WATER USE IN KENTUCKY, 1985

By Clyde J. Sholar, U.S. Geological Survey, and
V. David Lee, Kentucky Natural Resources and
Environmental Protection Cabinet

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DONALD PAUL HODEL, Secretary

U.S. GEOLOGICAL SURVEY

Dallas L. Peck, Director

For additional information
write to:

District Chief
U.S. Geological Survey
2301 Bradley Avenue
Louisville, Kentucky 40217

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CONVERSION FACTORS

For use of readers who prefer to use metric (International System) units, the following conversion factors may be used:

Multiply inch-pound unit	By	To obtain metric unit
acre	4,047	square meter (m^2)
acre-foot (acre-ft)	1,233	cubic meter (m^3)
thousand acre-feet per year	0.003377	million cubic meters per day
gallon per day (gal/d)	0.003785	cubic meter per day (m^3/d)
million gallons per day (Mgal/d)	0.003785	million cubic meters per day
inch per year (in/yr)	25.4	millimeter per year (mm/yr)

GLOSSARY

Significant terms, defined according to their meaning in this report (modified from Solley, 1983), are listed below:

acre-foot (acre-ft)--the volume of water required to cover 1 acre of land (43,560 square feet) to a depth of 1 foot.

agricultural water use--in this report pertains to water used for livestock watering and irrigation.

aquifer--a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

commercial water use--water used by motels, hotels, restaurants, office buildings, commercial facilities, and institutions, both civilian and military. The water may be obtained from a public supply or be self-supplied.

consumptive use--water that is no longer available because it has been evaporated, transpired, incorporated into products or crops, consumed by man or livestock, or otherwise removed from the water environment. Also referred to as water consumption and water consumed.

conveyance loss--water that is lost in transit from a pipe, canal, conduit, or ditch by leakage or evaporation. Generally the water is not available for further use; however, leakage from an irrigation ditch, for example, may percolate to a ground-water source and be available for use.

cooling water--water used for cooling purposes, such as condensers for heat exchangers.

domestic water use--water used for normal household purposes, such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens. Also called residential water use. The water may be obtained from a public supply or may be self-supplied.

evaporation--process by which water is changed from the liquid state to the vapor state.

gigawatthour (gWh)--unit of measurement for power generation which equals one billion watthours or one million kilowatthours.

ground water--generally all subsurface water as distinct from surface water; specifically, that part of the subsurface water in the saturated zone.

hydroelectric power water use--the use of water to drive turbines and generate electric power.

industrial water use--water used to produce items such as steel, chemical and allied products, paper and allied products, and to refine petroleum. The water may be obtained from a public supply or may be self-supplied.

instream use--water use taking place within the stream channel for purposes such as hydroelectric power generation, navigation, water-quality improvement, fish propagation, and recreation. Sometimes called nonwithdrawal use or in-channel use.

irrigation water use--artificial application of water on lands to assist in the growing of crops and pastures.

livestock water use--in this report pertains to watering of cattle, sheep, horses, hogs, and poultry.

million gallons per day (Mgal/d)--a rate of flow of water equal to one million gallons in a 24-hour period.

mining water use--water used in the extraction of minerals occurring naturally: solids, such as coal and ores; liquids, such as crude petroleum; and gases, such as natural gas. Also includes quarrying, well operation, milling (crushing, screening, washing, flotation, etc.) and other preparation customarily done at the mine site, or as part of a mining activity.

offstream use--water withdrawn or diverted from a ground- or surface-water source for public supply, commercial, domestic, thermoelectric power, industry, irrigation, and livestock uses. Sometimes called off-channel use or withdrawal use.

per capita use--the average amount of water used per person per day.

public supply--water withdrawn for all uses by public and private water suppliers and delivered to users that do not supply their own water. Water suppliers provide water for a variety of uses such as domestic, commercial, industrial, and public water use.

public water use--water supplied from a public supply and used for firefighting, street washing, and municipal parks and swimming pools.

return flow--the amount of water that reaches a ground- or surface-water source after release from the point of use and thus becomes available for further use.

self-supplied water--water withdrawn from a surface- or ground-water source by a user and not obtained from a public supply.

surface water--an open body of water such as a stream or a lake.

thermoelectric power--electrical power generated using fossil fuel (coal, oil, or natural gas), geothermal, or nuclear energy. Presently only fossil fuel is used in Kentucky to power thermoelectric power plants.

water use--see offstream use and instream use.

withdrawal--water removed from the ground or diverted from a surface-water source for use. See also offstream use.

withdrawal use--see offstream use.

WATER USE IN KENTUCKY, 1985

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and Environmental Protection Cabinet

ABSTRACT

Water-use information for 1985 was collected and reported by county for eight major categories of use. Seven of the categories were offstream uses, which included (1) public supply, (2) commercial, (3) domestic, (4) industrial, (5) mining, (6) thermoelectric, and (7) agricultural uses. The agricultural category was separated into irrigation and livestock water use. Instream water-use data also were collected for hydroelectric power generation.

Water withdrawals in Kentucky were estimated to average 4,200 million gallons per day during 1985 for all offstream uses. About 95 percent of this amount was from surface-water sources, and about 5 percent was from ground-water sources. Per capita use for all offstream uses was about 1,100 gallons per day. Total consumptive use (water not returned to the surface- or ground-water system) was estimated to be 260 million gallons per day, or 6 percent of total withdrawals. Instream water use for hydroelectric power generation was estimated to be 91,000 Mgal/d.

Almost 97 percent of the offstream water withdrawals in 1985 were withdrawn for thermoelectric, public supply, and industrial use. Cooling water used in the production of thermoelectric power accounted for about 81 percent of the total offstream water withdrawals during 1985. Water withdrawals for public supplies were the second largest in the State and accounted for about 10 percent of the total, and industrial water withdrawals accounted for almost 6 percent.

Thermoelectric, domestic, and livestock categories accounted for almost 90 percent of the consumptive use in 1985. Consumptive use in the thermoelectric category was almost one-half of the total consumptive use in the State for all categories.

INTRODUCTION

Water is one of the Kentucky's most important resources. Numerous streams, reservoirs, and aquifers along with an average annual precipitation of about 47 inches per year (Conner, 1982, p. 30) make a large quantity of water available to the people of the State. However, dry periods of recent years and water-quality concerns throughout the State have made it more important than ever to determine the amount of water being used in order to assess and manage the available water resources. Therefore, water-use information was collected and presented in this report through a cooperative program between the Kentucky Natural Resources and Environmental Protection Cabinet, Division of Water, and the U.S. Geological Survey.

The purpose of this report is to summarize and present 1985 data for eight water-use categories in Kentucky. Several sources of data were used to compile information for this report. The Water Withdrawal Permit File and Drinking Water File maintained by the Kentucky Natural Resources and Environmental Protection Cabinet (KNREPC) were used to obtain withdrawal data for public water supply, commercial, industrial, and mining use categories. Population figures for each county were compiled by the U.S. Geological Survey from U.S. Bureau of the Census data. Population served by public supply was obtained from the KNREPC Drinking Water File. Water-use data for the power generation categories were obtained from a report published by the U.S. Department of Energy (1984) and from the Kentucky Public Service Commission. Livestock numbers and irrigated acreage were obtained from the 1982 Census of Agriculture for Kentucky published by the U.S. Department of Commerce, Bureau of Census (1984).

The authors thank those agencies listed above that provided information for this report. In addition, special thanks is given to city and county officials, and representatives of water systems and industries that continue to be very helpful by providing information and assistance to the Kentucky Water-Use Program.

WATER-USE CATEGORIES

Water-use information in this report is presented by category. The following offstream water-use categories are included: public supply, domestic, commercial, industrial, mining, thermoelectric, and agriculture. The agricultural use category is further divided into irrigation and livestock water use. Quantitative data are also presented for one instream use, hydroelectric power generation. It should be noted that the public-supply category is not a water use in the same sense as the other categories presented in this report. Only that amount utilized for public purposes such as firefighting, street washing, municipal parks, and swimming pools is considered a use, with the remainder being delivered to other categories where the water is actually used.

Within each category, water-use information is presented by county. A county map showing the county names (fig. 1) is included to assist the reader in locating specific counties on the water-withdrawal and consumptive use maps throughout the report.

