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Water Withdrawals in Illinois, 1978

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ABSTRACT

This report, part of a continuing cooperative program with the U.S. Geological Survey, summarizes the results of the 1978 Illinois Water Use Inventory. The water use data are presented for the following categories: Public Water Supply (1770.9 mgd), Self-Supplied Industry (44,331.0 mgd), Rural Water Use (220.0 mgd), and Fish and Wildlife Management Areas (44.2 mgd). The data are then further categorized by county, districts, hydrologic units, and Standard Metropolitan Statistical Areas.

Illinois water withdrawals during 1978 were 46,366.1 mgd, of which groundwater provided 945.7 mgd and surface water sources supplied 45,420.4 mgd. The largest user of water in Illinois is electric power generation, 92 percent of the total withdrawals. Excluding electric power withdrawals, 1978 groundwater use was 939.5 mgd and surface water use was 2915.0 mgd.

INTRODUCTION

Illinois has been considered a water excess state. The state, in a sense, is surrounded by fresh water with the Mississippi River on its western border, the Ohio and Wabash Rivers to the south and east, and Lake Michigan on the northeast. Within the interior the large tributaries to these major water systems are the Illinois, Kaskaskia, Rock, Sangamon, Embarras, and Kankakee Rivers. They are the principal surface water sources in the state. In addition the state is blessed with abundant groundwater resources. But these water resources are finite and are not distributed uniformly.

It is necessary to document current water uses to permit planning and proper management of Illinois' existing water resources. To this end the Illinois State Water Survey in cooperation with the U.S. Geological Survey has expanded water use inventory activities to include all areas of the state and all water sources. This data collection system is intended to document the state's total water use; assist in coordinating the management of groundwater resources in the northeastern part of the state, where a major groundwater resource system is currently being "mined" (withdrawn faster than recharge); expedite the exchange of water use information to the benefit of other state agencies; complement resource research and studies with the capability to rapidly aggregate various regional water use patterns; and facilitate planning the most effective use of Illinois water resources for the economic and social well being of the people of Illinois and the rest of the nation.

This report is the first summary of water withdrawals throughout Illinois. It is anticipated to be the forerunner of a continuous water use inventory program which not only will show changes in quantities of water used but also will indicate trends in use and provide the basic data required for establishing water budgets, developing water use plans, and evaluating hydrologic unit and aquifer systems.

Previous Studies

Since the early 1940s the Illinois State Water Survey has become increasingly involved in evaluating the use of the water resources of Illinois. Most of the previous reports on water use have emphasized the regions where water resources are extensively developed or have surveyed withdrawal by a major user category.

Northern Illinois

Eight reports on groundwater levels and pumpage in the Chicago region have been published by the State Water Survey. These are Cooperative Reports 1 and 2 and Circulars 79, 83, 85, 94, 113, and 125 which summarized trends in water levels and pumpage from deep wells from 1864 through 1975.[1-8]

In addition, Reports of Investigation 50 and 52 summarized trends in total groundwater pumpage in 17 counties of northern Illinois through 1962 and 1963 respectively.[9,10] Report of Investigation 73 discussed groundwater pumpage in 20 counties of northern Illinois during the period 1960-1970.[11]

Particular emphasis has been given to the Chicago region because of the continuing increase in pumpage and corresponding decline in water levels in deep wells in that area. Pumpage from deep wells in the Chicago region increased from 200,000 gallons per day (gpd) in 1864 to 166.6 million gallons per day (mgd) in 1978. As a result, water levels in deep wells tapping the Cambrian-Ordovician aquifer system in Chicago have declined more than 850 feet. Pumpage in the region has exceeded the sustained yield of the Cambrian-Ordovician aquifer every year since 1958 as groundwater users continue to mine water from this aquifer system.[8] For the Chicago region, average annual water-level declines during 1971 through 1975 ranged from 6 feet in McHenry County to 16 feet in Grundy County and averaged about 12 feet. This decline is significantly greater than the long-term average decline of 7.8 feet per year. Water levels in deep wells in northern Illinois outside the Chicago region declined an average of 1.7 feet per year during the same period.

Peoria-Pekin Area

Four reports on groundwater levels and pumpage in the Peoria-Pekin area have been published by the State Water Survey. These are Bulletins 33, 39, and 48 and Report of Investigation 61 which summarize trends in water levels and pumpage from the sand and gravel aquifers along the Illinois River from 1890 through 1966.[12-15]

The State Water Survey's work in the Peoria-Pekin area followed a request by local officials in 1940 to investigate the groundwater resources of the region. It was estimated that prior to 1946, pumpage in three of the main well fields had approached or exceeded their practical sustained yield. A program of artificial groundwater recharge, in consultation with the State Water Survey, was started in 1951 using Illinois River water via infiltration pits.[15] In 1978, an average 3.8 mgd of surface water was pumped into infiltration pits for recharge.

East St. Louis Area

Six reports on groundwater levels and pumpage in the East St. Louis area have been published by the State Water Survey. These are Reports of Investigation 17, 44, and 51, and Circulars 95, 112, and 134 which show the trends in water levels and pumpage from the sand and gravel aquifers in the American Bottoms area from 1890 through 1977.[16-21]

The groundwater resources of the East St. Louis area, one of the most heavily populated and industrialized areas in the state, have been extensively developed. A period of intensive data collection was initiated in 1941, after alarming water-level recessions were observed by local industries.

Recent reports show that groundwater withdrawals have declined since the mid-1960s as industries have initiated conservation measures or have shifted to Mississippi River water. The region has a potential groundwater yield more than three times the present withdrawals.[21]

Industrial and Other Water Uses

Two papers[22,23] were presented and two reports, Reprint Series 4 and Circular 115,[24,25] were published on withdrawal of water by industry in Illinois. These summarized the industrial water use from 1950 through 1971. Two other types of water use were researched. Report of Investigation 11[26] reported irrigation water demand during

1950-1951, Report of Investigation 30[27] surveyed trends in domestic water use, and Reprint Series 32[28] studied the relation of domestic water use to several socio-economic variables.

Present Study

This report presents the results of the 1978 Illinois Water Use Inventory. It summarizes water withdrawals by major use categories from groundwater and surface water sources in Illinois during 1978 and compares selected data from previous publications with the 1978 data.

Information on the quantity of water withdrawn for use in Illinois was obtained from many sources during the inventory. The data are presented by the following categories: Public Water Supply; Self-Supplied Industry—thermoelectric power generation, manufacturing, mineral extraction, and hydroelectric power generation; Rural use — domestic, livestock, and irrigation; and Fish and Wildlife Management Areas. The water use data in this report are then further categorized by county, districts, hydrologic units, and Standard Metropolitan Statistical Areas. Information concerning drainage district transfers and non-withdrawal uses such as navigation and water-based recreation was not collected.

Acknowledgments

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Acknowledgment is also made to the numerous individuals and organizations who have generously contributed information incorporated into this report. A special expression of gratitude is extended to the staff of public and industrial water supply systems for reporting their annual pumpage in response to a mail questionnaire. Representatives of the Illinois Environmental Protection Agency Public Water Supply Division provided public water supply data. Representatives of the Illinois Department of Conservation and U.S. Fish and Wildlife Service, Illinois Bureau of the Budget, and Illinois Department of Labor provided fish and wildlife management data, population data and projections, and industry listings respectively. Roger Lah, Carroll Drablos, and Dr. Marlow Thorne of the University of Illinois Agricultural Engineering Department provided updated results of their 1977 irrigation survey study. Marvin Clevenger supervised and verified data entry from industrial water use questionnaires; Mrs. J. L. Ivens edited the report and Mrs. Marilyn Innes prepared the camera-ready copy; Mrs. Pamela S. Lovett typed the draft manuscripts; and John W. Brother, Jr., supervised preparation of the illustrations.

WATER WITHDRAWALS

Terminology

When the term "water use" appears in this report, withdrawal use (the amount of water withdrawn from its source) is implied; this is equivalent to "intake" or "water requirement" as used in industry and agriculture respectively. The principal requisite for withdrawal use is that water must be taken from a groundwater or surface water source and conveyed to the place of use. If the water is used more than once by recycling, it will do the work of a greater quantity of water; the amount of this greater quantity, which is commonly called the "gross water use," is not evaluated in this report. If, however, the water is returned to a stream, lake, aquifer, or other source and then withdrawn anew, the summation of successive withdrawals gives the "total or cumulative withdrawal" use.

In Illinois "public water supplies" are defined as

systems or wells which furnish water for drinking or general domestic use in incorporated municipalities, unincorporated communities where 10 or more separate lots or properties are being served or are intended to be served, and state owned properties and institutions. Public water supplies serve domestic, commercial, and industrial users.

If a public supply is either not available or not used, the water is "self-supplied." Individual families and small communities not served by a public water supply system are categorized as "rural" with regard to water use. Industries and commercial establishments using their own water source facilities are categorized as "self-supplied industry."

Water used to generate hydroelectric power is also included as a withdrawal use in this report because of its diversion through powerplants. The term "non-withdrawal uses" encompasses all uses taking place within the river channel itself. Non-withdrawal uses are not included in this report.

Water use data are reported as the average daily quantities, usually derived from the annual use. The use is expressed in million gallons per day. Common equivalents are given in table 1.

Geographic Areas

When the term "district" is used in this report, it is synonymous with the Climatological Division of the National Oceanic and Atmospheric Administration and the Crop Reporting Districts (figure 1) of the Illinois Cooperative Crop Reporting Service.[29]

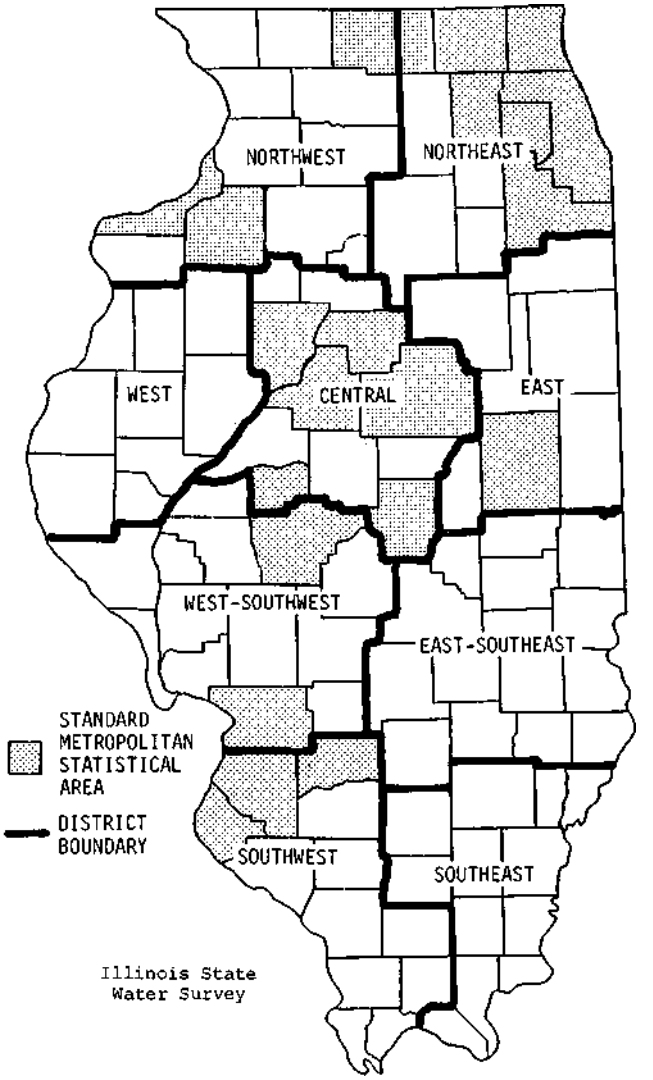


Figure 1. District and SMSA boundaries

Table 1. Hydraulic Equivalents

(Equivalent values, to three significant figures, are on the same horizontal line)

Million gallons per day	*Billion gallons per day*	*Thousand acre-feet per year*	*Thousand cubic feet per second*	*Thousand gallons per minute*	*Million cubic meters per day*
1.0	0.001	1.12	0.00155	0.694	0.00379
1000	1.0	1120	1.55	694	3.79
0.893	0.000893	1.0	0.00138	0.620	0.00338
646	0.646	724	1.0	449	2.45
1.44	0.00144	1.61	0.00223	1.0	0.00545
264	0.264	296	0.409	184	1.0

These districts represent divisions with similar climate, soils, and types of farming.

