

Report to
Legislative Council Rules Clearinghouse
NR 102, Wis. Adm. Code
Natural Resources Board Order No. WY-23-13

Wisconsin Statutory Authority

- Sections 281.11 and 281.12, Wis. Stats.
- Section 281.15, Wis. Stats.
- Section 281.65(4)(c) and (cd), Wis. Stats.

Federal Authority

- Sec. 303(d)(1)(A) of the Federal Water Pollution Control Act (Clean Water Act) requires states to develop an impaired waters list that identifies waters that are not meeting any water quality standard.
- Sec. 305(b)(1) of the Federal Water Pollution Control Act (Clean Water Act) requires states to prepare a biennial report documenting which waterbodies are attaining their designated uses.
- 40 CFR s. 130.4 Water Quality Monitoring. This section requires water quality monitoring and assessments of state waters.
- 40 CFR s. 130.7 Total maximum daily loads (TMDLs) and individual water quality-based effluent limitations. This section provides additional information related to requirements for developing the impaired waters list.
- 40 CFR s. 130.8 Water Quality Reports. States must submit water quality reports to EPA that include a water quality assessment of state waters.
- 40 CFR s. 130.3. Water quality standards. This section defines water quality standards as setting water quality goals for a waterbody that will protect its designated uses (such as protection of fish, wildlife, recreation, and public health and welfare). Criteria will be set to protect those uses.
- 40 CFR s. 131.11 Criteria. States must adopt those water quality criteria that protect the designated use. Such criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use. For waters with multiple use designations, the criteria shall support the most sensitive use.

Comparison of Adjacent States

- All states follow assessment procedures similar to the department's waterbody assessment procedures outlined in subch. IV of ch. NR 102.
- Biological assessments are used by states to evaluate the biological health of surface waters. Some states assess waterbodies through guidance and other states have established narrative or numeric biocriteria in rules. Narrative biocriteria provide a general statement of goals and the types of metrics to be assessed, while numeric biocriteria specify numeric thresholds for biological quality of fish, insects, plants, or other aquatic life.

Wisconsin is proposing narrative biocriteria. Indiana currently has narrative biocriteria. Until recently, Minnesota had narrative biocriteria similar to Wisconsin's proposal. Minnesota recently revised their biocriteria to a numeric format. Ohio also has promulgated numeric biocriteria. Michigan, Illinois, and Iowa have not formally incorporated narrative or numeric biocriteria into their water quality standards. However, all Region 5 states, Iowa, and most other states in the nation do use biological metrics such as fish and insect scores for waterbody assessments and 303(d) listing, regardless of whether narrative or numeric biocriteria are codified.

- Most Region 5 states use some variation on phosphorus response indicators, including algal indicators or criteria. Minnesota has a promulgated combined criteria approach to assessing nutrient levels and their biological and chemical responses. Minnesota's biological metrics center on chlorophyll a. Ohio's approach is to use a multi-metric scoring system that aggregates results from separate evaluations of primary productivity (algae/plants), biological health and in-stream nutrient concentrations. Indiana has a process for assessing phosphorus impairments using chlorophyll a response indicators. Illinois has numeric phosphorus criteria for lakes and is currently considering promulgating proposed numeric phosphorus criteria for streams/rivers. Illinois also has narrative nutrient criteria and considers a water to be not meeting the criteria if excess algae is present in the waterbody. Michigan does not currently have numeric phosphorus criteria, but does have narrative phosphorus criteria. Iowa does not currently have phosphorus criteria but does assess waterbodies for phosphorus and chlorophyll a, and uses chlorophyll a to list waters as impaired for eutrophication based on narrative criteria.
- Wisconsin and Minnesota are the only Region 5 states that have two-story coldwater fishery lakes. Wisconsin's oxythermal criteria were developed using a modification of methods developed in Minnesota. Although Minnesota uses its methods for assessments, it has not yet codified oxythermal criteria for its two-story fishery lakes.

Court Decisions Directly Relevant

NA

Analysis of the Rule - Rule Effect - Reason for the Rule

This rule package addresses several areas related to the state's assessments of its streams, rivers, lakes and other waterbodies. It focuses largely on assessments related to the biological quality of a waterbody.

Waterbody Assessments and Reporting. Every two years, under federal Clean Water Act requirements, the department assesses the state's waterbodies to determine whether they are attaining water quality standards. A new subchapter is proposed that codifies Wisconsin's current procedures for conducting surface water impairment assessments, including public participation opportunities and EPA approval.