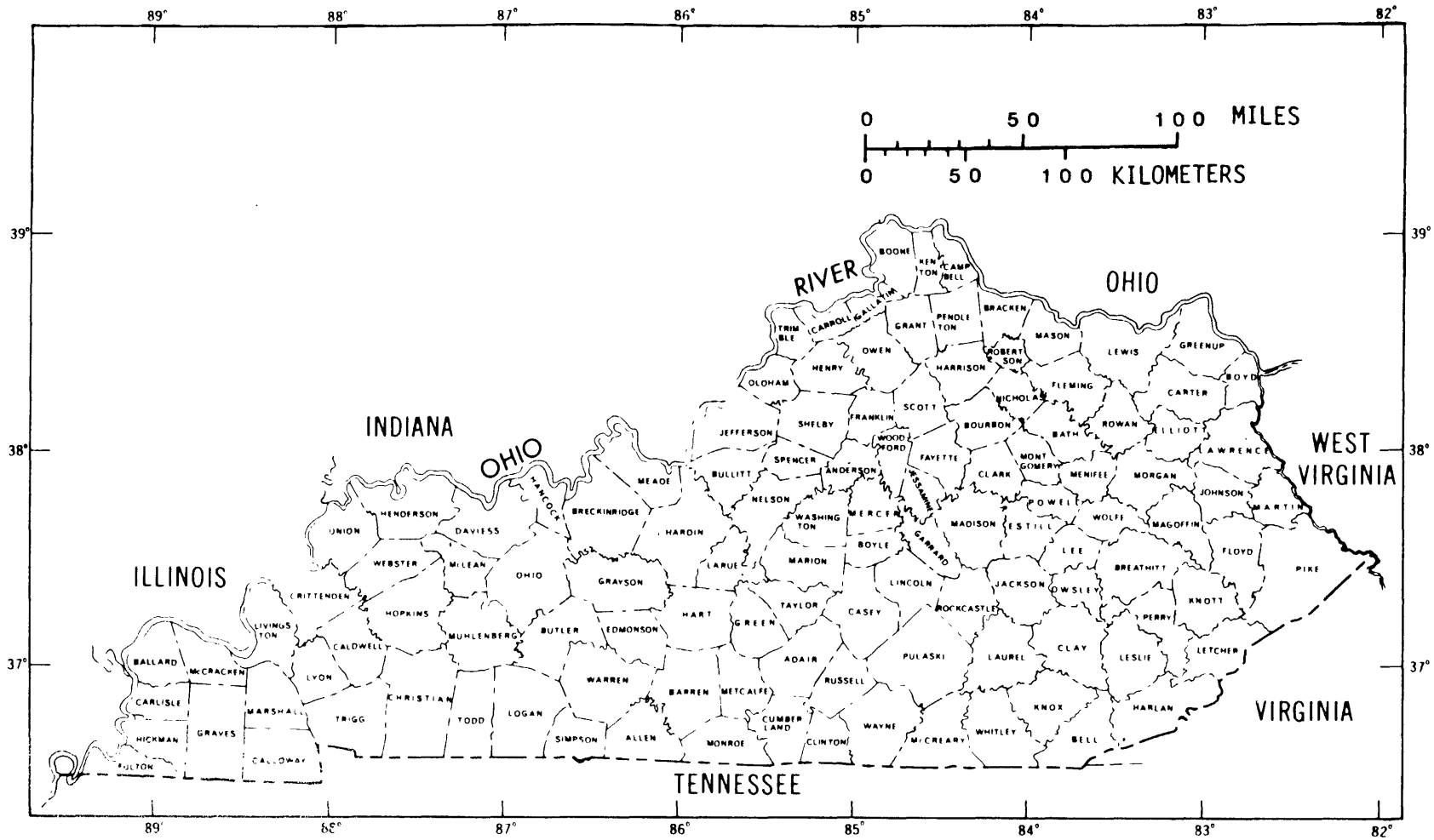


Figure 1.--Counties of Kentucky.

Public Supply

About 404 Mgal/d of water was withdrawn for public-supply systems in Kentucky during 1985. This is a 15 percent increase from 1980 estimates published by Solley and others (1983), and represents almost 10 percent of all water withdrawn for offstream use in the State. Of the total public-supplied withdrawals, about 356 Mgal/d (88 percent) was surface water and 48.8 Mgal/d (12 percent) was ground water (fig. 2A). About 44 percent of the water from public-water systems was delivered to domestic users, about 41 percent to industrial users, and almost 5 percent to commercial users (fig. 2B). It was estimated that the remaining 10 percent of the public-supply withdrawals included water lost in distribution systems and water for public uses, such as firefighting, street washing, municipal parks, and swimming pools.

Public-supply withdrawal patterns vary geographically within the State (fig. 3). Public suppliers in Jefferson County, with its considerable domestic and industrial demand, delivered 119 Mgal/d or 29 percent of the total public-supplied water in the State. About 99 percent of the water withdrawn in Jefferson County for public-supply was from surface-water sources, and represented the most surface-water withdrawn for public supply in the State. Nearly one-third of all the surface water withdrawn for public supply was in Jefferson County. Public suppliers in Fayette County delivered the second largest amount of public-supplied water in the State, about 36 Mgal/d.

Most of the ground water for public supplies is withdrawn from the alluvial aquifer underlying the floodplain of the Ohio River. In the extreme western part of Kentucky, aquifers also yield dependable quantities of water for public supply. Public suppliers in Daviess County withdrew 11 Mgal/d of ground water, the most of any county during 1985. This amount represents 23 percent of the State's total public-supplied ground water, and is due primarily to domestic and industrial demand. There were no withdrawals for public supply in Metcalfe County because water was purchased from a supplier in Barren County. Public-water-supply data (withdrawals, deliveries, per capita use) for 1985 by county are shown in table 1.

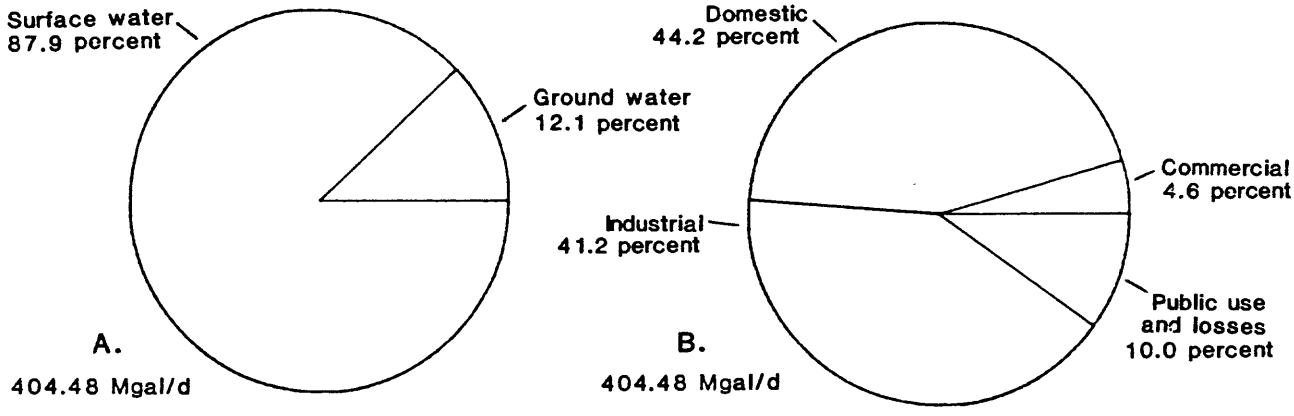


Figure 2.--Public supply water use in 1985. A. Withdrawals by source. B. Deliveries by category. (Mgal/d = million gallons per day)