"Hydrologic unit" in the text refers to one of the 12 Hydrologic Accounting Units of the U.S. Geological Survey's Hydrologic Unit Map of 1974 for Illinois.[30] This map, prepared by the USGS in cooperation with the U.S. Water Resources Council, delineates the boundaries of major U.S. river basins to help standardize the collection and dissemination of water data. A distinct eight digit code has been assigned to each river basin.

Standard Metropolitan Statistical Areas (SMSA) are integrated economic and social units with a large volume of daily travel and communication be-

tween the central city having 50,000 population or more and outlying parts of the area. Each area consists of one or more whole counties. An area may contain not only highly industrialized counties but also adjoining counties which, though primarily residential in character, contribute significantly to the labor force of the industrial counties and are socially and economically integrated with the central city (figure 1). These areas were defined by the Federal Committee on Standard Metropolitan Statistical Areas of the Office of Management and Budget for general purpose use throughout the Federal government in presenting economic and social data.[31]

Public Water Supply Use

The total water withdrawal in 1978 for public water supply systems was 1770.9 mgd (see table 8 in the appendix). Surface waters furnished 1312.7 mgd while groundwater supplied 458.2 mgd.

The primary source of data for most public water supply systems was the Illinois Environmental Protection Agency Public Water Supply Division. Their latest information was supplemented with annual survey data from our Northern Regional Office.

Water use data were obtained for over 1900 public water systems. The largest system, in terms of population served, is the Chicago Department of Water and Sewers, Bureau of Water, serving more than 4.5 million people in 75 communities. The Chicago system pumped 1004.3 mgd from Lake Michigan in 1978. The largest area served by a public water system is the Rend Lake Conservancy District. Reaching into parts of nine counties — Franklin, Jackson, Jefferson, Hamilton, Marion, Perry, Saline, Washington, and Williamson — the Conservancy District serves an area of more than 1800 square miles and pumped 12.2 mgd from Rend Lake in 1978.

Self-Supplied Industry Water Use

Nearly all the self-supplied industry in Illinois can be divided into four major classifications: thermoelectric power generation, hydroelectric power generation, manufacturing, and mineral extraction. The total self-supplied industrial water withdrawals were 44,331.0 mgd (see table 13) in 1978 (including the 22,593.0 mgd diverted through the hydroelectric turbines). Surface water supplied 44,071.9 mgd; groundwater sources provided 259.1 mgd. Excluding water used for thermoelectric and hydroelectric generation, water used by self-supplied industry was 1819.3 mgd (see table 12).

Industrial self-supplied water withdrawals were computed from a mail canvas of 4641 industries in the state. Followup was by a second mailing, and then by telephone. Over 94 percent of these industries were accounted for either by questionnaire return, telephone contact, or staff knowledge.

The electric power generation industry is the largest user of water in the state, accounting for 91.7 percent of the total water use and 95.9 percent of the self-supplied industry water use. This industry withdraws 42.5 billion gallons of water a day (see table 9) but more than 99.9 percent of this water is returned to its source with only an increase in temperature.

Thermoelectric Power Generation

The water withdrawn for steam electric power generation has increased from 8774.9 mgd in 1970 to 19,918.7 mgd in 1978, a 127 percent increase, as shown in table 2. With the additional generating capacity scheduled for completion by 1985, this withdrawal will increase an estimated 7600 mgd to about 27,500 mgd.

The state has 40 operating thermoelectric (steam turbine) stations; the majority of these stations are coal fired. Three stations have a total of seven nuclear reactors providing heat energy for the boilers. By 1985 seven more nuclear reactors are scheduled to be producing electricity.

Hydroelectric Power Generation

In 1978, 22,593.0 mgd of surface water was diverted through the seven remaining low head hydroelectric stations in Illinois including one-half of the hydroelectric diversion on the Mississippi River along the border with Iowa (table 3). The Keokuk station uses 71 percent of this water or about 40 percent of the Mississippi River flow.

Manufacturing

Self-supplied withdrawal by manufacturing during 1978 totaled 622.1 mgd. Surface water sup-

Table 2. Historic and Projected Water Use for Electric Power Generation

	Thermoelectric (mgd)	Hydroelectric (mgd)
1950-1951	5,927	20,964
1960	9,051.3	21,155
1964-1965	9,120.3	
1970	8,774.9	
1978	19,918.7	22,593.0
1985	27,500	

Table 3. Public Hydroelectric Plants in Illinois, 1978

Plant name	Water source	Normal head (ft)	Installed capacity (kw)	Average flow through turbines (mgd)
Lockport	Des Plaines River	38	19,900	1,472
Marseilles	Illinois River	15	2,024	1,410
Dayton	Fox River	32	3,680	287
Rockton	Rock River	11	1,100	478
Dixon	Rock River	11	3,200	2,135
Moline	Mississippi River	12	3,600	698*
Keokuk	Mississippi River	32	121,600	16,113*
Total average flow				22,593

One-half of flow credited to Illinois

plied 440.7 mgd while groundwater provided 181.4 mgd (see table 10). Manufacturing is defined as those industries listed under "Division D, Manufacturing," in the Standard Industrial Classification Manual-1972 (table 4).[32]

The water withdrawal data of the 20 major manufacturing groups, according to the Standard Industrial Classification (SIC) system, were examined and are presented in table 4. The range of water withdrawals was large with the primary metals industries surpassing all others. Three self-supplied, major industries groups withdraw about 69 percent of the total. They are the primary metals industries (252.9 mgd), food and kindred products (89.6 mgd), and chemical and allied products (89.4 mgd).

The three digit SIC system was used for grouping in examining the water withdrawal data for specific self-supplied manufacturers. On the basis of selecting only those specific groups which withdraw water at a rate of more than 5.0 mgd, 19 self-supplied specific groups were selected and are given in table 5. These 19 specific manufacturing groups account for almost 90 percent of the total self-supplied manufacturing withdrawal. Groundwater makes up 25 percent of the withdrawal, 140.9 mgd, while surface water makes up the other 75 percent, 414.2 mgd.

Mineral Extraction

Water withdrawals by the mineral extraction industries during 1978 totaled 1105.2 mgd. Surface water supplied 1057.3 mgd while groundwater supplied 47.9 mgd (see table 11). Oil field brine made up 38.5 mgd of this groundwater.[33] Most of the brine was injected into the oil-producing formations in water-flooding operations. Most of the surface water is recirculated through its source many times, while being used in product preparation or washing. This practice leads to large cumulative withdrawals for the mineral extraction industries.

The major minerals industries in Illinois are fluorspar mining, quarrying, sand and gravel operations, oil production, and coal mining. Their rates of withdrawal are:

Mineral	Groundwater (mgd)	Surface water (mgd)	Total (mgd)
Fluorspar	1.1	0.6	1.7
Quarrying	1.2	9.7	10.9
Sand & Gravel	0.8	31.9	32.7
Oil	44.2*	3.4	47.6
Coal	0.6	1011.7	1012.3

Including 38.5 mgd brine

Rural Water Use

For the purpose of this report rural water use (withdrawals) is divided into three classifications: domestic, livestock, and irrigation. While the amount of water withdrawn for rural uses is small (<0.5 percent) when compared with the other withdrawal uses in Illinois, rural withdrawals have increased from an estimated 81 mgd in 1970[34] and 101 mgd in 1975[35] to an estimated 220 mgd during 1978 (see table 14).

There has been no attempt during this study to break down the rural water use estimate into groundwater and surface water sources. Because of

Table 4. Water Withdrawals by Self-Supplied Industry, Manufacturing, by Major SIC Group, 1978

Major SIC group	Manufacturing groups	Withdrawals (mgd) Ground-water	Surface water	Total
20	Food and kindred products	31.6	58.0	89.6
21	Tobacco manufacturers	n	0.4	0.4
22	Textile and mill products	0.8	n	0.8
23	Apparel and fabric products	0	n	0
24	Lumber and wood products	0.1	0.1	0.2
25	Furniture and fixtures	0.4	n	0.4
26	Paper and allied products	18.7	16.6	35.3
27	Printing, publishing, & allied industries	0.3	4.0	4.3
28	Chemical and allied industries	38.7	50.7	89.4
29	Petroleum and coal products	31.9	19.7	51.6
30	Rubber and plastic products	8.0	0	8.0
31	Leather and leather products	n	n	n
32	Stone, clay, and glass	1.6	12.9	14.5
33	Primary metals industries	31.8	221.1	252.9
34	Fabricated metal products	9.3	11.3	20.6
35	Machinery (except electrical)	4.6	40.4	45.0
36	Electrical and electronics	3.2	0.5	3.7
37	Transportation equipment	0.3	4.0	4.3
38	Instruments and related products	0.1	n	0.1
39	Misc. manufacturing industries	n	1.0	1.0
	Totals	181.4	440.7	622.1

Note, n = none; 0 = <0.05

Table 5. Water Withdrawals by Self-Supplied Industry, Manufacturing, by Specific SIC Group, 1978

Specific SIC group	Manufacturing groups	Withdrawals (mgd) Ground-water	Surface water	Total
204	Grain mill products	7.7	52.7	60.4
207	Fats and oils	6.3	2.7	9.0
208	Beverages	5.2	2.5	7.7
262	Paper mills	1.8	6.2	8.0
263	Paperboard mills	9.4	6.7	16.1
266	Building paper mills	5.9	0	5.9
281	Industrial inorganic chemicals	13.1	12.3	25.4
282	Plastics and resins	9.3	10.0	19.3
283	Drugs	4.8	13.3	18.1
286	Industrial organic chemicals	3.2	12.0	15.2
287	Agricultural chemicals	3.2	2.0	5.2
291	Petroleum refining	30.8	19.7	50.5
307	Plastic products	6.0	n	6.0
321	Flat glass	0.4	9.2	9.6
331	Steel rolling and finishing	26.7	202.3	229.0
332	Iron and steel foundries	2.9	18.7	21.6
344	Fabricated structural metal products	0.4	4.7	5.1
348	Ordnance and accessories	3.6	2.4	6.0
352	Farm and garden machinery	0.2	36.8	37.0
	Totals	140.9	414.2	555.1

Note: n = none; 0 = <0.05

District	Withdrawal
Northwest	101.0 gpcd
Northeast	85.1
West	71.0
Central	87.1
East	80.8
West Southwest	70.0
East Southeast	54.6
Southwest	61.1
Southeast	56.9

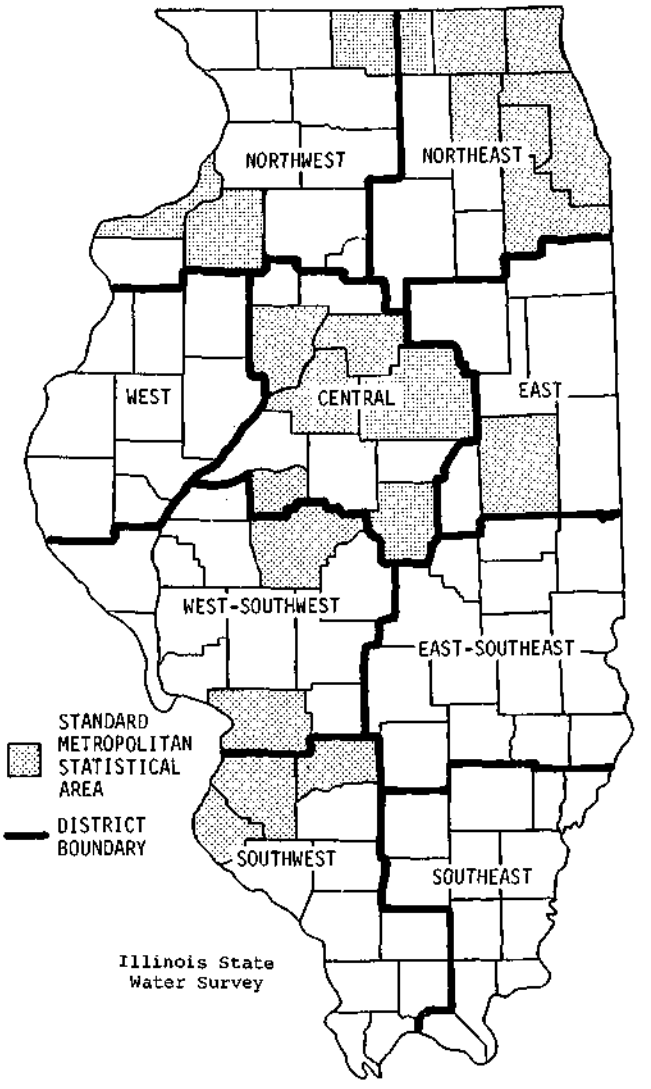


Figure 2. District domestic per capita water use, 1978

the relative magnitude of rural use compared with other withdrawal categories, and the knowledge that most of these withdrawals are from groundwater, rural water use is reported as groundwater withdrawals in table 16 and is not shown in table 17.

