

Water Quality Exchange (WQX)

A Need for the Network

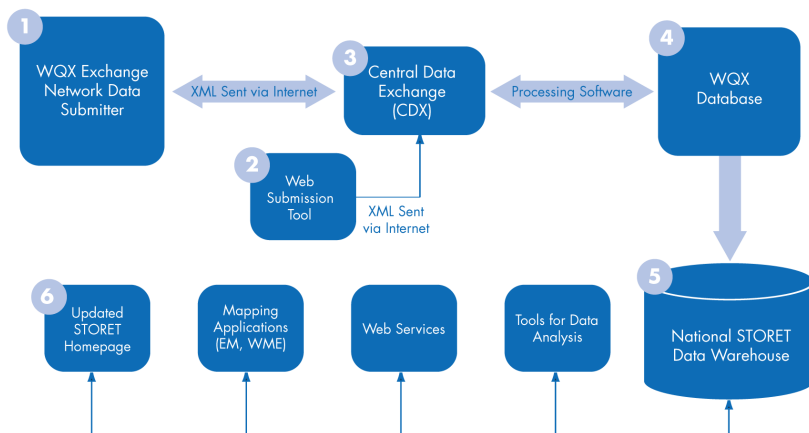
Access to comprehensive water quality information is indispensable for managing and protecting water resources. However, timely and accurate information can be difficult to come by since water monitoring data are collected by a wide range of organizations with different information systems that are often incompatible.

The U.S. EPA worked to overcome this data access problem by developing the National STORET Data Warehouse. The warehouse serves as a one-stop shop for water quality data collected by federal agencies, states, tribes, watershed organizations, and universities. It has been instrumental in encouraging data sharing and helps to support analyses of water quality data collected around the country.

In recent years, STORET has presented some challenges for EPA and its users because it requires all contributors to install and operate their own copy of the database. With copies in place throughout the country, updates and changes to STORET became increasingly difficult to manage. Some potential contributors chose not to participate because of the technical challenges associated with maintaining and sending their data. EPA, states, and tribes sought a better way of doing business that would ease data sharing and open up millions of additional water monitoring results for analysis.

An Exchange Network Solution

The technology and standards of the Exchange Network offered a more user-friendly solution for sharing water quality information. Working with a group of states and tribes, the EPA Office of Water developed the Water Quality Exchange (WQX). WQX allows states, tribes, and other partners to store their water quality information in any format or database they choose. After a straightforward conversion of the data to XML—the standard language of the Exchange Network—they can use their Exchange Network Nodes to automatically share the information with EPA. All of the data is automatically processed by EPA's Central Data Exchange (CDX) and then deposited in the STORET warehouse. Once there, water quality managers across the nation can access the information through the Internet.



The automated processes of WQX simplify the sharing of water quality information and make it available for use in a wide range of analytical products and services.

Better Information for Better Decisions

The standards and simplicity of WQX are already paying enormous dividends. Current contributors to the STORET warehouse are working with EPA to transition away from using the distributed database in favor of the simpler WQX model. Most importantly, new contributors are joining the WQX fold and filling gaps where data was previously unavailable. For example, the state of Wisconsin has added 18,500 monitoring locations and over 1.6 million results since implementing WQX. Similarly, Texas added 8,500 new monitoring locations and over 3.5 million results.

In addition, smaller organizations now have a much greater incentive to make their monitoring data available, since WQX helps to lower technical barriers to participation. Many tribes that monitor water quality are now able to share their information more easily than ever before. The door is also open wider for more watershed organizations, universities, municipal agencies, and other partners to begin contributing to the STORET warehouse.

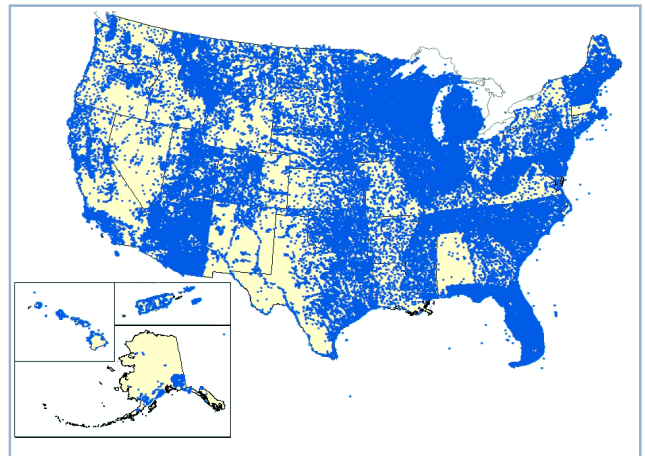
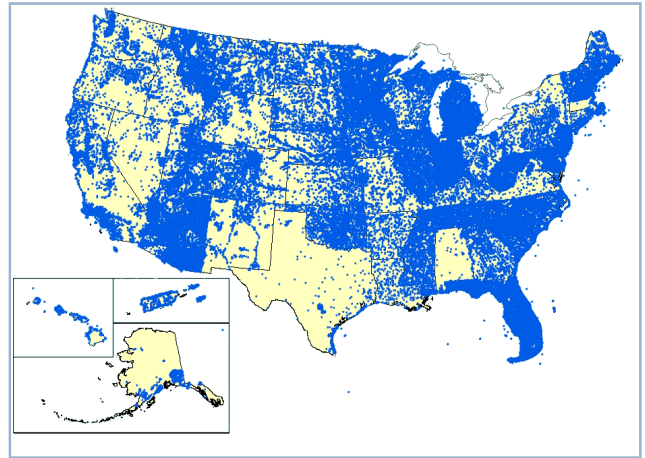
Exchange Network technologies will also make it easier to get rich sets of information out of STORET. EPA plans to offer new services that will allow users to incorporate data from STORET into their own specialized applications for water quality modeling, data analysis, priority setting and decision making, or dissemination of public information. In the near future, these data sharing capabilities will extend to the full range of available water quality information in STORET, including biological, physical habitat, and toxicity data.

The Exchange Network and WQX are blowing the lid off of water quality information that has been trapped in disparate data systems. Timelier and more comprehensive information is now at the ready to help water quality managers and the public make better decisions about our environment.

Learn More

To learn more about how your organization can use the WQX and the STORET warehouse, please visit the Exchange Network website at:

<http://www.exchangenetwork.net/exchanges/water/wqx.htm>.



Each blue dot on these maps indicates the location of a water quality monitoring station in STORET. The bottom map depicts the effect of Wisconsin and Texas joining WQX and adding data from a combined 27,000 stations.