



Water-Quality Monitoring and Modeling in the Mississippi and Atchafalaya River Basin

Surface-Water-Quality Networks—The U.S. Geological Survey (USGS) maintains several surface-water-quality networks that are intended to provide stakeholders with reliable long-term information for a fixed set of stations in the Mississippi and Atchafalaya River Basin (MARB).

Large rivers are sampled 12 times per year at 17 stations through the National Stream Quality Accounting Network (NASQAN) and at 1 station through the proposed National Monitoring Network (NMN, <http://acwi.gov/monitoring/network/>). Smaller rivers and streams are sampled from 6 to 26 times per year at an additional 37 stations through the National Water-Quality Assessment (NAWQA) Program “Status and Trends” network. Unlike NASQAN/NMN stations, only a subset of NAWQA stations are sampled every year. The remainder are sampled every other or every fourth year. Constituents measured by the NASQAN program are also measured at 5 NAWQA stations on large rivers that are sampled annually.

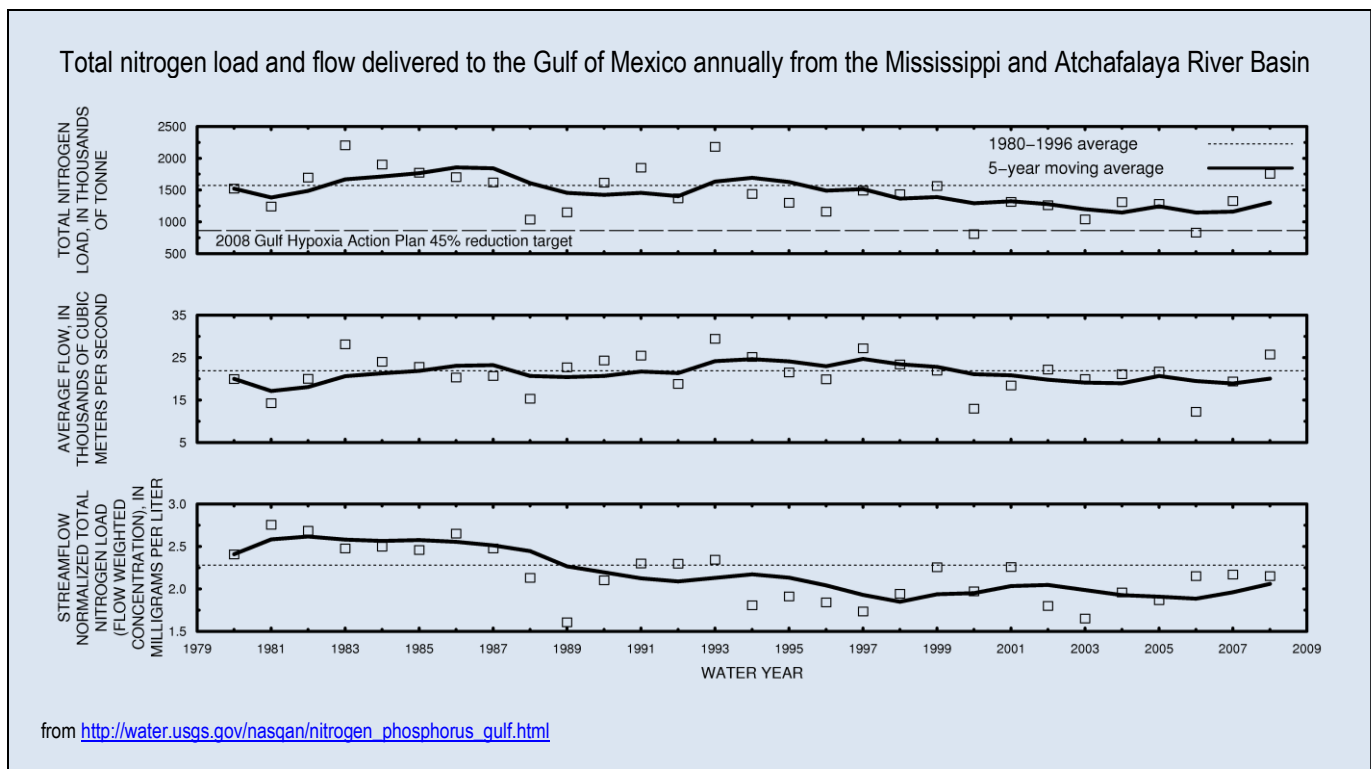
NASQAN and NMN Monitoring Objectives—NASQAN objectives for the MARB are to determine (1) annual and seasonal loads (the amount of a constituent transported by a river during a given period of time) of total and dissolved nutrients from the Mississippi River Basin to the Gulf of