Domestic

Rural domestic use for 1978 was estimated to be 82.2 mgd. The rural domestic use was computed by multiplying the population in each county not served by a public water system by a district per capita water use. The district per capita water use was derived by averaging the per capita water use of all public water supply systems serving less than 800 persons but located outside SMSA's. The district rural domestic per capita use ranged from 54.6 gallons per day (gpd) in the East Southeastern district to 101.0 gpd in the Northwestern district (figure 2).

Table 6. Livestock Water Requirements

Livestock	*Water use (gpd)*
Milk cows	35
Horse, mule, cattle	12
Hog	4
Sheep	2
Chicken	0.06
Turkey	0.12

From references 36, 37, and 38.

Livestock

Water withdrawals for livestock use in 1978 were estimated to be 65.9 mgd. The water use estimates for livestock are based on a fixed amount of water used per head, for each type of animal. County livestock populations were provided by the annual Illinois agricultural census.[29] Daily consumption rates (table 6) provided the basis for these calculations.

Irrigation

Withdrawals for irrigation during 1978 were estimated to be 71.9 mgd on an annual basis. Most of this water is applied during the months of June, July, and August. The water use estimates for irrigation are based upon a University of Illinois Agricultural Engineering 1977 survey of irrigation in Illinois.[39] This was updated with the help of the U of I Agricultural Engineering Department and the State Water Survey Northern Regional Office. For all but the 22 northern Illinois counties, irrigation estimates were obtained by multiplying an average annual acre-inch value times the number of acres irrigated. This value was 8.5 inches for Mason County and 5.4 inches for the other counties. For the 22 northern Illinois counties, estimates of water withdrawals for irrigation were based upon county rainfall and the number of irrigation wells.

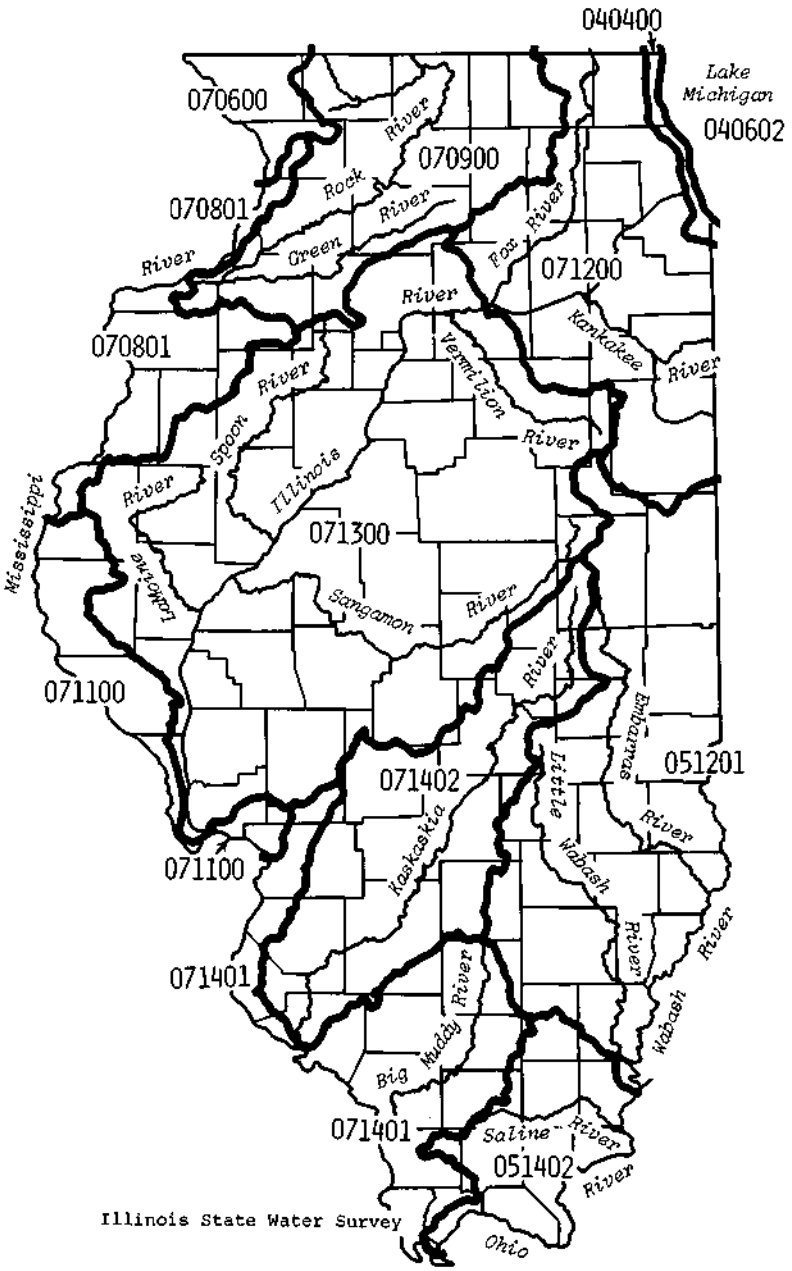
There has been a substantial increase in the acreage of agricultural lands irrigated since 1950, from 9000 acres[26] to an estimated 120,400 acres in 1978. Total acreage (including golf courses, cemeteries, etc.) under irrigation was estimated to 172,000 acres.

Fish and Wildlife Management Areas Water Use

The Illinois Department of Conservation, U.S. Fish and Wildlife Service, and the U.S. Forest Service reported water withdrawals within their management areas to be 44.2 mgd in 1978. Most of the water was used to flood portions of water fowl areas during the fall migration. Surface water made up 35.8 mgd of the withdrawals, with groundwater providing the other 8.4 mgd (see tables 16 and 17).

Hydrologic Basin Surface Water Use

For the purpose of having a standard framework for detailed water and related land-resources planning, the state has been divided into 12 major hydrologic units by the U.S. Geological Survey.[30] Generally, these units are concomitant with the watershed boundaries for major river systems in Illinois (figures 3 and 4). Total surface water (including lakes and ponds) withdrawals within the units (figure 4) ranged from 1.3 mgd in the Mississippi River drainage above Lock and Dam 13 to 18,229.1 mgd in the Mississippi River drainage basin upstream from the mouth of the Des Moines River to Lock and Dam 13.



Unit	Withdrawal mgd
040400	17.0
040602	3138.6
051201	421.3
051402	608.7
070600	0.0
070801	18209.7
070900	2655.8
071100	632.4
071200	11341.3
071300	4374.8
071401	393.6
071402	2278.7
Total	44071.9

Figure 3. Surface water withdrawals by self-supplied industry, by hydrologic units, 1978

SUMMARY OF ILLINOIS WATER USE

Total accounted water withdrawals in Illinois during 1978 were 46,366.1 mgd (see table 15). The 1978 withdrawal was about 59 percent greater than the 1975 withdrawals estimated by the U.S. Geological Survey.[35] Surface water accounted for 45,420.4 mgd and groundwater supplied 945.7 mgd (see tables 16 and 17). The water withdrawals by each category are given in table 7.

Standard Metropolitan Statistical Areas account for 35 percent, 16,343.8 mgd, of the total water use in the state. The SMSA's also have 33 percent, 14,708.2 mgd, of the state's self-supplied industrial withdrawals (see table 18). Excluding the electric power industry withdrawals, SMSA's account for 58 percent, 2229.8 mgd, of the water use in the state (see table 19).

Unit	Withdrawal mgd
040400	17.0
040602	4216.4
051201	442.3
051402	612.7
070600	1.3
070801	18229.1
070900	2655.8
071100	656.8
071200	11351.4
071300	4454.5
071401	477.3
071402	2305.8
Total	45420.4

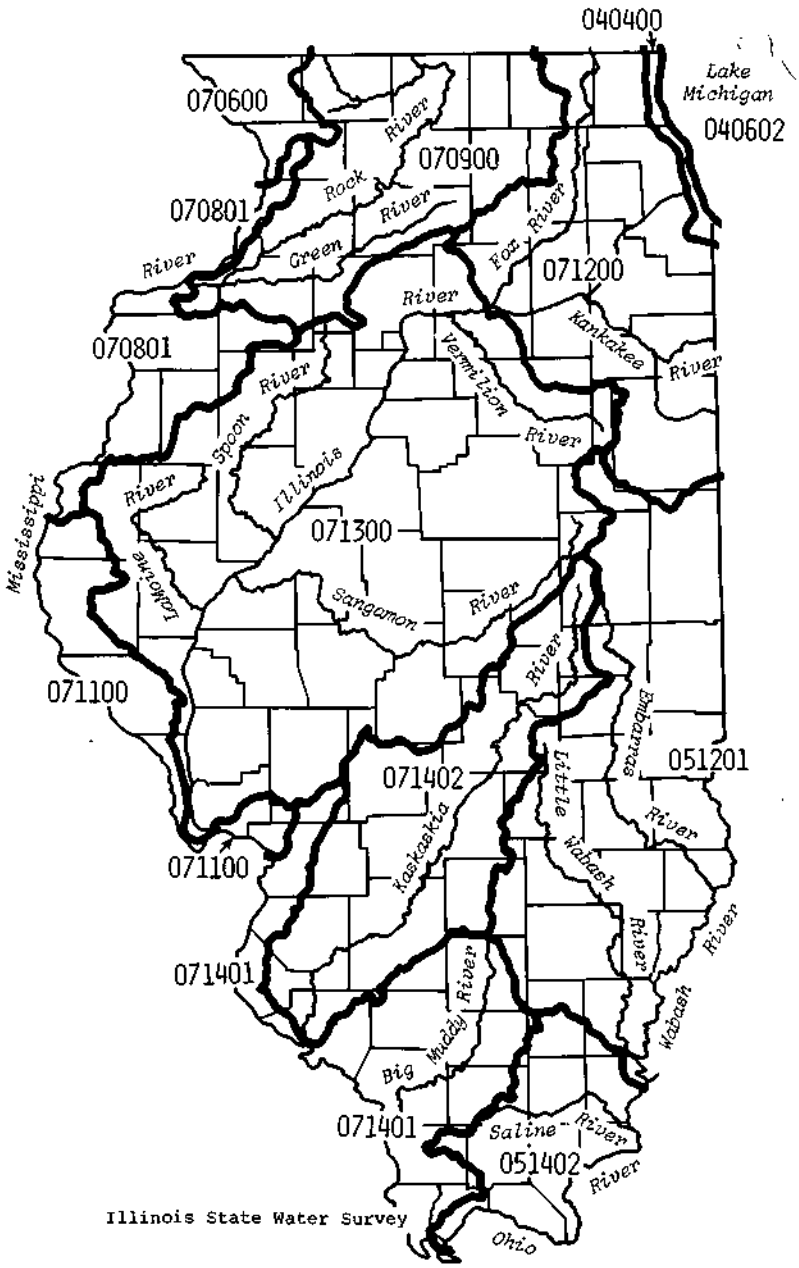


Figure 4. Total surface water withdrawals by hydrologic unit, 1978

Table 7. Summary of Total Water Withdrawals, 1978

Category	*Groundwater*	*Surface water*	*Total*
Public Systems	458.2	1,312.7	1,770.9
Self-supplied Industry	259.1	44,071.9	44,331.0
Rural	220.0*	*	220.0
Fish and Wildlife	8.4	35.8	44.2
Total	945.7	45,420.4	46,366.1