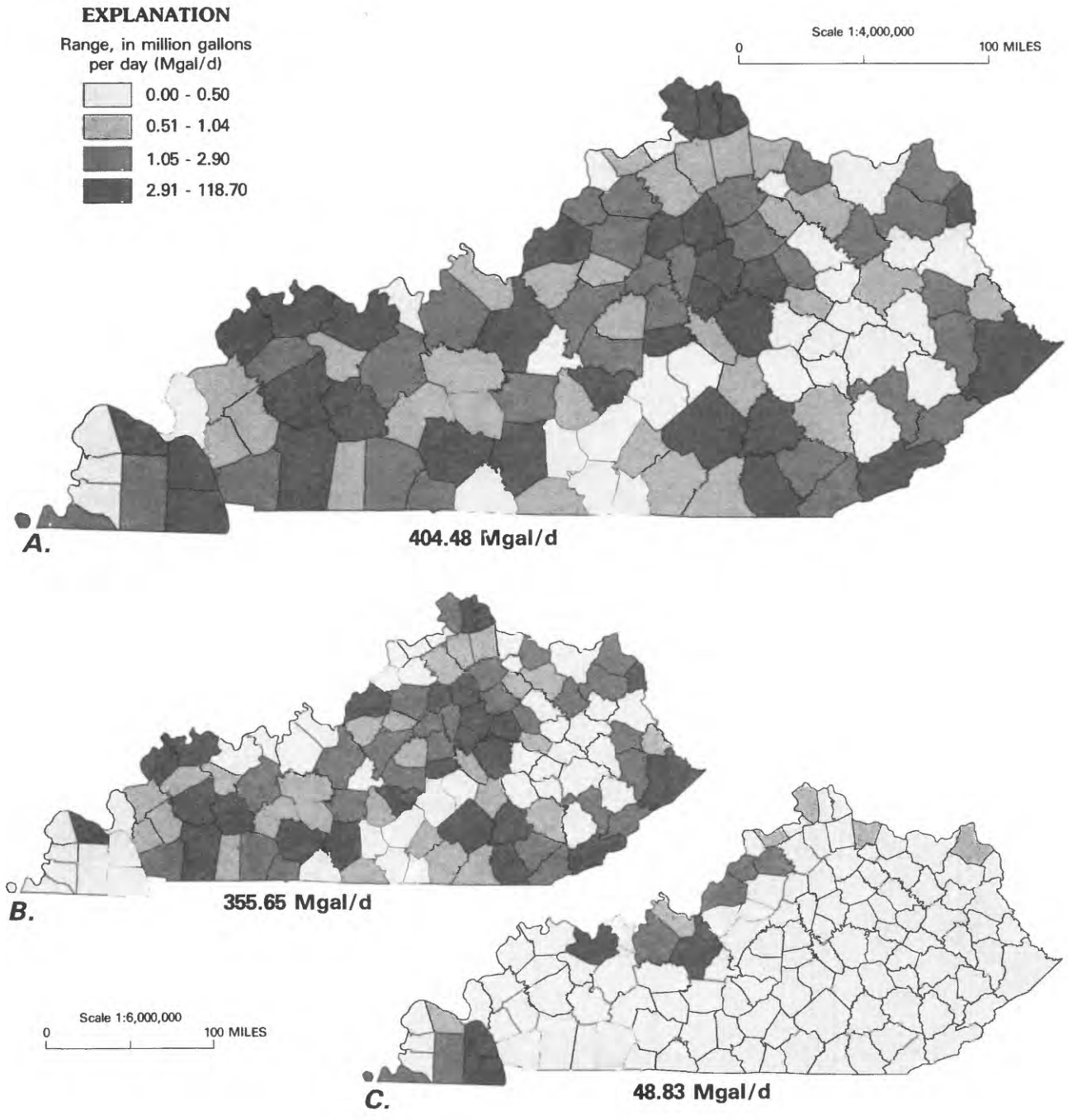


Figure 3.--Public supply water withdrawals, by county, in 1985.
A. Total. B. Surface water. C. Ground water.

Table 1.--Public supplied water use, by county, in 1985

County	Population served, in thousands			Water withdrawals, in million gallons per day			Water deliveries, by type of use, in million gallons per day				Per capita use in gallons per day
	Source			Source							
	Ground water	Surface water	Total	Ground water	Surface water	Total	Commercial	Domestic	Industrial	Public use, losses, and transfer	
ADAIR	0.00	6.55	6.55	0.00	0.47	0.47	0.00	0.41	0.01	0.05	71.74
ALLEN	5.08	0.97	6.05	0.38	0.09	0.47	0.02	0.26	0.14	0.05	77.69
ANDERSON	0.00	10.82	10.82	0.00	1.17	1.17	0.04	0.68	0.33	0.12	108.12
BALLARD	4.05	1.40	5.45	0.29	0.17	0.46	0.01	0.34	0.06	0.05	84.40
BARREN	0.00	12.45	12.45	0.00	3.61	3.61	0.23	0.78	2.09	0.51	289.94
BATH	0.00	1.57	1.57	0.00	0.15	0.15	0.00	0.10	0.04	0.01	95.48
BELL	0.03	23.04	23.07	0.01	2.34	2.35	0.06	1.46	0.59	0.24	101.86
BOONE	0.78	33.88	34.66	0.55	2.37	2.92	0.04	2.19	0.40	0.29	84.25
BOURBON	0.00	13.30	13.30	0.00	1.56	1.56	0.05	0.84	0.51	0.16	117.28
BOYD	0.00	33.73	33.73	0.00	7.18	7.18	0.29	3.55	2.63	0.71	212.86
BOYLE	0.00	18.07	18.07	0.00	4.04	4.04	0.17	1.90	1.57	0.40	223.56
BRACKEN	5.26	0.00	5.26	1.03	0.00	1.03	0.06	0.33	0.53	0.11	195.78
BREATHITT	0.19	2.80	2.99	0.02	0.28	0.30	0.01	0.19	0.07	0.03	100.33
BRECKINRIDGE	1.66	5.87	7.53	2.35	0.39	2.74	0.20	0.48	1.79	0.27	363.88
BULLITT	0.00	5.71	5.71	0.00	0.57	0.57	0.02	0.36	0.13	0.06	99.81
BUTLER	0.00	8.64	8.64	0.00	0.59	0.59	0.02	0.31	0.20	0.06	68.28
CALDWELL	0.00	11.56	11.56	0.00	0.91	0.91	0.01	0.73	0.08	0.09	78.71
CALLOWAY	27.16	0.00	27.16	6.49	0.00	6.49	0.40	1.77	3.66	0.66	238.95
CAMPBELL	0.37	79.18	79.55	0.06	18.70	18.76	1.19	5.01	10.68	1.88	235.83
CARLISLE	2.45	0.00	2.45	0.16	0.00	0.16	0.00	0.13	0.02	0.01	65.28
CARROLL	8.34	0.00	8.34	1.00	0.00	1.00	0.04	0.52	0.34	0.10	119.89
CARTER	0.00	14.26	14.26	0.00	1.37	1.37	0.04	0.90	0.30	0.13	96.07
CASEY	0.00	3.43	3.43	0.00	0.29	0.29	0.01	0.22	0.04	0.02	84.52
CHRISTIAN	0.89	42.27	43.16	0.00	5.63	5.63	0.23	2.72	2.11	0.57	130.44
CLARK	0.00	17.42	17.42	0.00	3.18	3.18	0.18	1.10	1.58	0.32	182.54
CLAY	0.12	10.20	10.32	0.01	0.85	0.86	0.01	0.65	0.12	0.08	83.33
CLINTON	0.00	6.27	6.27	0.00	0.49	0.49	0.01	0.40	0.04	0.04	78.14
CRITTENDEN	0.00	5.02	5.02	0.00	0.53	0.53	0.02	0.31	0.14	0.06	105.56
CUMBERLAND	0.00	5.60	5.60	0.00	0.40	0.40	0.00	0.35	0.01	0.04	71.42
DAVIESS	53.43	0.00	53.43	11.41	0.00	11.41	0.47	5.61	4.19	1.14	213.55
EDMONSON	0.00	9.30	9.30	0.00	0.51	0.51	0.01	0.33	0.12	0.05	54.83
ELLIOTT	0.78	0.00	0.78	0.09	0.00	0.09	0.00	0.04	0.04	0.01	115.24
ESTILL	0.00	11.96	11.96	0.00	0.50	0.50	0.00	0.42	0.03	0.05	41.80
FAYETTE	0.00	190.71	190.71	0.00	35.50	35.50	1.84	13.46	16.64	3.56	186.15
FLEMING	0.00	7.87	7.87	0.00	0.54	0.54	0.02	0.35	0.12	0.05	68.61
FLOYD	0.15	24.97	25.12	0.03	2.82	2.85	0.10	1.58	0.88	0.29	113.46
FRANKLIN	0.00	39.51	39.51	0.00	6.48	6.48	0.29	2.92	2.63	0.64	164.00
FULTON	6.40	0.00	6.40	1.45	0.00	1.45	0.09	0.40	0.81	0.15	226.53
GALLATIN	1.79	0.00	1.79	0.14	0.00	0.14	0.00	0.12	0.01	0.01	78.17
GARRARD	0.00	8.58	8.58	0.00	0.77	0.77	0.02	0.54	0.13	0.08	89.73
GRANT	0.00	8.90	8.90	0.00	0.93	0.93	0.03	0.56	0.25	0.09	104.48
GRAVES	28.21	0.00	28.21	2.30	0.00	2.30	0.03	1.77	0.27	0.23	81.53
GRAYSON	0.17	9.84	10.01	0.00	0.99	0.99	0.03	0.63	0.23	0.10	98.90
GREEN	0.00	8.55	8.55	0.00	0.52	0.52	0.02	0.31	0.14	0.05	60.81
GREENUP	7.21	25.53	32.74	0.66	1.46	2.12	0.07	1.18	0.66	0.21	64.75
HANCOCK	0.00	3.83	3.83	0.00	0.35	0.35	0.01	0.24	0.06	0.04	91.36
HARDIN	66.38	16.60	82.98	8.13	2.16	10.29	0.24	6.86	2.16	1.03	124.01
HARLAN	1.96	16.33	18.29	0.18	3.08	3.26	0.18	1.15	1.60	0.33	178.24
HARRISON	0.00	12.10	12.10	0.00	1.78	1.78	0.08	0.76	0.76	0.18	147.10
HART	0.44	14.30	14.74	0.06	1.94	2.00	0.07	1.08	0.65	0.20	135.69
HENDERSON	0.00	37.92	37.92	0.00	4.34	4.34	0.15	2.38	1.37	0.44	114.45
HENRY	10.77	1.20	11.97	1.16	0.14	1.30	0.03	0.88	0.26	0.13	108.60
HICKMAN	2.87	0.00	2.87	0.22	0.00	0.22	0.00	0.18	0.02	0.02	76.63
HOPKINS	2.39	39.55	41.94	0.27	4.47	4.74	0.12	3.10	1.04	0.48	113.02
JACKSON	0.00	6.31	6.31	0.00	0.48	0.48	0.00	0.40	0.04	0.04	76.06
JEFFERSON	0.11	658.57	658.68	1.49	117.21	118.70	6.32	40.33	56.63	15.42	180.21
JESSAMINE	0.00	26.38	26.38	0.00	4.76	4.76	0.26	1.66	2.36	0.48	180.43
JOHNSON	0.02	11.37	11.39	0.00	1.69	1.69	0.08	0.72	0.72	0.17	148.38
KENTON	0.00	123.21	123.21	0.00	9.44	9.44	0.24	6.03	2.22	0.95	76.62
KNOTT	0.90	0.00	0.90	0.18	0.00	0.18	0.01	0.05	0.10	0.02	199.78

