

Water-Quality Issues

The following water-quality issues have been identified in the Great Salt Lake Basins:

- Effects of stormwater runoff into streams from residential and commercial urban areas on water quality and aquatic biological communities
- Effects of urban and agricultural land use in ground-water recharge areas on ground-water quality
- Changes in aquatic biological communities as a result of changing land use and non-point pollution
- Sediments eroded from stream banks as a result of fluctuating streamflow, modification of land cover, hydrologic changes that result from road development, and urbanization
- High concentrations of nutrients from livestock grazing, feedlots, and natural factors that cause eutrophication, the process by which surface waters increase in biological productivity in response to nutrient enrichment
- Leachate from mine waste rock and possibly tailings in surface waters

Implementation

Initial project activities include planning and analysis of existing data during the first and second years. Intensive data collection and analysis will take place during the next 3 years and will be followed by a period of low-level assessment activities, mainly intermittent water-quality monitoring at selected sites and completion of reports detailing NAWQA activities.

Activity	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Planning and study design											
High-intensity monitoring											
Preparation of reports											
Low-intensity monitoring											

For More Information

Information on technical reports and hydrologic data related to the Great Salt Lake Basins NAWQA study can be obtained from:

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For information on all USGS reports and products (including maps, images, and computerized data), CALL 1-800-USA-MAPS.



NAWQA

National Water-Quality Assessment Program

Great Salt Lake Basins



U.S. Department of the Interior
U.S. Geological Survey

Communication and Coordination

Communication and coordination between U.S. Geological Survey (USGS) personnel and other interested scientists and land and water-management organizations are critical components of the NAWQA program. The liaison committee for the Great Salt Lake Basins study area has proved very effective in this process and consists of representatives from Federal, State, and local agencies, universities, and the private sector, who have water-resources responsibilities and interests.

Goals of NAWQA

The protection and enhancement of the quality of the Nation's ground-water and surface-water resources are high priority concerns of the public. Nationally consistent information on the status and trends of the Nation's water quality is needed to help determine the effectiveness of past programs and to provide a base of knowledge for future management decisions. The National Water Quality Assessment (NAWQA) was developed to meet these needs.

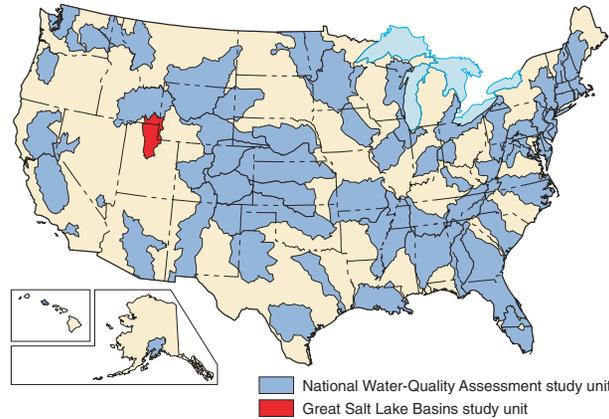


The long-term goals of the program are to:

- Provide a nationally consistent description of current water-quality conditions for a large part of the Nation's water resources.
- Define long-term trends (or lack of trends) in water quality.
- Provide a sound scientific understanding of the primary natural and human factors affecting water quality.



Design of NAWQA



NAWQA Study Units

NAWQA study units include parts of most major river and aquifer systems and represent the diverse geography, water resources, and land and water uses of the Nation. These study-unit investigations are the building blocks of the National assessment effort. The study units range in size from less than 1,000 to more than 60,000 square miles and represent the majority of the Nation's water use and population served by public water supplies. A NAWQA study for the Great Salt Lake Basins unit began in 1997 to assess the quality of the Bear, Weber, and Jordan River basins.



Sampling fish for analysis of contaminants.

Description of the Great Salt Lake Basins Study Unit

- Most of the 14,500 square miles of the Great Salt Lake Basins study unit is in Utah but some areas in Idaho and Wyoming also are included.
- Three major river systems that discharge into Great Salt Lake are included: the Bear, the Weber, and the Provo/Jordan.
- Average annual precipitation ranges from less than 12 to greater than 50 inches. About 85 percent of the annual precipitation occurs as snow.
- The study unit includes Utah's three largest cities (Salt Lake City, Ogden, and Provo) and about 1.6 million people, or 85 percent of the population of the State.
- The estimated total withdrawal of water (off-stream) in the study unit was 2,797 million gallons per day (Mgal/d) in 1995. Of the total, 418 Mgal/d (15 percent) was from ground-water sources (wells and springs) and 2,379 Mgal/d (85 percent) was from surface-water sources. Hydroelectric water use (on-stream) was estimated to be 3,633 Mgal/d in 1995.
- The elevation ranges from 4,200 feet to 12,000 feet above sea level.
- Surface- and ground-water quality along the Wasatch Front is most affected by urban and industrial land uses and wastewater treatment. Farming and livestock grazing on irrigated land most affect the water quality in the Bear River basin.

Type of water use	Estimated surface-water diversions (million gallons per day)	Estimated ground-water withdrawals (million gallons per day)	Total use (million gallons per day)
Irrigation	2,130 (94%)	139 (6%)	2,269
Public supply	193 (45%)	240 (55%)	433
Other ¹	56 (59%)	39 (41%)	95

¹Other is self-supplied domestic, self-supplied commercial, self-supplied industrial, and mining, fossil-fuel, and livestock/animal specialties.