

MAHOMET AQUIFER CONSORTIUM

<http://www.mahometaquiferconsortium.org>

Mission statement:

To further study the Mahomet aquifer system, the river basins and surface waters located in the 15 county regional water supply planning area and to develop and recommend options for the planning and management of these valuable public resources.

Mahomet Aquifer Consortium Newsletter: April 2011

This Newsletter is the first one produced by the Mahomet Aquifer Consortium (MAC) to inform people about progress being made in water supply planning in East-Central Illinois. Subsequent Newsletters will be produced several times a year.

Mahomet Aquifer Consortium

For over a decade the MAC has spearheaded groundwater planning in East-Central Illinois. From 1996 through 2009 the MAC was the lead organization to produce a report on water supply planning in a 15-county region of East-Central Illinois. East-Central Illinois was identified as a priority water planning area to implement Governor Blagojevich's 2006 Executive Order requiring progress be made in regional water supply planning in Illinois. The Illinois Department of Natural Resources provided guidance and financial support. Both groundwater and surface waters were studied.

The MAC established a 12-member grass-roots committee of stakeholder representatives – the East-Central Illinois Regional Water Supply Planning Committee (RWSPC) – to prepare the report, which was finalized in June 2009. The RWSPC examined many factors that are important in water supply planning including water demand to 2050, climate variability and change, the geology of the region, and groundwater flow. Based on the information they obtained, the RWSPC made recommendations to improve the planning and management of regional water supplies in the region. Two of the recommendations were for the MAC to take the lead in a continuing process of regional water supply planning and for the MAC to expand its area of interest to include surface waters.

In response to these recommendations, the MAC has modified its Bylaws to include surface waters, developed a Strategic Plan and added two new Board members and a Technical Advisor from the Illinois Natural History Survey. The MAC is in the process of re-establishing the RWSPC, which will lay out a plan of work to revise the 2009 plan by 2014. An important part of the work of the MAC and RWSPC will be to strengthen stakeholder participation in the regional water supply planning process.

As state support for regional water supply planning has decreased due to the economic slowdown, the MAC has been successful in obtaining substantial voluntary contributions from many generous individuals and organizations in the region. The MAC will continue to seek a continuing flow of contributions to allow it to continue the water supply planning process.

Population Growth and Water Demand

Results from the 2010 census allow us to determine how population and water demand have changed in the region since 2000. Over the last decade population in the 15-county East-Central Illinois Region increased by 49,204 to 1,082,976. Population increases in 7 counties more than compensated for population decreases in 8 counties. Illinois census data is available at <http://www2.illinois.gov/census/Pages/default.aspx>.

Assuming that the average person in the region continued to use 134.4 gallons of water per day from public water supplies (for residential, industrial, recreational and other uses), the population increase in the region translates into increased water demand of 6.6 million gallons of water per day. This average figure could change once we have more detailed information on actual water withdrawals, which also are influenced by other factors such as climate, economic development and conservation. The Illinois Water Inventory Program at the Illinois State Water Survey is producing a detailed inventory of water withdrawals in 2010.

Media Presentation (CD) now available – W2 “The World of Water”

Most people take it for granted that clean water will flow from the faucet when it is turned on. However, they tend not to be well informed about sources of water, water demand, water distribution systems, water supply issues and water conservation. To better inform people about water supply planning in East-Central Illinois the MAC has produced a CD with supporting material: this is a 30-minute narrated PowerPoint presentation called **W2 “The World of Water”**. The CD is being distributed to 5th-12th grade teachers, soil and water districts, extension offices, farm bureaus, and others throughout the region. The presentation can be viewed at the MAC website and discs can be obtained from Robbie Berg, MAC Project Coordinator, at (217) 493 7407, or earthpartners@hotmail.com.

Key Aquifer Recharge Areas

Groundwater in the Mahomet Aquifer flows slowly. Water enters the Mahomet Aquifer principally from the infiltration of rainfall or leakage of water from streams in areas where sandy geologic material occurs at the land surface. Groundwater is naturally discharged from the Mahomet Aquifer into major streams in the region. Recent research at the Illinois State Water Survey and Illinois Geological Survey has done much to identify key areas where groundwater in the Mahomet Aquifer is recharged and discharged. Identifying and protecting key areas where groundwater in the Mahomet Aquifer is recharged is necessary for managing sustainable water supplies in the region.

