

The Connecticut Integrated Water Quality Report (IWQR) Factsheet

Background

The Federal Clean Water Act (CWA) requires states to adopt Water Quality Standards (WQS) that provide protection and propagation of fish, shellfish and wildlife and recreation in and on the water. The Integrated Water Quality Report (IWQR) provides biannual information (also called a cycle) on the health of the surface water quality in Connecticut (CT). This report identifies which CT waterbodies are meeting and not meeting (WQS) for one or more of a waterbodies' Designated Uses.

The list of impaired waters that are not meeting WQS are detailed in Appendix B-1 of the IWQR every other year.

Each cycle The Connecticut Department of Energy and Environmental Protection (CT DEEP) conducts a Public Meeting to gather comments from the civic community regarding the IWQR. All comments and questions must be submitted in writing to DEEP.IWQR@ct.gov. Information regarding the public meeting is posted on the webpage.

Monitoring and Assessment

The CT DEEP Monitoring and Assessment team at DEEP uses chemical and biological data collected by various entities including; the CT DEEP program, private and volunteer organizations and the United States Geological Survey (USGS). These data are

CT's Designated Water Uses



Recreation

Primary contact- swimming, water skiing, surfing Secondary contact- boating, canoeing, kayaking, fishing



Aquatic Life

Protection and maintenance of a viable aquatic life and associated wildlife communities



Shellfish Harvesting for Direct Consumption

Harvested (recreationally and commercially) can be consumed directly without passing them to approved or conditionally approved waters for natural cleansing



Commercial Shellfish Harvesting

Waters supporting commercial shellfish harvesting for transfer to a depuration plant for cleansing.



Drinking Water Supply

Waters used for, proposed for future use, or has potential to be used as a public drinking water supply,



Navigation

Waters used for shipping, travel or other transportation by private, military or commercial vessels.



Water Supply for Industry

Waters suitable for industrial supply.



Agriculture

Waters suitable for general agricultural purposes.

Figure 1. Definitions of Designated Uses in CT

analyzed, reviewed and compared to the [Connecticut Water Quality Criteria and Standards](#).

Water quality assessments are based on the different uses of the water body (Figure1). Designated uses set the goals for what activities can occur in the waterbody, and criteria are developed to protect each of those goals. Typical designated uses in CT include:

- Aquatic Life Use
- Recreation
- Fish Consumption advisory
- Shellfishing:
 1. Direct
 2. Commercial
- Public water supply
- Agriculture, industry, and navigation.

The Biological Condition Gradient

The [Biological Condition Gradient](#) (BCG) is a conceptual model that describes changes in aquatic communities and provides a more refined way of assigning stream health than the traditional pass/fail approach. Over the past 12 years, CT DEEP has developed BCG models for [fish communities](#) and [macroinvertebrate communities](#). In 2018, CT incorporated these concepts into water quality assessments for the IWQR. The CT DEEP [web-based interactive BCG mapping application](#) (Figure 2) is updated each cycle. More information is available on the [EPA BCG Factsheet](#).

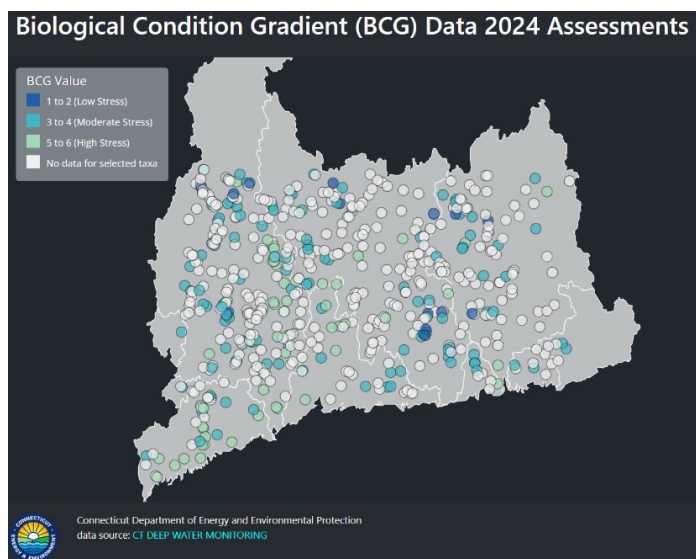


Figure 2. The Biological Condition Gradient web map.

Volunteer Involvement

There are many active environmental groups throughout Connecticut looking for volunteers to help provide water quality monitoring information to CT DEEP for use in the IWQR evaluations. There may be a group in your neighborhood that is involved with water quality monitoring. For more information, please see our [volunteer water monitoring webpage](#).

If you have water quality data you would like CT DEEP to consider evaluating for the next IWQR, please contact us at DEEP.IWQR@ct.gov.

All data submitted must conform to the requirements listed below:

- Was collected under an approved Quality Assurance Project Plan (QAPP).
- Has been validated by the Quality Assurance Officer per the QAPP; and
- It is in the spreadsheet format provided by CT DEEP with all the required fields filled in.

Continued Development of Database for Ambient Monitoring Data

The ambient monitoring data continues to flow into EPA's WQX data exchange network and has been made publicly available through the [water quality portal](#). This workflow has improved our ability to conduct assessments for the IWQR. Work continues to back populate WQX with historical data and streamline reporting and data analysis processes for the IWQR.

