the potential for confounding variables that shift the reduction burdens assigned in the Regional TMDL¹¹.

Response:

There are a number of factors that contribute to mercury accumulation in waterbodies in addition to the actual mercury deposition. However, many of these factors cannot be controlled. Some watersheds are naturally more sensitive due to geology and prevalence of wetlands.

Nutrients are another factor which generally affect mercury accumulation, and higher nutrient levels are normally associated with lower fish mercury levels. While there is potential to control nutrient levels, states are generally working toward achieving lower nutrient levels to improve dissolved oxygen for aquatic life and reduce the risk of algal blooms. This enhances the need for meaningful mercury controls to meet the multiple uses of waters that need to meet recreational, aquatic life, and fish consumption uses.

Because specific areas have been identified as more sensitive to mercury pollution, including impoundments subject to hydropower modification, these areas will be more closely monitored during the implementation of the TMDL. The adaptive implementation approach of the TMDL, as well as existing licenses for hydropower storage impoundments that require monitoring for mercury impacts on wildlife, will allow for changes in the approach to addressing sensitive areas if necessary and will allow for refinements as scientific data and understanding evolve.

Comment:

- In particular, Section 4.2 indicates that there are areas of elevated fish tissue mercury concentrations, and that these areas will respond differently than other areas. However, only one area in MA is excluded from the TMDL. The TMDL should indicate whether these areas of higher sensitivity will attain the TMDL target; if not, we recommend that the states consider addressing these areas separately from the rest of the TMDL (e.g., a separate TMDL calculation) or excluded from the TMDL, similar to the areas in MA⁸.

Response:

Because some areas are more sensitive to mercury pollution due to factors such as water chemistry, presence of wetlands, and water level fluctuations, these areas may also be more sensitive to

reductions in mercury emissions and deposition. Therefore, these areas may actually respond more quickly to decreases in mercury deposition. However, the exact response of these areas is not known. Therefore, these areas are targeted to be more closely monitored during the TMDL implementation period. If monitoring results indicate that more specific reduction strategies are necessary for these areas, they will be implemented at that time. The adaptive implementation approach will allow for changes in the approach to addressing sensitive areas if necessary.

5 Northeast Regional Approach

Comment:

- At the same time, the TMDL should provide further information regarding the basis for a single TMDL encompassing waterbodies in seven states, and how the TMDL will achieve water quality standards in each of the states. The TMDL mentions air deposition of mercury as the reason for taking a regional approach. The TMDL would be strengthened if it described why all of the waterbodies identified in the draft TMDL can be treated similarly for the purposes of a TMDL. Specifically, the TMDL should provide further details on factors in support of the regional approach, including the geographic distribution of sources, both point sources and nonpoint sources (air deposition), land use, and fish mercury levels, and identify any geographic variation in these factors. If there isn't adequate justification for the single region approach, we recommend breaking the TMDL into appropriate sub-regions, or separating out any waters/areas that may be unlikely to achieve the fish tissue target with the reductions called for in the proposed regional TMDL⁸.

Response:

Because the entire region is impacted by local, regional, and global mercury deposition sources, the Northeast states and NEIWPC feel that it is appropriate to keep the TMDL at the scale of the entire region. By targeting fish tissue concentrations, the TMDL ensures that water quality standards for mercury in the water column will be met. Calculations in the revised TMDL will demonstrate the relationship between water column concentrations and fish tissue concentrations and that the fish tissue concentration is more protective. For Connecticut, meeting the 0.1 ppm guidance value used by the Department of Public Health ensures the state's narrative criteria for protection of human health are met.

Kamman, et al. (2005) provides that although there are differences in fish tissue concentrations across states, differences in fish tissue concentrations are more strongly influenced by individual fish length than they are by jurisdiction. In the case of smallmouth bass, once the effect of length is accounted for, there is very little variation in fish concentrations among the states. This relationship can be seen in a graph that has been added to the revised TMDL.

5.1 Impaired Waters

Comments:

- Waterbodies Covered by the TMDL: It is important to identify each waterbody as it appears on the state's 303(d) list or Integrated Report. This could be done by providing a link between the waterbodies addressed by the TMDL and the category 5 listings, i.e., which 303(d) list/integrated report year is being addressed (e.g., 2006) and which impairments are being addressed. The TMDL should also indicate the priority ranking for waterbodies being addressed in the TMDL⁸.
- In addition, if the TMDL covers some but not all the waters on a state's 303(d) list or integrated report, we recommend that the waters be described so it is clear which waters are covered. In

particular, it would be helpful if the TMDL clarified both in Table 5-1 and Appendix A for CT, ME, and NH how the excluded waters are designated in each state's integrated list. For example, in Maine, are the waters in the category "estuarine and marine" waters excluded, and in CT, are the waters designated "E" excluded from the TMDL⁸?

- **Pollutant Sources – Air Deposition:** The TMDL indicates that it applies only to waterbodies impaired for mercury primarily from air deposition. We recommend the TMDL explain the process for determining that the waters covered by the TMDL are waters impaired primarily by air deposition, especially for the three states for which all waters are included in the TMDL⁸.

Response:

For Massachusetts, New York, Rhode Island, and Vermont, the waters listed in Appendix A of the TMDL were taken directly from the states' most recently approved 303(d) or Integrated List. The revised TMDL will explicitly state the year of the report that is being referenced. For Connecticut, Maine and New Hampshire, the TMDL applies to all fresh waterbodies with the exception of a small number of waterbodies that will be listed in the revised TMDL. These are waterbodies where atmospheric deposition is not the primary source of mercury pollution. In Connecticut, this means all waterbodies that are not designated with an "E" (for estuary). For New Hampshire, this means any waterbodies that are designated as RIV (river), LAK (lake), or IMP (impoundment). Waterbodies designated EST (estuary) and OCN (ocean) are not included. For Maine, waterbodies designated as rivers, streams, and lakes are included. Those designated as marine and estuarine are not included.

Connecticut's Integrated List provides the following language:

"In addition to those waters included on the list, all waterbodies where statewide fish consumption advisories have been established due to atmospheric deposition of mercury from sources outside of state jurisdictional borders are implicitly included in EPA Category 5 ("303(d) listed"). Specific fish consumption advisories established as a result of local pollution sources (i.e. releases of polychlorinated biphenyls - PCBs or chlordane) are individually listed in Appendix C-4."

Maine DEP lists waters impaired by atmospheric deposition of mercury in Category 5C:

"Category 5-C: Waters Impaired by Atmospheric Deposition of Mercury. Regional or National TMDL may be Required.