Table 1.--Public supplied water use, by county, in 1985--Continued

County	Population served, in thousands			Water withdrawals, in million gallons per day			Water deliveries, by type of use, in million gallons per day				Per capita use in gallons per day
	Source			Source							
	Ground water	Surface water	Total	Ground water	Surface water	Total	Commercial	Domestic	Industrial	Public use, losses and Transfer	
KNOX	0.00	15.43	15.43	0.00	1.07	1.07	0.04	0.56	0.36	0.11	69.34
LARUE	0.00	3.75	3.75	0.00	0.21	0.21	0.01	0.13	0.04	0.03	55.99
LAUREL	0.00	33.69	33.69	0.00	3.35	3.35	0.09	2.12	0.80	0.34	99.43
LAWRENCE	0.00	5.00	5.00	0.00	0.47	0.47	0.01	0.31	0.10	0.05	93.98
LEE	0.00	1.85	1.85	0.00	0.31	0.31	0.02	0.12	0.14	0.03	167.48
LESLIE	0.00	2.70	2.70	0.00	0.48	0.48	0.03	0.17	0.23	0.05	177.71
LETCHER	0.67	7.78	8.45	0.12	1.22	1.34	0.06	0.53	0.61	0.14	158.58
LEWIS	5.13	0.00	5.13	0.32	0.00	0.32	0.01	0.19	0.09	0.03	62.37
LINCOLN	0.00	9.98	9.98	0.00	0.45	0.45	0.01	0.31	0.09	0.04	45.09
LIVINGSTON	0.00	8.19	8.19	0.00	0.44	0.44	0.01	0.36	0.03	0.04	53.72
LOGAN	0.00	18.04	18.04	0.00	2.12	2.12	0.08	1.13	0.69	0.22	117.51
LYON	0.72	5.53	6.25	0.01	0.67	0.68	0.02	0.40	0.20	0.06	108.80
MCCRACKEN	7.18	51.69	58.87	0.62	5.85	6.47	0.21	3.71	1.91	0.64	109.90
MCCREARY	0.00	9.57	9.57	0.00	0.63	0.63	0.03	0.34	0.20	0.06	65.82
MCLEAN	0.73	6.58	7.31	0.09	0.80	0.89	0.04	0.46	0.31	0.08	121.75
MADISON	0.00	46.02	46.02	0.00	5.39	5.39	0.20	2.90	1.75	0.54	117.12
MAGOFFIN	0.00	2.45	2.45	0.00	0.27	0.27	0.01	0.15	0.08	0.03	110.16
MARION	0.00	12.29	12.29	0.00	1.49	1.49	0.05	0.77	0.51	0.16	121.23
MARSHALL	19.51	3.50	23.01	3.15	0.42	3.57	0.18	1.45	1.58	0.36	155.15
MARTIN	0.00	6.00	6.00	0.00	0.62	0.62	0.02	0.38	0.16	0.06	103.32
MASON	2.79	12.69	15.48	0.31	1.43	1.74	0.04	1.18	0.35	0.17	112.40
MEADE	3.03	1.66	4.69	0.51	0.09	0.60	0.03	0.30	0.22	0.05	127.93
MENIFEE	0.00	2.10	2.10	0.00	0.21	0.21	0.00	0.13	0.05	0.03	99.95
MERCER	0.00	15.74	15.74	0.00	1.12	1.12	0.00	0.99	0.02	0.11	71.15
METCALFE	0.00	1.60	1.60	0.00	0.00	0.00	0.01	0.10	0.04	-0.15	0.00
MONROE	0.00	6.40	6.40	0.00	0.55	0.55	0.01	0.40	0.08	0.06	85.92
MONTGOMERY	0.00	17.82	17.82	0.00	1.78	1.78	0.04	1.12	0.43	0.19	99.88
MORGAN	0.19	2.31	2.50	0.24	0.27	0.51	0.03	0.16	0.27	0.05	204.00
MUHLENBERG	0.00	29.16	29.16	0.00	3.11	3.11	0.10	1.84	0.86	0.31	106.65
NELSON	0.00	22.02	22.02	0.00	2.32	2.32	0.07	1.39	0.63	0.23	105.35
NICHOLAS	0.00	6.48	6.48	0.00	1.02	1.02	0.05	0.40	0.46	0.11	157.38
OHIO	3.18	15.42	18.60	0.11	1.82	1.93	0.05	1.17	0.51	0.20	103.76
OLDHAM	10.95	18.48	29.43	2.60	0.00	2.60	0.29	3.01	2.59	-3.29	88.35
OWEN	0.00	5.85	5.85	0.00	0.56	0.56	0.02	0.37	0.12	0.05	95.71
OWSLEY	0.00	2.50	2.50	0.00	0.14	0.14	0.01	0.09	0.03	0.01	55.98
PENDLETON	0.00	6.95	6.95	0.00	0.74	0.74	0.02	0.44	0.21	0.07	106.46
PERRY	0.27	13.19	13.46	0.02	1.61	1.63	0.06	0.85	0.56	0.16	121.10
PIKE	1.03	21.31	22.34	0.16	2.99	3.15	0.14	1.40	1.29	0.32	141.00
POWELL	0.00	6.76	6.76	0.00	0.78	0.78	0.03	0.42	0.25	0.08	115.37
PULASKI	0.00	39.74	39.74	0.00	3.48	3.48	0.06	2.50	0.57	0.35	87.57
ROBERTSON	0.00	0.83	0.83	0.00	0.09	0.09	0.01	0.03	0.04	0.01	108.30
ROCKCASTLE	0.00	10.05	10.05	0.00	0.95	0.95	0.03	0.63	0.20	0.09	94.52
ROWAN	0.00	17.37	17.37	0.00	1.93	1.93	0.04	1.35	0.35	0.19	111.10
RUSSELL	0.00	4.79	4.79	0.00	0.69	0.69	0.04	0.31	0.28	0.06	144.02
SCOTT	0.00	12.90	12.90	0.00	4.38	4.38	0.31	0.81	2.82	0.44	339.51
SHELBY	0.00	23.81	23.81	0.00	2.30	2.30	0.05	1.50	0.51	0.24	96.59
SIMPSON	0.00	13.59	13.59	0.00	2.24	2.24	0.07	1.30	0.64	0.23	164.81
SPENCER	0.00	5.94	5.94	0.00	0.52	0.52	0.01	0.38	0.08	0.05	87.53
TAYLOR	0.00	16.37	16.37	0.00	3.22	3.22	0.19	1.03	1.67	0.33	196.69
TODD	0.00	7.59	7.59	0.00	0.66	0.66	0.01	0.48	0.11	0.06	86.95
TRIGG	0.00	8.73	8.73	0.00	1.11	1.11	0.03	0.71	0.26	0.11	127.13
TRIMBLE	4.86	0.00	4.86	0.19	0.00	0.19	0.00	0.17	0.00	0.02	39.09
UNION	0.00	15.11	15.11	0.00	6.12	6.12	0.46	0.95	4.09	0.62	405.00
WARREN	0.00	81.60	81.60	0.00	9.89	9.89	0.36	5.26	3.28	0.99	121.20
WASHINGTON	0.00	3.05	3.05	0.00	0.62	0.62	0.04	0.19	0.33	0.06	203.21
WAYNE	0.00	7.46	7.46	0.00	0.85	0.85	0.03	0.47	0.27	0.08	113.93
WEBSTER	6.12	7.38	13.50	0.14	0.92	1.06	0.01	0.85	0.10	0.10	78.52
WHITLEY	1.28	23.52	24.80	0.09	6.90	6.99	0.48	1.57	4.25	0.69	281.85
WOLFE	0.32	1.00	1.32	0.01	0.13	0.14	0.01	0.08	0.04	0.01	106.06
WOODFORD	0.43	13.88	14.31	0.02	1.66	1.68	0.06	0.90	0.55	0.17	117.40
Total	308.75	2,460.59	2,769.34	48.83	355.65	404.48	18.60	178.75	166.64	40.49	146.06

Domestic Use

Water for domestic purposes is furnished to Kentucky's 3.7 million people by both public-supplied and self-supplied systems. The number of people served by their own water systems decreased from 33 percent of the population in 1980 to 26 percent in 1985 because of expanded public water distribution systems throughout the State. This caused the self-supplied domestic withdrawals to decrease from 61 Mgal/d during 1980 to about 47 Mgal/d during 1985.

