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The Hydrologic Benchmark Network

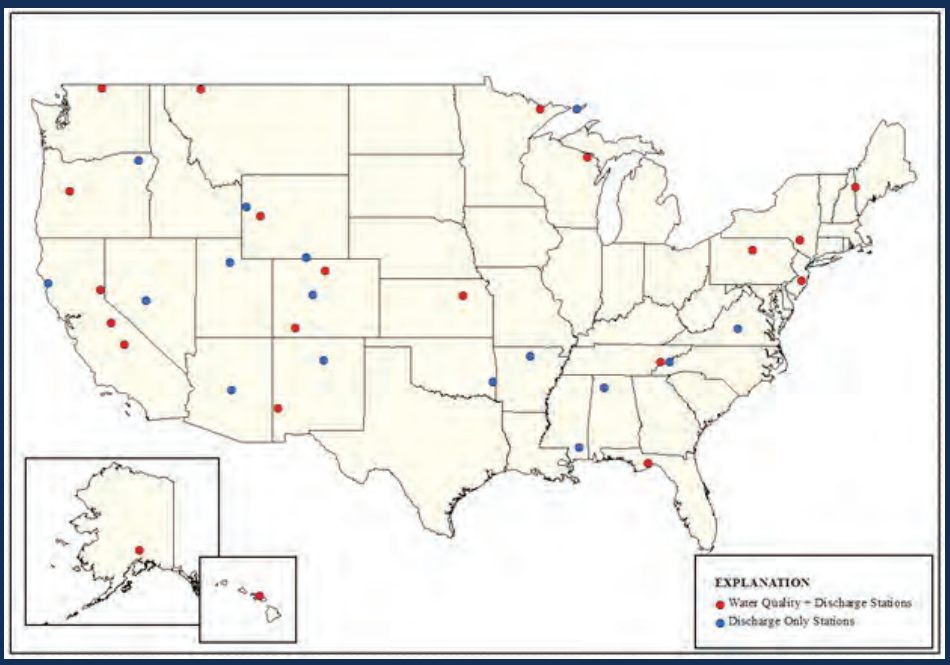
In the ever-changing landscape of the North American continent, there are few medium to large-scale rivers that remain largely undisturbed

Summary

The Hydrologic Benchmark Network (HBN) consists of 37 watersheds that provide long-term measurements of streamflow and water quality in areas that are minimally affected by human activities. In 2011 measurements of aquatic biology and soil chemistry were added to the network. All of these data are used to study long-term trends in surface water flow, water chemistry, aquatic biology, and soil chemistry and as a benchmark against which to compare changes in flow and chemistry in developed watersheds.

In 1962, Luna B. Leopold, then Chief Hydrologist of the U.S. Geological Survey (USGS), proposed the establishment of a network of "hydrologic benchmarks" on the nation's rivers (Leopold, 1962). The main purpose of the Hydrologic Benchmark Network (HBN) is to provide a long-term database to track changes in the flow and water quality of undisturbed streams and rivers (rivers draining undeveloped lands), and to serve as a reference for discerning natural from human-induced changes in river ecosystems. In the ever-changing landscape of the North American continent, there are few medium- to large-scale watersheds that remain largely undisturbed. The HBN is the only nationwide network of environmental monitoring stations that tracks the health of rivers draining medium sized, undisturbed basins in the United States. HBN watersheds range in size from 2 mi2 to 254 mi2 though one watershed has an area close to 2,000 mi2. HBN watersheds are larger than typical research watersheds in which most ecosystem research is conducted, but are small enough to be responsive to anthropogenic atmospheric inputs and climate change. The HBN thus provides a frame of reference to evaluate changes in river chemistry and flow patterns in large or developed watersheds, such as those commonly sampled as part of State and Federal monitoring programs.
Website: http://water.usgs.gov/hbn/

Locations of Hydrologic Benchmark Network Watersheds



Related Publications

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Lake Odessa in the Big Thompson River Watershed, Colorado

Young Woman's Creek, Pennsylvania

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