Water Quality Action Plan Development

Waterbodies that are not meeting Water Quality Standards (the list of impaired waters) are required to have a plan to restore the waterbody back to meeting its water quality goals for the impaired designated use. Water Quality Action Plans (WQAPs) can also be developed to protect waters that are meeting WQS from becoming degraded through a Protection Plan. CT has developed many types of WQAPs. For more information about CT WQAPs visit the [Connecticut Water Quality Action Plan](#) webpage.

The [Water Quality Plans and Assessments Online Web Mapping Application](#) is an interactive way to view the assessment status and WQAPs that are associated with each waterbody and is updated each cycle. The information is also offered in table format on the [IWQR webpage](#).

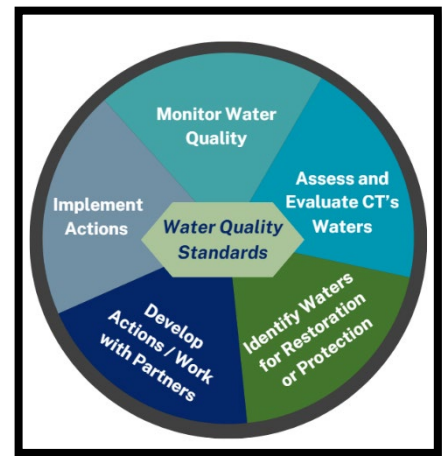


Figure 3. The Water Quality Planning Process in CT.

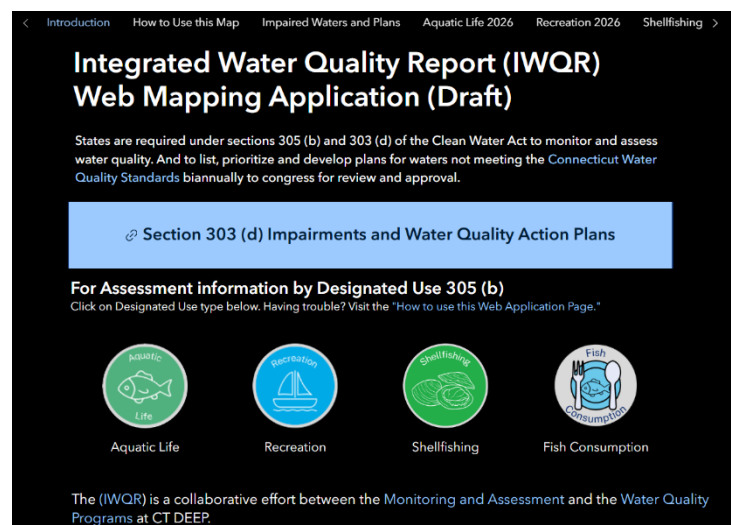


Figure 4. The IWQR Web Mapping Application.

Public Input and Communication IWPM and Water Quality Plans

In addition to reporting the status of the health of CT waterbodies, and developing WQAPs, CT is required to develop a planning process to address impaired waters, called Integrated Water Planning Management. This is a long-term planning process which spans the course of 10 years. Through public outreach and engagement, topics are chosen for WQAP development. The list of these plans and waterbodies can be found in Appendices C-1 of the IWQR.

Water Quality Health in Connecticut

CT Rivers and Streams. Appendix A-1 of the IWQR details the results of water quality health for CT's Rivers and Streams for each reporting cycle. In general, water quality in most rivers is sufficient in CT to support fish and other aquatic life communities. Aquatic life impairments can be caused by excess nutrients, altered streamflow, runoff from developed areas, or a mixture of all three. The most common water quality problem in rivers is bacteria where levels exceed WQS for recreation. Elevated bacteria levels indicate the potential risk of encountering pathogens from humans and/or animals while swimming or boating, which can cause illness.

Lakes. Appendix A-2 of the IWQR details the results of water quality health for CT's Lakes for each reporting cycle. Most of CT's lakes have water quality that is supportive for aquatic life habitat. Excess levels of nutrients can cause cyanobacteria (blue green algae) blooms and multiply rapidly under the right conditions and often produce a toxin that is harmful to humans and pets. These conditions impact both recreational and aquatic life use supports. Recreational use impairments can also be caused by elevated bacteria levels in lakes.

Marine Waters. Appendix A-3 of the IWQR details the results of water quality health for CT's Lakes for each reporting cycle. Impairments in marine waters are mostly due to low dissolved oxygen (called hypoxia) in Long Island Sound and the coastal embayments also due to excess nutrients. Water quality does not support fish or other aquatic life during the summer months under these conditions. The Long Island Sound Water Quality and Hypoxia Monitoring Program conducts studies and surveys to identify annual trends and differences in various water quality parameters and general conditions of LIS waters.

Legacy pollution in the sediments from industrial use in some harbors can also contribute to water quality impairments.

CT State Beaches. Samples are collected weekly by DEEP staff and are analyzed at the Department of Public Health (DPH) to ensure they meet WQS to support recreational activities. The **State Swimming Water Quality Report** provides information for state owned beaches in CT State Parks.

Fish Consumption. Appendix A-4 of the IWQR details the results of water quality health for Fish Consumption for each reporting cycle. Please refer to the CT Department of Public Health's Fish Consumption Advisory for more information on safely eating fish caught in Connecticut.

Related DEEP Programs

- [Connecticut Water Quality Standards](#)
- [Connecticut Integrated Water Planning Management](#)
- [Connecticut Action Plans for Water Quality Restoration and Protection](#)
- [Connecticut DEEP Water Monitoring and Assessment Program](#)