



3/24/05

***Potential Revisions to the
Comprehensive Assessment and Listing Methodology (CALM)
and Guidance for Submitting Comments
(for the 2006 Section 305(b) Water Quality Report and Section 303(d) List of Impaired Waters)***

Dear Interested Party,

The New Hampshire Department of Environmental Services (DES) is in the process of revising the Comprehensive Assessment and Listing Methodology (CALM) for use in the 2006 surface water quality assessments required by Sections 305(b) and 303(d) of the Clean Water Act. Section 305(b) requires each state to prepare a water quality inventory of its surface waters every two years. Section 303(d) requires states to prepare a list of impaired surface waters for which comprehensive water quality studies [i.e., Total Maximum Daily Load (TMDL) studies] must be prepared to help guide restoration efforts. This list, which is commonly called the "303(d) List", represents a subset of all impaired waters as some impaired waters do not require a TMDL study. The CALM describes, in detail, the process used to make surface water quality attainment decisions for 305(b) reporting and 303(d) listing purposes. The current CALM, used for the 2004 assessment listing cycle, may be found at <http://www.des.state.nh.us/wmb/swqa/2004/pdf/CALM.pdf>.

The purpose of this letter is to inform the public of revisions which are currently under consideration and to request your comments regarding any suggested revisions to the CALM. Potential revisions that are currently being discussed are included in the table provided at the end of this document:

SCHEDULE

If you have suggested revisions for the CALM please submit them to the Watershed Management Bureau (see details below) by April 30, 2005.

WHAT TO SUBMIT

General comments pertaining to sections of the current CALM are useful but specific recommendations with supporting background information are preferred.

Submittals should include the following:

- ✓ Contact Information:
 - Your name and organization
 - Mailing Address
 - E-mail
 - Phone number
- ✓ Your comments referenced to specific sections of the current CALM.
- ✓ Documentation supporting why you believe that section of the CALM requires the changes suggested.



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HOW TO SEND COMMENTS TO DES

Submit your comments along with any supporting documentation, to DES by mail, fax or E-mail at the addresses shown below.

By mail: Water Quality Data
 New Hampshire Department of Environmental Services
 Watershed Management Bureau
 P.O. Box 95
 Concord, New Hampshire 03302-0095

By fax: Water Quality Data
 603-271-7894

By E-mail: wqdata@des.state.nh.us or visit our website at www.des.state.nh.us/wmb/swqa/

QUESTIONS? Please call 603-271-2457

Table 1: Potential revisions to the CALM that are currently being discussed

<u>General Section</u>	<u>Applicable 2004 CALM Section</u>	<u>Overview</u>
Beach assessment procedure	3.2.2 Use: Primary Contact Recreation	For listing beaches as impaired, consider applying a binomial like approach based on the number of inspections and “postings” of a beach. Alternately, use the bacteria standard directly by using the 60-day geometric mean or two samples in a season above the SSMC.
Assessment of uses besides Primary Contact Recreation at Beach AUIDs.	New element	Data necessary to assess Aquatic Life Use Support (ALUS) is not collected in beach assessment units. Support of this use, however is probably not significantly different from that in the parent waterbody. Consider applying the ALUS assessment for the parent waterbody to the designated beach area.

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<u>General Section</u>	<u>Applicable 2004 CALM Section</u>	<u>Overview</u>
<p>Application of dissolved oxygen percent saturation (%DO) criteria in the case of,</p> <ul style="list-style-type: none"> ▪ partial day, continuous data logger data sets and, ▪ grab samples. 	<p>New element that ties in with Section 3.2.4 Use: Aquatic Life, Indicator 1, Notes:5, c, 2&3</p>	<p>Currently only full 24 hour data logger datasets or %DO grab samples taken within a very small window may be used to evaluate the %DO criteria. Where continuous data logger data sets exist, partial record days and grab samples should be usable to evaluate this criteria in conjunction with the full 24 hour data logger datasets.</p>
<p>Spatial applicability of stations in the Little Bay/Great Bay area.</p>	<p>New element</p>	<p>The estuary and ocean AUIDs are not strictly hydrologically based.</p> <ul style="list-style-type: none"> • There are some datasets near boundaries that should apply to two or more AUIDs. • In the Marina AUIDs designated uses besides shellfishing should inherit the assessments of their surrounding AUIDs.
<p>Elimination of the assessment table used for determining metal impairment when “nonclean” sampling and analysis techniques are used.</p>	<p>Section 3.2.4 Use: Aquatic Life, Indicator 5, Note 4 and Table 3-23</p>	<p>Table 3-23 was developed for the 2004 assessment to facilitate assessment of metal data that was not collected using clean sampling and analysis techniques. To account for probable contamination, the metals criteria are higher in this table than in the surface water quality regulations (Env-Ws 1700). Use of this table helps prevent waters that are not really impaired from being listed as impaired. However there is a chance that waters which are actually impaired are not being listed. Consider removing the table and basing assessments solely on Env-Ws 1700 metals criteria regardless of how metals were collected and analyzed. This would be more protective but could result in waters being listed as impaired which are actually meeting standards.</p>
<p>The guidance for determining "naturally occurring" for parameters for which the class A standard is "none unless naturally occurring" should be included.</p>	<p>New element</p>	<p>DES had proposed and WQSAC has reviewed a “reference condition” method to determine “none unless naturally occurring” for (list) Use this method to evaluate impairment for class A waters and parameters that have a “none unless naturally occurring” requirement</p>

