



IOWA DEPARTMENT OF NATURAL RESOURCES

Water Supply News

Environmental Services

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Assessing the U.S. Climate: November 2017 Report

From NOAA

"The United States experienced its 7th warmest November and 10th warmest autumn, according to the National Oceanic and Atmospheric Administration’s National Centers for Environmental Information (NOAA-NCEI). In the [report](#), the national maps for temperature and precipitation are shown for the month, the season, and the year-to-date, with the rankings as compared with the past 122 years of data."

USGS - Groundwater Quality in the North: The Glacial Aquifer System

From USGS NAQWA News Release, 12/11/2017

Examining the largest source of groundwater for public and domestic supply in the Nation

"A [regional assessment](#) of untreated groundwater in the Glacial aquifer system, which includes parts of 25 states across the northern contiguous United States, is now available from the U.S. Geological Survey.

The Glacial aquifer system ranks first in the Nation as a source of groundwater for public and domestic supply, providing 2.6 billion gallons per day for this use. The aquifer underlies an area with a population of about 98 million people, nearly one third of the country’s population.

Scientists tested for hundreds of water-quality constituents and characteristics in samples of untreated groundwater from 90 public-supply wells throughout the aquifer. At least one inorganic constituent—principally the trace elements manganese, arsenic and strontium—was measured in groundwater at a concentration greater than its human-health benchmark (defined as a “high concentration”) in about one quarter of the study area. Manmade organic constituents, including pesticides and volatile organic compounds, were not detected in groundwater at high concentrations.”

USGS - Groundwater Quality in the Midwest: The Cambrian-Ordovician Aquifer System

From USGS NAQWA News Release, 12/11/2017

“A [regional assessment](#) of untreated groundwater in the Cambrian-Ordovician aquifer system, which includes parts of Minnesota, Wisconsin, Michigan, Iowa, Illinois, Missouri and Indiana, is now available from the U.S. Geological Survey.

The Cambrian-Ordovician aquifer system ranks ninth in the nation as a source of groundwater for public supply, providing 631 million gallons per day for this use. The aquifer underlies an area with a population of about 26 million people in parts of seven states and includes the metropolitan areas of Chicago, Illinois; Milwaukee, Wisconsin; and Minneapolis-St. Paul, Minnesota.

Scientists tested for hundreds of water-quality constituents and characteristics in samples of untreated groundwater from 60 public-supply wells throughout the aquifer. At least one inorganic constituent was measured in groundwater at a concentration greater than its human-health benchmark (defined as a “high concentration”) in 50 percent of the study area. Manmade organic constituents, which include pesticides and volatile organic compounds, were not detected at high concentrations. Radioactive constituents were present at high levels in groundwater in about 45 percent of the study area. Most of the radioactivity in groundwater comes from the decay of isotopes of uranium and thorium that are naturally present in minerals found in aquifer rocks.

“Nuisance” constituents—those that can affect water’s taste, color or odor—were present at high levels, meaning they exceeded the Environmental Protection Agency’s non-mandatory benchmarks, in 63 percent of the study area. Total dissolved solids, a measure of the salinity of groundwater, occurred at high levels in groundwater in 40 percent of the study area.”

USGS Interactive Maps – Decadal Trends in the Quality of the Nation’s Groundwater

USGS NAQWA News Release, 12/11/2017

“Between 2013 and 2022, the USGS National Water Quality Assessment (NAWQA) Project is assessing the quality of the nation’s groundwater by sampling about 2,300 shallow wells and 1,400 deep public-supply wells for a broad range of water-quality constituents. Information on USGS regional aquifer assessments can be found in a [USGS Featured Story](#).

Explore USGS interactive maps—[Decadal Trends in the Quality of the Nation’s Groundwater](#)”

For more information on the Glacial or Cambrian-Ordovician aquifer systems in the previous two articles, contact Paul Stackelberg, pestack@usgs.gov

Iowa Nutrient Reduction Strategy annual report now available

DES MOINES – Iowa State University, the Iowa Department of Agriculture and Land Stewardship and the Iowa Department of Natural Resources today highlighted the [Iowa Nutrient Reduction Strategy Annual Progress Report](#) that is now available.

"The annual report provides progress updates on point source and nonpoint source efforts to reduce nitrogen and phosphorus loads leaving the state. The Report follows the "logic model" framework that identifies measurable indicators of desirable change that can be quantified, and represents a progression toward the goals of achieving a 45-percent reduction in nitrogen and phosphorus loads leaving the state.

"There are a wide variety of factors that impact water quality and this report seeks to identify and quantify all of the work being done. We continue to see progress among all aspects of measures that have been identified, we just need to continue to accelerate and scale-up our efforts," said Iowa Deputy Secretary of Agriculture Mike Naig.

"We continue to focus highly on the main goal of water quality improvement and it is gratifying to see we are moving in that direction. A great deal of collaboration and cooperation has taken place which has enhanced and continues to enhance the partnerships and teamwork being done to successfully meet our end goals," said Iowa DNR Director Chuck Gipp.

The "logic model" framework recognizes that in order to affect change in water quality, there is a need for increased inputs, measured as funding, staff, and resources. Inputs affect change in outreach efforts and human behavior. This shift toward more conservation-conscious attitudes in the agricultural and point source communities is a desired change in the human dimension of water quality efforts.

With changes in human attitudes and behavior, changes on the land may occur, measured as conservation practice adoption and wastewater treatment facility upgrades. Finally, these physical changes on the land may affect change in water quality, which ultimately can be measured through both empirical water quality monitoring and through modeled estimates of nutrient loads in Iowa surface water.

"While it will take time to reach the 45 percent reduction goal, the indicators we track are moving in the right direction," said John Lawrence, interim vice president of extension and research at Iowa State University.

Highlights from the report include:

Inputs

- The report identifies \$420 million in private and public sector funding for NRS efforts, an increase of \$32 million compared to the previous year.
- Since 2013 the Iowa Nutrient Research Center has funded 54 projects with a primary focus on evaluating the performance of current and emerging in-field and edge-of-field practices to reduce nutrient loss.
- Of the 151 municipal wastewater plants and industrial facilities required to assess their nutrient removal capacity, 105 have been issued new permits and 51 of those have submitted feasibility studies on potential technology improvements to reduce nutrient loss.

Human

- Outreach events effectively doubled in the last year. In the latest reporting period, partner organizations reported 474 events focused on water quality with 54,500 total attendees.
- In 2017, 77% of farmers surveyed reported that they are knowledgeable about the NRS. This is a 9% increase from 2015.

Land

- Government cost-share programs enrolled 300,000 cover crop acres in 2016. Iowa has experienced a steady increase in cover crop acres since 2011, and statewide estimates (beyond just cost-share) indicate 600,000 acres were planted in 2016.
- Edge-of-field practices that address only nitrogen, such as bioreactors and nitrate-treating wetlands, are just starting to receive increased focus from cost-share programs.

Water

- Iowa has an extensive water quality monitoring system in place and at least 88% of Iowa's land naturally drains to a location with water quality sensors installed and maintained mainly by the Iowa Department of Natural Resources, University of Iowa—IIHR, and the US Geological Survey
- Water monitoring occurs at various scales, from edge-of-field to large watersheds. Long-term data will contribute to our understanding of local and statewide nutrient loss over time.

The report was compiled by the Iowa Nutrient Research Center at Iowa State University with support from the Iowa Department of Agriculture and Land Stewardship and the Iowa Department of Natural Resources. A draft of the report was shared with the Iowa Water Resources Coordinating Council in late September and their feedback was incorporated into the recently finalized report."