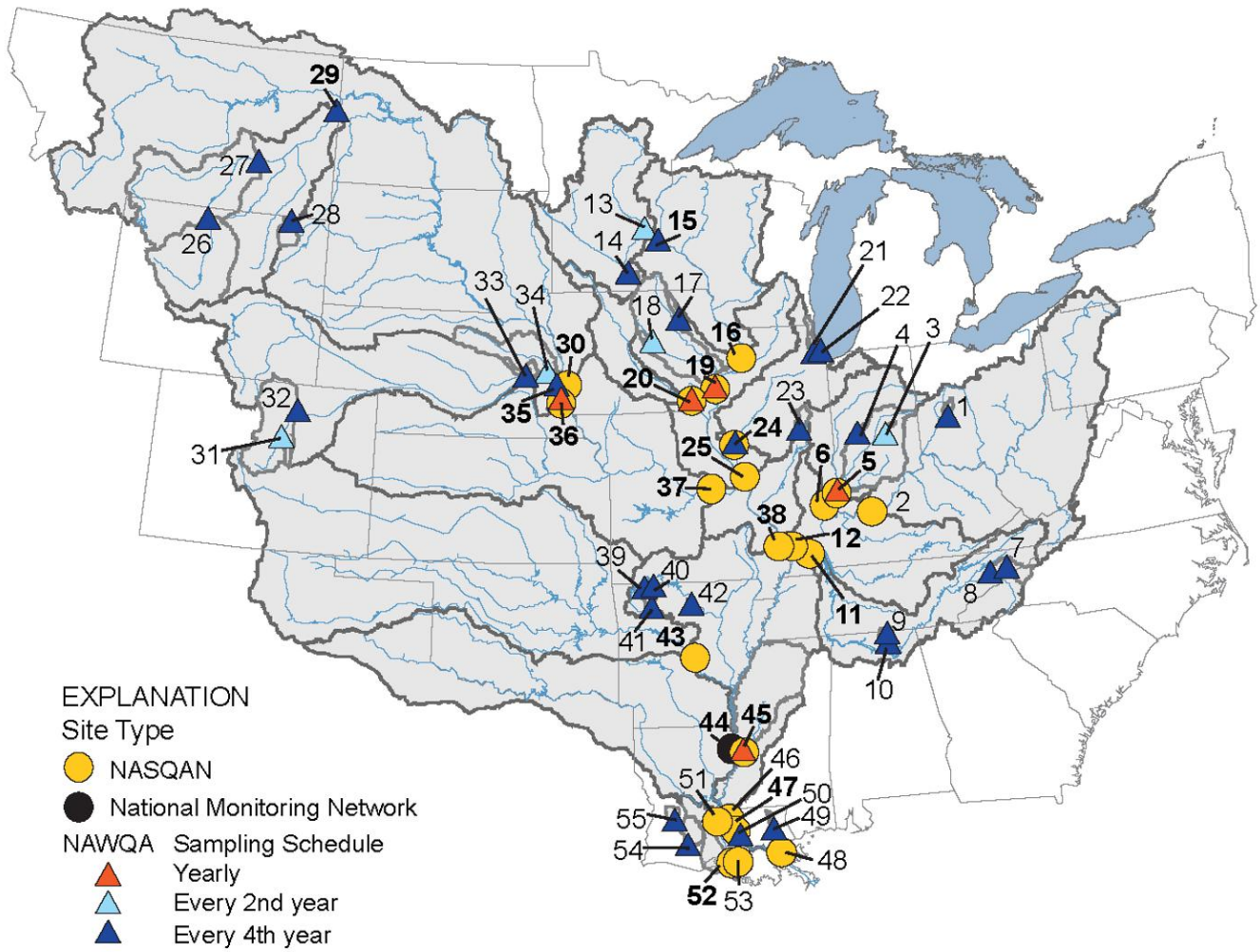
Mexico; (2) concentrations and loads of total and dissolved nutrients, organic and inorganic carbon, and selected pesticides in major sub-basins and selected smaller watersheds in the Mississippi River Basin; and (3) changes in loads and concentrations of these constituents through time (<http://water.usgs.gov/nasqan/>). Much of this information is directly relevant to the Mississippi River Gulf of Mexico Watershed Nutrient Task Force (<http://www.epa.gov/msbasin/>).

