
10. WATER BODY USE DESIGNATIONS

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Status: Currently in Place

This program was established in the 1970s to meet EPA requirements. An effort is currently underway to explore alternatives to the status quo regarding use designations and assessment practices designed to evaluate condition of Wisconsin's surface water communities. Any revisions promoted by WDNR in the coming years will be focused on improving the public understanding of water quality standards, increasing consistency in evaluation of water condition, and efficiently deploying staff and fiscal resources to maximize monitoring efforts statewide.

Monitoring Objectives

Clean Water Act Objectives

- Establishing, reviewing and revising water quality standards
- Determining water quality standards attainment
- Identifying impaired waters
- Identifying causes and sources of water quality impairments
- Supporting the implementation of water management programs
- Supporting the evaluation of program effectiveness

Specific objectives

Objectives of the Use Designation program are:

- Collect information on the water quality of Wisconsin waterbodies
- Appropriately designate use(s) of statewide waterbodies in order to accurately assign WPDES effluent limits
- Appropriately designate potential use of surface waters in order to protect water quality in compliance with the Clean Water Act.
- Monitor to assess water quality conditions in relation to nonpoint source management projects.
- Monitor water quality conditions to support Wisconsin's Impaired Waters Program and the integrated 303(d)/305(b) Report.
- Determine correct Use Designations of Statewide waterbodies to be used in the construction of an accurate GIS layer of stream classifications.
- Systematically identify candidate waters for special designation as Outstanding or Exceptional Resource Waters.

Monitoring Design

Water bodies throughout Wisconsin are monitored on an as-needed basis to determine their use designations. In the absence of field data and a full assessment, rivers and streams are classified as full fish and aquatic life communities by default. In years past, Wisconsin default designations were used to protect for a balanced warmwater fish community. However, a decision is now made to protect for a coldwater community if a given water body is actively being managed as a trout community.

Reviews of classifications are completed on a priority basis, most often focused on streams with a WPDES permitted discharger discharging to the waterbody. Within this category of streams with permitted discharges, monitoring and assessment work is prioritized by activities such as WWTP facility planning/upgrade, 303(d) listing, waters with sensitive species (endangered/threatened), etc. Over time, it is anticipated that Baseline Tier 1 efforts will allow for a more rapid and complete establishment of use designations throughout the state regardless of whether or not a point source is located or planned for any given water body.

Core and Supplemental Water Quality Indicators

Core indicators of this program consist primarily of Fish and Aquatic Life parameters, including biological community condition (fish and macroinvertebrates), dissolved oxygen (DO), temperature, flow, and even habitat. More extensive data are collected if necessary, often in order to clarify a classification or to answer a site-specific question.

- Fish community: assessed to gain an understanding of what fish species are found in a waterbody, and to aid in the decision process of assigning a use designation to a stream segment.
- Macroinvertebrate community: assessed when a robust fish population is not present in a waterbody (or often even when a robust community *is* present). The types of macroinvertebrates found can indicate the quality of the water at a specific site.
- Habitat characteristics, including stream width, depth, and flow, are assessed to help in determining the *potential* aquatic community a surface water could support.
- Water quality assessments are conducted to determine possible characteristics that may be limiting aquatic populations, as well as to help determine the type of aquatic life that could be attained in a specific water body. Water quality parameters that are routinely collected are dissolved oxygen and temperature. Parameters such as suspended solids, ammonia and other toxic substances can also impact aquatic communities, and may be sampled as necessary.
- Additional assessments that may be conducted include, but are not limited to, sediment chemistry, ambient water chemistry, and effluent toxicity tests.

Quality Assurance

Chemical, biological and physical sampling/assessment, as well as analytical procedures follow established WDNR protocols.

Data Management

All data collected as part of a use designation exercise are considered public information and available for public review upon request. Where available, use designation reports and supporting data are stored in the SWIMS database.

Data collected for the purpose of use designations are compiled into a written Use Designation Report. Reports are archived in WDNR Central Office files in Madison. Fish data are often entered into the WDNR FH database. Other analytical data are maintained in databases by the State Lab of Hygiene and UW-Stevens Point Aquatic Entomology Lab.

Data Analysis/Assessment

Data collected are analyzed collectively to determine the appropriate use designation of surface waters. Fish data are utilized for the Index of Biotic Integrity (IBI) to evaluate the environmental quality of the water body. Macroinvertebrate data that is analyzed leads to a Hilsenhoff Biotic Index (HBI) value, which gives an idea of the pollution tolerance of the organisms found. Chemical, physical and biological data are analyzed according to the WDNR Field Procedures Manual and/or standard operating procedures at laboratories.

Guidance on how to interpret data in order to ultimately assign a use designation is found in the Guidelines for Designating Fish and Aquatic Life Uses for Wisconsin Surface Waters, Wisconsin Department of Natural Resources, December 2004. As noted above, an effort is underway to evaluate alternative use designations as well as develop new use designation procedures.

Reporting

Collected data are summarized in the form of a Stream Classification Report. These data are referred to in 303(d)/305(b) Report as well as water quality plans for each water basin in Wisconsin. As needed, use designations are also promulgated in Chapter NR 104 of the Wisconsin Administrative Code.

Programmatic Evaluation

Redirection of this program has occurred when needed to account for changes. As noted above, an effort is currently underway to determine if changes in the uses and the assessment techniques should be recommended.

General Support and Infrastructure Planning

Staff & Training – Many WDNR staff are involved in use designations and assessments. However, these staff members are not necessarily assigned exclusively to this task. In order to thoroughly and effectively carry out this task it would be useful to have additional staff assigned to this effort, potentially up to double the number that currently exist. Due to the addition of new staff members to this program who are not completely familiar with monitoring protocols, data assessment and report preparation, training is absolutely vital to the success of this program. There is a strong need for training to address what type of fieldwork is necessary, as well as how those field samples should be collected. Furthermore, in order to improve statewide consistency in how collected data are analyzed and reported, there should be training on proper techniques for synthesizing field data and recommending an appropriate classification. Stream classification projects may provide a good opportunity for citizen involvement, and will be evaluated further.

Laboratory resources & Funding – Water samples collected from field surveys are sent to certified laboratories for analysis. As part of this effort, macroinvertebrate samples are routinely collected and sent to University of Wisconsin-Stevens Point (UW-SP) for analysis. A per sample charge in excess of \$120 is incurred for this type of work. There are also occasions when water chemistry samples are collected in order to substantiate a use designation. These samples are typically sent to the State Laboratory of Hygiene for analysis. The cost for analysis varies according to sample type.

References

Guidelines for Designating Fish and Aquatic Life Uses for Wisconsin Surface Waters, Wisconsin Department of Natural Resources, December 2004.