In the Havana Lowland region aquifer sands occur at the surface, so this whole region has the potential to provide recharge. As groundwater in the Mahomet Aquifer generally flows slowly from east to west, recharge in the Havana Lowland region does not contribute to recharge further east.

In the central and eastern portions of the aquifer, defining key recharge areas is more difficult because clay-rich glacial tills dominate the surficial geology and recharge through these quite impervious materials is very slow. Outcrops of sandy aquifer material are largely limited to the modern stream valleys and small outwash plains in front of the glacial moraines. Unfortunately, the thick layer of wind-blown loess that covers most of the region and forms the productive soils also hampers the ability of geologists to locate other near-surface sand deposits. For water in a surficial sand to become aquifer recharge, there must be interconnecting sands down to the Mahomet Aquifer. Some surficial sands, such as the alluvial fans on the west side of Champaign, appear to have no hydraulic connection with the aquifer. Based on water level responses to precipitation, the areas of greatest recharge occur in places like Easton and Rantoul where streams and drainage ways cross over sand bodies as they flow off clay-rich uplands. Other key recharge areas have been identified in Logan, McLean, De Witt, Champaign, Ford, and Vermilion Counties.

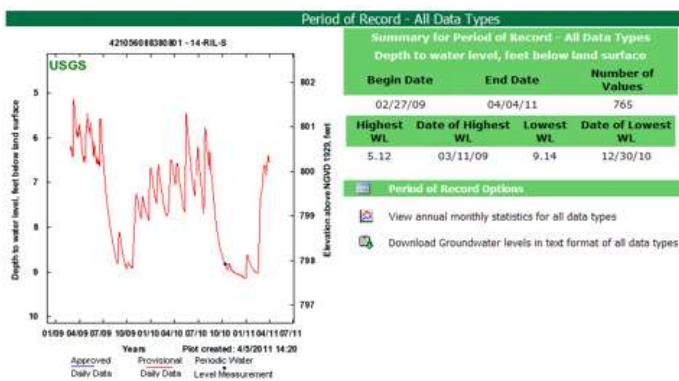
U.S. Geological Survey to Monitor Water Levels in Real Time in Mahomet Aquifer

In the upcoming months of 2011, the Illinois Water Science Center of the U.S. Geological Survey (USGS), in cooperation with the Illinois State Water Survey and Illinois State Geological Survey of the University of Illinois, will begin “real-time” monitoring of groundwater levels at two Mahomet Aquifer sites. The sites near Fisher, Ill., in northeastern Champaign Co., and Emden, Ill., in south-central Tazewell Co., include vertically clustered wells installed by the State Surveys to various depths (69-265 feet) in the Mahomet and Glasford Aquifers and by the USGS to the water table (less than 20 feet). Water levels in the deepest well open to the Mahomet Aquifer and the water-table well will be monitored at a 15-minute rate and broadcast by satellite telemetry on an hourly schedule to the publicly available USGS Websites: NWISWeb (<http://waterdata.usgs.gov/nwis>) and Groundwater Watch (<http://groundwaterwatch.usgs.gov/>).

The continuously monitored and periodically measured (by hand) data can be viewed or downloaded in hydrograph, table, or list formats. As the period of record expands over the next few years, groundwater-level statistics will be automatically generated and available. In the future, should funding become available within the USGS or from cooperative partners, real-time monitoring at these sites will be expanded to include the wells open to shallower parts of the Mahomet Aquifer and the overlying Glasford Aquifer. For additional information about the USGS Illinois Water Science Center and its data and research programs in Illinois and the Nation, please visit: <http://il.water.usgs.gov/>.

To view presently available data on the Web from the subject wells, use the following Database Site Numbers:

<u>Site Number</u>	<u>Well name</u>	<u>County</u>	<u>Aquifer</u>	<u>Well Depth (ft)</u>
401654088212001	CHAM08-09A	Champaign	Mahomet	265
401654088212004	21N7E-13.4h4	Champaign	Water-Table	20
401921089282102	MTH-17N	Tazewell	Mahomet	152
401921089282103	22N3W-29.8a3	Tazewell	Water-Table	20



Example of Web available data from the USGS



Example of well with real-time groundwater-level monitoring