Department of
ENERGY & ENVIRONMENTAL PROTECTION

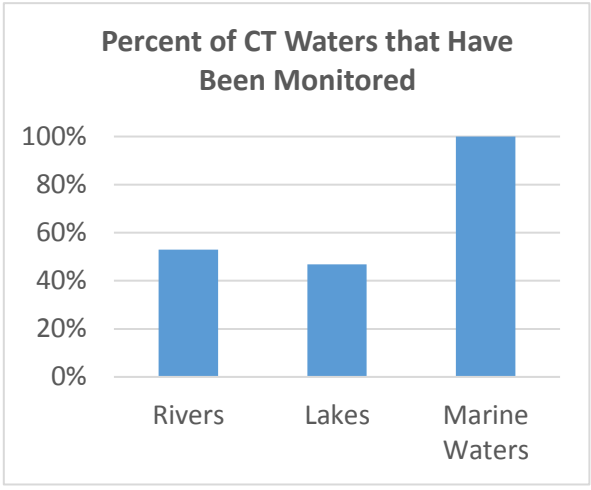
2018 Connecticut Integrated Water Quality Report (IWQR) Factsheet

Why is this report important?

Water is a critical natural resource. In Connecticut, there are nearly 6,000 miles of rivers and streams, 425 major lakes and ponds, 82 coastal harbors and bays, and the world-renowned Long Island Sound. By federal law, each state must monitor, evaluate, and report the quality of its waters every two years. The IWQR is the summary of these assessments and serves as a report card on water quality in Connecticut. The report includes information on which waters are not meeting standards, where water quality is improving, and where it is getting worse. This information is useful for the public to decide where to recreate, for municipalities to prioritize water management projects, and for CT DEEP and watershed organizations to plan for restoration or protection actions. The findings of this report also influence permitting decisions by CT DEEP and the U.S. Environmental Protection Agency.

What information is considered for this report?

Scientists from CT DEEP use data collected by the Department and by other government, private, and volunteer organizations to determine if a waterbody is healthy or impaired. A wide variety of data are considered, including physical measurements made out in the field and chemical and biological test results from laboratories. Over a million individual test results are included, covering about half of all lakes and rivers and all marine waters. The results are carefully reviewed to ensure that they are accurate and that there are enough measurements from a waterbody to be representative. Then, the data are compared to the Connecticut Water Quality Criteria and Standards to determine whether the waterbody is healthy or impaired.



Are Connecticut's waters safe for swimming, boating, fishing, and supporting fish and aquatic life?

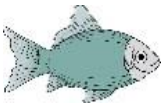
Water quality assessments are made based on the different uses of the water body. The major uses considered are recreating (e.g., swimming and boating), supporting aquatic life, and consuming fish caught in the waterbody. The graphs on this page show the percent of Connecticut's rivers, lakes, and marine waters where the water quality meets standards to support these uses. These charts are based on the waters that have been monitored in some way, not all waters in the state.

Rivers and Streams. The water quality in most rivers is sufficient to support fish and other aquatic life. In the segments where the aquatic life use is not supported, the causes are likely excess nutrients, altered streamflow, runoff from developed areas, or a mixture of all three.

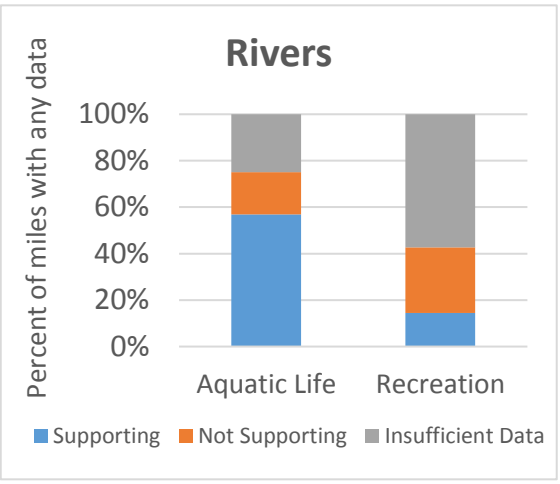
In a few cases, we know for sure that excess nutrients are a contributing factor thanks to a new assessment methodology (see next page). The most common water quality problem in rivers is not meeting bacteria standards for recreation. Elevated bacteria levels indicate that there is a risk of coming in contact with pathogens from humans and animals while swimming or boating.