Combined self-supplied withdrawals and public-supplied deliveries for domestic purposes were 226 Mgal/d during 1985. Self-supplied domestic withdrawals were about 90 percent ground water and 10 percent surface water (fig. 4A). The most self-supplied domestic withdrawals (3 Mgal/d) of any county in the State were in Pike County. Domestic deliveries from public water supply systems were 179 Mgal/d or 79 percent of total water (self supplied withdrawals and public-supply deliveries) for the domestic water-use category (fig. 4B). The most public-supplied deliveries for domestic purposes (40 Mgal/d) were in Jefferson County. The distribution of self-supplied domestic withdrawals by county is shown in figure 5.

Per capita use for domestic users of public supplies was estimated to be 65 gal/d in 1985, and for domestic users of self-supplied systems was estimated to be 50 gal/d. Overall, domestic withdrawals and deliveries accounted for more than 5 percent of total offstream water use (withdrawals and deliveries) in Kentucky, making it the third most water intensive category (following thermoelectric and industrial). As a consumptive user of water, domestic consumptive use was greater than industrial consumptive use, and accounted for almost 60 Mgal/d, or 23 percent of the State's total consumptive use. Individual county data (withdrawal, deliveries, per capita use, consumptive use) are shown for the domestic use category in table 2.

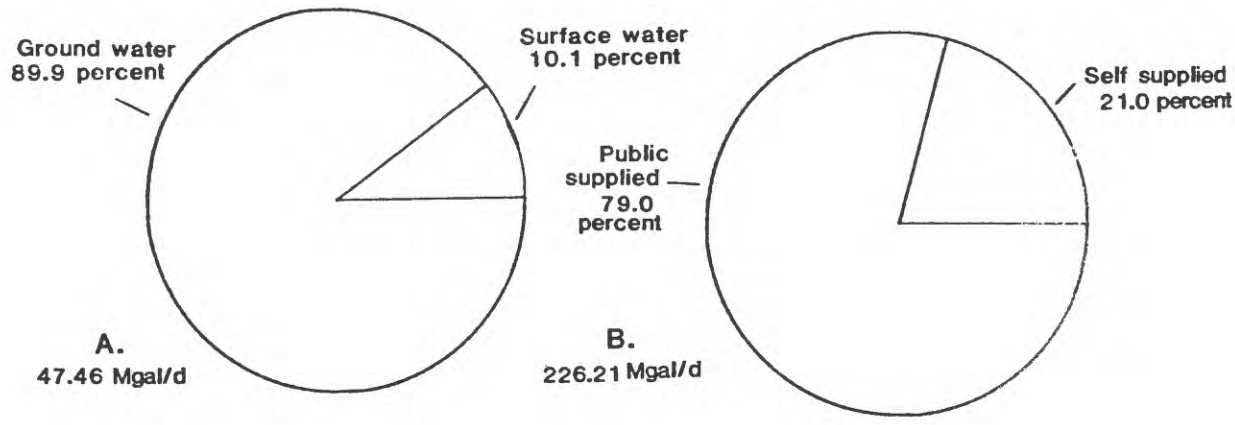


Figure 4.--Domestic water use in 1985. A. Self-supplied withdrawals by source. B. Total domestic use (self-supplied withdrawals and public-supplied deliveries). (Mgal/d = million gallons per day)

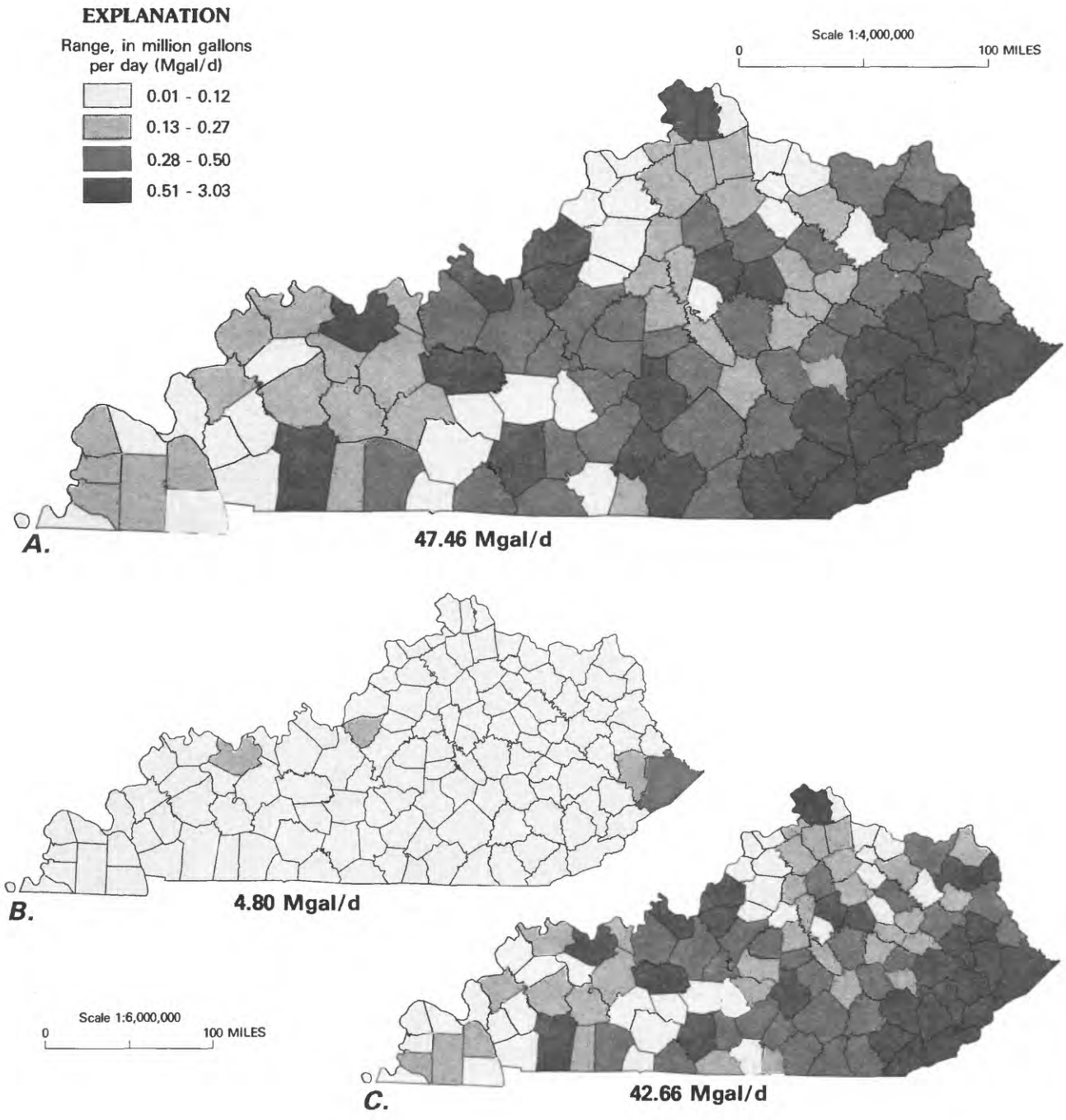


Figure 5.--Self-supplied domestic water withdrawals, by county, in 1985. A. Total. B. Surface water. C. Ground water.

