



# WATER FACT SHEET

U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR

## ESTIMATED WATER USE IN OHIO, 1990 Thermoelectric Power Data

### Introduction

Our Nation's social and economic development has depended on and will continue to depend on the availability of usable water. In 1950, the U.S. Geological Survey (USGS) began publishing water-use data on a national level every 5 years to assist in the management of our Nation's water resources. The USGS currently collects and (or) estimates water-use data for the following categories: public supply, domestic, commercial, industrial, thermoelectric power, mining, livestock, animal specialties, irrigation, hydroelectric power (instream use), sewage-treatment returns, and reservoir evaporation.

In 1977, Congress authorized the National Water-Use Information Program. The program encourages the USGS and a State-level agency in each of the 50 States to cooperate in the collection and dissemination of water-use data. In Ohio, the USGS and the Ohio Department of Natural Resources, Division of Water (ODNR-DW), are cooperators in this effort.

In 1990, ODNR-DW implemented the Water Withdrawal Facility Registration Program for Ohio, which requires those water consumers who have the capacity to withdraw 100,000 gallons of water daily to register annually with the ODNR-DW. The information collected from the registrants is maintained in computerized data bases at the ODNR-DW and at the Ohio District Office of the USGS.

This Fact Sheet, which summarizes Ohio's 1990 thermoelectric power water-use data, is one of a series that supplements, by category, the USGS publication on water use in the United States in 1990.

### Thermoelectric Power

The thermoelectric power category includes those facilities that withdraw water to produce electric power in Ohio. Thermoelectric facilities generate electric power using fossil fuel (such as coal, oil, and natural gas) and by nuclear-fission.

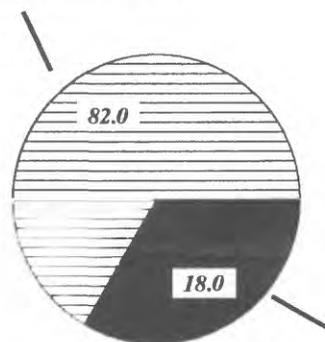
Thermoelectric facilities withdrew water at an estimated rate of 9,553 Mgal/d (million gallons per day) in 1990. Ohio ranked seventh in the Nation in total thermoelectric withdrawals. Thermoelectric facilities accounted for about 82 percent of the total estimated water withdrawals in Ohio in 1990 (fig. 1).

### Ground Water

In 1990, thermoelectric facilities in Ohio withdrew an estimated 13 Mgal/d from ground-water sources, which represents less than 1 percent of the total amount of water withdrawn for use in thermoelectric facilities. Fossil-fuel facilities accounted for all ground-water withdrawal estimates reported. The greatest ground-water withdrawals for an Ohio county, an estimated 3 Mgal/d, were reported by facilities in Belmont County, whereas facilities in Wayne County reported withdrawals of 110,000 gal/d (gallons per day).

The water was obtained from three principal aquifer systems (alluvial, glacial outwash, and Pennsylvanian bedrock) in Ohio. About 65 percent of the total estimated amount of ground water used by fossil-fuel facilities was withdrawn from alluvial aquifers.

Withdrawals for  
thermoelectric power



Withdrawals for  
remaining water-use  
categories

**Figure 1.** Percentage of total estimated water withdrawals in Ohio, 1990.

## Surface Water

In 1990, thermoelectric facilities in Ohio withdrew an estimated 9,540 Mgal/d from surface-water sources. This quantity represents more than 99 percent of the total water withdrawn for use by thermoelectric facilities. The greatest surface-water withdrawals for an Ohio county, an estimated 2,029 Mgal/d, were reported by thermoelectric facilities in Jefferson County, whereas facilities in Ottawa County reported withdrawals of 32 Mgal/d (fig. 2).



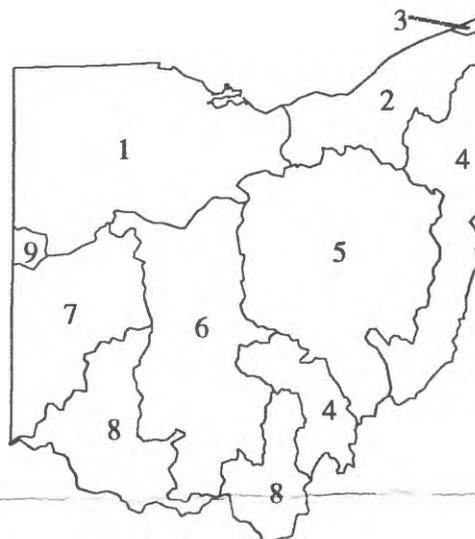
Withdrawals (in million gallons per day)

□ 0.0 - 400	■ 1,000.01 - 1,600
▨ 400.01 - 1,000	■ 1,600.01 - 2,200

**Figure 2.** Estimated surface-water withdrawals for thermoelectric power in Ohio, by county, 1990.

Surface-water withdrawals for thermoelectric facilities are shown by drainage basin in figure 3. About 42 percent of the total estimated amount of surface water used by this category in Ohio was withdrawn in the Upper Ohio River Basin.

Surface-water withdrawals by fossil-fuel facilities were estimated to be 9,402 Mgal/d, whereas surface-water withdrawals by nuclear-fission facilities were an estimated 138 Mgal/d.



Drainage Basin	Water Withdrawn (in million gallons per day)
----------------	---

1. Western Lake Erie	723
2. Southern Lake Erie	1,971
3. Eastern Lake Erie	0
4. Upper Ohio River	3,970
5. Muskingum River	900
6. Scioto River	60
7. Great Miami River	412
8. Middle Ohio River	1,504
9. Wabash River	0

**Figure 3.** Estimated surface-water withdrawals from drainage basins in Ohio for thermoelectric power, 1990.

## Selected References

- Ohio Department of Natural Resources, Division of Water, 1991, Water Withdrawal Facility Registration Program—1990 water-use data: Data on file at the Division of Water office in Columbus, Ohio.
- Solley, W.B., Pierce, R.R., and Perlman, H.A., 1993, Estimated use of water in the United States in 1990: U.S. Geological Survey Circular 1081, 76 p.
- U.S. Department of Energy, 1989, Energy Information Administration—767 Report: Part 5, Sections A and B, p. 10-11.

Additional information on water use in Ohio can be obtained from:

U.S. Geological Survey  
Water Resources Division  
975 West Third Avenue  
Columbus, Ohio 43212-3192  
(614)469-5553