5-C: Impairment caused by atmospheric deposition of mercury and a regional scale TMDL is required. Maine has a fish consumption advisory for fish taken from all freshwaters due to mercury. Many waters, and many fish from any given water, do not exceed the action level for mercury. However, because it is impossible for someone consuming a fish to know whether the mercury level exceeds the action level, the Maine Department of Human Services decided to establish a statewide advisory for all freshwater fish that recommends limits on consumption. Maine has already instituted statewide programs for removal and reduction of mercury sources. The State of Maine is participating in the development of regional scale TMDLs for the control of mercury."

The New Hampshire 303(d) list states:

"..it is important to note that all surface waters are impaired due to statewide fish/shellfish consumption advisories issued because of elevated levels of mercury in fish and shellfish tissue. Since mercury is a pollutant that requires a TMDL, all 5000+ surface waters in New Hampshire are included on the Section 303(d) List. However, in order to keep the length of the 303(d) List in Appendix A to manageable size, surface waters impaired solely by atmospheric mercury deposition were not included."

Therefore, all fresh waterbodies in Connecticut, Maine, and New Hampshire with the exception of those listed in Appendix B of the revised TMDL are included in the Northeast Regional TMDL.

Comment:

- **Future listings:** The draft TMDL indicates that future mercury listings would be covered by the TMDL. It would be helpful if the TMDL clarified how such future listings would be covered through the listing process, and how the states would provide for adequate public comment⁸.

Response:

This TMDL applies to the impaired waterbodies that are listed in Appendix A of the TMDL document. This TMDL may, in appropriate circumstances, also apply to waterbodies that are listed for mercury impairment in subsequent state CWA § 303(d) Integrated List of Waters. For such waterbodies, this TMDL may apply if, after listing the waters for mercury impairment and taking into account all relevant comments submitted on the CWA § 303(d) list, the state determines with EPA approval of the CWA § 303(d) list that this TMDL should apply to future mercury impaired waterbodies.

5.2 Selection of Existing Fish Mercury Concentration Based on Standard Size Fish

Comment:

- Agree with choice of basing TMDL analysis on 80th and 90th percentile of distribution of standard length fish because it is more protective⁹.

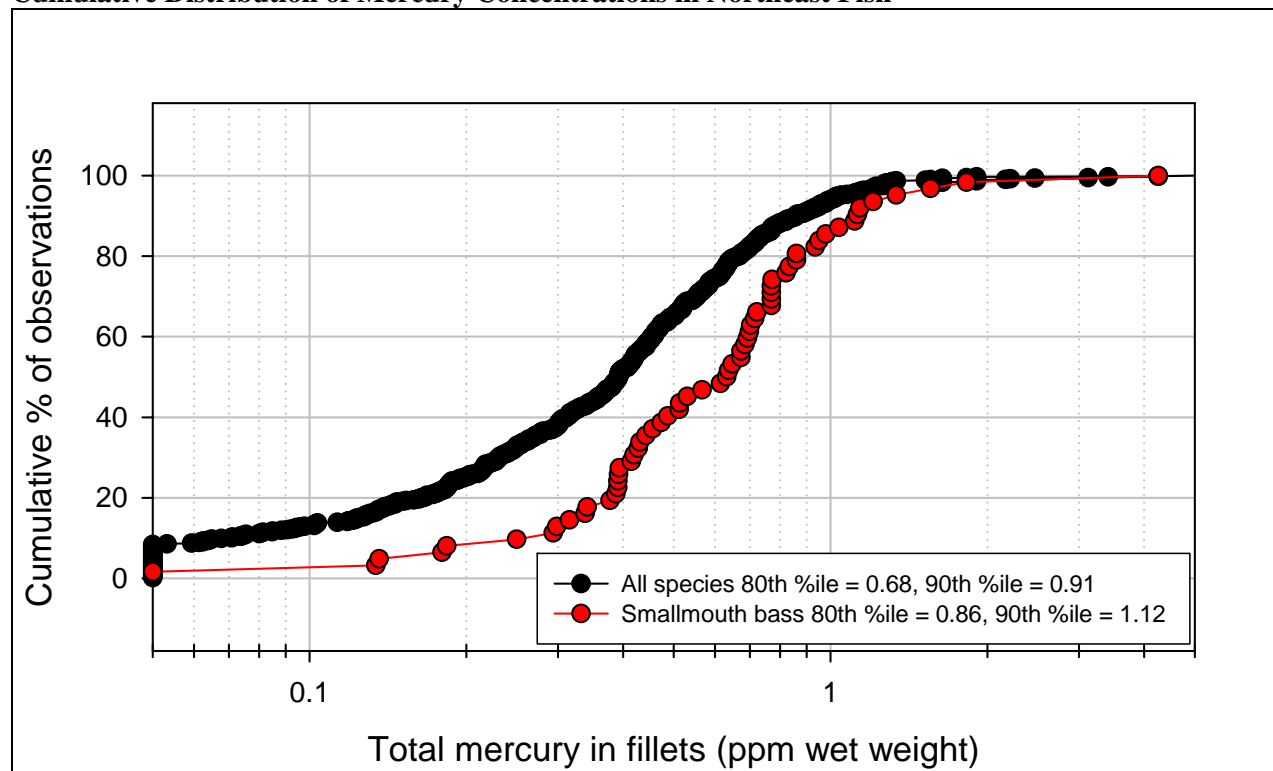
Comment:

- We also recommend that the TMDL describe how using a range of 80th-90th percentile fish tissue concentrations is adequately protective. Would waters where fish tissue levels are above the 90th percentile meet the TMDL target, or, if not, how will they be addressed (would they potentially need to be excluded and addressed separately)? What is the rationale for providing a range, rather than just the 90th (or 80th) percentile⁸?

Response:

The figure below shows the cumulative distribution of length-standardized smallmouth bass mercury concentrations based on data within the NERC dataset, in comparison to those for all fish species. Smallmouth bass was selected as the standard indicator target species for this TMDL because its use balances the competing needs of having a sufficient quantity of fish-mercury datapoints and a sufficiently high-mercury fish to provide a strongly protective TMDL. The 80th percentile value of 0.86 ppm mercury for smallmouth bass corresponds to the 90th percentile concentration for all fish species, while the 90th percentile value of 1.12 ppm mercury for smallmouth bass corresponds to the 96th percentile concentration for all fish species. As such, by targeting the range of smallmouth bass concentrations shown in the TMDL calculations, we are ensuring that fully 96 percent of fish should ultimately come into compliance with water quality standards. The graph shown below will be added to the revised TMDL.