Table 2.--Domestic water use, by county, in 1985
[gal/d=gallons per day, Mgal/d=million gallons per day]

	Self supplied					Public supplies			Total	
		Water withdrawals, in Mgal/d								
		Source								
County	Population, in thousands	Ground water	Surface water	Total	Per capita use, in gal/d	Population served, in thousands	Water deliveries, in Mgal/d	Per capita use, in gal/d	With-drawals and de-liveries, in Mgal/d	Consumptive use, in Mgal/d
ADAIR	9.35	0.42	0.05	0.47	50.27	6.55	0.41	62.59	0.88	0.42
ALLEN	8.55	0.38	0.04	0.42	49.12	6.05	0.26	42.98	0.68	0.36
ANDERSON	2.68	0.12	0.01	0.13	48.53	10.82	0.68	62.84	0.81	0.18
BALLARD	2.75	0.12	0.01	0.13	47.27	5.45	0.34	62.39	0.47	0.14
BARREN	21.75	0.98	0.11	1.09	50.12	12.45	0.78	62.65	1.87	0.96
BATH	8.63	0.39	0.04	0.43	49.83	1.57	0.10	63.65	0.53	0.36
BELL	11.23	0.51	0.06	0.57	50.76	23.07	1.46	63.29	2.03	0.62
BOONE	16.54	0.74	0.08	0.82	49.58	34.66	2.19	63.19	3.01	0.90
BOURBON	6.00	0.27	0.03	0.30	50.01	13.30	0.84	63.15	1.14	0.33
BOYD	19.87	0.89	0.10	0.99	49.83	33.73	3.55	105.24	4.54	1.19
BOYLE	7.23	0.33	0.04	0.37	51.18	18.07	1.90	105.14	2.27	0.67
BRACKEN	2.34	0.11	0.01	0.12	51.30	5.26	0.33	62.73	0.45	0.13
BREATHITT	13.51	0.61	0.07	0.68	50.33	2.99	0.19	63.55	0.87	0.56
BRECKINRIDGE	9.37	0.42	0.05	0.47	50.16	7.53	0.48	63.75	0.95	0.43
BULLITT	39.99	1.40	0.20	1.60	40.01	5.71	0.36	63.04	1.96	1.32
BUTLER	2.56	0.12	0.01	0.13	50.80	8.64	0.31	35.88	0.44	0.14
CALDWELL	1.74	0.08	0.01	0.09	51.75	11.56	0.73	63.14	0.82	0.15
CALLOWAY	1.74	0.07	0.01	0.08	46.00	27.16	1.77	65.17	1.85	0.26
CAMPBELL	2.15	0.10	0.01	0.11	51.16	79.55	5.01	62.98	5.12	0.64
CARLISLE	2.65	0.12	0.01	0.13	49.08	2.45	0.13	53.04	0.26	0.12
CARROLL	1.36	0.06	0.01	0.07	51.51	8.34	0.52	62.34	0.59	0.11
CARTER	11.54	0.52	0.06	0.58	50.26	14.26	0.90	63.11	1.48	0.56
CASEY	11.57	0.52	0.06	0.58	50.13	3.43	0.22	64.12	0.80	0.49
CHRISTIAN	20.94	0.94	0.10	1.04	49.67	43.16	2.72	63.02	3.76	1.13
CLARK	11.58	0.52	0.06	0.58	50.09	17.42	1.10	63.14	1.68	0.59
CLAY	13.31	0.60	0.06	0.66	49.59	10.32	0.65	62.98	1.31	0.60
CLINTON	3.53	0.16	0.02	0.18	51.01	6.27	0.40	63.79	0.58	0.19
CRITTENDEN	3.98	0.18	0.02	0.20	50.26	5.02	0.31	61.74	0.51	0.20
CUMBERLAND	1.90	0.09	0.01	0.10	52.66	5.60	0.35	62.49	0.45	0.12
DAVIESS	34.27	1.54	0.17	1.71	49.90	53.43	5.61	105.00	7.32	1.99
EDMONSON	2.00	0.09	0.01	0.10	50.03	9.30	0.33	35.48	0.43	0.12
ELLIOTT	5.92	0.27	0.03	0.30	50.68	0.78	0.04	51.22	0.34	0.24
ESTILL	3.04	0.14	0.02	0.16	52.65	11.96	0.42	35.11	0.58	0.18
FAYETTE	21.19	0.95	0.11	1.06	50.03	190.71	13.46	70.58	14.52	2.56
FLEMING	4.53	0.20	0.02	0.22	48.58	7.87	0.35	44.47	0.57	0.22
FLOYD	25.68	1.16	0.13	1.29	50.23	25.12	1.58	62.90	2.87	1.21
FRANKLIN	4.39	0.20	0.02	0.22	50.13	39.51	2.92	73.90	3.14	0.50
FULTON	1.70	0.07	0.01	0.08	47.09	6.40	0.40	62.49	0.48	0.10
GALLATIN	3.11	0.14	0.02	0.16	51.46	1.79	0.12	67.00	0.28	0.14
GARRARD	3.02	0.14	0.02	0.16	53.00	8.58	0.54	62.93	0.70	0.19
GRANT	5.20	0.23	0.03	0.26	50.01	8.90	0.56	62.91	0.82	0.27
GRAVES	4.69	0.21	0.02	0.23	49.05	28.21	1.77	62.74	2.00	0.38
GRAYSON	11.49	0.52	0.06	0.58	50.48	10.01	0.63	62.94	1.21	0.53
GREEN	2.35	0.11	0.01	0.12	51.09	8.55	0.31	36.25	0.43	0.13
GREENUP	5.46	0.25	0.03	0.28	51.28	32.74	1.18	36.04	1.46	0.36
HANCOCK	4.27	0.19	0.02	0.21	49.19	3.83	0.24	62.65	0.45	0.20
HARDIN	9.22	0.41	0.05	0.46	49.89	82.98	6.86	82.67	7.32	1.13
HARLAN	24.01	1.08	0.12	1.20	49.98	18.29	1.15	62.88	2.35	1.09
HARRISON	3.60	0.16	0.02	0.18	50.01	12.10	0.76	62.80	0.94	0.99
HART	1.66	0.07	0.01	0.08	48.19	14.74	1.08	73.27	1.16	0.18
HENDERSON	4.48	0.20	0.02	0.22	49.12	37.92	2.38	62.76	2.60	0.44
HENRY	1.33	0.06	0.01	0.07	52.63	11.97	0.88	73.52	0.95	0.15
HICKMAN	2.83	0.13	0.01	0.14	49.49	2.87	0.18	62.70	0.32	0.13
HOPKINS	4.66	0.21	0.02	0.23	49.36	41.94	3.10	73.92	3.33	0.53
JACKSON	6.19	0.28	0.03	0.31	50.09	6.31	0.40	63.38	0.71	0.29
JEFFERSON	24.72	1.11	0.12	1.23	49.76	658.68	40.33	61.23	41.56	5.46
JESSAMINE	2.22	0.10	0.01	0.11	49.57	26.38	1.66	62.92	1.77	1.01
JOHNSON	14.31	0.64	0.07	0.71	49.62	11.39	0.72	63.21	1.43	0.65
KENTON	13.69	0.62	0.07	0.69	50.41	123.21	6.03	48.94	6.72	1.17
KNOTT	17.50	0.79	0.09	0.88	50.29	0.90	0.05	55.49	0.93	0.71

Table 2.--Domestic water use, by county, in 1985--Continued
[gal/d=gallons per day, Mgal/d=million gallons per day]

