



Monitoring Large Rivers in the National Stream Quality Accounting Network (NASQAN)

Surface-Water-Quality Networks—The Office of Water Quality of the U.S. Geological Survey (USGS) maintains three surface-water networks that are intended to provide stakeholders with reliable information over time for a fixed set of stations.

Large rivers and the quality of water at the terminus of large watersheds entering receiving waters are monitored routinely at 32 stations through the National Stream Quality Accounting Network (or “NASQAN”) and at 5 stations through the National Monitoring Network, as needed by the Integrated Ocean Observing System and the proposed U.S. Ocean Action Plan (see inset). Smaller rivers and streams are monitored at 113 stations through the National Water-Quality Assessment (NAWQA) Program “Status and Trends” network, which consists of 113 sites across the Nation (see inset).

Five sites are monitored as part of the National Monitoring Network

Brazos River near Rosharen, TX
Mississippi R. above Vicksburg, MS (at mile 438)
Apalachicola R near Sumatra, FL
Delaware R. at Trenton, NJ
Hudson River below Poughkeepsie, NY

NASQAN—This information sheet describes the 5-year (2008-2013) mission, objectives, and locations of the NASQAN large rivers component of the Network. The NASQAN network has a long history (since 1973) and several re-designs over the 35 years. Information on NASQAN can be accessed at <http://water.usgs.gov/nasqan/> and <http://pubs.usgs.gov/dds/wqn96cd/html/report/contents.htm>.

Since its peak of operation with about 500 sites (1980s), and beginning in 2008, the NASQAN network was reduced to 32 stations. The mission of NASQAN, however, remains the same, which is to annually monitor and assess concentrations and loads of selected constituents delivered by major rivers to coastal waters of the U.S., and to monitor and to identify major source areas in selected inland sub-basins that contribute significantly to adverse conditions in receiving waters.

National-scale objectives of NASQAN are to assess: (1) concentrations and 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 stream flow, suspended sediment, total nitrogen, and total phosphorus discharging to coastal waters from the conterminous U.S.

Additional NASQAN objectives, specific to the Mississippi River Basin and hypoxia in the Gulf of Mexico, are to determine (1) seasonal loads of total and dissolved nutrients from the Mississippi River Basin to the Gulf of Mexico; (2) concentrations and loads of total and dissolved nutrients in major sub-basins and selected smaller watersheds within the Mississippi River Basin; and, (3) changes in loads and concentrations of constituents through time in major sub-basins and selected watersheds within the Mississippi River Basin. Objectives for the Mississippi River Basin and Gulf are accomplished at 19 sites in the Basin. The information is directly relevant to the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force (<http://www.epa.gov/msbasin/taskforce/index.htm>).

NASQAN findings describe concentrations and constituent transport and delivery of loads over time, as well as possible linkages to basin characteristics, natural and human sources, and land activities through periodic summary and trend analyses at national and large-basin scales.

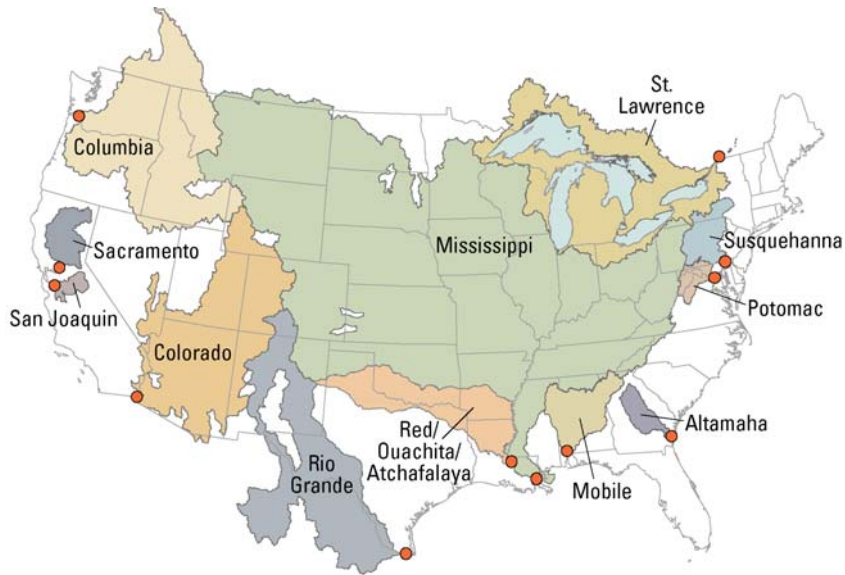
Rivers and streams also are monitored by NAWQA

NAWQA surface-water fixed sites (113) vary in the degree to which they are monitored and the land uses they represent. A brief description and map of these sites are at http://water.usgs.gov/nawqa/studies/mrb/mrb_sites.html.

