The State Water Survey is the primary agency in Illinois concerned with water and atmospheric resources. Research and service programs encompass the assessment and evaluation of ground, surface, and atmospheric water resources as to quantity, quality, and use. Scientific research anticipates and reacts to practical problems. Much of the Survey’s work is facilitated by an extensive database collected and developed over the course of a century.

Research activities are organized under three major Scientific Divisions: Atmospheric Sciences, Chemistry, and Hydrology. Within each Division individual programs are addressed by specific Offices composed of groups of scientists, engineers, and support staff possessing expertise in a particular field of research or problem area.

Each of the Scientific Divisions conducts activities in three interwoven task areas according to the needs of the state: research, data collection, and service. Research is often accompanied by data collection when existing information resources for water and weather are not adequate. Data collection typically takes two forms: 1) the operation of statewide sampling networks and 2) occasional massive sorties to collect data from a wide variety of locales in a short period of time.

Extensive data collection and research efforts enable the Water Survey to provide numerous services to those concerned with water and weather issues in Illinois and the nation. They include:

- Workshops and conferences for local and state officials, businesses, and scientists; and lectures and seminars to a wide spectrum of audiences.
- Public information through interviews and news releases for radio, TV, and newspapers statewide.
- Technical reports, public information brochures, and scientific journal articles with a broad distribution.
- Meetings with public officials and consultants in the Chicago area concerning alternative water supply plans.
- Information on flooding supplied through the Illinois Floodplain Information Repository.
- Technical guidance to the Environmental Protection Agency and the Attorney General’s office regarding land disposal facilities and potential ground-water pollution.
- A real-time climate information system for nine midwestern states that provides a wide variety of information products for state agencies, industries, and private citizens.
- Water analyses and consultations on public and private water supplies.
- Management strategies to restore lake water quality for water supply and recreation, as well as a variety of information on lake levels, evaporation, and sedimentation.
State Water Survey

Programs of the Water Survey

Administration Division

The Administration Division is under the Office of the Chief, which is responsible for policy development, state and federal liaison, and overall administrative leadership of the Water Survey. Offices within the Division are responsible for personnel and fiscal management and policy implementation; publications and public information; extension services, general operations, and specialized facilities; and computer support.

- Water Survey Library
- Machine shop
- Meeting planning
- Publications and public information
- Building operations and planning
- Fiscal operations
- Human resources
- Computer services and support

Atmospheric Sciences Division

The Division includes the areas of meteorology, climatology, and atmospheric chemistry. Research addresses issues such as drought, inadvertent weather modification, climate change, acid rain, and air toxics. Field and laboratory studies and theoretical work seek an understanding of atmospheric motions that transport weather systems and air pollution, and atmospheric processes that produce rain from clouds and transform and remove air pollutants.

- Aerosol and gas chemistry
- Midwestern Climate Center and Climate Information System
- Precipitation and deposition chemistry
- Effects of wet and dry deposition
- Agricultural meteorology
- Cloud physics and dynamics
- Climate impact assessment
- Dynamics and prediction of weather
- Weather and climate modification

Chemistry Division

The Chemistry Division is concerned with the quality of surface and ground waters, sediment, wastewaters, precipitation, supplies in public and private systems, and riverine and lacustrine habitats. The Division's Public Service Program, established in 1895, tests water samples submitted by private citizens, industries, and public entities in an EPA-certified laboratory. The Institutional Water Treatment Program, established in 1949, serves all major state facilities. Offices and laboratories are located in both Champaign and Peoria.

- Water supply analyses and consultations
- Analytical methods development
- Nonpoint pollution control
- Lake eutrophication studies
- Water and wastewater treatment
- Aquatic toxicology
- Mobile Oxidation Pilot Plant
- Scale and corrosion phenomena
- Sediment and ground-water chemistry
- Precipitation and air chemistry analyses

Hydrology Division

The Division addresses surface and ground-water issues with basic and applied research on water resources availability, management, protection, predictive modeling, and spatial data analysis. Field, laboratory, and computer studies address ground-water contamination, sedimentation of reservoirs, site suitability for waste disposal, navigation traffic impacts on rivers, flooding, wetland restoration, and ground-water use impacts. Public services include the Floodplain Information Repository and ground-water information.