County	Self supplied					Public supplies			Total	
	Population, in thousands	Water withdrawals, in Mgal/d			Per capita use, in gal/d	Population served, in thousands	Water deliveries, in Mgal/d	Per capita use, in gal/d	With-drawals and de-liveries, in Mgal/d	Consumptive use, in Mgal/d
		Source								
		Ground water	Surface water	Total						
KNOX	14.77	0.66	0.07	0.73	49.43	15.43	0.56	36.29	1.29	0.65
LARUE	8.65	0.39	0.04	0.43	49.72	3.75	0.13	34.66	0.56	0.36
LAUREL	8.01	0.36	0.04	0.40	49.94	33.69	2.12	62.92	2.52	0.56
LAWRENCE	9.70	0.44	0.05	0.49	50.52	5.00	0.31	61.99	0.80	0.43
LEE	6.15	0.28	0.03	0.31	50.41	1.85	0.12	64.83	0.43	0.26
LESLIE	12.60	0.57	0.06	0.63	50.00	2.70	0.17	62.94	0.80	0.52
LETCHER	21.75	0.98	0.11	1.09	50.11	8.45	0.53	62.72	1.62	0.93
LEWIS	9.17	0.42	0.05	0.47	51.26	5.13	0.19	37.03	0.66	0.40
LINCOLN	9.22	0.41	0.05	0.46	49.90	9.98	0.31	31.06	0.77	0.40
LIVINGSTON	0.91	0.04	0.00	0.04	44.00	8.19	0.36	43.95	0.40	0.07
LOGAN	7.76	0.35	0.04	0.39	50.26	18.04	1.13	62.64	1.52	0.44
LYON	0.15	0.01	0.00	0.01	66.67	6.25	0.40	64.00	0.41	0.05
MCCRACKEN	1.93	0.09	0.01	0.10	51.81	58.87	3.71	63.02	3.81	0.49
MCCREARY	6.93	0.31	0.03	0.34	49.07	9.57	0.34	35.52	0.68	0.31
MCLEAN	2.59	0.12	0.01	0.13	50.19	7.31	0.46	62.93	0.59	0.16
MADISON	8.48	0.38	0.04	0.42	49.53	46.02	2.90	63.01	3.32	0.66
MAGOFFIN	11.85	0.53	0.06	0.59	49.79	2.45	0.15	61.20	0.74	0.49
MARION	5.51	0.25	0.03	0.28	50.83	12.29	0.77	62.65	1.05	0.31
MARSHALL	2.79	0.13	0.01	0.14	50.18	23.01	1.45	63.02	1.59	0.27
MARTIN	8.30	0.37	0.04	0.41	49.40	6.00	0.38	63.32	0.79	0.37
MASON	1.72	0.08	0.01	0.09	52.33	15.48	1.18	76.23	1.27	0.20
MEADE	18.51	0.83	0.09	0.92	49.70	4.69	0.30	63.97	1.22	0.77
MENIFEE	3.20	0.14	0.02	0.16	50.02	2.10	0.13	61.88	0.29	0.14
MERCER	3.26	0.15	0.02	0.17	52.16	15.74	0.99	62.89	1.16	0.25
METCALFE	8.20	0.37	0.04	0.41	50.01	1.60	0.10	62.46	0.51	0.34
MONROE	5.80	0.26	0.03	0.29	50.01	6.40	0.40	62.49	0.69	0.28
MONTGOMERY	2.68	0.12	0.01	0.13	48.53	17.82	1.12	62.85	1.25	0.23
MORGAN	9.50	0.43	0.05	0.48	50.53	2.50	0.16	64.00	0.64	0.40
MUHLENBERG	2.84	0.13	0.01	0.14	49.31	29.16	1.84	63.10	1.98	0.32
NELSON	7.28	0.33	0.04	0.37	50.83	22.02	1.39	63.12	1.76	0.45
NICHOLAS	0.72	0.03	0.00	0.03	41.72	6.48	0.40	61.72	0.43	0.07
OHIO	3.00	0.14	0.02	0.16	53.33	18.60	1.17	62.90	1.33	0.26
OLDHAM	0.37	0.02	0.00	0.02	54.05	29.43	3.01	102.28	3.03	0.35
OWEN	3.55	0.16	0.02	0.18	50.72	5.85	0.37	63.24	0.55	0.18
OWSLEY	3.10	0.14	0.02	0.16	51.63	2.50	0.09	35.99	0.25	0.14
PENDLETON	3.95	0.18	0.02	0.20	50.65	6.95	0.44	63.30	0.64	0.21
PERRY	21.34	0.96	0.11	1.07	50.14	13.46	0.85	63.15	1.92	0.95
PIKE	60.56	2.73	0.30	3.03	50.03	22.34	1.40	62.67	4.43	2.58
POWELL	5.24	0.24	0.03	0.27	51.54	6.76	0.42	62.12	0.69	0.26
PULASKI	8.26	0.37	0.04	0.41	49.64	39.74	2.50	62.91	2.91	0.61
ROBERTSON	1.47	0.07	0.01	0.08	54.46	0.83	0.03	36.10	0.11	0.07
ROCKCASTLE	4.55	0.20	0.02	0.22	48.36	10.05	0.63	62.68	0.85	0.25
ROWAN	1.93	0.09	0.01	0.10	51.84	17.37	1.35	77.72	1.45	0.23
RUSSELL	10.21	0.46	0.05	0.51	49.96	4.79	0.31	64.70	0.82	0.44
SCOTT	9.00	0.40	0.05	0.45	50.01	12.90	0.81	62.79	1.26	0.45
SHELBY	0.19	0.01	0.00	0.01	52.91	23.81	1.50	63.00	1.51	0.18
SIMPSON	1.51	0.07	0.01	0.08	53.02	13.59	1.30	95.65	1.38	0.21
SPENCER	0.26	0.01	0.00	0.01	38.61	5.94	0.38	63.96	0.39	0.05
TAYLOR	5.63	0.25	0.03	0.28	49.74	16.37	1.03	62.92	1.31	0.34
TODD	3.21	0.14	0.02	0.16	49.86	7.59	0.48	63.23	0.64	0.18
TRIGG	0.97	0.04	0.00	0.04	41.28	8.73	0.71	81.32	0.75	0.11
TRIMBLE	1.34	0.06	0.01	0.07	52.28	4.86	0.17	34.97	0.24	0.08
UNION	2.69	0.12	0.01	0.13	48.35	15.11	0.95	62.87	1.08	0.21
WARREN	0.40	0.02	0.00	0.02	50.13	81.60	5.26	64.46	5.28	0.60
WASHINGTON	7.15	0.32	0.04	0.36	50.36	3.05	0.19	62.27	0.55	0.31
WAYNE	10.24	0.46	0.05	0.51	49.81	7.46	0.47	62.99	0.98	0.46
WEBSTER	1.40	0.06	0.01	0.07	50.00	13.50	0.85	62.96	0.92	0.15
WHITLEY	10.70	0.48	0.05	0.53	49.53	24.80	1.57	63.31	2.10	0.60
WOLFE	5.78	0.26	0.03	0.29	50.17	1.32	0.08	60.61	0.37	0.24
WOODFORD	4.39	0.20	0.02	0.22	50.11	14.31	0.90	62.89	1.12	0.28
Total	956.39	42.66	4.80	47.46	49.62	2,769.34	178.75	64.55	226.21	59.68

Commercial Use

Combined self-supplied withdrawals and public-supplied deliveries for commercial purposes were about 34 Mgal/d during 1985. Of this amount, about 16 Mgal/d was self-supplied and surface water was the source for about two-thirds of the self supplied commercial withdrawals in the State (fig. 6A). Public-water suppliers delivered about 19 Mgal/d, or about 54 percent of the total water for commercial purposes (fig. 6B). The county distribution of self-supplied commercial withdrawals throughout the State is shown in figure 7.

Commercial water use (self supplied withdrawals and public-supplied deliveries) in Jefferson County was the largest in the State and averaged over 10 Mgal/d. Public-supplied deliveries for commercial purposes in Jefferson County were over 6 Mgal/d, the largest for the State. Nearly 4 Mgal/d of self-supplied ground water was withdrawn in Jefferson County for commercial purposes, which was more than any other county in the State. McCracken County had the most self-supplied surface-water withdrawals (about 6 Mgal/d) for commercial purposes.

Commercial withdrawals and deliveries account for less than 1 percent of the State's total offstream water use budget. Only mining and irrigation use less water. Consumptive use of water for commercial purposes was less than all other categories but mining. Individual county data (withdrawals, deliveries, consumptive use) are shown for the commercial water-use category in table 3.

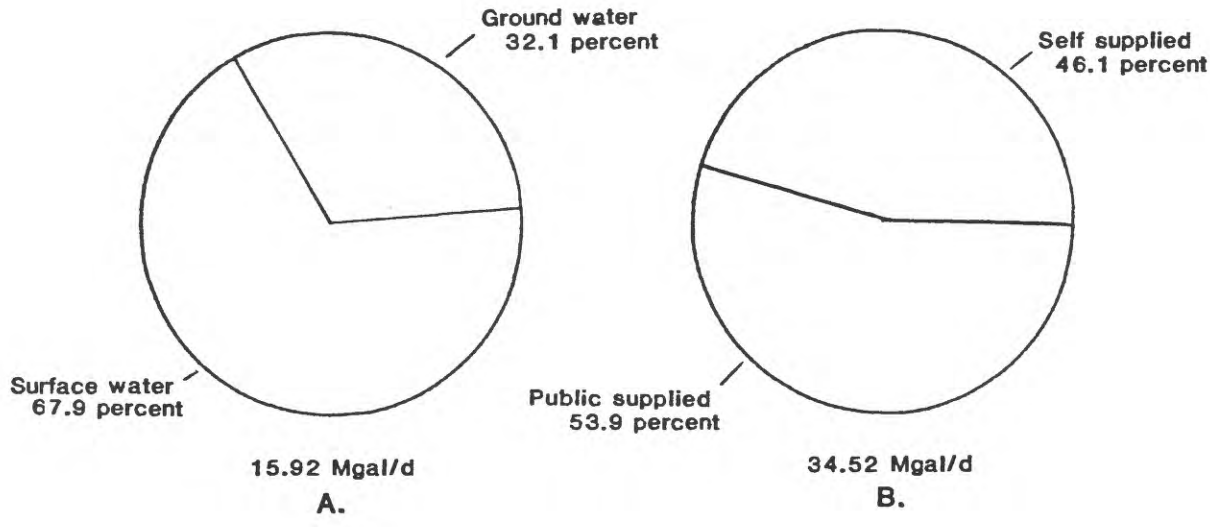


Figure 6.--Commercial water use in 1985. A. Self-supplied withdrawals by source. B. Total commercial use (self-supplied withdrawals and public-supplied deliveries). (Mgal/d = million gallons per day)