*See page 8

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APPENDIX

Table 8. Public Water Systems Withdrawals, 1978

District / County	Groundwater (mgd)	Surface water (mgd)	Total (mgd)
Northwest			
006 Bureau	3.706	0	3.706
008 Carroll	1.549	0	1.549
037 Henry	3.870	0	3.870
043 Jo Daviess	2.923	0	2.923
052 Lee	3.773	0	3.773
066 Mercer	.857	0	.857
071 Ogle	6.435	0	6.435
078 Putnam	.367	0	.367
081 Rock Island	2.455	18.799	21.254
089 Stephenson	6.260	0	6.260
098 Whiteside	5.279	0	5.279
101 Winnebago	39.496	0	39.496
District total	*76.970*	*18.799*	*95.769*
Northeast			
004 Boone	4.103	0	4.103
016 Cook	79.923	1046.868	1126.791
019 DeKalb	8.190	0	8.190
022 DuPage	65.778	0	65.778
032 Grundy	2.291	0	2.291
045 Kane	30.971	0	30.971
047 Kendall	1.740	0	1.740
049 Lake	12.853	30.969	43.822
050 LaSalle	12.659	3.805	16.464
056 McHenry	10.639	0	10.639
099 Will	30.019	0	30.019
District total	*259.166*	*1081.642*	*1340.808*
West			
001 Adams	.543	7.485	8.028
005 Brown	.052	.251	.303
029 Fulton	.973	2.396	3.369
034 Hancock	.113	1.329	1.442
036 Henderson	7.094	0	7.094
048 Knox	1.203	0	1.203
055 McDonough	.605	2.800	3.405
085 Schuyler	.438	0	.438
088 Stark	.467	0	.467
094 Warren	2.597	0	2.597
District total	*14.085*	*14.261*	*28.346*
Central			
020 DeWitt	1.607	0	1.607
054 Logan	3.558	0	3.558
057 McLean	3.573	7.800	11.373
058 Macon	.793	16.000	16.793
062 Marshall	1.082	0	1.082
063 Mason	1.374	0	1.374
065 Menard	.894	0	.894
072 Peoria	13.153	16.050	29.203
090 Tazewell	13.110	.053	13.163
102 Woodford	1.518	.493	2.011
District total	*40.662*	*40.396*	*81.058*
East			
010 Champaign	18.369	0	18.369
027 Ford	1.424	0	1.424
038 Iroquois	1.966	0	1.966
046 Kankakee	1.496	9.879	11.375
053 Livingston	1.652	1.580	3.232
074 Piatt	.984	0	.984
092 Vermilion	1.579	8.712	10.291
District total	*27.470*	*20.171*	*47.641*

Table 8. (Concluded)

District / *County*	*Groundwater (mgd)*	*Surface water (mgd)*	*Total (mgd)*
W. Southwest			
003 Bond	.050	.622	.672
007 Calhoun	.306	0	.306
009 Cass	1.205	.240	1.445
011 Christian	1.168	2.792	3.960
031 Greene	.219	.332	.551
042 Jersey	.684	0	.684
059 Macoupin	.066	3.422	3.488
060 Madison	8.987	21.270	30.257
068 Montgomery	.489	1.848	2.337
069 Morgan	.120	.535	.655
075 Pike	.733	.450	1.183
084 Sangamon	2.138	21.130	23.268
086 Scott	4.266	0	4.266
District total	*20.431*	*52.641*	*73.072*
E. Southeast			
012 Clark	1.613	0	1.613
013 Clay	0	.950	.950
015 Coles	.085	4.324	4.409
017 Crawford	1.530	0	1.530
018 Cumberland	.234	0	.234
021 Douglas	.831	.481	1.312
023 Edgar	.296	1.340	1.636
025 Effingham	.227	1.466	1.693
026 Fayette	.214	1.121	1.335
040 Jasper	.030	.320	.350
051 Lawrence	1.120	0	1.120
070 Moultrie	.817	0	.817
080 Richland	.102	1.000	1.102
087 Shelby	1.465	.100	1.565
District total	*8.564*	*11.102*	*19.666*
Southwest			
002 Alexander	.110	1.460	1.570
014 Clinton	.316	1.173	1.489
039 Jackson	.117	5.310	5.427
044 Johnson	0	.447	.447
061 Marion	.020	3.558	3.578
067 Monroe	.117	.340	.457
073 Perry	.031	.300	.331
077 Pulaski	.709	0	.709
079 Randolph	.714	2.530	3.244
082 St. Clair	.370	39.520	39.890
091 Union	1.620	.565	2.185
095 Washington	.070	.427	.497
100 Williamson	0	1.040	1.040
District total	*4.194*	*56.670*	*60.864*
Southeast			
024 Edwards	.025	.080	.105
028 Franklin	0	12.410	12.410
030 Gallatin	.410	.041	.451
033 Hamilton	0	0	0
035 Hardin	.059	.255	.314
041 Jefferson	0	0	0
064 Massac	4.464	0	4.464
076 Pope	0	.100	.100
083 Saline	.010	1.587	1.597
093 Wabash	.462	1.300	1.762
096 Wayne	.087	1.160	1.247
097 White	1.178	.020	1.198
District total	*6.695*	*16.953*	*23.648*
State total	**458.237**	**1312.635**	**1770.872**

Figures may not add to totals because of independent rounding.

Table 9. Self -Supplied Industry, Electrical Power Generation Water Withdrawals, Reported 1978
(SIC 4911 & 4931)

District / *County*	*Thermoelectric* *Groundwater (mgd)*	*Thermoelectric* *Surface water (mgd)*	*Hydroelectric* *Surface water (mgd)*	*Total (mgd)*
Northwest				
006 Bureau	0	0	0	0
008 Carroll	0	0	0	0
037 Henry	0	0	0	0
043 Jo Daviess	0	0	0	0
052 Lee	0	0	2135.350	2135.350
066 Mercer	0	0	0	0
071 Ogle	0	0	0	0
078 Putnam	0	236.128	0	236.128
081 Rock Island	.047	1379.956	698.067	2078.070
089 Stephenson	0	0	0	0
098 Whiteside	0	0	0	0
101 Winnebago	0	0	478.305	478.305
District total	*.047*	*1616.084*	*3311.722*	*4927.853*
Northeast				
004 Boone	0	0	0	0
016 Cook	.037	1674.715	0	1674.752
019 DeKalb	0	0	0	0
022 DuPage	.010	0	0	.010
032 Grundy	1.030	3289.970	0	3291.000
045 Kane	0	0	0	0
047 Kendall	0	0	0	0
049 Lake	0	3113.510	0	3113.510
050 LaSalle	.295	0	1697.000	1697.295
056 McHenry	0	0	0	0
099 Will	2.138	2936.230	1471.530	4409.898
District total	*3.509*	*11014.425*	*3168.530*	*14186.464*
West				
001 Adams	0	0	0	0
005 Brown	0	0	0	0
029 Fulton	.089	560.774	0	560.863
034 Hancock	0	0	16112.700	16112.700
036 Henderson	0	0	0	0
048 Knox	0	0	0	0
055 McDonough	0	0	0	0
085 Schuyler	0	0	0	0
088 Stark	0	0	0	0
094 Warren	0	0	0	0
District total	*.089*	*560.774*	*16112.700*	*16673.563*
Central				
020 DeWitt	0	.030	0	.030
054 Logan	0	0	0	0
057 McLean	0	0	0	0
058 Macon	0	0	0	0
062 Marshall	0	0	0	0
063 Mason	0	274.495	0	274.495
065 Menard	0	0	0	0
072 Peoria	0	339.850	0	339.850
090 Tazewell	.134	1073.399	0	1073.533
102 Woodford	0	0	0	0
District total	*.134*	*1687.774*	*0*	*1687.908*
East				
010 Champaign	0	0	0	0
027 Ford	0	0	0	0
038 Iroquois	0	0	0	0
046 Kankakee	0	0	0	0
053 Livingston	0	0	0	0
074 Piatt	0	0	0	0
092 Vermilion	0	2.173	0	2.173
District total	*0*	*2.173*	*0*	*2.173*

Table 9. (Concluded)

District / County	Thermoelectric: Groundwater (mgd)	Thermoelectric: Surface water (mgd)	Hydroelectric: Surface water (mgd)	Total (mgd)
W. Southwest				
003 Bond	0	0	0	0
007 Calhoun	0	0	0	0
009 Cass	0	0	0	0
011 Christian	0	691.603	0	691.603
031 Greene	0	0	0	0
042 Jersey	0	0	0	0
059 Macoupin	0	0	0	0
060 Madison	0	630.005	0	630.005
068 Montgomery	0	452.000	0	452.000
069 Morgan	.331	125.359	0	125.690
075 Pike	0	0	0	0
084 Sangamon	0	230.500	0	230.500
086 Scott	0	0	0	0
District total	*.331*	*2129.467*	*0*	*2129.798*
E. Southeast				
012 Clark	0	0	0	0
013 Clay	0	0	0	0
015 Coles	0	0	0	0
017 Crawford	1.253	86.530	0	87.783
018 Cumberland	0	0	0	0
021 Douglas	0	0	0	0
023 Edgar	0	0	0	0
025 Effingham	0	0	0	0
026 Fayette	0	0	0	0
040 Jasper	0	302.400	0	302.400
051 Lawrence	0	0	0	0
070 Moultrie	0	0	0	0
080 Richland	0	0	0	0
087 Shelby	0	0	0	0
District total	*1.253*	*388.930*	*0*	*390.183*
Southwest				
002 Alexander	0	0	0	0
014 Clinton	0	.500	0	.500
039 Jackson	0	0	0	0
044 Johnson	0	0	0	0
061 Marion	0	0	0	0
067 Monroe	0	0	0	0
073 Perry	0	0	0	0
077 Pulaski	0	0	0	0
079 Randolph	0	1797.620	0	1797.620
082 St. Clair	0	85.050	0	85.050
091 Union	0	0	0	0
095 Washington	0	0	0	0
100 Williamson	0	105.127	0	105.127
District total	*0*	*1988.297*	*0*	*1988.297*
Southeast				
024 Edwards	0	0	0	0
028 Franklin	0	0	0	0
030 Gallatin	0	0	0	0
033 Hamilton	0	0	0	0
035 Hardin	0	0	0	0
041 Jefferson	0	0	0	0
064 Massac	.904	498.196	0	499.100
076 Pope	0	0	0	0
083 Saline	0	0	0	0
093 Wabash	0	26.320	0	26.320
096 Wayne	0	0	0	0
097 White	0	0	0	0
District total	*.904*	*524.516*	*0*	*525.420*
State total	6.268	19912.440	22592.952	42511.659

Figures may not add to totals because of independent rounding.