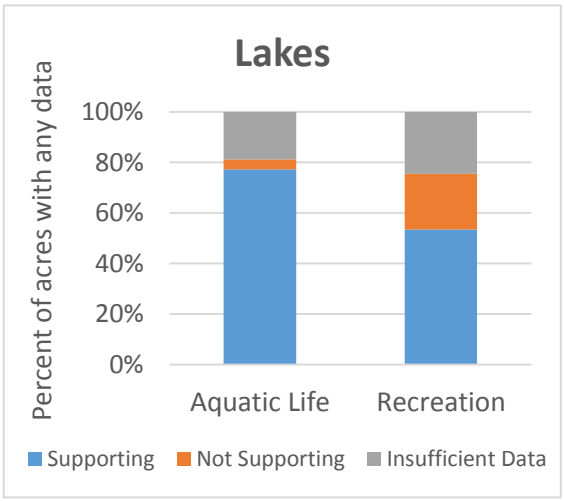
Lakes. The vast majority of lakes have water quality that is supportive of aquatic life. Approximately a quarter of lakes were found to not support recreational use some of the time. Elevated bacteria is one cause. Another cause is cyano-bacteria (blue green algae) blooms. Cyanobacteria can multiply rapidly under the right conditions and often produce a toxin that is harmful to humans and pets.

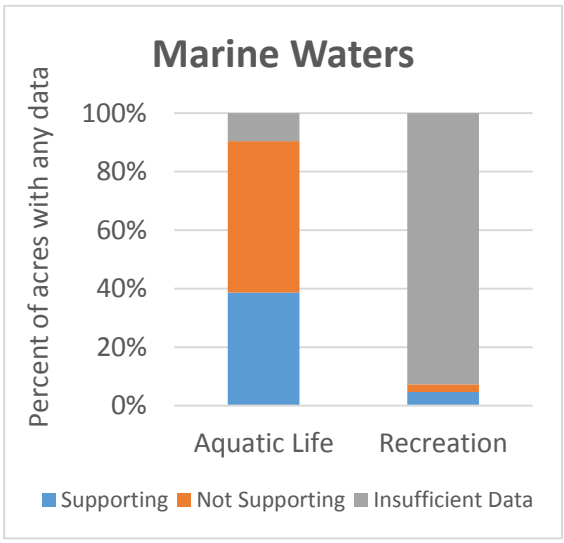
Marine Waters. Water quality does not support fish or other aquatic life during the summer in over 50% of marine waters. These impairments are mostly due to low dissolved oxygen in the Sound and the coastal embayments, which is caused by excess nutrients. Legacy pollution in the sediments in some harbors also contributes to the problem. For the recreational use, sufficient monitoring data are only available in a few areas. The state beaches on the coast are tested weekly and consistently meet standards.

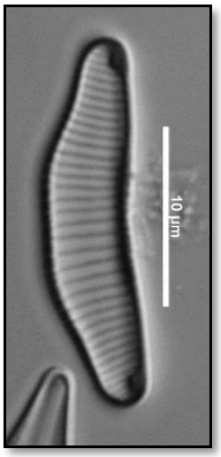


Fish Consumption. The graphs on this page do not show the assessment results for fish consumption. This is because fish consumption is limited for all Connecticut waters due to a statewide fish consumption advisory. Please refer to CT DEEP website for the most recent *Fishing Guide* or to the CT Department of Public Health's Fish Consumption Advisory for more information on safely eating fish caught in Connecticut.