Biocriteria. The most direct and commonly-applied method of measuring the quality of a waterbody is through assessing the biological communities within the waterbody—its fish, insects,

plants, and algae. This proposed subchapter establishing narrative biocriteria will provide a general outline of the types of procedures that the department undertakes to assess the quality of surface waters based on the health of their biological communities. These “narrative biocriteria” generally describe the types of biological assessments conducted to determine whether a waterbody’s aquatic community is healthy and attaining its designated uses or is not attaining and should be placed on the impaired waters list (s. 303(d) list).

Dissolved oxygen criteria for Aquatic Life. Revisions to the dissolved oxygen section are needed to clarify which criteria apply to different waterbody types:

- This rule specifies that the dissolved oxygen criterion of 7.0 mg/L applies not only to the time of spawning but also during the early life stages that require higher oxygen levels. This more protective time frame applies to only trout class I and II streams, which by definition support trout reproduction. This rule removes the requirement for higher dissolved oxygen during spawning from class III trout streams, which by definition do not support reproduction.
- This rule relocates certain dissolved oxygen criteria from ch. NR 104 to s. NR 102.04(4), so that all dissolved oxygen criteria are located in the same part of the code. The relocated criteria are the existing dissolved oxygen criterion of 3 mg/L for limited forage fish waters and 1 mg/L for limited aquatic life waters, diffuse surface waters, and wastewater effluent channels.
- The addition of oxythermal criteria for two-story fisheries is necessary because the existing dissolved oxygen criteria are not appropriate for this relatively rare and sensitive type of coldwater fishery, comprising only .01% of Wisconsin’s lakes.

Algae criteria for Recreation and Aquatic Life. The rule proposes algae (chlorophyll *a*) criteria for lakes, reservoirs and impounded flowing waters. Algae levels are a top water quality concern for the public, and are a critical component of waterbody assessments to determine whether recreational goals are met. The rule proposes algae (chlorophyll *a*) criteria for lakes, reservoirs and impounded flowing waters. The chlorophyll *a* criteria created here are the same as benchmarks already used by the department to assess water quality for recreation and aquatic life uses.

Phosphorus assessment procedures using biological metrics. Statewide phosphorus criteria were promulgated in 2010. However, the criteria did not include evaluation procedures for determining attainment of the phosphorus criteria in a waterbody. This rule specifies how attainment of the phosphorus criteria is determined. It also incorporates flexibility for determining impairment due to phosphorus levels by creating a “combined criteria” approach. Under this approach, the waterbody’s phosphorus concentration is reviewed in conjunction with “phosphorus response indicators”—algae and plant metrics—that specifically indicate whether the waterbody is exhibiting a biological response to phosphorus. If a waterbody exceeds the statewide phosphorus criterion (within a certain range) but does not exhibit a biological or recreational use impairment, it would not be considered impaired for purposes of s. 303(d) listing.

NR 217 calculation of upstream background phosphorus concentrations. This rule includes a revision to a portion of ch. NR 217 to align the phosphorus calculation methods used to determine background phosphorus concentrations for effluent limit calculations with those delineated in

proposed s. NR 102.07 (1) (a) 2. Previously, slightly different methods were used to calculate ambient phosphorus concentrations for purposes of criteria assessment and to calculate upstream background phosphorus concentrations for WPDES permit limit derivation under s. NR 217.13 (2) (d). Although these two methods yield very similar resulting phosphorus concentrations, the differences between the two methods have caused confusion and are unnecessary. The proposed procedure detailed in s. NR 102.07 (1) (a) 2, which is the method used for criteria assessment, parallels how the criteria were initially developed and will be most appropriate for both applications.

Definitions. Several new definitions are included in this rule, and some definitions are relocated from the section of the rule dealing only with the phosphorus criteria to the section of the rule applying to the whole chapter. There are also some clarifications made to a few definitions, such as “stratified lake or reservoir” and “stratified two-story fishery lake.” These are not expected to change the waterbodies included in these categories, only to clarify the existing interpretation of these terms.

Agency Procedures for Promulgation

The department will hold two hearings on September 12, 2019 at 10:00 a.m. at WI Department of Natural Resources, 101 S. Webster St., Madison, WI 53707, Room G09, and at the same date and time at WI Department of Natural Resources, 2984 Shawano Ave, Green Bay, WI 54313, Lake Michigan Room. The hearing will be followed by board adoption, expected in December 2019, followed by a request for the governor’s signature and legislative review.

Description of any Forms (attach copies if available)

N/A

Name and Telephone Number of Agency Contacts

Processing: Daniela Branco, (608) 266-7524
Technical: Kristi Minahan, (608) 266-7055