Table 10. Self-Supplied Industry, Manufacturing
Water Withdrawals, Reported 1978
(SIC 2000-3999)

District *County*	*Groundwater* *(mgd)*	*Surface water* *(mgd)*	*Total* *(mgd)*
Northwest			
006 Bureau	.057	15.114	15.171
008 Carroll	.070	0	.070
037 Henry	.086	0	.086
043 Jo Daviess	2.658	0	2.658
052 Lee	.312	.050	.362
066 Mercer	0	0	0
071 Ogle	1.195	0	1.195
078 Putnam	0	12.700	12.700
081 Rock Island	9.154	17.842	26.996
089 Stephenson	2.521	0	2.521
098 Whiteside	1.687	29.077	30.764
101 Winnebago	7.060	0	7.060
District total	*24.800*	*74.783*	*99.583*
Northeast			
004 Boone	.252	0	.252
016 Cook	11.434	182.955	194.389
019 DeKalb	.307	.720	1.027
022 DuPage	.959	.006	.965
032 Grundy	10.285	4.221	14.507
045 Kane	3.284	.050	3.334
047 Kendall	.860	0	.860
049 Lake	2.740	17.042	19.782
050 LaSalle	5.376	13.938	19.314
056 McHenry	2.027	0	2.027
099 Will	7.806	4.588	12.394
District total	*45.330*	*223.520*	*268.851*
West			
001 Adams	9.841	0	9.841
005 Brown	0	0	0
029 Fulton	0	0	0
034 Hancock	.024	0	.024
036 Henderson	0	0	0
048 Knox	<.001	0	<.001
055 McDonough	.026	0	.026
085 Schuyler	0	0	0
088 Stark	0	0	0
094 Warren	0	0	0
District total	*9.890*	*0*	*9.890*
Central			
020 DeWitt	0	.112	.112
054 Logan	.011	0	.011
057 McLean	.500	0	.500
058 Macon	<.001	10.200	10.200
062 Marshall	.550	0	.550
063 Mason	.003	0	.003
065 Menard	0	0	0
072 Peoria	8.742	28.940	37.682
090 Tazewell	6.332	17.689	24.020
102 Woodford	.002	0	.002
District total	*16.140*	*56.941*	*73.081*
East			
010 Champaign	4.640	0	4.640
027 Ford	.107	0	.107
038 Iroquois	.278	0	.278
046 Kankakee	.323	0	.323
053 Livingston	.063	0	.063
074 Piatt	2.290	0	2.290
092 Vermilion	3.426	.002	3.428
District total	*11.128*	*.002*	*11.131*

Table 10. (Concluded)

District / *County*	*Groundwater (mgd)*	*Surface water (mgd)*	*Total (mgd)*
W. Southwest			
003 Bond	.050	0	.050
007 Calhoun	0	0	0
009 Cass	1.135	0	1.135
011 Christian	1.600	0	1.600
031 Greene	0	0	0
042 Jersey	0	0	0
059 Macoupin	0	0	0
060 Madison	56.252	57.033	113.285
068 Montgomery	0	.440	.440
069 Morgan	2.926	0	2.926
075 Pike	0	0	0
084 Sangamon	0	0	0
086 Scott	0	0	0
District total	*61.963*	*57.473*	*119.436*
E. Southeast			
012 Clark	0	0	0
013 Clay	0	0	0
015 Coles	0	0	0
017 Crawford	4.995	0	4.995
018 Cumberland	0	20.000	20.000
021 Douglas	.021	7.000	7.021
023 Edgar	0	0	0
025 Effingham	0	0	0
026 Fayette	0	0	0
040 Jasper	0	0	0
051 Lawrence	.058	0	.058
070 Moultrie	0	0	0
080 Richland	0	0	0
087 Shelby	0	0	0
District total	*5.073*	*27.000*	*32.073*
Southwest			
002 Alexander	0	0	0
014 Clinton	0	0	0
039 Jackson	0	0	0
044 Johnson	0	0	0
061 Marion	0	0	0
067 Monroe	0	0	0
073 Perry	0	.523	.523
077 Pulaski	0	0	0
079 Randolph	0	0	0
082 St. Clair	3.667	0	3.667
091 Union	0	.039	.039
095 Washington	0	0	0
100 Williamson	0	0	0
District total	*3.667*	*.562*	*4.229*
Southeast			
024 Edwards	0	0	0
028 Franklin	0	.416	.416
030 Gallatin	0	0	0
033 Hamilton	0	0	0
035 Hardin	0	0	0
041 Jefferson	0	0	0
064 Massac	3.412	0	3.412
076 Pope	0	0	0
083 Saline	0	0	0
093 Wabash	0	.015	.015
096 Wayne	<.001	<.001	<.001
097 White	0	0	0
District total	*3.412*	*.431*	*3.843*
State total	181.404	440.713	622.117

Figures may not add to totals because of independent rounding.

Table 11. Self-Supplied Industry, Mineral Extraction
Water Withdrawals, Reported 1978
(SIC 1000-1499)

District / County	Groundwater		Surface water	Total
	Brine (mgd)	Fresh (mgd)	(mgd)	(mgd)
Northwest				
006 Bureau	0	0	7.000	7.000
008 Carroll	0	0	0	0
037 Henry	0	0	0	0
043 Jo Daviess	0	0	0	0
052 Lee	0	.046	0	.046
066 Mercer	0	0	0	0
071 Ogle	0	.040	.001	.041
078 Putnam	0	0	0	0
081 Rock Island	0	0	1.902	1.902
089 Stephenson	0	0	0	0
098 Whiteside	0	.001	.100	.101
101 Winnebago	0	.058	.684	.742
District Total	*0*	*.144*	*9.687*	*9.831*
Northeast				
004 Boone	0	0	3.600	3.600
016 Cook	0	.010	3.638	3.648
019 DeKalb	0	.001	.500	.501
022 DuPage	0	1.120	0	1.120
032 Grundy	0	0	0	0
045 Kane	0	.010	.010	.020
047 Kendall	0	<.001	0	<.001
049 Lake	0	.050	0	.050
050 LaSalle	0	.512	6.251	6.763
056 McHenry	0	.026	0	.026
099 Will	0	.050	1.989	2.039
District Total	*0*	*1.780*	*15.988*	*17.767*
West				
001 Adams	0	0	0	0
005 Brown	0	0	0	0
029 Fulton	0	.161	958.923	959.084
034 Hancock	0	0	0	0
036 Henderson	0	0	0	0
048 Knox	0	.003	1.555	1.558
055 McDonough	0	.001	0	.001
085 Schuyler	0	0	0	0
088 Stark	0	<.001	0	<.001
094 Warren	0	0	0	0
District Total	*0*	*.165*	*960.478*	*960.643*
Central				
020 DeWitt	0	0	0	0
054 Logan	0	0	0	0
057 McLean	0	0	0	0
058 Macon	0	0	2.000	2.000
062 Marshall	0	0	0	0
063 Mason	0	0	0	0
065 Menard	0	0	0	0
072 Peoria	0	.003	2.705	2.708
090 Tazewell	0	<.001	1.600	1.600
102 Woodford	0	0	1.600	1.600
District Total	*0*	*.003*	*7.905*	*7.908*
East				
010 Champaign	0	0	2.041	2.041
027 Ford	0	0	.250	.250
038 Iroquois	0	0	0	0
046 Kankakee	0	<.001	0	<.001
053 Livingston	0	0	0	0
074 Piatt	0	0	0	0
092 Vermilion	0	<.001	0	<.001
District Total	*0*	*<.001*	*2.291*	*2.291*

Table 11. (Concluded)

District / County	Groundwater: Brine (mgd)	Groundwater: Fresh (mgd)	Surface water (mgd)	Total (mgd)
W. Southwest				
003 Bond	.010	.006	0	.016
007 Calhoun	0	0	0	0
009 Cass	0	0	0	0
011 Christian	.491	0	0	.491
031 Greene	0	<.001	0	<.001
042 Jersey	0	0	0	0
059 Macoupin	0	0	3.427	3.427
060 Madison	.122	.028	0	.149
068 Montgomery	0	.032	.008	.039
069 Morgan	0	0	0	0
075 Pike	0	0	.010	.010
084 Sangamon	0	0	4.185	4.185
086 Scott	0	0	0	0
District Total	*.622*	*.065*	*7.629*	*8.317*
E. Southeast				
012 Clark	.085	.035	0	.120
013 Clay	1.125	.070	.001	1.197
015 Coles	.155	.054	.043	.253
017 Crawford	2.165	3.027	.031	5.223
018 Cumberland	.293	.001	.005	.298
021 Douglas	0	0	3.258	3.258
023 Edgar	.046	0	0	.046
025 Effingham	.460	0	0	.460
026 Fayette	5.214	0	0	5.214
040 Jasper	.465	.015	0	.480
051 Lawrence	5.055	.008	.061	5.123
070 Moultrie	0	0	0	0
080 Richland	.997	.021	0	1.018
087 Shelby	.029	0	0	.029
District Total	*16.091*	*3.231*	*3.399*	*22.721*
Southwest				
002 Alexander	0	.040	0	.040
014 Clinton	.461	.005	13.171	13.637
039 Jackson	0	0	.178	.178
044 Johnson	0	0	.008	.008
061 Marion	10.702	0	6.948	17.650
067 Monroe	0	0	0	0
073 Perry	.015	0	4.804	4.819
077 Pulaski	0	0	0	0
079 Randolph	0	.014	7.779	7.792
082 St. Clair	0	.001	1.745	1.745
091 Union	0	.016	0	.016
095 Washington	.525	.004	0	.529
100 Williamson	0	.180	1.854	2.034
District Total	*11.703*	*.260*	*36.486*	*48.449*
Southeast				
024 Edwards	.447	.009	0	.456
028 Franklin	.398	.023	6.736	7.157
030 Gallatin	.317	.131	.697	1.145
033 Hamilton	1.482	.038	0	1.520
035 Hardin	0	1.147	.590	1.737
041 Jefferson	.603	0	1.111	1.714
064 Massac	0	0	0	0
076 Pope	0	0	0	0
083 Saline	.362	0	4.100	4.462
093 Wabash	.946	.730	.016	1.692
096 Wayne	2.491	.085	0	2.575
097 White	3.029	1.630	.202	4.860
District Total	*10.073*	*3.793*	*13.452*	*27.319*
State Total	38.490	9.441	1057.316	1105.246

Figures may not add to totals because of independent rounding.

Table 12. Self-Supplied Industry, Excluding Electrical Power Generation Water Withdrawals, Reported 1978

District / County	Groundwater* (mgd)	Surface water (mgd)	Total (mgd)
Northwest			
006 Bureau	.057	22.114	22.171
008 Carroll	.233	0	.233
037 Henry	.086	0	.086
043 Jo Daviess	2.722	0	2.722
052 Lee	.561	.050	.611
066 Mercer	.001	0	.001
071 Ogle	1.235	.001	1.236
078 Putnam	0	12.700	12.700
081 Rock Island	9.154	19.744	28.898
089 Stephenson	2.521	0	2.521
098 Whiteside	1.688	29.177	30.865
101 Winnebago	8.359	.684	9.043
District total	*26.618*	*84.469*	*111.087*
Northeast			
004 Boone	.252	3.600	3.852
016 Cook	15.936	254.041	269.977
019 DeKalb	.308	1.220	1.528
022 DuPage	3.374	1.021	4.395
032 Grundy	11.656	4.221	15.877
045 Kane	3.470	.060	3.530
047 Kendall	.877	0	.877
049 Lake	2.859	17.042	19.901
050 LaSalle	5.888	20.188	26.076
056 McHenry	2.191	0	2.191
099 Will	8.878	6.577	15.455
District total	*55.689*	*307.970*	*363.659*
West			
001 Adams	9.841	0	9.841
005 Brown	0	0	0
029 Fulton	.161	958.923	959.084
034 Hancock	.024	0	.024
036 Henderson	0	0	0
048 Knox	.003	1.555	1.558
055 McDonough	.026	0	.026
085 Schuyler	0	0	0
088 Stark	<.001	0	<.001
094 Warren	0	0	0
District total	*10.055*	*960.478*	*970.534*
Central			
020 DeWitt	0	.112	.112
054 Logan	.011	0	.011
057 McLean	.500	0	.500
058 Macon	<.001	12.200	12.200
062 Marshall	.550	0	.550
063 Mason	.003	0	.003
065 Menard	0	0	0
072 Peoria	8.788	31.645	40.433
090 Tazewell	6.337	19.289	25.625
102 Woodford	.002	1.600	1.602
District total	*16.191*	*64.846*	*81.037*
East			
010 Champaign	4.640	2.041	6.681
027 Ford	.107	.250	.357
038 Iroquois	.278	0	.278
046 Kankakee	.324	0	.324
053 Livingston	.063	0	.063
074 Piatt	2.290	0	2.290
092 Vermilion	3.426	.002	3.428
District total	*11.129*	*2.294*	*13.422*

Table 12. (Concluded)

District County	Groundwater* (mgd)	Surface water (mgd)	Total (mgd)
W. Southwest			
003 Bond	.066	0	.066
007 Calhoun	0	0	0
009 Cass	1.135	0	1.135
011 Christian	2.091	0	2.091
031 Greene	<.001	0	<.001
042 Jersey	0	0	0
059 Macoupin	0	3.427	3.427
060 Madison	56.401	57.033	113.434
068 Montgomery	.032	.448	.479
069 Morgan	2.926	0	2.926
075 Pike	.002	.010	.012
084 Sangamon	0	4.185	4.185
086 Scott	0	0	0
District total	*62.653*	*65.102*	*127.755*
E. Southeast			
012 Clark	.120	0	.120
013 Clay	1.196	.001	1.197
015 Coles	.210	.043	.253
017 Crawford	10.188	.031	10.218
018 Cumberland	.293	20.005	20.298
021 Douglas	.021	10.258	10.279
023 Edgar	.046	0	.046
025 Effingham	.460	0	.460
026 Fayette	5.214	0	5.214
040 Jasper	.480	0	.480
051 Lawrence	5.120	.061	5.181
070 Moultrie	0	0	0
080 Richland	1.018	0	1.018
087 Shelby	.029	0	.029
District total	*24.395*	*30.399*	*54.794*
Southwest			
002 Alexander	.040	0	.040
014 Clinton	.466	13.171	13.637
039 Jackson	0	.178	.178
044 Johnson	0	.008	.008
061 Marion	10.702	6.948	17.650
067 Monroe	0	0	0
073 Perry	.015	5.327	5.342
077 Pulaski	0	0	0
079 Randolph	.014	7.779	7.792
082 St. Clair	16.882	1.745	18.627
091 Union	.016	.039	.055
095 Washington	.529	0	.529
100 Williamson	.180	1.854	2.034
District total	*28.845*	*37.048*	*65.893*
Southeast			
024 Edwards	.456	0	.456
028 Franklin	.421	7.152	7.573
030 Gallatin	.448	.697	1.145
033 Hamilton	1.520	0	1.520
035 Hardin	1.147	.590	1.737
041 Jefferson	.603	1.111	1.714
064 Massac	3.412	0	3.412
076 Pope	0	0	0
083 Saline	.362	4.100	4.462
093 Wabash	1.676	.031	1.707
096 Wayne	2.576	<.001	2.576
097 White	4.659	.202	4.860
District total	*17.279*	*13.883*	*31.162*
State total	252.852	1566.491	1819.343

'Includes 38.490 mgd brine
Figures may not add to totals because of independent rounding.