Eunotia implicata is a diatom that is sensitive to excess TP in streams making it a useful indicator of natural conditions

What is new in the 2018 report?

New Methodology Determines Impairments Caused By Excess Phosphorus

CT DEEP led an extensive effort under Connecticut Public Act 12-155 to evaluate the impact and control of total phosphorus (TP) in freshwater streams. DEEP developed a new methodology to identify where TP should be considered a cause of aquatic life impairments. The approach uses a combination of three measures: the overall health of the stream, whether TP concentrations exceed thresholds, and the relative abundance of certain types of algae (diatoms) that are sensitive to TP. The methodology is an important new tool because it allows DEEP to objectively identify streams where phosphorus concentrations are too high. More information can be obtained in Appendix A-5 of the IWQR.

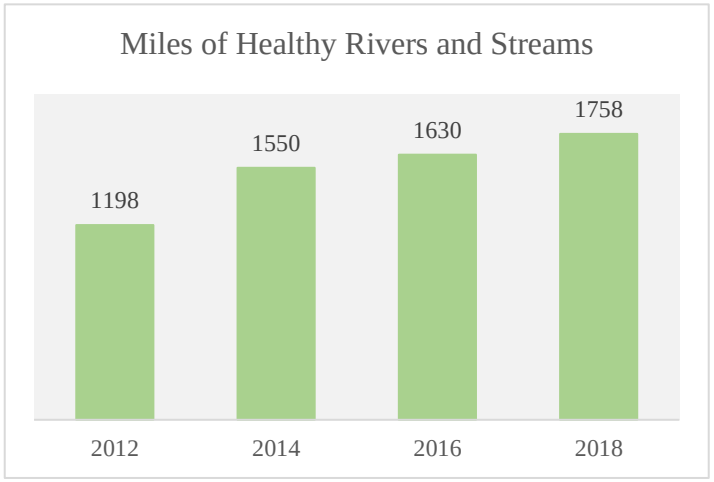
Trail Cameras Identify Stream Impairments Due to Low Flows

CT DEEP is using hourly photographs taken with trail cameras to monitor when human alterations of stream flow limit the habitat for fish and other aquatic life in a stream. This method documents when water levels in a stream get dry or exceptionally low. Observations on unimpacted streams are used to distinguish between natural flow variation and man-induced alterations. Using this method, CT DEEP has documented additional flow-impaired river sections: from 34 miles in 2014 to 159 miles in 2018.

Trail camera monitoring stream flow conditions captures a dry stream in Northwestern Connecticut

Targeted Monitoring Identifies More Healthy Streams in Connecticut

The miles of documented healthy rivers and streams has been increasing because CT DEEP has been using models to predict which stream reaches are likely to be healthy but have not yet been tested. Data are collected from these reaches by the CT DEEP Monitoring Program as well as the Volunteer Stream Monitoring Program. The targeted sampling has increased in the number of miles of documented healthy streams from 1,198 in 2012 to 1,758 in 2018. This represents a 47% increase in documented healthy streams over a 6-year period.



How can I get more information and get involved?

The most recent and past Integrated Water Quality Reports are available at www.ct.gov/deep/iwqr.

The following webpages have more information about related CT DEEP Programs:

- Connecticut Water Quality Standards: www.ct.gov/deep/wqsc
- Connecticut Integrated Water Resource Management Plan: www.ct.gov/deep/iwrm
- Connecticut Action Plans for Water Quality Restoration and Protection: www.ct.gov/deep/tmdl
- Connecticut DEEP Water Monitoring Program: www.ct.gov/deep/watermonitoring

If you have water quality data for CT DEEP to consider for the next IWQR, please contact us at (860) 424-3735. We can only use data that:

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

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 the volunteer water monitoring webpage: www.ct.gov/deep/volunteerwatermonitoring.