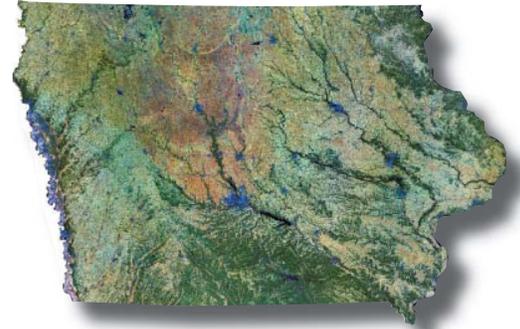




Our Common Ground

Iowa Department of Natural Resources

Iowa Geological Survey
Resource Information Fact Sheet 2005-1



Understanding Iowa's geology and hydrology provides the critical information needed to ensure that our natural resources are properly utilized and protected. Gaining this knowledge and helping Iowans apply it is the core function of your Iowa Geological Survey (IGS). The questions to be answered are many. How were Iowa's bedrock formations, glacial deposits, and alluvial materials deposited? How have they been altered, weathered, and eroded? Have these processes affected the availability, quality, and movement of groundwater? Where are mineral, aggregate, or energy resources found? What role do earth materials play in the function of healthy watersheds, and how do they impact stream quality? Where are geologic hazards such as sinkholes, slope failures, and fluctuating water tables likely to occur? How are societal activities, land use, and geology woven together to impact our natural resources?

Inventory and study of Iowa's soils, rocks, and water are the keys to understanding our resource base. IGS records water levels in wells and

examines how water-well pumping affects those levels. We monitor the quality of our streams, lakes, and groundwater. We study the hydrology of watersheds and relate these factors to geology and land use. Staff geologists map the extent and thickness of geologic deposits, as well as archive earth materials and records from tens of thousands of water wells. We map aquifer water levels, define the three-dimensional water supply zones for public wells, and assess their vulnerability to contamination. Our geographic specialists use remote sensing and aerial imagery to examine and interpret land uses and the land surface in detail. In addition we assemble geographically based data on land use, water bodies, soils, regulated facilities, infrastructure, and cultural features into electronic map layers within the Natural Resources Geographic Information System (NRGIS) Library.

Earth, water, landscapes, infrastructure, and land use data are integrated to provide accurate resource information to Iowans. By building partnerships with local, state, and federal interests, more informed

decisions are made at the watershed, county, and regional levels.

Data are available to you in many ways. The NRGIS Library and extensive databases for geology, wells, and water quality are available on our web site. IGS provides forecasts for water wells to the public, drillers, cities, and economic development projects, and interpretations of geology to state regulators and the affected community. Our greatest strengths are the technical expertise and experience of our staff – only a phone call away. A summary of our services and activities are on the reverse side of this sheet. It is my pleasure as State Geologist to invite you to contact us whenever you need information about what lies on and beneath *Our Common Ground*.

Robert D. Libra
State Geologist of Iowa

- **Private-public partnerships** between IGS and water well drillers, mineral exploration and energy companies, and geotechnical professionals have helped create Iowa's geologic data repository on the University of Iowa Oakdale campus. The rock library holds soil and rock cutting samples and other information from over 60,000 locations and wells across the state, along with data on groundwater levels and well and aquifer yields. These geohydrologic data are readily available through the on-line database Geosam (gsbdata.igsb.uiowa.edu/geosam).

- **Our staff is available** for geohydrologic consultation for water supply development, mineral extraction, and a wide range of assessments for resource and environmental management, economic development, and watershed enhancement activities.

- **Geologic mapping** of the state, counties, watersheds, and other pertinent areas is carried out to provide a better understanding of subsurface conditions.

- **The on-line NRGIS Library** and our GIS staff provide ready access to a growing collection of computer-based maps, aerial photography, and natural resource data layers. These range from soils to land use, hydrology to geology, roads to infrastructure, and census data to agricultural activities. The library is a powerful information source for natural resource evaluations, land-use planning, economic development, and watershed protection (www.igsb.uiowa.edu/nrgislibx).

- **Our rivers, lakes, beaches,** groundwater, and wetlands are monitored professionally to provide a comprehensive overview of the state's water quality. Data are analyzed to assess trends through time and regional differences in water quality. This information and other water quality data are available from the on-line database STORET (wqm.igsb.uiowa.edu/iastoret).

- **Iowa's citizens contribute** knowledge of the state's water quality through the volunteer monitoring program IOWATER. Data collected by these citizen monitors are available on-line from the IOWATER (www.iowater.net) and STORET databases.

- **Natural resource information** is increasingly made available through web-based interactive mapping applications. These "point and click" tools give users access to data layers used for watershed education and protection. Other applications include descriptions of regulated facilities, distribution of endangered species, and areas considered suitable for livestock burial. Interactive applications are also available for accessing data in Geosam and STORET. Go to www.iowadnr.gov and click on "Mapping (GIS Interactive)" for all publicly available interactive mapping applications.

- **Methods for interpreting** aerial photography and other remote imagery are developed and adapted to understand Iowa's land surface characteristics, adding further information and value to the data held in the NRGIS Library.



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