

Recent Revisions to the Design of the National Stream Quality Accounting Network

Charles G. Crawford
U.S. Geological Survey
5957 Lakeside Boulevard
Indianapolis, IN 47278

ABSTRACT

The U.S. Geological Survey is implementing a Federal Surface-Water-Quality Fixed Station Network (“the Network”), of which the National Stream Quality Accounting Network (NASQAN) Program represents the large rivers component. As part of establishing this Network, the design and operation of the NASQAN program were reviewed and revised. The Network contributes to meeting the objectives of several National programs, including measuring the quality of water at the terminus of large watersheds entering receiving waters, as needed by the Integrated Ocean Observing System, the proposed U.S. Ocean Action Plan National Monitoring Network, and the Mississippi River/Gulf of Mexico Nutrients Task Force. Thus, the mission of NASQAN was determined to be annually monitoring and assessing concentrations and loads of selected constituents delivered by major rivers to coastal waters of the U.S., and to monitoring and assessing selected inland sub-basins in priority river basins that contribute significantly to adverse conditions in receiving waters. Periodic summaries and trend analyses at national and large-basin scales are planned. Specific national-scale objectives of NASQAN are to assess (1) concentrations and annual loads of nitrogen, phosphorus, carbon, silica, dissolved solids, selected pesticides, and suspended sediment to coastal waters of the U.S.; and, (2) changes in concentrations and loads of these constituents through time. National objectives are accomplished at 13 sites through bimonthly sampling, supplemented by 6 samples representing variable hydrologic and seasonal conditions. The 13 sites account for about 80 percent of the streamflow, suspended sediment, total nitrogen, and total phosphorus discharging to coastal waters from the conterminous U.S. Additional NASQAN objectives, specific to the Mississippi and Atchafalaya River Basins (MARB) and hypoxia in the Gulf of Mexico, are to determine (1) seasonal loads of total and dissolved nutrients from the MARB to the Gulf of Mexico; (2) concentrations and annual loads of total and dissolved nutrients in major sub-basins and selected smaller watersheds within the MARB; and, (3) changes in loads and concentrations of constituents through time in major sub-basins and selected watersheds within the MARB. These objectives are accomplished at 18 sites in the MARB.

KEYWORDS

coastal rivers, Mississippi River Basin, monitoring networks, NASQAN, water quality.