Cumulative Distribution of Mercury Concentrations in Northeast Fish



5.3 Target Fish Mercury Concentration

Comment:

- The draft TMDL's adoption of EPA's methylmercury fish tissue criterion of 0.3 ppm as the common endpoint is reasonable. Four of the States have adopted a fish tissue concentration 0.3 ppm as the basis for fish consumption advisories, and others have stricter requirements. Given the well documented human health impacts of mercury consumption, the Northeast Environmental Organizations encourage each state to adopt the most stringent standard practicable when evaluating the endpoint TMDL levels in 2010, as called for in the Mercury TMDL³.

Comment:

- The Northeast Regional Mercury TMDL should use a more stringent mercury fish tissue target of 0.1 ppm. CCE recommends that the more protective standard of 0.1 ppm which is already being utilized in Connecticut, be used in New York and the other Northeast states².

Response:

States consider a number of factors and sources of data when determining a target fish tissue concentration and do not base fish consumption advisory decisions solely on guidance concentrations. There is currently no risk-assessment basis for regionwide adoption of a 0.1 ppm criterion. A region-wide target of 0.3 ppm is viewed as a reasonable initial goal.

Comment:

- The TMDL should be revised to expressly state that NY will change its guidance values from 1.0 ppm to 0.3 ppm⁵.

Response:

New York cannot commit to changing its guidance value at this time. There are a number of factors in addition to the guidance value that states consider when making decisions about fish consumption advisories, so New York's use of 1.0 ppm does not mean that fish consumption advisories are not issued unless this value is exceeded.

Comment:

- We believe that a more technically sound approach [for setting the fish tissue target] would be to consider the data from all of the relevant fish species. This would be consistent with the approach outlined in EPA's "Draft Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion." That document states that "[if target populations consume fish from different trophic levels, the state or authorized tribe should consider factoring the consumption by trophic levels when computing the average methylmercury concentration in fish tissue." The agencies should revise the TMDL to implement that recommendation. By taking into account what fish people actually consume, the agencies would be developing a TMDL that is more grounded in facts and is more likely to focus on preventing real risks¹².

Response:

Not all of the states have the data available to show which types of fish their residents are consuming. These are very likely to differ across the region, by population and with time. By using a high trophic level species with a high concentration, a conservative approach is being used that will protect both general and sensitive populations. This ensures that the highest level consumers will be protected and allows for a margin of safety to be built into the TMDL. Moreover, fish that feed high on the food web, such as smallmouth bass, are more reflective of other obligate apex predators such as loons and eagles. By targeting the TMDL to 80th to 90th percentile smallmouth bass (which is the equivalent of 90th to 96th percentile of all fish), ecological health as well as human health are protected by ensuring that the prey upon which obligate piscivores feed will have low enough mercury concentrations to preclude risk to the most mercury-sensitive aquatic biota.

Comment:

- The states cannot develop and apply an ad hoc water quality criterion without the procedural safeguards of notice-and-comment rulemaking followed by EPA review and approval¹¹.

Response:

TMDLs are not only based on failure to meet water quality criteria, but also on impairment of a designated use. Because the necessity of fish consumption advisories indicates that the affected waterbodies are impaired for their designated use of fish consumption, a TMDL is necessary for these waters. In the case of mercury, the concentrations used to make decisions about fish consumption advisories are the appropriate criteria for deciding if a TMDL is necessary and as a goal for restoring the waterbodies to the point where the designated use is met.

While not all of the states have adopted fish tissue criteria, all of the states have adopted either fish tissue criteria or water column criteria. Because the fish tissue criterion accounts for bioaccumulation, it is actually more protective than the water column concentration and meeting the fish tissue concentration ensures that the water column concentration will be met.

Comment:

- TMDL target: The draft TMDL states that the target of 0.3 mg/kg was chosen because it is EPA's recommended criterion. Nonetheless, the TMDL should describe why this target is appropriate for the entire region, and how the target assures that each state's water quality standards will be attained. In addition, the TMDL also recognizes that this target is not appropriate for CT and ME, and that the

proposed TMDL would not attain water quality standards in those states. Appendix B generally describes the reductions that would be needed in CT and ME. EPA suggests that it may be more appropriate for CT and ME to adopt a TMDL based on Appendix B, rather than the regional TMDL. If so, we recommend that the final TMDL submission indicate specifically what TMDL elements, including the wasteload and load allocation, are being adopted for these two states⁸.

Response:

To more clearly document that the final goal of this TMDL is for Maine and Connecticut criteria to be met, the document will highlight the necessary reductions to meet water quality standards in Maine and Connecticut. In both of those states, calculations require reductions in anthropogenic mercury deposition greater than 100 percent. The calculation of needed reductions is affected by a number of variables, including the percentage of deposition due to anthropogenic sources, and there is a range of accepted values associated with this parameter. Various studies have found this percentage to be between 75 and 85 percent. Use of a lower percentage results in a greater percent reduction from anthropogenic sources, whereas a higher percentage has the opposite effect. Because of these ranges and other reasonable and prudent assumptions made about values for a number of parameters, adaptive management will be used when implementing the reductions necessary to meet the TMDL. At the end of Phase III, the states will re-evaluate progress made toward the 0.2 and 0.1 goals and will determine if adjustments need to be made in the ultimate goals that have been set, or how they can be achieved.

As is discussed in greater detail in Section 7.6 below, because the entire region is impacted by local, regional, and global mercury deposition sources, the Northeast states and NEIWPCC feel that it is appropriate to keep the TMDL at the scale of the entire region.

5.4 Proportionality of Mercury Reductions

Comment:

- There is broad support for the assumption set forth in the Mercury TMDL that a decrease in atmospheric mercury emissions will result in a proportional decrease in mercury deposition in the Northeast, and corresponding decrease in mercury concentrations in fish living in the States' waterbodies. No less an authority than EPA has confirmed the accuracy of this assumption in its Mercury Maps model³.

Comment:

- The states' assumption of proportionality is not borne out by the data¹¹.

Response:

The assumption of proportionality is based on the results of two models that were presented in the U.S. EPA Mercury Maps report. The Mercury Cycling Model and the IEM-2M Watershed Model assumed linear relationships between atmospheric deposition and fish tissue mercury concentrations, which support the assumption of proportionality. Reductions in fish tissue may not be proportional to deposition reductions in the short term, but it is expected that over the long term, when the system reaches steady state, a proportional relationship will be observed. Because the relationship may not be perfectly linear, the states have chosen to use an adaptive implementation method that will include monitoring of mercury emissions, deposition, and fish tissue data, and allow for revising of goals if the relationship between reductions in emissions, deposition, and fish tissue concentrations does not follow that of the assumptions made in the TMDL.