NAWQA Monitoring Objectives—NAWQA objectives differ from those of NASQAN and are to (1) characterize the concentrations of nutrients and selected pesticides in rivers and streams; (2) determine long-term trends and changes in nutrient and selected pesticide concentrations in rivers and streams; and (3) characterize the ecological condition of selected wadable streams (<http://water.usgs.gov/nawqa/studies/mrb/>).

Modeling—The USGS SPARROW (SPATIally Referenced Regression On Watershed attributes) model is being used to extrapolate information to unmonitored locations in the MARB. Three regional-scale models are being developed for major hydrologic regions in the MARB (the Great Lakes, Ohio, Upper Mississippi, and Souris-Red-Rainy; Missouri; and Lower Mississippi, Arkansas-White-Red, and Texas-Gulf). These models are being used to assess relations between nutrient concentrations and loads as a function of human and natural factors at the regional scale (http://water.usgs.gov/nawqa/sparrow/mrb/sparrow_mrb.html).

(See map on back for sampling locations)





EXPLANATION

Site Type

● NASQAN

● National Monitoring Network

NAWQA Sampling Schedule

▲ Yearly

▲ Every 2nd year

▲ Every 4th year

21 Basin ID number

Stations in bold indicate a station at or near a proposed National Monitoring Network site

- 1--Mad River near Eagle City, OH
- 2--Ohio River at Cannelton Dam, KY
- 3--Sugar Creek at New Palestine, IN
- 4--Big Walnut Creek near Roachdale, IN
- 5--White River at Hazleton, IN**
- 6--Wabash River at New Harmony, IN**
- 7--Big Limestone Creek near Limestone, TN
- 8--Nolichucky River near Lowland, TN
- 9--Hester Creek near Plevna, AL
- 10--Flint River near Brownsboro, AL
- 11--Tennessee River at Highway 60 near Paducah, KY**
- 12--Ohio River at Dam 53 near Grand Chain, IL**
- 13--Shingle Creek at Minneapolis, MN
- 14--Little Cobb River near Beauford, MN
- 15--Mississippi River at Hastings, MN**
- 16--Mississippi River at Clinton, IA**
- 17--Wapsipinicon River near Tripoli, IA
- 18--South Fork Iowa River near New Providence, IA
- 19--Iowa River at Wapello, IA**

- 20--Des Moines River at Keosauqua, IA**
- 21--Salt Creek at Western Springs, IL
- 22--Des Plaines River at Riverside, IL
- 23--Sangamon River at Monticello, IL
- 24--Illinois River at Valley City, IL**
- 25--Mississippi River below Grafton, IL**
- 26--Bighorn River at Kane, WY
- 27--Yellowstone River at Forsyth, MT
- 28--Little Powder River near Weston, WY
- 29--Yellowstone River near Sidney, MT**
- 30--Missouri River at Omaha, NE**
- 31--Cherry Creek at Denver, CO
- 32--South Platte River near Kersey, CO
- 33--Shell Creek near Columbus, NE
- 34--Maple Creek near Nickerson, NE
- 35--Elkhorn River at Waterloo, NE**
- 36--Platte River at Louisville, NE**
- 37--Missouri River at Hermann, MO**
- 38--Mississippi River at Thebes, IL**
- 39--Kings River near Berryville, AR
- 40--Yocum Creek near Oak Grove, AR

- 41--Buffalo River near Boxley, AR
- 42--North Sylamore Creek near Fifty Six, AR
- 43--Arkansas River at David D. Terry Lock and Dam below Little Rock, AR**
- 44--Mississippi River at River Mile 438, Above Vicksburg, MS**
- 45--Yazoo River near Long Lake, MS**
- 46--Mississippi River near St. Francisville, LA**
- 47--Mississippi River at Baton Rouge, LA
- 48--Mississippi River at Belle Chasse, LA**
- 49--Tchefuncte River near Covington, LA
- 50--Dawson Creek at Baton Rouge, LA
- 51--Atchafalaya River at Melville, LA
- 52--Wax Lake Outlet at Calumet, LA
- 53--Lower Atchafalaya River at Morgan City, LA**
- 54--Mermentau River at Mermentau, LA
- 55--Whisky Chitto Creek near Oberlin, LA

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