Table 13. Self-Supplied Industry, Total Water Withdrawals, Reported 1978

District / *County*	*Groundwater** *(mgd)*	*Surface water* *(mgd)*	*Total* *(mgd)*
Northwest			
006 Bureau	.057	22.114	22.171
008 Carroll	.233	0	.233
037 Henry	.086	0	.086
043 Jo Daviess	2.722	0	2.722
052 Lee	.561	2135.400	2135.961
066 Mercer	.001	0	.001
071 Ogle	1.235	.001	1.236
078 Putnam	0	248.828	248.828
081 Rock Island	9.201	2097.767	2106.968
089 Stephenson	2.521	0	2.521
098 Whiteside	1.688	29.177	30.865
101 Winnebago	8.359	478.989	487.348
District Total	*26.665*	*5012.275*	*5038.940*
Northeast			
004 Boone	.252	3.600	3.852
016 Cook	15.973	1928.756	1944.728
019 DeKalb	.308	1.220	1.528
022 DuPage	3.384	1.021	4.405
032 Grundy	12.686	3294.191	3306.877
045 Kane	3.470	.060	3.530
047 Kendall	.877	0	.877
049 Lake	2.859	3130.552	3133.411
050 LaSalle	6.183	1717.188	1723.371
056 McHenry	2.191	0	2.191
099 Will	11.016	4414.337	4425.353
District Total	*59.198*	*14490.925*	*14550.123*
West			
001 Adams	9.841	0	9.841
005 Brown	0	0	0
029 Fulton	.250	1519.698	1519.947
034 Hancock	.024	16112.700	16112.724
036 Henderson	0	0	0
048 Knox	.003	1.555	1.558
055 McDonough	.026	0	.026
085 Schuyler	0	0	0
088 Stark	<.001	0	<.001
094 Warren	0	0	0
District Total	*10.144*	*17633.953*	*17644.097*
Central			
020 DeWitt	0	.142	.142
054 Logan	.011	0	.011
057 McLean	.500	0	.500
058 Macon	<.001	12.200	12.200
062 Marshall	.550	0	.550
063 Mason	.003	274.495	274.498
065 Menard	0	0	0
072 Peoria	8.788	371.495	380.283
090 Tazewell	6.471	1092.688	1099.158
102 Woodford	.002	1.600	1.602
District Total	*16.325*	*1752.620*	*1768.945*
East			
010 Champaign	4.640	2.041	6.681
027 Ford	.107	.250	.357
038 Iroquois	.278	0	.278
046 Kankakee	.324	0	.324
053 Livingston	.063	0	.063
074 Piatt	2.290	0	2.290
092 Vermilion	3.426	2.175	5.601
District Total	*11.129*	*4.467*	*15.595*

Table 13. (Concluded)

District / *County*	*Groundwater* (mgd)*	*Surface water (mgd)*	*Total (mgd)*
W. Southwest			
003 Bond	.066	0	.066
007 Calhoun	0	0	0
009 Cass	1.135	0	1.135
011 Christian	2.091	691.603	693.694
031 Greene	<.001	0	<.001
042 Jersey	0	0	0
059 Macoupin	0	3.427	3.427
060 Madison	56.401	687.038	743.439
068 Montgomery	.032	452.448	452.479
069 Morgan	3.257	125.359	128.616
075 Pike	.002	.010	.012
084 Sangamon	0	234.685	234.685
086 Scott	0	0	0
District Total	*62.984*	*2194.569*	*2257.553*
E. Southeast			
012 Clark	.120	0	.120
013 Clay	1.196	.001	1.197
015 Coles	.210	.043	.253
017 Crawford	11.441	86.561	98.001
018 Cumberland	.293	20.005	20.298
021 Douglas	.021	10.258	10.279
023 Edgar	.046	0	.046
025 Effingham	.460	0	.460
026 Fayette	5.214	0	5.214
040 Jasper	.480	302.400	302.880
051 Lawrence	5.120	.061	5.181
070 Moultrie	0	0	0
080 Richland	1.018	0	1.018
087 Shelby	.029	0	.029
District Total	*25.648*	*419.329*	*444.977*
Southwest			
002 Alexander	.040	0	.040
014 Clinton	.466	13.671	14.137
039 Jackson	0	.178	.178
044 Johnson	0	.008	.008
061 Marion	10.702	6.948	17.650
067 Monroe	0	0	0
073 Perry	.015	5.327	5.342
077 Pulaski	0	0	0
079 Randolph	.014	1805.399	1805.412
082 St. Clair	16.882	86.795	103.677
091 Union	.016	.039	.055
095 Washington	.529	0	.529
100 Williamson	.180	106.981	107.161
District Total	*28.845*	*2025.345*	*2054.190*
Southeast			
024 Edwards	.456	0	.456
028 Franklin	.421	7.152	7.573
030 Gallatin	.448	.697	1.145
033 Hamilton	1.520	0	1.520
035 Hardin	1.147	.590	1.737
041 Jefferson	.603	1.111	1.714
064 Massac	4.316	498.196	502.512
076 Pope	0	0	0
083 Saline	.362	4.100	4.462
093 Wabash	1.676	26.351	28.027
096 Wayne	2.576	<.001	2.576
097 White	4.659	.202	4.860
District Total	*18.183*	*538.399*	*556.582*
State Total	**259.120**	**44071.883**	**44331.003**

'Includes 38.490 mgd brine
Figures may not add to totals because of independent rounding.

Table 14. Estimated Rural Water Withdrawals, 1978

District / *County*	*Domestic (mgd)*	*Livestock (mgd)*	*Irrigation (mgd)*	*Total (mgd)*
Northwest				
006 Bureau	1.027	1.128	.360	2.514
008 Carroll	.759	1.593	.450	2.802
037 Henry	1.610	2.644	2.240	6.494
043 Jo Daviess	.885	2.045	.120	3.050
052 Lee	.720	.748	2.531	3.999
066 Mercer	.764	1.257	.221	2.242
071 Ogle	1.819	1.705	.540	4.064
078 Putnam	.255	.170	.181	.606
081 Rock Island	1.481	.727	.780	2.987
089 Stephenson	.984	2.409	.195	3.588
098 Whiteside	2.020	1.400	5.528	8.948
101 Winnebago	4.809	.916	.715	6.441
District Total	*17.134*	*16.741*	*13.861*	*47.736*
Northeast				
004 Boone	.885	.543	.107	1.536
016 Cook	.851	.049	2.933	3.834
019 DeKalb	.782	1.063	.110	1.954
022 DuPage	1.838	.026	1.265	3.129
032 Grundy	.529	.173	.025	.727
045 Kane	1.932	.750	.315	2.997
047 Kendall	1.607	.370	.020	1.997
049 Lake	3.383	.137	.755	4.275
050 LaSalle	.790	.794	.030	1.614
056 McHenry	4.169	1.056	.768	5.993
099 Will	6.929	.391	.755	8.075
District Total	*23.695*	*5.352*	*7.083*	*36.130*
West				
001 Adams	.764	1.624	.603	2.991
005 Brown	.161	.500	0	.661
029 Fulton	.905	1.086	.040	2.031
034 Hancock	.531	1.302	.321	2.155
036 Henderson	.389	.669	1.406	2.464
048 Knox	.390	1.453	0	1.843
055 McDonough	.600	.818	0	1.418
085 Schuyler	.271	.617	.040	.929
088 Stark	.232	.283	0	.515
094 Warren	.476	1.118	0	1.594
District Total	*4.720*	*9.471*	*2.411*	*16.602*
Central				
020 DeWitt	.449	.220	0	.669
054 Logan	.300	.503	0	.803
057 McLean	.758	.775	.040	1.573
058 Macon	1.646	.208	0	1.854
062 Marshall	.388	.372	.121	.881
063 Mason	.815	.279	29.091	30.185
065 Menard	.435	.326	0	.760
072 Peoria	1.490	.507	0	1.997
090 Tazewell	1.028	.594	3.214	4.836
102 Woodford	1.022	.677	.040	1.739
District Total	*8.330*	*4.460*	*32.506*	*45.297*
East				
010 Champaign	1.382	.357	.157	1.895
027 Ford	.248	.265	0	.513
038 Iroquois	.928	.864	.804	2.596
046 Kankakee	2.106	.257	7.100	9.463
053 Livingston	1.114	.807	0	1.921
074 Piatt	.448	.188	.014	.650
092 Vermilion	1.722	.510	.040	2.272
District Total	*7.948*	*3.249*	*8.114*	*19.311*

Table 14. (Concluded)

District / *County*	*Domestic (mgd)*	*Livestock (mgd)*	*Irrigation (mgd)*	*Total (mgd)*
W. Southwest				
003 Bond	.342	.549	.080	.971
007 Calhoun	.251	.349	0	.600
009 Cass	.230	.446	.362	1.038
011 Christian	.362	.358	0	.719
031 Greene	.330	1.106	.482	1.918
042 Jersey	.496	.622	.221	1.339
059 Macoupin	.583	1.281	0	1.865
060 Madison	1.552	.750	.562	2.865
068 Montgomery	.548	.775	.161	1.484
069 Morgan	.362	.770	0	1.132
075 Pike	.573	2.128	.402	3.103
084 Sangamon	2.849	.766	.040	3.656
086 Scott	.205	.360	.221	.786
District Total	*8.684*	*10.261*	*2.531*	*21.476*
E. Southeast				
012 Clark	.360	.567	.181	1.108
013 Clay	.186	.334	0	.520
015 Coles	.382	.322	0	.704
017 Crawford	.236	.333	.135	.704
018 Cumberland	.311	.478	.016	.805
021 Douglas	.335	.277	0	.612
023 Edgar	.422	.591	.016	1.029
025 Effingham	.632	.882	.040	1.555
026 Fayette	.465	.648	.080	1.193
040 Jasper	.283	.555	0	.837
051 Lawrence	.307	.217	1.607	2.130
070 Moultrie	.192	.223	0	.415
080 Richland	.329	.321	0	.651
087 Shelby	.588	.620	.121	1.329
District Total	*5.028*	*6.369*	*2.196*	*13.592*
Southwest				
002 Alexander	.083	.110	.100	.294
014 Clinton	.410	1.060	.042	1.512
039 Jackson	.119	.401	.040	.560
044 Johnson	.337	.463	0	.800
061 Marion	.118	.523	0	.641
067 Monroe	.389	.372	.281	1.043
073 Perry	.262	.409	.201	.872
077 Pulaski	.146	.185	0	.331
079 Randolph	.196	.774	.201	1.170
082 St. Clair	1.952	.556	.603	3.111
091 Union	.184	.372	.040	.597
095 Washington	.361	.789	.201	1.351
100 Williamson	.142	.239	0	.380
District Total	*4.700*	*6.252*	*1.710*	*12.661*
Southeast				
024 Edwards	.199	.421	0	.619
028 Franklin	.107	.280	0	.388
030 Gallatin	.069	.167	.643	.879
033 Hamilton	.178	.271	0	.449
035 Hardin	.065	.146	0	.211
041 Jefferson	.203	.418	.020	.641
064 Massac	.131	.339	.121	.590
076 Pope	.046	.225	.001	.272
083 Saline	.210	.234	0	.444
093 Wabash	.240	.178	.064	.482
096 Wayne	.319	.657	0	.976
097 White	.213	.354	.643	1.210
District Total	*1.980*	*3.691*	*1.491*	*12.661*
State Total	82.218	65.845	71.903	219.966

Figures may not add to totals because of independent rounding.