Comment:

- Loading capacity and critical conditions: The TMDL should provide additional information on its key assumptions in determining the loading capacity, as well as any other assumptions used in developing the TMDL. For example, what assumptions were made regarding how much of the air deposition load to land is ultimately delivered to waterbodies? We also recommend that the TMDL include an additional justification for using the principle of proportionality to determine the necessary reductions in mercury loading. Although assumptions such as proportionality have been used in other mercury TMDLs, the northeast TMDL should provide its own support for the assumptions⁸.

Response:

At this time, there is no precise modeling of the link between emissions and mercury bioaccumulation or the effect of a given emissions reduction on fish tissue concentrations. Therefore it is reasonable to rely on certain assumptions regarding the relationships between mercury emissions, deposition, and fish tissue concentrations. There is sufficient empirical evidence to show that emissions reductions cause reductions in fish tissue concentrations, which validates the assumptions used in this TMDL.

Steady state in environmental systems means that concentrations may vary season to season or even year to year, but that long term averages are constant. The steady state formulation of the Mercury Cycling Model (MCM) shows a linear relationship between concentration in fish and atmospheric deposition rate. The steady state formulation of the IEM-2M model shows that given a decrease in mercury air deposition loading rate, the same decrease is seen in total soil mercury concentration, total water column mercury concentration, and predatory fish mercury concentration. Based on the steady state formulations of the MCM and IEM-2M models, a simplified model can be derived to relate percent reductions in air deposition load to percent reductions in fish tissue concentrations at steady state.

The standard steady state bioaccumulation equation is:

$$C_{fish_{t1}} = BAF \cdot C_{water_{t1}}$$

where $C_{fish_{t1}}$ and $C_{water_{t1}}$ are methylmercury contaminant levels in fish and water at time $t1$, respectively and BAF is the site specific bioaccumulation factor, which is constant for a given age/length and species of fish in a specific waterbody

For a future time, $t2$, when mercury concentrations have changed but all other parameters remain constant, the equation can be written as:

$$C_{fish_{t2}} = BAF \cdot C_{water_{t2}}$$

where $C_{fish_{t2}}$ and $C_{water_{t2}}$ are methylmercury contaminant levels in fish and water at time $t2$, respectively and $C_{fish_{t2}}$ is for a fish that is the same age, length, and species as for $C_{fish_{t1}}$.

Combining the equations produces:

$$\frac{C_{fish_{t1}}}{C_{fish_{t2}}} = \frac{C_{water_{t1}}}{C_{water_{t2}}}$$

Because methylmercury water column concentrations are proportional to mercury air deposition load to a watershed, this equation can be rewritten as:

$$\frac{C_{fish_{t1}}}{C_{fish_{t2}}} = \frac{L_{air_{t1}}}{L_{air_{t2}}}$$

where $L_{air_{t1}}$ and $L_{air_{t2}}$ are the air deposition mercury loads to a waterbody at time $t1$ and $t2$, respectively.

Based on this relationship, mercury fish concentrations will be reduced from current levels in proportion to load reductions for the watershed. For waterbodies in which air deposition is the only significant source, fish tissue mercury concentration reductions will be directly proportional to air deposition reductions.

Because these relationships are based on steady states, we do not expect that a proportional relationship between atmospheric deposition reductions and fish tissue reductions will be observed immediately. However, it is expected this response will be seen over the long term, once systems have reached steady state. While it is acknowledged that there is a time lag between mercury being deposited on land and that mercury reaching waterbodies, it is assumed that the terrestrial system will eventually reach a new steady state with atmospheric deposition, and total loading of mercury to surface water will be proportional to atmospheric deposition.

6.1 Northeast States Emissions Inventory

Comment:

- The Mercury TMDL properly relies on the studies prepared by NESCAUM to inventory mercury emissions in the northeastern states³.

6.2 Atmospheric Deposition Modeling

Comment:

- The Mercury TMDL correctly analyzes the approximate relative contributions from in-state sources and upwind out-of-region sources to atmospheric mercury deposition in the States, relying on modeling by NESCAUM³.

Comment:

- In Section 6.2, considering adding a graph similar to Figure 6-1 that incorporates data from Table 1 of the Mercury Matters report⁹.

Response:

A graph showing the contributions of different sources to national mercury emissions will be added to the revised TMDL.

6.3 Point Sources to Water

Comments:

- Pollutant Sources – Point Sources: We recommend that the TMDL identify the specific NPDES-permitted point sources covered by the TMDL, including NPDES-permitted stormwater sources. The TMDL generally mentions categories of sources: POTWs, pulp and paper mills, lighting manufacturing, chemical and metal industries as the sources within the region and provides a list of categories of mercury sources in the New England Region. In particular, the regional approach would be better supported by showing the geographic distribution of sources within the region, and whether there are any state or local differences in sources that should be given special consideration or treated separately from other areas of the region. For example, Table 6-3 shows much higher mean and median concentrations for facilities in Rhode Island than in other states. We recommend that the TMDL explain the higher loadings from these facilities, and if appropriate, take such higher loadings into account in calculating the total source load, or consider treating these facilities separately⁸.
- We also note that using a median concentration in wastewater treatment plants doesn't seem to fully account for other types of sources that may have much higher mercury concentrations in their discharges. If available, we recommend using facility-specific data, or estimates for source categories other than wastewater treatment plants, to better characterize the total loadings from point sources⁸.
- Baseline total source load: The TMDL establishes a 1998 total source load based on loadings from wastewater treatment facilities. It would strengthen the TMDL if it were further explained why 1998 is an appropriate baseline. We also suggest that the states consider other types of facilities (e.g., pulp and paper mills, chloralkali facilities, MS4s) that may have a different mercury concentration in their effluent from POTWs. If appropriate, the TMDL should indicate how loadings from sources other than wastewater treatment plants are accounted for in the baseline loading estimate⁸.
- The average concentration of mercury in point sources has an enormous variance among states. An explanation of the sources of this variance would be helpful and would bolster the credibility of the analysis. An explanation of how non-detects were handled in the calculation of average concentration would also be helpful⁷.

Response:

The median wastewater concentration used in the development of the point source load was based on data from both wastewater treatment facilities and various types of industrial dischargers. This may not be clearly discussed in the draft TMDL, so it will be better described in the revised TMDL. It has been determined that data from Rhode Island were collected using EPA Method 245.1 and many samples were actually below the detection limit, but reported as the detection limit. The detection limit for this method is much higher than the newer EPA Method 1631. The states decided that it was not appropriate to use data collected with the older method and therefore these data will be excluded and the point source load revised. Rhode Island has a small amount of data that was collected under the older method, but the facilities were able to achieve a method detection limit much lower than the typical limit for this method. These data will be included in the calculation of the point source load. It was also determined that Connecticut's data were collected using EPA Method 245.1, so these data will be excluded and the point source load revised.

