

The Future

To keep the WARM Network as viable as possible, funds are continually sought to maintain and enhance network components. Enhancements include modernization of portions of the network, with emphasis on the automation of the data-gathering process and the maintenance of a modern, digitized database that is easily accessible to all who have a need for the data. Expansion of the network in terms of the number of stations is also being pursued.

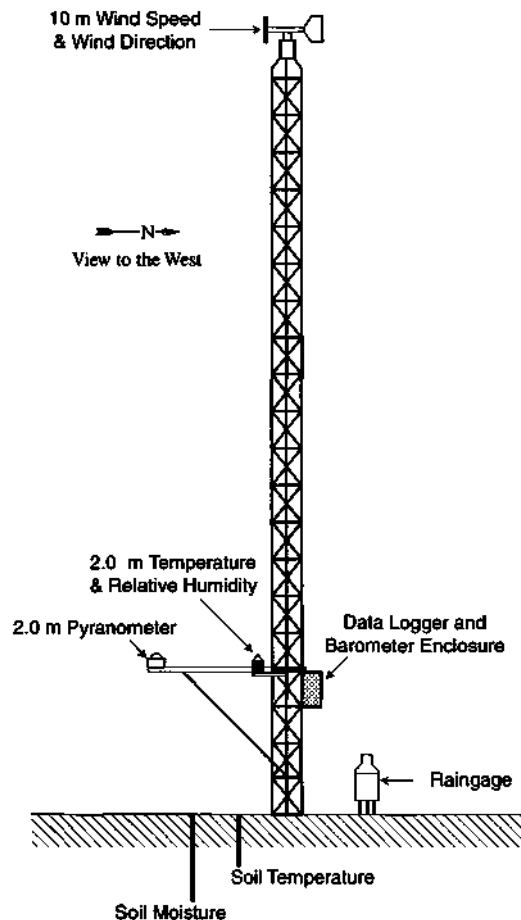
Development of a new automated soil moisture profiler during 1994 and 1995 will allow unprecedented real-time observations of this parameter within the current automated climate monitoring system. A new soil temperature profiler, which will allow for measurement of soil temperatures at many depths in a profile down to 40 inches, is also being developed. Plans for 1995 and beyond include the development of a near real-time (hourly) data acquisition system, followed by an automated dissemination system for users who have a telephone and a computer. Finally, automation of shallow and deep ground-water wells is also being planned. Some data and analyses will be made available on the Internet beginning in 1995.

These types of improvements will make the Illinois WARM Network one of only a handful of modernized water resources networks in the United States.

For more information about the WARM Network and its various components, to obtain any of the publications listed in this brochure, or to obtain data, please contact:

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The Water and Atmospheric Resources Monitoring (WARM) Network



April 1995
Miscellaneous Publication 164
(WARM Network Publication 2)

Introduction

The Illinois State Water Survey, headquartered in Champaign on the campus of the University of Illinois, is the primary agency in Illinois concerned with the measurement and evaluation of water resources. Research and service programs assess and evaluate the quantity, quality, and use of the state's ground, surface, and atmospheric water resources.

A cornerstone in helping the Water Survey achieve its mission is a statewide network of data-gathering sites called the **Water and Atmospheric Resources Monitoring Network**, or **WARM Network** for short. The WARM Network routinely collects and compiles data to facilitate both comprehensive assessments of Illinois' water and atmospheric resources and provide timely information on these resources to users both in Illinois and across the United States. Network data collection began in the 1950s. Newer automated data-gathering platforms began operation in the late 1980s. Evolution of the network continues, as increased automation of data collection and more real-time retrieval and dissemination of data and products are either being achieved or are proposed.

This brochure briefly describes the WARM Network and is intended for the citizens of Illinois and users of network data.

The Network

Measurement and compilation systems currently operating within the WARM Network include:

- 18 shallow ground-water observation wells
- 15 instream suspended sediment sampling sites
- 19 automated climate monitoring stations
- 18 soil moisture measurement sites
- Compilation of statewide surface water data

Shallow ground-water observation wells, some dating back to the 1950s, provide information on changes in statewide water-table levels in rural areas remote from pumping sites. Data are collected in remote areas so that only natural fluctuations in shallow water resources are measured. These data allow scientists to assess both short-term and long-term trends in shallow water-table levels. This knowledge improves our understanding of the effects of phenomena such as droughts and floods, and their lingering impacts. Data are collected continuously and are manually retrieved monthly.

Instream suspended sediment sampling commenced at some locations in 1981. Sites are located along various Illinois streams where U.S. Geological Survey streamgaging stations are housed. The samples from these sites are analyzed primarily to measure the concentration of suspended sediments in the streams and the sediment load in tons per day. Samples are collected weekly.

Suspended sediments flowing in streams are often deposited in Illinois lakes and reservoirs, many of which are used as drinking water sources and/or for recreational purposes. Thus, a large amount of sedimentation in these lakes and reservoirs can become a major water resource and pollution problem for the state. The magnitude of this problem, both with respect to the physical and chemical aspects of the sediments, is still under study.

Automated climate monitoring, which began in 1988-1989, includes sites located at Illinois community colleges and university agricultural experimental farms. This group of stations is known as the Illinois Climate Network (ICN). Variables measured include barometric pressure, wind speed and direction, solar radiation, air temperature, relative humidity, soil temperatures at depths