Table 15. Total Water Withdrawals, Estimated and Reported 1978

District / County	Public systems (mgd)	Self-supplied industry (mgd)	Rural (mgd)	Fish and wildlife (mgd)	Total (mgd)
Northwest					
006 Bureau	3.706	22.171	2.514	0	28.392
008 Carroll	1.549	.233	2.802	1.278	5.862
037 Henry	3.870	.086	6.494	0	10.450
043 Jo Daviess	2.923	2.722	3.050	0	8.695
052 Lee	3.773	2135.961	3.999	0	2143.733
066 Mercer	.857	.001	2.242	0	3.100
071 Ogle	6.435	1.236	4.064	0	11.735
078 Putnam	.367	248.828	.606	0	249.801
081 Rock Island	21.254	2106.968	2.987	0	2131.209
089 Stephenson	6.260	2.521	3.588	0	12.368
098 Whiteside	5.279	30.865	8.948	0	45.092
101 Winnebago	39.496	487.348	6.441	0	533.285
District total	*95.769*	*5038.940*	*47.736*	*1.278*	*5183.723*
Northeast					
004 Boone	4.103	3.852	1.536	0	9.491
016 Cook	1126.791	1944.728	3.834	0	3075.353
019 DeKalb	8.190	1.528	1.954	0	11.672
022 DuPage	65.778	4.405	3.129	0	73.312
032 Grundy	2.291	3306.877	.727	0	3309.895
045 Kane	30.971	3.530	2.997	0	37.498
047 Kendall	1.740	.877	1.997	0	4.614
049 Lake	43.822	3133.411	4.275	.047	3181.555
050 LaSalle	16.464	1723.371	1.614	0	1741.449
056 McHenry	10.639	2.191	5.993	.237	19.060
099 Will	30.019	4425.353	8.075	.268	4463.715
District total	*1340.808*	*14550.123*	*36.130*	*.553*	*15927.614*
West					
001 Adams	8.028	9.841	2.991	0	20.860
005 Brown	.303	0	.661	0	.964
029 Fulton	3.369	1519.947	2.031	4.488	1529.835
034 Hancock	1.442	16112.724	2.155	0	16116.321
036 Henderson	7.094	0	2.464	0	9.558
048 Knox	1.203	1.558	1.843	0	4.605
055 McDonough	3.405	.026	1.418	0	4.850
085 Schuyler	.438	0	.929	0	1.367
088 Stark	.467	<.001	.515	0	.982
094 Warren	2.597	0	1.594	0	4.191
District total	*28.346*	*17644.097*	*16.602*	*4.488*	*17693.533*
Central					
020 DeWitt	1.607	.142	.669	0	2.418
054 Logan	3.558	.011	.803	0	4.372
057 McLean	11.373	.500	1.573	0	13.446
058 Macon	16.793	12.200	1.854	0	30.847
062 Marshall	1.082	.550	.881	0	2.513
063 Mason	1.374	274.498	30.185	2.130	308.187
065 Menard	.894	0	.760	0	1.654
072 Peoria	29.203	380.283	1.997	0	411.483
090 Tazewell	13.163	1099.158	4.836	0	1117.157
102 Woodford	2.011	1.602	1.739	0	5.352
District total	*81.058*	*1768.945*	*45.297*	*2.130*	*1897.430*
East					
010 Champaign	18.369	6.681	1.895	0	26.946
027 Ford	1.424	.357	.513	0	2.295
038 Iroquois	1.966	.278	2.596	0	4.840
046 Kankakee	11.375	.324	9.463	0	21.162
053 Livingston	3.232	.063	1.921	0	5.216
074 Piatt	.984	2.290	.650	0	3.924
092 Vermilion	10.291	5.601	2.272	0	18.164
District total	*47.641*	*15.595*	*19.311*	*0*	*82.547*

Table 15. (Concluded)

District County	Public systems (mgd)	Self-supplied industry (mgd)	Rural (mgd)	Fish and wildlife (mgd)	Total (mgd)
W. Southwest					
003 Bond	.672	.066	.971	0	1.709
007 Calhoun	.306	0	.600	3.502	4.408
009 Cass	1.445	1.135	1.038	.823	4.441
011 Christian	3.960	693.694	.719	0	698.373
031 Greene	.551	<.001	1.918	0	2.469
042 Jersey	.684	0	1.339	3.949	5.971
059 Macoupin	3.488	3.427	1.865	0	8.780
060 Madison	30.257	743.439	2.865	0	776.561
068 Montgomery	2.337	452.479	1.484	0	456.300
069 Morgan	.655	128.616	1.132	0	130.403
075 Pike	1.183	.012	3.103	0	4.298
084 Sangamon	23.268	234.685	3.656	0	261.608
086 Scott	4.266	0	.786	.371	5.422
District total	*73.072*	*2257.553*	*21.476*	*8.644*	*2360.745*
E. Southeast					
012 Clark	1.613	.120	1.108	0	2.841
013 Clay	.950	1.197	.520	0	2.667
015 Coles	4.409	.253	.704	0	5.366
017 Crawford	1.530	98.001	.704	0	100.235
018 Cumberland	.234	20.298	.805	0	21.337
021 Douglas	1.312	10.279	.612	0	12.203
023 Edgar	1.636	.046	1.029	0	2.712
025 Effingham	1.693	.460	1.555	0	3.708
026 Fayette	1.335	5.214	1.193	4.833	12.575
040 Jasper	.350	302.880	.837	0	304.067
051 Lawrence	1.120	5.181	2.130	0	8.432
070 Moultrie	.817	0	.415	1.657	2.889
080 Richland	1.102	1.018	.651	0	2.771
087 Shelby	1.565	.029	1.329	0	2.923
District total	*19.666*	*444.977*	*13.592*	*6.490*	*484.725*
Southwest					
002 Alexander	1.570	.040	.294	.274	2.178
014 Clinton	1.489	14.137	1.512	0	17.138
039 Jackson	5.427	.178	.560	2.679	8.844
044 Johnson	.447	.008	.800	0	1.255
061 Marion	3.578	17.650	.641	.107	21.975
067 Monroe	.457	0	1.043	0	1.500
073 Perry	.331	5.342	.872	0	6.545
077 Pulaski	.709	0	.331	0	1.040
079 Randolph	3.244	1805.412	1.170	0	1809.826
082 St. Clair	39.890	103.677	3.111	0	146.678
091 Union	2.185	.055	.597	1.686	4.522
095 Washington	.497	.529	1.351	0	2.377
100 Williamson	1.040	107.161	.380	.018	108.599
District total	*60.864*	*2054.190*	*12.661*	*4.763*	*2132.478*
Southeast					
024 Edwards	.105	.456	.619	0	1.181
028 Franklin	12.410	7.573	.388	0	20.370
030 Gallatin	.451	1.145	.879	0	2.475
033 Hamilton	0	1.520	.449	0	1.969
035 Hardin	.314	1.737	.211	0	2.262
041 Jefferson	0	1.714	.641	13.939	16.293
064 Massac	4.464	502.512	.590	1.953	509.519
076 Pope	.100	0	.272	0	.372
083 Saline	1.597	4.462	.444	0	6.503
093 Wabash	1.762	28.027	.482	0	30.272
096 Wayne	1.247	2.576	.976	0	4.799
097 White	1.198	4.860	1.210	0	7.268
District total	*23.648*	*556.582*	*7.162*	*15.892*	*2132.478*
State total	1770.872	44331.003	219.966	44.238	46366.079

Figures may not add to totals because of independent rounding.

Table 16. Total Groundwater Withdrawals, Estimated and Reported 1978

District / *County*	*Public systems (mgd)*	*Self-supplied industry (mgd)*	*Rural* (mgd)*	*Fish and wildlife (mgd)*	*Total (mgd)*
Northwest					
006 Bureau	3.706	.057	2.514	0	6.277
008 Carroll	1.549	.233	2.802	0	4.584
037 Henry	3.870	.086	6.494	0	10.450
043 Jo Daviess	2.923	2.722	3.050	0	8.695
052 Lee	3.773	.561	3.999	0	8.333
066 Mercer	.857	.001	2.242	0	3.100
071 Ogle	6.435	1.235	4.064	0	11.735
078 Putnam	.367	0	.606	0	.973
081 Rock Island	2.455	9.201	2.987	0	14.643
089 Stephenson	6.260	2.521	3.588	0	12.368
098 Whiteside	5.279	1.688	8.948	0	15.915
101 Winnebago	39.496	8.359	6.441	0	54.296
District total	*76.970*	*26.665*	*47.736*	*0*	*151.371*
Northeast					
004 Boone	4.103	.252	1.536	0	5.891
016 Cook	79.923	15.973	3.834	0	99.729
019 DeKalb	8.190	.308	1.954	0	10.452
022 DuPage	65.778	3.384	3.129	0	72.292
032 Grundy	2.291	12.686	.727	0	15.704
045 Kane	30.971	3.470	2.997	0	37.438
047 Kendall	1.740	.877	1.997	0	4.614
049 Lake	12.853	2.859	4.275	.047	20.034
050 LaSalle	12.659	6.183	1.614	0	20.455
056 McHenry	10.639	2.191	5.993	.237	19.060
099 Will	30.019	11.016	8.075	0	49.110
District total	*259.166*	*59.198*	*36.130*	*.284*	*354.778*
West					
001 Adams	.543	9.841	2.991	0	13.375
005 Brown	.052	0	.661	0	.713
029 Fulton	.973	.250	2.031	0	3.254
034 Hancock	.113	.024	2.155	0	2.292
036 Henderson	7.094	0	2.464	0	9.558
048 Knox	1.203	.003	1.843	0	3.050
055 McDonough	.605	.026	1.418	0	2.050
085 Schuyler	.438	0	.929	0	1.367
088 Stark	.467	<.001	.515	0	.982
094 Warren	2.597	0	1.594	0	4.191
District total	*14.085*	*10.144*	*16.602*	*0*	*40.831*
Central					
020 DeWitt	1.607	0	.669	0	2.276
054 Logan	3.558	.011	.803	0	4.372
057 McLean	3.573	.500	1.573	0	5.646
058 Macon	.793	<.001	1.854	0	2.647
062 Marshall	1.082	.550	.881	0	2.513
063 Mason	1.374	.003	30.185	0	31.562
065 Menard	.894	0	.760	0	1.654
072 Peoria	13.153	8.788	1.997	0	23.938
090 Tazewell	13.110	6.471	4.836	0	24.416
102 Woodford	1.518	.002	1.739	0	3.259
District total	*40.662*	*16.325*	*45.297*	*0*	*102.284*
East					
010 Champaign	18.369	4.640	1.895	0	24.905
027 Ford	1.424	.107	.513	0	2.045
038 Iroquois	1.966	.278	2.596	0	4.840
046 Kankakee	1.496	.324	9.463	0	11.283
053 Livingston	1.652	.063	1.921	0	3.636
074 Piatt	.984	2.290	.650	0	3.924
092 Vermilion	1.579	3.426	2.272	0	7.277
District total	*27.470*	*11.129*	*19.311*	*0*	*57.910*

Table 16. (Concluded)