7.5 Wasteload Allocation

Comments:

- MWRA agrees that "implementation of mercury minimization plans will help assure that discharges have no reasonable potential to cause or contribute to an exceedance of water quality standards⁷."
- MWRA believes that aerial deposition is the largest remaining source of its mercury loadings, both within its collection system, and in its receiving waters. MWRA is therefore strongly in favor of the goals of the proposed TMDL⁷.
- We agree that an MMP is an appropriate mechanism for addressing point source mercury discharges, and we support use of that regulatory tool in the TMDL instead of source-specific allocations or numeric permit limits¹².
- We agree with the conclusions in the draft regional TMDL that classify in-state point source contributions to waterways as *de minimis*, and the necessity of controlling sources of atmospheric deposition of mercury to waterbodies of the States³.

Comment:

- Definition of de minimis: The TMDL establishes the WLA at 1.2% and indicates this is "de minimis." Using "de minimis" in this context may imply incorrectly that the point sources are not subject to any reductions. Thus, we recommend that the term "de minimis" not be used to describe the WLA. Alternatively, the TMDL should explain that the term does not imply that point sources are not subject to reductions under the wasteload allocation. It would also be helpful if the TMDL further explained why 1.2% was selected as the WLA, especially as this is higher than the WLA in other approved mercury TMDLs⁸.

Response:

Upon re-evaluation of the point source load and wasteload allocation, a units error was discovered, resulting in the point source load increasing from 1.2 percent to 2.2 percent of the total load. However, the states still feel that 2.2 percent is insignificant, and therefore can be considered de minimis. As such, we feel that if the point source load is to remain de minimis in the final TMDL, it is appropriate to keep it as the same percentage of the TMDL as the percentage of the baseline loadings.

Comment:

- Implementation of WLA in permits: The TMDL indicates that the WLA will not be allocated among sources, but rather through mercury minimization plans and region-wide mercury reduction efforts. We recommend that the TMDL clarify how individual permits will be written on the basis of a single regional WLA, and how will the allocations be made among the states? We also recommend that the TMDL further describe how will it be determined that the WLA will not be exceeded, and how it will be determined that there will not be localized exceedance of the water quality standards (e.g., the TMDL could indicate that reasonable potential determinations would be made at the time of permit issuance)⁸

Response:

This TMDL places much emphasis on the fact that the States have agreed to a goal of virtual elimination of mercury. As is stated in Section 2.5 of the TMDL, as of 2006, all of the Northeast states have passed legislation to address mercury in products and require installation of dental amalgam separators. Individual laws and requirements vary by state, but legislation addresses bans on disposal of mercury-added products, bans on sale or distribution of mercury-added novelties and

measuring devices, requirements for labeling of mercury-added products, prohibition of primary and secondary schools purchasing or using mercury, removal of mercury switches from automobiles, and requirements on recycling of mercury-added products. Connecticut, Massachusetts, Maine, New Hampshire, and New York have all passed legislation to reduce mercury emissions limits from coal-fired utilities. The end result of all these mercury minimization efforts is that a smaller quantity of mercury makes its way into the waste stream and less mercury is discharged from wastewater treatment facilities. These efforts undoubtedly increase the likelihood of successfully implementing the wasteload allocation. Because these reduction efforts are on-going the states feel there is little else that could be done through the NPDES program that could further ensure that the WLA will not be exceeded. Evaluation of progress at the Phase II milestone will determine if mercury minimization plans and additional monitoring at point sources should be prescribed for dischargers that do not already have those programs in place.

Comment:

- **Stormwater:** Because NPDES-regulated stormwater discharges are point sources that must be included in the WLA, the TMDL should indicate that any NPDES-regulated stormwater sources are subject to the wasteload allocation, regardless of whether the mercury in stormwater originally came from atmospheric deposition. In addition, if the WLA is determined by using the same percentage as the percentage of point source discharges in the TSL, this approach could result in inaccurate computations of the WLA. Thus, we recommend that mercury loadings from NPDES-regulated stormwater discharges be included in the estimates of point source mercury loadings in the point source portion of the TSL, and that these sources be added to the point source list⁸.

Response:

The Northeast Regional TMDL for Mercury has been calculated and prepared based on the understanding of the states that the primary source of mercury to the waters covered by this TMDL is atmospheric deposition. Although the contribution of stormwater to mercury loading is unknown, the vast majority of mercury from stormwater that contributes to the impairment of these waters originates from air sources and should be controlled accordingly. Regulated stormwater is considered to be part of the minimis WLA, but will be addressed through the controls on atmospheric deposition sources that are required to meet the load allocation. The states anticipate that once atmospheric deposition reductions are met, the only remaining regulated stormwater contributions would be solely attributed to natural sources and run-off from localized non-atmospheric sources. This residual stormwater contribution is considered to be a minute part of the WLA.

The states are already engaged in controlling stormwater pollution using best management practices (BMPs) in accordance with Clean Water Act §402(p) and 40 CFR 122.44(k) and any residual mercury in stormwater that originates from non-atmospheric sources can be addressed by these programs. The six minimum measures associated with permits for municipal separate storm sewer systems (MS4s) will contribute toward reducing mercury loading by reducing stormwater volume and sediment loading.

Comment:

- **Future Growth:** The TMDL does not identify an allocation for future growth. The TMDL should clarify whether all new or increased discharges would need to stay below the regional WLA⁸.

Response:

All new or increased discharges will be required to stay below the regional WLA. This statement will be added to the revised TMDL.

7.6 Load Allocation

Comment:

- We recommend that the TMDL describe whether there are any geographic differences in sources or other factors that may affect fish mercury levels. In particular, the TMDL should provide a rationale for using a single estimate of deposition for the entire region, and whether there are any geographic differences in deposition within the region, e.g., near urban areas or specific sources. If appropriate, the TMDL should identify any areas of high local deposition that should be treated separately from the rest of the region, in addition to the area in Massachusetts⁸.

Response:

Because the entire region is impacted by local, regional, and global mercury deposition sources, the Northeast states and NEIWPCC feel that it is appropriate to keep the TMDL at the scale of the entire region. Any regional differences in deposition are the result of local deposition sources that have already been addressed or are in the process of being addressed. Therefore, the entire region is in the same position of being primarily impacted by out-of-region sources and therefore feels it is appropriate to do the TMDL on a regional basis.

Kamman, et al. (2005) provides that although there are differences in fish tissue concentrations across states, differences in fish tissue concentrations are more strongly influenced by individual fish length than they are by jurisdiction. In the case of smallmouth bass, once the effect of length is accounted for, there is very little variation in fish concentrations among the states. This relationship can be seen in a graph that has been added to the revised TMDL.