Twelve of the 113 sites represent agricultural and urban “core” sites, and are used to monitor conditions in rivers that drain agricultural areas in 8 major river basins and urban areas in 4 of the major river basins. These sites are measured frequently to assess intra-annual variations, generally between 12-22 times each year.

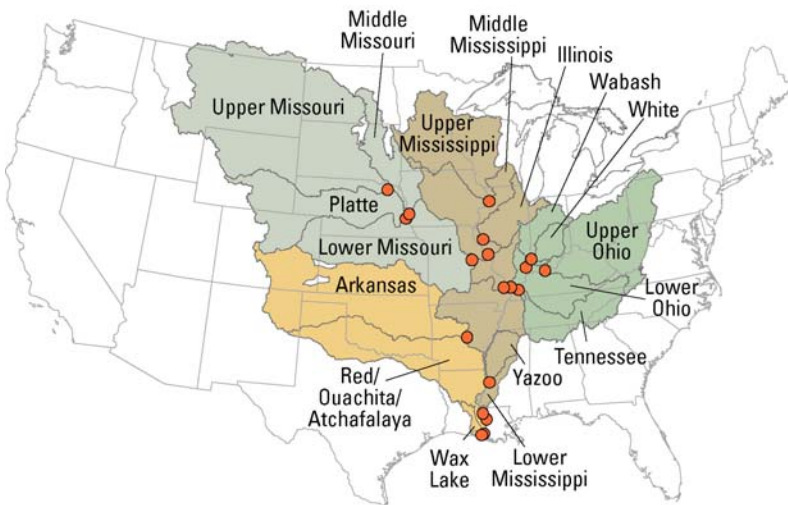
The remaining sites are used to monitor smaller agricultural and urban watersheds and are sampled on a rotational schedule, varying every 2 to 4 years. More detailed information on this network can be accessed at: http://water.usgs.gov/nawqa/studies/mrb/mrb_factsheet.pdf

(See maps on back)



- Susquehanna River at Conowingo, MD
- Potomac River at Chain Bridge at Washington, DC
- St. Lawrence River at Cornwall, Ontario, near Massena, NY
- Altamaha River near Everett City, GA
- Mobile River at Mt. Vernon, AL
- Mississippi River at Belle Chasse, LA
- Atchafalaya River at Melville, LA
- Rio Grande near Brownsville, TX
- Colorado River at NIB, above Morelos Dam, AZ
- San Joaquin River near Vernalis, CA
- Sacramento River at Freeport, CA
- Columbia River near Beaver Army Terminal, OR
- Yukon River at Pilot Station, AK

Flow, concentrations, and loads are measured at 13 sites discharging to coastal waters of the U.S. (above). Flow, concentrations, and loads are measured in 19 priority sub-basins within the Mississippi River Basin that contribute significantly to adverse conditions in the Gulf of Mexico (below).



- Ohio River at Cannelton Dam at Cannelton, IN
- White River at Hazleton, IN
- Wabash River at New Harmony, IN
- Tennessee River at Hwy 60 near Paducah, KY
- Ohio River at Dam 53 near Grand Chain, IL
- Mississippi River at Clinton, IA
- Illinois River at Valley City, IL
- Mississippi River Below Grafton, IL
- Missouri River at Yankton, SD
- Missouri River at Omaha, NE
- Platte River at Louisville, NE
- Missouri River at Hermann, MO
- Mississippi River at Thebes, IL
- Arkansas River at David D Terry Lock and Dam below Little Rock, AR
- Yazoo River below Steele Bayou near Long Lake, MS
- Mississippi River near St. Francisville, LA
- Mississippi River at Baton Rouge, LA
- Wax Lake Outlet at Calumet, LA
- Atchafalaya River at Morgan City, LA

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