

Illinois Groundwater Fact Sheet

The Illinois Groundwater Protection Act (IGPA) (P.A. 85-0863, 1987) responds to the need to manage groundwater by emphasizing a prevention-oriented process. (see

<http://www.develop.epa.state.il.us/water/groundwater/index.html>) The IGPA is a comprehensive law that relies upon a state and local partnership. Although the IGPA is directed toward protection of groundwater as a natural and public resource, special provisions target drinking water wells. The IGPA responds to the need to protect groundwater and establishes a unified protection program by:

- Setting a groundwater protection policy;
- Enhancing cooperation;
- Establishing water well protection zones;
- Providing for surveys, mapping and assessments;
- Establishing authority for recharge area protection;
- Requiring groundwater quality standards; and
- Requiring technology control regulations.

The Interagency Coordinating Committee on Groundwater (ICCG) is required to report biennially to the Governor and General Assembly on Groundwater quality and quantity, and the state's enforcement efforts.

The groundwater policy, established by the IGPA, sets the framework for management of groundwater as a vital resource. The law focuses upon uses of the resource and establishes statewide protection measures directed toward potable water wells. In addition, local governments and citizens are provided an opportunity to perform an important role for groundwater protection in Illinois.

In the six county area around Chicago, the deep bedrock aquifer is at a level of sustained yield of 65 MGD, and withdrawals beyond this will mine the groundwater. The Northeastern Illinois Planning Commission's (NIPC) Strategic Plan for Water Resource Management shows that areas are projected to experience water shortages in the future. Furthermore, projections by the ISWS show that, depending on population growth and climate changes, shortages may be exacerbated.

Groundwater Importance: Safe and adequate water supplies are vital for public health and necessary for local and regional economic development. There are 5,534 public water supplies in Illinois of which 1,271 are community water supplies that are dependent on groundwater as their source of water. These community water supplies serve approximately 2.8 million people. An additional seven community water supplies utilize a mixture of surface water and groundwater sources. These systems provide approximately a half a million individuals with potable water. Furthermore, approximately 400,000 residences in the state are served by private water supply wells. Groundwater also provides up to 80 percent of the base flow to streams in many areas of the state and is essential to watershed ecology.

Where is it? In Illinois, the largest amount of groundwater withdrawal is in the northern one-third of the state. In this area, large supplies of potable water are available in aquifers that range in depth from about 10 to 1,500 feet. Approximately 70 percent of community water supplies (CWSs) in the state withdraw water from confined aquifers that have natural geologic protection from surface and near surface activities. However, the remaining 30 percent of the communities withdraw water from unconfined aquifers that are sensitive to pollution from land use. On Earth Day 2002 Executive Order #5 was signed into effect. The Executive Order requires the ICCG, in

coordination with the Groundwater Advisory Council (GAC), a Governor-appointed committee representing planning, utility, industrial and environmental interests, to establish water-quantity planning procedures for the State of Illinois by implementing the following programs:

- 1) A coordinated groundwater and surface water resources program with information that is accessible and usable by governmental agencies and the public to support the State's water-resources quantity programs;
- 2) A statewide groundwater and surface-water resource program to serve as the basis for the formation of priority water-quantity planning areas; and
- 3) A statewide program for the identification and recommendation of the appropriate organizational structure for priority water-quantity planning areas.

How good is the water? Groundwater quality is a high priority in Illinois. Water quality degradation or contamination resulting from point and nonpoint sources throughout the state is of concern. In many industrialized parts of the state (including the metropolitan areas of Chicago, Rockford, and East St. Louis) groundwater in glacial deposits and bedrock aquifers has been degraded by improperly contained or disposed of chemicals. In some agricultural areas, the quality of groundwater in the underlying shallow aquifers has been degraded by the routine application of agricultural chemicals. Surface water quality has been degraded in some areas because of the influx of contaminated groundwater. The Illinois Environmental Protection Agency (EPA) continues to evaluate the question of how good is the water by implementing an ambient monitoring network of CWS wells, as illustrated in Figure 1. In addition, the Illinois Department of Agriculture (IDA) has implemented a monitoring well network for pesticides in shallow groundwater to assist with implementation of Illinois' Generic

Pesticide Management Plan (PMP) that has been endorsed by the United States Environmental Protection Agency (U.S. EPA).

Costs of Contamination: Illinois has, and will, spend millions of dollars on cleaning up contaminated groundwater. For example, the cleanup of groundwater and connection of homes to public water supply could cost millions in Lisle. Furthermore, groundwater contamination has resulted in significant unanticipated costs when the village of Carpentersville expanded its wastewater treatment plant.

A recent ISWS study of Illinois EPA groundwater monitoring data from CWS in northeastern Illinois shows increasing trends of chlorides. In addition, there are naturally occurring contaminants such as arsenic and radionuclides that require treatment in certain parts of the state.

Efforts to Protect Groundwater: Illinois continues to address the need for protecting groundwater by accomplishing the mission set forth in the IGPA and through federal, state and local partnerships establishing groundwater protection programs. The IDA through its Illinois FarmAsyst, HomeACRE and FarmLANDS programs has made contamination-risk assessment tools readily available to the general public to allow protective actions to be implemented locally. These partnerships utilize regulatory and non-regulatory programs to achieve success.

Protecting the land surface areas overlying sensitive unconfined aquifer wells (recharge areas) can help prevent contamination of groundwater. To measure protection program progress for CWS facilities utilizing these sensitive aquifers, the Illinois EPA developed Figure 3. Coupled with the population served, measuring the acres with protection programs under development or in place provides an effective measure of Illinois' progress in protecting these sensitive areas.