- Flood hydrology and information
- River hydraulics and sediment transport
- Sediment and wetland studies
- Urban stormwater management
- Ground-water resource evaluation
- Data collection and management
- Ground-water flow and transport modeling
- Site characterization
- Water inventory program
- Multipurpose management of large navigable rivers
Directory of Key Personnel

Water Survey Research Center
2204 Griffith Drive, Champaign, IL 61820-7495
Telefax (217) 333-6540

Office of the Chief

Mark E. Peden, Acting Chief
(217) 333-2210

Office of Special Programs

Global Climate Change Program
Water & Atmospheric Resources
Monitoring Network

Administrative Division

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Ronald F. Karr, Head, and Assistant to the Chief (217) 333-2210

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(618) 453-8890
Location of Facilities

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2204 Griffith Drive
Champaign, IL 61820-7495
Telefax (217) 333-6540

The Water Survey's main laboratories and headquarters are located in the Water Survey Research Center on the campus of the University of Illinois at Urbana-Champaign. The Offices of River Water Quality and Water Quality Management are situated in Peoria, and other facilities and staff are posted in special study areas around the state.

Office of the Chief
Building 1; (217) 333-2210
Administration Division
Buildings 1, 2, and 4; (217) 333-2210
Atmospheric Sciences Division
Buildings 1, 6, and 9; (217) 333-2213, 333-6780
Chemistry Division
Buildings 2, 3, and 9; (217) 333-9321
Peoria Offices
1320 S.W. Monarch, P.O. Box 697;
Peoria, IL 61652-0697;
(309) 671-3196; telefax (309) 671-5455
Hydrology Division
Buildings 4 and 5; (217) 333-4300, 333-9545
Southern Illinois Field Office
P.O. Box 1495, Carbondale, IL 62903
(618) 453-8890
The Water Survey was founded in 1895 as a unit of the University of Illinois Department of Chemistry. Its original mission was to survey the waters of Illinois to trace the spread of water-borne disease, particularly typhoid. In its first fifteen months of operation, the Water Survey responded to public requests for chemical analyses on 1,787 water samples from 156 towns in 68 Illinois counties. The Water Survey also addressed the health and safety of public water supplies, water softening methods, sewage and wastewater treatment, and the establishment of sanitary standards for drinking water.

In 1917 the Water Survey was transferred to the state Department of Registration and Education. At that time, the Board of Natural Resources and Conservation, composed of eminent scientists and professionals selected by the Governor, was established to guide its activities. Scientific investigations were expanded, and the state's first inventory of municipal ground-water supplies was published. Activities also focused on methods to determine water levels in wells, yield testing, and establishment of an ongoing survey of the state's surface waters.

During World War II, Water Survey chemists cooperated with the University and the federal government in studies on the detection of chemical warfare agents in water and methods for their removal. Meteorological efforts expanded in the postwar years, including the use of radar to measure rainfall and track severe storms and the establishment of networks of densely spaced raingages. The U.S. Weather Bureau transferred the state climatologist to the Water Survey, and computerization of the Survey's historic weather records was begun.

Population growth in the late 1950s and 1960s created the need for expanded water resources, and the Water Survey attempted to identify and increase usable supplies. Studies addressed reservoir development and maintenance, new methods for evaluating wells and aquifers, and the effects of future development. A statewide network of observation wells was established, and investigations of ground-water resources in the Chicago and East St. Louis areas led to a comprehensive inventory of the state's principal ground-water formations.

Since 1979 the Water Survey has been a division of the Department of Energy and Natural Resources. Support for scientific programs includes a state appropriation and income from grants and contracts with various Illinois state agencies, municipal groups, universities, private organizations and businesses, and various federal agencies. The Water Survey cooperates with all agencies concerned with the water and weather of Illinois.

The current staff is composed of 235 employees, including 130 professional scientists and engineers, 75 technical and support staff, and 30 students, as well as visiting professional scientists.