7.7 Margin of Safety

Comments:

- In general, we recommend that the margin of safety be more fully justified. The TMDL uses an implicit MOS based on two conservative assumptions: use of the fish species with the highest mercury concentrations; and use of a midpoint (25%) estimate for contributions from natural sources (estimated to range from 15-35%). The description of how sediment cores from rural sites makes the natural source estimate conservative should be further explained. For example, use of the midpoint would be conservative for the lower end of the range, but not be conservative if the true contribution were at the higher end. In addition, use of a top fish species with higher mercury levels would typically be more conservative than using data from a lower trophic level fish such as smallmouth bass⁸.
- We also suggest you look into whether there are other conservative assumptions in the TMDL that may provide an MOS. For example, if the TMDL does not account for reductions in the transformation of mercury to methylmercury due to reduced sulfur deposition, this may contribute to the MOS⁸.

Response:

Smallmouth bass is not a lower trophic level fish – it is a high trophic level predator, and therefore an appropriate target fish. Additional information will be added to the margin of safety in the revised TMDL. The states agree that reduced sulfur deposition (which is occurring through federal and state actions) will lead to reduced mercury methylation. This reduction in methylation could potentially allow for the necessary reductions in mercury load to be less than proposed in the TMDL, meaning that the proposed loads allow for additional protection.

The states feel that it is more likely that the contribution from natural sources of mercury has been overestimated and therefore is more likely to be less than 25 percent instead of greater. The sediment cores were taken from rural locations where contributions from natural sources may be greater than the region as a whole, which has many urbanized areas.

An additional piece to add to the margin of safety is that EPA's fish tissue criterion is for methylmercury and the states are actually measuring total mercury in fish. It is estimated that about 90 percent of total mercury in fish is methylmercury. As states monitor for meeting TMDL goals, when fish have met the target of 0.3, 0.2, or 0.1 ppm total mercury, the methylmercury concentration will actually be lower, and therefore more protective.

7.8 Seasonal Variation and Critical Conditions

Comment:

- Although the TMDL mentions water chemistry and water level fluctuations as affecting mercury accumulation over the long term, the TMDL should describe how the critical conditions are being addressed or accounted for in the TMDL⁸.

Response:

Because some areas are more sensitive to mercury pollution due to factors such as water chemistry, presence of wetlands, and water level fluctuations, these areas may also be more sensitive to reductions in mercury emissions and deposition. Therefore, these areas may actually respond more quickly to decreases in mercury deposition. However, the exact response of these areas is not known. Therefore, these areas are targeted to be more closely monitored during the TMDL implementation period. If monitoring results indicate that more specific reduction strategies are necessary for these areas, they will be implemented at that time. The adaptive implementation approach will allow for changes in the approach to addressing sensitive areas if necessary.

7.9 Daily Load

Comments:

- We believe that daily loading levels of mercury are essentially irrelevant to the goal of the TMDL, which should be to prevent mercury from building up in fish tissue over long periods of time. In addressing a mercury impairment based on protecting the fish consumption designated use, a daily load is not "technically defensible." Therefore, such a loading calculation should not be included in the TMDL¹².
- The daily load should not be calculated by simply dividing the annual load by 365. A daily load equal to 1/365th of the annual load has no relevance whatsoever to a daily impact on fish bioaccumulation of mercury. A more technically reasonable way to develop a meaningful daily load, as EPA has recommended in its recently-developed draft "daily load" guidance, is to apply recognized statistical techniques to the annual load numbers¹².
- The TMDL should state clearly that the daily load calculation has been done only to implement the recommendation in EPA's recent guidance, and is not intended to be implemented in permits¹².
- A daily wasteload allocation for mercury is inappropriate; even if it were appropriate, the proposed allocation is technically infirm¹¹.

Response:

In a memorandum issued on November 15, 2006 by Ben Grumbles, Assistant Administrator, Water, US EPA, provided guidance related to a court decision in the U.S. Court of Appeals, for the D.C. Circuit in the Friends of the Earth, Inc. v. EPA, et al., (D.C. Cir. 2006). The purpose of that memorandum was to relay EPA's recommendation that all future TMDLs and associated load allocations and wasteload allocations be expressed in terms of daily time increments. The memorandum goes on to explain that TMDL submissions can also include alternate non-daily expressions for the purposes of implementation of applicable water quality standards. The Northeast Regional TMDL does provide an alternate non-daily expression for the mercury load, as well as the daily load in order to comply with the EPA recommendation. The approach used in the Northeast Regional Mercury TMDL is consistent with the approach used in the Statewide Minnesota Mercury TMDL that was approved by EPA in March, 2007.

9 Implementation

Comments:

- It may be useful to at least mention that mercury levels in fish may have effects on aquatic biota as well as fish-eating wildlife such as loons, eagles, otters, and minks. At the Phase III review stage, the states may want to discuss whether or not whole fish mercury levels are sufficient to also protect fish and wildlife⁹.
- Mercury reductions should aim to address the threat not only to human health but also to the health of natural ecosystems and to wildlife, especially the State's Species of Greatest Conservation Need. We also recommend that, as the TMDL is implemented, the states support research to determine whether the steps taken to reduce mercury in fish tissue to consistently safe levels also reduce mercury levels sufficiently to achieve ecosystem health and recovery, including among the most vulnerable species and ecosystems, and adjust the plan accordingly to achieve both goals¹⁰.

Response:

Text will be added to the TMDL to briefly describe the concerns associated with mercury and wildlife. While the states agree that protection of wildlife is also important, the main goal of the TMDL is to protect human health. As resources are limited, the states cannot commit at this time to monitoring of mercury levels in wildlife, but some fish monitoring that is carried out for the purposes of fish consumption advisories can be used to assess the risk to wildlife.

Comments:

- Is there enough being done to make everyone aware of methods to safely dispose of compact fluorescent bulbs? What if it ends up in garbage, like most things we use does, and gets into our drinking water supply? Are manufacturers putting safeguards in place to “take back” used bulbs and dispose of them properly? Is legislation being enacted in New York State and surrounding states to this effect? Are stores asked to run such take-back programs? I would like your good offices to spearhead this effort. As a state government body that has the interest of safe drinking water for its citizens in mind, your office is best positioned to carry out this effort, in collaboration with other state governmental agencies⁴.
- NYIPL recommends that NYSDEC come up with a recycling process for CFLs that works. We recommend that NYS provide the funding necessary for the towns within the state to recycle these mercury wastes as part of their normal recycling programs¹³.

Response:

Effective public education and recycling programs for compact fluorescent lights are issues that all of the states are working on addressing at this time. The states acknowledge that more work needs to be done in this area and will continue to address this issue.