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<u>General Section</u>	<u>Applicable 2004 CALM Section</u>	<u>Overview</u>
Revision of the criteria used to determine use support for “Drinking Water After Adequate Treatment”	Section 3.2.2 Use: Drinking Water After Adequate Treatment.	Some public water supplies have been listed in the past as impaired due to their source waters being treated with CuSO ₄ to control taste and odor problems associated with algae. Is treatment with CuSO ₄ a “conventional treatment”? Remove treatment with CuSO ₄ as an indicator of impairment. What parameters/criteria should be used to determine if “conventional treatment” is sufficient to make the raw water suitable for drinking?
Where continuous data logger data sets exist for applicable parameters, incorporation of frequency/duration for determining impairment.	New element	There are cases where we have continuous datasets that have 100+ days worth of conductivity samples (used to determine chloride levels) taken at 15 minute intervals. Currently the binomial approach is used, however this can erroneously lead to the conclusion that the water is not impaired due to large sample size which increases the number of exceedances needed to list a water as impaired. In such case, we should compare the results to the frequency and duration of exceedance that the toxic water quality criteria are based. For example, chronic criteria are based on the 4 day average concentration not being exceeded more than once every 3 years on the average. Acute criteria are based on a 1 hour average concentration not being exceeded more than once every 3 years on the average. For grab samples the binomial approach (where applicable) will still be used to determine use support.
General application of the “Binomial Method”	Section 3.1.16 Minimum Number of Samples - Binomial Method	Should we abandon the binomial approach for determining impairment? For example can we just require 3 or more violations to be considered impaired regardless of how many samples are taken? This would be more protective of water quality and prevent potential violations from being diluted by many other samples.

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<u>General Section</u>	<u>Applicable 2004 CALM Section</u>	<u>Overview</u>
<p>Refinement of the “critical period” for applicable parameters and designated uses.</p>	<p>Section 3.2.2 Use: Primary Contact Recreation, Indicator 2.</p> <p>Section 3.2.2 Use: Primary Contact Recreation, Indicator 4.</p> <p>Section 3.2.3 Use: Secondary Contact Recreation, Indicator 1.</p> <p>Section 3.2.4 Use: Aquatic Life, Indicator 1.</p> <p>New elements?</p>	<p>Examples:</p> <ul style="list-style-type: none"> • Conditions of low flow and high temperatures are when dissolved oxygen violations are most likely to occur. Should the “critical period” for determining if dissolved oxygen is meeting standards also require that samples be taken when flows are less than 3 times the 7Q10 low flow and water temperature in the upper 90th percentile? The drawback is low flows occur relatively infrequently and it will be difficult to get sufficient samples during this time to assess many waters for dissolved oxygen and aquatic life use support. • Should the critical condition for determining if pH is meeting standards be revised to include samples taken during late winter and early spring when pH is most likely to be low due to snowmelt and acid rain? • For parameters that are related to stormwater/meltwater runoff should only data collected during such event be used to determine if a parameter is meeting standards? If so, we need to define (quantify) what constitutes a stormwater/meltwater event.
<p>Determine periphyton criteria</p>	<p>Section 3.2.2 Use: Primary Contact Recreation, Indicator 4.</p>	<p>Per our nutrient plan we will develop interim chlorophyll a for rivers, lakes and estuaries. We don’t have anything for periphyton. Consider including a periphyton as an indicator of impairment for primary contact recreation and base the threshold on literature values for now.</p>

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<u>General Section</u>	<u>Applicable 2004 CALM Section</u>	<u>Overview</u>
Evaluate pH criteria.	Section 3.2.4 Use: Aquatic Life, Indicator 2.	Is the pH criteria in New Hampshire too strict (must be greater than 6.5 but less than 8.0 unless naturally occurring)? Many waters are listed due to low pH but often the pH is greater than 6.0. which is generally not considered to be harmful to aquatic life. How much of an effect does New Hampshire's geology have on low pH? We know acidic atmospheric deposition occurs, but can we every say that low pH is natural except perhaps in bog-like areas? (note: this change would be for the 2006 list, as it requires legislation to change the pH standard)
Application of the cyanobacteria criteria	Section 3.2.2 Use: Primary Contact Recreation, Indicator 1, Note 2.	This is similar to the beach listing issue. Is listing based upon one scum too stringent? It does not seem to focus the appropriate actions to the places with genuine problems.
Evaluation of the spatial applicability of exotics infestations.	Section 3.2.4 Use: Aquatic Life, Indicator 8.	Is listing a whole AUID as impaired based upon exotics in one section appropriate? For example, we often have one AU for an entire lake. If a small part of the lake is impaired by exotics, the entire lake is listed as impaired. As a result the total acreage of lakes impaired by exotics is overestimated. Is this acceptable or do we need to divide waterbodies into smaller AUs? The same issue applies to other parameters (chemical, physical or biological). Although the current method may overestimate the number of impaired or fully supporting waters, it does focus resources to the areas for further study and keeps the number of AUs down to a manageable level.