District / County	Public systems (mgd)	Self-supplied industry (mgd)	Rural* (mgd)	Fish and wildlife (mgd)	Total (mgd)
W. Southwest					
003 Bond	.050	.066	.971	0	1.087
007 Calhoun	.306	0	.600	.639	1.545
009 Cass	1.205	1.135	1.038	.823	4.201
011 Christian	1.168	2.091	.719	0	3.978
031 Greene	.219	<.001	1.918	0	2.137
042 Jersey	.684	0	1.339	.059	2.082
059 Macoupin	.066	0	1.865	0	1.931
060 Madison	8.987	56.401	2.865	0	68.253
068 Montgomery	.489	.032	1.484	0	2.005
069 Morgan	.120	3.257	1.132	0	4.509
075 Pike	.733	.002	3.103	0	3.838
084 Sangamon	2.138	0	3.656	0	5.794
086 Scott	4.266	0	.786	0	5.052
District total	*20.431*	*62.984*	*21.476*	*1.521*	*106.412*
E. Southeast					
012 Clark	1.613	.120	1.108	0	2.841
013 Clay	0	1.196	.520	0	1.716
015 Coles	.085	.210	.704	0	.999
017 Crawford	1.530	11.441	.704	0	13.675
018 Cumberland	.234	.293	.805	0	1.333
021 Douglas	.831	.021	.612	0	1.464
023 Edgar	.296	.046	1.029	0	1.372
025 Effingham	.227	.460	1.555	0	2.242
026 Fayette	.214	5.214	1.193	0	6.621
040 Jasper	.030	.480	.837	0	1.347
051 Lawrence	1.120	5.120	2.130	0	8.370
070 Moultrie	.817	0	.415	0	1.232
080 Richland	.102	1.018	.651	0	1.771
087 Shelby	1.465	.029	1.329	0	2.823
District total	*8.564*	*25.648*	*13.592*	*0*	*47.804*
Southwest					
002 Alexander	.110	.040	.294	.274	.718
014 Clinton	.316	.466	1.512	0	2.294
039 Jackson	.117	0	.560	2.679	3.356
044 Johnson	0	0	.800	0	.800
061 Marion	.020	10.702	.641	0	11.362
067 Monroe	.117	0	1.043	0	1.160
073 Perry	.031	.015	.872	0	.918
077 Pulaski	.709	0	.331	0	1.040
079 Randolph	.714	.014	1.170	0	1.898
082 St. Clair	.370	16.882	3.111	0	20.363
091 Union	1.620	.016	.597	1.686	3.918
095 Washington	.070	.529	1.351	0	1.950
100 Williamson	0	.180	.380	0	.560
District total	*4.194*	*28.845*	*12.661*	*4.638*	*50.338*
Southeast					
024 Edwards	.025	.456	.619	0	1.101
028 Franklin	0	.421	.388	0	.808
030 Gallatin	.410	.448	.879	0	1.737
033 Hamilton	0	1.520	.449	0	1.969
035 Hardin	.059	1.147	.211	0	1.417
041 Jefferson	0	.603	.641	0	1.244
064 Massac	4.464	4.316	.590	1.953	11.323
076 Pope	0	0	.272	0	.272
083 Saline	.010	.362	.444	0	.816
093 Wabash	.462	1.676	.482	0	2.620
096 Wayne	.087	2.576	.976	0	3.638
097 White	1.178	4.659	1.210	0	7.047
District total	*6.695*	*18.183*	*7.162*	*1.953*	*50.338*
State total	458.237	259.119	219.966	8.397	945.719

'Includes estimated rural water withdrawals regardless of source
Figures may not add to totals because of independent rounding.

Table 17. Total Surface Water Withdrawals, Reported 1978

District / County	Public systems (mgd)	Self-supplied industry (mgd)	Fish and wildlife (mgd)	Total* (mgd)
Northwest				
006 Bureau	0	22.114	0	22.114
008 Carroll	0	0	1.278	1.278
037 Henry	0	0	0	0
043 Jo Daviess	0	0	0	0
052 Lee	0	2135.400	0	2135.400
066 Mercer	0	0	0	0
071 Ogle	0	.001	0	.001
078 Putnam	0	248.828	0	248.828
081 Rock Island	18.799	2097.767	0	2116.566
089 Stephenson	0	0	0	0
098 Whiteside	0	29.177	0	29.177
101 Winnebago	0	478.989	0	478.989
District total	*18.799*	*5012.275*	*1.278*	*5032.352*
Northeast				
004 Boone	0	3.600	0	3.600
016 Cook	1046.868	1928.756	0	2975.624
019 DeKalb	0	1.220	0	1.220
022 DuPage	0	1.021	0	1.021
032 Grundy	0	3294.191	0	3294.191
045 Kane	0	.060	0	.060
047 Kendall	0	0	0	0
049 Lake	30.969	3130.552	0	3161.521
050 LaSalle	3.805	1717.188	0	1720.993
056 McHenry	0	0	0	0
099 Will	0	4414.337	.268	4414.606
District total	*1081.642*	*14490.925*	*.268*	*15572.836*
West				
001 Adams	7.485	0	0	7.485
005 Brown	.251	0	0	.251
029 Fulton	2.396	1519.698	4.488	1526.582
034 Hancock	1.329	16112.700	0	16114.029
036 Henderson	0	0	0	0
048 Knox	0	1.555	0	1.555
055 McDonough	2.800	0	0	2.800
085 Schuyler	0	0	0	0
088 Stark	0	0	0	0
094 Warren	0	0	0	0
District total	*14.261*	*17633.953*	*4.488*	*17652.702*
Central				
020 DeWitt	0	.142	0	.142
054 Logan	0	0	0	0
057 McLean	7.800	0	0	7.800
058 Macon	16.000	12.200	0	28.200
062 Marshall	0	0	0	0
063 Mason	0	274.495	2.130	276.625
065 Menard	0	0	0	0
072 Peoria	16.050	371.495	0	387.545
090 Tazewell	.053	1092.688	0	1092.741
102 Woodford	.493	1.600	0	2.093
District total	*40.396*	*1752.620*	*2.130*	*1795.146*
East				
010 Champaign	0	2.041	0	2.041
027 Ford	0	.250	0	.250
038 Iroquois	0	0	0	0
046 Kankakee	9.879	0	0	9.879
053 Livingston	1.580	0	0	1.580
074 Piatt	0	0	0	0
092 Vermilion	8.712	2.175	0	10.887
District total	*20.171*	*4.467*	*0*	*24.638*

Table 17. (Concluded)

District County	Public systems (mgd)	Self-supplied industry (mgd)	Fish and wildlife (mgd)	Total* (mgd)
W. Southwest				
003 Bond	.622	0	0	.622
007 Calhoun	0	0	2.863	2.863
009 Cass	.240	0	0	.240
011 Christian	2.792	691.603	0	694.395
031 Greene	.332	0	0	.332
042 Jersey	0	0	3.890	3.890
059 Macoupin	3.422	3.427	0	6.849
060 Madison	21.270	687.038	0	708.308
068 Montgomery	1.848	452.448	0	454.296
069 Morgan	.535	125.359	0	125.894
075 Pike	.450	.010	0	.460
084 Sangamon	21.130	234.685	0	255.815
086 Scott	0	0	.371	.371
District total	*52.641*	*2194.569*	*7.123*	*2254.333*
E. Southeast				
012 Clark	0	0	0	0
013 Clay	.950	.001	0	.951
015 Coles	4.324	.043	0	4.367
017 Crawford	0	86.561	0	86.561
018 Cumberland	0	20.005	0	20.005
021 Douglas	.481	10.258	0	10.739
023 Edgar	1.340	0	0	1.340
025 Effingham	1.466	0	0	1.466
026 Fayette	1.121	0	4.833	5.954
040 Jasper	.320	302.400	0	302.720
051 Lawrence	0	.061	0	.061
070 Moultrie	0	0	1.657	1.657
080 Richland	1.000	0	0	1.000
087 Shelby	.100	0	0	.100
District total	*11.102*	*419.329*	*6.490*	*436.921*
Southwest				
002 Alexander	1.460	0	0	1.460
014 Clinton	1.173	13.671	0	14.844
039 Jackson	5.310	.178	0	5.488
044 Johnson	.447	.008	0	.455
061 Marion	3.558	6.948	.107	10.613
067 Monroe	.340	0	0	.340
073 Perry	.300	5.327	0	5.627
077 Pulaski	0	0	0	0
079 Randolph	2.530	1805.399	0	1807.929
082 St. Clair	39.520	86.795	0	126.315
091 Union	.565	.039	0	.604
095 Washington	.427	0	0	.427
100 Williamson	1.040	106.981	.018	108.039
District total	*56.670*	*2025.345*	*.125*	*2082.140*
Southeast				
024 Edwards	.080	0	0	.080
028 Franklin	12.410	7.152	0	19.562
030 Gallatin	.041	.697	0	.738
033 Hamilton	0	0	0	0
035 Hardin	.255	.590	0	.845
041 Jefferson	0	1.111	13.939	15.050
064 Massac	0	498.196	0	498.196
076 Pope	.100	0	0	.100
083 Saline	1.587	4.100	0	5.687
093 Wabash	1.300	26.351	0	27.651
096 Wayne	1.160	<.001	0	1.160
097 White	.020	.202	0	.222
District total	*16.953*	*538.399*	*13.939*	*569.291*
State total	1312.635	44071.883	35.842	45420.359

'Rural water withdrawals not included, see table 16 and page 8.
Figures may not add to totals because of independent rounding.

Table 18. Water Withdrawals within SMSA's, Estimated and Reported 1978

SMSA's *	*Public supply (mgd)*	*Self-supplied industry (mgd)*	*Rural (mgd)*	*Fish and wildlife (mgd)*	*Total (mgd)*
Bloomington-Normal	11.373	.500	1.573	0.000	13.446
Champaign-Urbana-Rantoul	18.369	6.681	1.895	0.000	26.946
Chicago	1308.020	9513.619	28.302	.553	10850.494
Davenport-Rock Island-Moline(IL)	25.124	2107.054	9.481	0.000	2141.659
Decatur	16.793	12.200	1.854	0.000	30.847
Peoria	44.377	1481.044	8.572	0.000	1533.992
Rockford	43.599	491.200	7.976	0.000	542.776
St. Louis(IL)	71.636	861.253	7.488	0.000	940.377
Springfield	24.162	234.685	4.416	0.000	263.263
SMSA areas	*1563.453*	*14708.236*	*71.557*	*.553*	*16343.799*
non-SMSA areas	*207.419*	*29622.767*	*148.409*	*43.686*	*30022.280*
State total	1770.872	44331.003	219.966	44.238	46366.079

Table 19. Water Withdrawals within SMSA's Excluding Electrical Power Generation, Reported 1978

SMSA's *	*Public supply (mgd)*	*Self-supplied industry (mgd)*	*Rural (mgd)*	*Fish and wildlife (mgd)*	*Total (mgd)*
Bloomington-Normal	11.373	.500	1.573	0.000	13.446
Champaign-Urbana-Rantoul	18.369	6.681	1.895	0.000	26.946
Chicago	1308.020	315.449	28.302	.553	1652.324
Davenport-Rock Island-Moline(IL)	25.124	28.984	9.481	0.000	63.589
Decatur	16.793	12.200	1.854	0.000	30.847
Peoria	44.377	67.661	8.572	0.000	120.609
Rockford	43.599	12.895	7.976	0.000	64.471
St. Louis(IL)	71.636	145.698	7.488	0.000	224.822
Springfield	24.162	4.185	4.416	0.000	32.763
SMSA areas	*1563.453*	*594.253*	*71.557*	*.552*	*2229.817*
non-SMSA areas	*207.419*	*1225.090*	*148.409*	*43.686*	*1624.603*
State total	1770.872	1819.343	219.966	44.238	3854.420

** Bloomington-Normal = McLean Co.*
Champaign-Urbana-Rantoul = Champaign Co.
Chicago — Cook, DuPage, Kane, Lake, McHenry, & Will Co.
Davenport-Rock Island-Moline(IL) = Rock Island & Henry Co
Decatur = Macon Co.
Peoria = Peoria, Tazewell, & Wooaford Co.
Rockford = Boone & Winnebago Co.
St. Louis (IL) = Clinton, Madison, Monroe, & St.Clair Co.
Springfield = Menard & Sangamon Co.

Figures may not add to totals because of independent rounding.