Comments:

- Angler survey data from New Hampshire indicate that smallmouth (and largemouth) bass have a high catch-and-release rate and are likely not the most-consumed freshwater fish. It is likely that perch (yellow and white) and trout are consumed at higher rates than bass. We believe that perch populations should continue to be sampled for mercury in addition to the smallmouth bass⁶.
- The TMDL should not rely solely on mercury concentration in smallmouth bass as indicators of water quality. While seemingly ubiquitous, smallmouth bass are invasive species in many traditional coldwater fisheries. While brook trout do not bioaccumulate mercury at the same rate as smallmouth bass, length-standardized mercury concentrations corresponding to concentrations in smallmouth bass should also be calculated for brook trout to allow for monitoring in waterways where smallmouth bass are not present⁵.

Response:

While smallmouth bass is the target species for the TMDL, it is not the only species that states will be monitoring. States will continue monitoring other species of fish, such as perch and trout, as they have done in the past. Smallmouth bass will be used as indicator for judging if TMDL goals are being met, but other species of fish will be monitored as part of normal monitoring program, provided that funding is available. Moreover, the calculation method and baseline results for length-adjusted brook trout and yellow perch are given in Kamman, et al. (2005).

Comments:

- The number of impaired waterbodies varies dramatically among states because of different listing policies. Does this affect how the TMDL would be implemented in different states⁷?
- Does the list of waterbodies in Appendix A impaired primarily by atmospheric deposition of mercury mean that the TMDL will in any way be implemented toward restoring those listed waterbodies vs. all water bodies⁹?

Response:

The Northeast Regional Mercury TMDL covers all of the waterbodies that are listed in Appendix A, which for some states includes all of their freshwaters. However, all waterbodies in the Northeast, whether they are listed or not, will benefit from the mercury reductions. Implementation of the TMDL will result in mercury reductions across the Northeast and not target specific locations within the region.

Comment:

- We support the "staged implementation" approach as proposed, provided the proposed loading reductions for upwind out-of-region sources are applied as described further below³.

Comment:

- Given the difficulty of meeting these goals through the actions of the Northeast states, we encourage NEIWPCC to coordinate with other regions to undertake similarly stringent goals for the reduction of mercury through the TMDL process. In addition, the states and NEIWPCC should encourage action at the federal level to ensure that there is a uniform approach to mercury reductions to protect public and environmental health¹⁰.

Response:

The New England States and New York were able to come together on this TMDL because the seven states are similarly impacted by mercury pollution. Further the states have shared data sets as they relate to fish tissue and atmospheric deposition and to extrapolate this information to other regions of the country would jeopardize the integrity of the data. However, should this approach prove to be successful, the states encourage other states and regions to use this TMDL as a model.

As the comment relates to encouraging action on the federal level, the Northeast states have argued in the Opening Brief of Government Petitioners dated January 11, 2006 in the matter of State of New Jersey, et al. vs. United States Environmental Protection Agency, the implementation of a strict plant-specific MACT for mercury under section 112(d) of the CAA would result in at least 90 percent control of mercury emissions by cost-effective and available technologies. Further, enacting a MACT standard under section 112(d) would require compliance within three years of the effective date of the standard. This TMDL adds a second dimension to the legal arguments presented by the Northeast states in the lawsuit mentioned above by calculating for the first time the extent of reductions needed to meet water quality standards in the region's listed waters and remove fish consumption advisories and certainly illustrates the need for federal action.

Comment:

- The draft TMDL should take into consideration the adequacy of monitoring practices used by municipal waste combustors⁵.

Response:

The mercury emissions inventory is based on use of emissions factors and/or emissions monitoring data for each of the sectors for which emissions are reported. Emissions factors are revised periodically, which results in revision to the emissions inventory. The inventory values for MSWC are based on considerable stack test data and are viewed as being good quality. Emissions monitoring data is collected on an ongoing basis and results will be updated as appropriate.

Comment:

- The Clean Water Act does not confer additional authority on EPA or states to regulate air emissions sources¹¹.

Response:

The intent of the Northeast Regional Mercury TMDL is consistent with the requirements of the Clean Water Act in that it sets to establish a pollutant load for mercury – a level at which water quality impairments and fish consumption advisories could be eliminated. The calculations provided in the TMDL illustrate how much mercury, which is identified as coming primarily from atmospheric deposition, must be reduced in order for water quality goals to be achieved. Achieving the loading goals set forth in the TMDL can only happen if more stringent controls on air emissions are put into place.

The Northeast Regional Mercury TMDL does not infer that additional statutory authority to regulate air emissions is provided by the Clean Water Act. However, that statutory authority already exists under the Clean Air Act and can be implemented through state and federal regulatory programs. The TMDL simply identifies loading goals and the existing tools states and EPA have to achieve them. 40 CFR 130.7(b)(1)(iii) specifically states that “Each State shall identify those water quality-limited segments still requiring TMDLs within its boundaries for which...Other pollution control requirements (e.g. best management practices) required by local, State, or Federal authority are not stringent enough to implement any water quality standards (WQS) applicable to such waters.”

9.1 State and Regional Implementation

Comment:

- The states should commit to a more detailed step-wise adaptive implementation method¹¹.

Response:

The states feel that the Northeast Regional TMDL already includes a detailed adaptive implementation plan. However, there are more details available in state mercury reduction plans and status reports. Web addresses for these reports will be provided in the appendices of the revised TMDL.

Comments:

- Very supportive of Northeast states' decisions to not participate in interstate trading allowed under CAMR⁹.
- The Mercury TMDL states that none of the Northeast states will participate in the interstate trading of mercury emission credits as allowed under CAMR. The Northeast Environmental Organizations fully support this commitment by the States³.

Comment:

- Recommend that states and EPA commit to repeating the Connecticut River Fish Tissue Contaminant Study in 2010⁹.

Response:

The states agree that it may be beneficial to repeat the Connecticut River Fish Tissue Contaminant Study in 2010, but due to limited resources, cannot commit to it at this time.

9.1.2 Adaptive Implementation of Load Allocation

Comment:

- If fish tissue concentrations decline to levels that meet the 0.3 ppm water quality standards before the recommended 86.6 to 98.2 percent reduction in anthropogenic loadings is achieved, the target readjustment should be deferred until after the fish tissue concentrations meet the stricter (0.1 ppm) water quality standards utilized by Connecticut⁵.

Response:

The TMDL will continue to be implemented until Connecticut's 0.1 ppm standard is met. This will be more clearly articulated in the revised TMDL.

9.2 Adaptive National Implementation

Comment:

- EPA should include not selling U.S. stockpiles of mercury as part of the strategy to reach Phase II goals by 2010⁹.

Response:

The Northeast states agree that not selling U.S. stockpiles of mercury is one strategy that should be used to work toward meeting out-of-region reduction goals. This may help to reduce mercury

emissions from global sources.

Comments:

- We further concur with the draft TMDL that the current federal CAMR is insufficient to meet the requirements of the TMDL¹.
- We strongly support New York and the other states that are suing the EPA for not implementing a strict MACT standard for power plant mercury emissions¹.
- It is important that EPA approves the Northeast Regional Mercury TMDL which calls for at least 90 percent control on out-of-region coal-fired power plants in addition to in-region controls to achieve its goals of reducing mercury contamination in Northeast waterbodies¹⁴.
- The Northeast Regional TMDL would help prevent serious human health impacts as well as benefiting wildlife and sensitive ecosystems such as the Adirondacks and Catskills. Mercury's health and environmental effects are too devastating to leave to market dynamics. Furthermore, cuts must be made deeper and quicker than those proposed in the federal CAMR. We feel this plan is a step in the right direction for clean water for the future of not only New York but the entire Northeast region¹⁴.
- ADK supports the strategy set forth in the Northeast Regional TMDL demonstrating that New York and other Northeastern states have taken all possible actions to reduce mercury emissions and discharges, providing a basis for EPA to abandon its cap and trade approach to controlling mercury emissions and instead include a strict mercury emission standard in Clean Air Act Title V permits for Midwestern coal-fired power plants and other industrial facilities¹⁴.
- CCE supports the plan's assertion that more stringent, comprehensive national and international mercury control programs are necessary to make fish safe to eat in our region. In order to make fish safer to eat in New York, the U.S. EPA should develop a more protective mercury pollution reduction program².
- The Northeast Environmental Organizations support and commend the States' efforts to work cooperatively to target the primary sources—out-of-region power plants—of the mercury threat to the Northeast region by calling for immediate implementation of existing economically and technically feasible reduction control technologies on these sources³.
- Very supportive of Northeast states in matter of *State of New Jersey et al. vs. United States Environmental Protection Agency*. EPA should start enforcing higher standards at municipal waste incinerators, coal plants, and other point sources of mercury throughout the country, using a timeframe that will lead to more immediate results⁹.

10 Reasonable Assurances

Comment:

- Enhanced pollution controls at municipal waste combustors are the best way to ensure TMDL goals are met⁹.

Response:

The states are currently addressing further reductions of mercury emissions from municipal waste combustors through pollution prevention efforts, including legislation regarding management and

disposal of mercury-containing products. At this time, the states feel that this is the most cost effective strategy for reducing emissions from this sector. However, based on developments in technology, the states will consider further pollution controls on municipal waste combustors as appropriate.

Comment:

- Mercury emissions from residential heating increased between 1998 and 2002. What is this category increasing and what can be done about it? The Northeast states should address this issue as a significant contributor to in-region emissions⁹.

Response:

Within the Northeast Mercury Emissions inventory, estimates of emissions from residential heating are considered to be the most uncertain. The Northeast States for Coordinated Air Use Management is currently conducting a study to improve the confidence in the emissions factor used for this sector. The results of this study may show that mercury emissions from this sector were previously overestimated. The Northeast states will determine how to address emissions from this sector once this study is complete. In addition, NESCAUM is part of an initiative to look at the feasibility of using low-sulfur and/or low sulfur biodiesel blend home heating oil that would have co-benefits of reduced mercury.

Comment:

- The Mercury TMDL clearly establishes that the mandated reductions in mercury loading to the waters of the States cannot be met by in-state reductions alone. The Reasonable Assurances section must therefore: (i) state that CAMR will be insufficient to achieve the necessary reductions, (ii) require that significant reductions be made by upwind out-of-region sources, primarily coal-fired power plants, (iii) require that the MACT provisions of section 112(d) of the CAA be adopted as the mechanism for implementing these reductions, (iv) state that EPA is obligated under both section 112 of the CAA and the loading reduction requirements of the TMDL provisions in section 303(d) of the Clean Water Act to act to immediately to reduce the emission of mercury from these sources, and (v) specify that the timeframe for implementation shall be as set forth in section 9 of the Mercury TMDL³.

Response:

The implementation section of the draft TMDL currently addresses the recommended language regarding CAMR and section 112(d) of the CAA. The states go on to recommend adaptive implementation of this TMDL and that a strict 90 percent MACT standard be enacted under section 112(d) to meet the national implementation requirements of the TMDL for Phase II (2003-2010). Upon consideration and review of the above comment, the States have modified the TMDL to include this discussion in Section 10: Reasonable Assurances. In addition, in order to better explain goals associated with both the load and waste load allocations, the TMDL has been modified to include clarifying language in those and other appropriate sections of the TMDL.

Authors of Comments Provided Above:

1. The Adirondack Council, 342 Hamilton Street, Albany, NY 12210
2. Citizens Campaign for the Environment, 735 Delaware Road, Box 140, Buffalo, NY 14223
3. Conservation Law Foundation on behalf of Clean Water Fund, National Wildlife Federation, Mercury Policy Project, Vermont PIRG, New York PIRG, Environmental Advocates of New York, Lake Champlain Waterkeeper, Hudson Riverkeeper, Casco Baykeeper, Saranac Waterkeeper, Upper St. Lawrence Riverkeeper, Soundkeeper, Inc., Environment New Hampshire
27 North Main Street, Concord, New Hampshire 03301
4. Sridhar Venkatesan, 1 Anton Court, Stony Point, NY 10980
5. Joseph J. Heath, Attorney at Law on behalf of the Onondaga Nation, 716 East Washington Street, Suite 104, Syracuse, NY 13210
6. New Hampshire Fish and Game Department, 11 Hazen Drive, Concord, NH 03301
7. Massachusetts Water Resources Authority, Charlestown Navy Yard, 100 First Avenue, Building 39, Boston, MA 02129
8. U.S. Environmental Protection Agency, Office of Water
9. Connecticut River Watershed Council, 15 Bank Row, Greenfield, MA 01301
10. Nature Conservancy, 195 New Karner Rd, Suite 200, Albany, NY 12205
11. Hunton & Williams LLP on behalf of The Utility Water Act Group, Riverfront Plaza, East Tower, 951 East Byrd Street, Richmond, VA 23219
12. Barnes & Thornburg LLP on behalf of the Federal Water Quality Coalition, One North Wacker Drive, Suite 4400, Chicago, IL 60606
13. New York Interfaith Power & Light, 401 Parsons Drive, Syracuse, NY 13219
14. Adirondack Mountain Club, 301 Hamilton Street, Albany, NY 12210