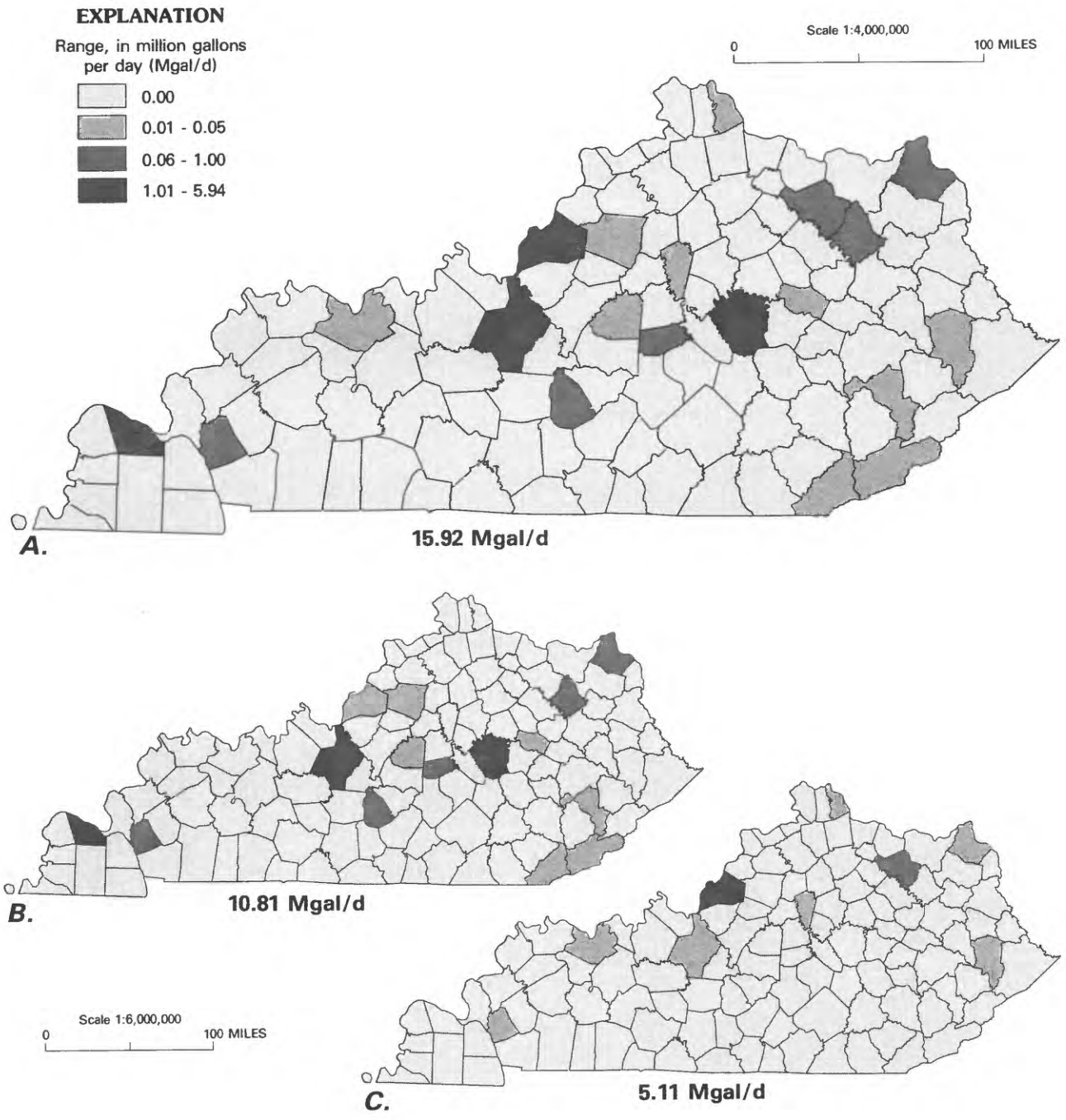


Figure 7.--Self-supplied commercial water withdrawals, by county, in 1985. A. Total. B. Surface water. C. Ground water.

Table 3.--Commercial water use, by county, in 1985

County	Self-supplied water withdrawals, in million gallons per day: Source: Ground water	Self-supplied water withdrawals, in million gallons per day: Source: Surface water	Self-supplied water withdrawals, in million gallons per day: Total	Public-supplied water deliveries, in million gallons per day	Total, in million gallons per day: Withdrawals and deliveries	Total, in million gallons per day: Consumptive use
ADAIR	0.00	0.00	0.00	0.00	0.00	0.00
ALLEN	0.00	0.00	0.00	0.02	0.02	0.00
ANDERSON	0.00	0.00	0.00	0.04	0.04	0.00
BALLARD	0.00	0.00	0.00	0.01	0.01	0.00
BARREN	0.00	0.00	0.00	0.23	0.23	0.01
BATH	0.00	0.00	0.00	0.00	0.00	0.00
BELL	0.00	0.03	0.03	0.06	0.09	0.00
BOONE	0.00	0.00	0.00	0.04	0.04	0.00
BOURBON	0.00	0.00	0.00	0.05	0.05	0.00
BOYD	0.00	0.00	0.00	0.29	0.29	0.01
BOYLE	0.00	0.20	0.20	0.17	0.37	0.02
BRACKEN	0.00	0.00	0.00	0.06	0.06	0.00
BREATHITT	0.00	0.00	0.00	0.01	0.01	0.00
BRECKINRIDGE	0.00	0.00	0.00	0.20	0.20	0.01
BULLITT	0.00	0.00	0.00	0.02	0.02	0.00
BUTLER	0.00	0.00	0.00	0.02	0.02	0.00
CALDWELL	0.00	0.00	0.00	0.01	0.01	0.00
CALLOWAY	0.00	0.00	0.00	0.40	0.40	0.02
CAMPBELL	0.02	0.00	0.02	1.19	1.21	0.05
CARLISLE	0.00	0.00	0.00	0.00	0.00	0.00
CARROLL	0.00	0.00	0.00	0.04	0.04	0.00
CARTER	0.00	0.00	0.00	0.04	0.04	0.00
CASEY	0.00	0.00	0.00	0.01	0.01	0.00
CHRISTIAN	0.00	0.00	0.00	0.23	0.23	0.01
CLARK	0.00	0.00	0.00	0.18	0.18	0.01
CLAY	0.00	0.00	0.00	0.01	0.01	0.00
CLINTON	0.00	0.00	0.00	0.01	0.01	0.00
CRITTENDEN	0.00	0.00	0.00	0.02	0.02	0.00
CUMBERLAND	0.00	0.00	0.00	0.00	0.00	0.00
DAVIESS	0.03	0.00	0.03	0.47	0.50	0.02
EDMONSON	0.00	0.00	0.00	0.01	0.01	0.00
ELLIOTT	0.00	0.00	0.00	0.00	0.00	0.00
ESTILL	0.00	0.00	0.00	0.00	0.00	0.00
FAYETTE	0.00	0.00	0.00	1.84	1.84	0.08
FLEMING	0.98	0.00	0.98	0.02	1.00	0.04
FLOYD	0.02	0.00	0.02	0.10	0.12	0.01
FRANKLIN	0.00	0.00	0.00	0.29	0.29	0.01
FULTON	0.00	0.00	0.00	0.09	0.09	0.00
GALLATIN	0.00	0.00	0.00	0.00	0.00	0.00
GARRARD	0.00	0.00	0.00	0.02	0.02	0.00
GRANT	0.00	0.00	0.00	0.03	0.03	0.00
GRAVES	0.00	0.00	0.00	0.03	0.03	0.00
GRAYSON	0.00	0.00	0.00	0.03	0.03	0.00
GREEN	0.00	0.16	0.16	0.02	0.18	0.01
GREENUP	0.02	0.29	0.31	0.07	0.38	0.02
HANCOCK	0.00	0.00	0.00	0.01	0.01	0.00
HARDIN	0.01	1.93	1.94	0.24	2.18	0.07
HARLAN	0.00	0.02	0.02	0.18	0.20	0.01
HARRISON	0.00	0.00	0.00	0.08	0.08	0.00
HART	0.00	0.00	0.00	0.07	0.07	0.00
HENDERSON	0.00	0.00	0.00	0.15	0.15	0.01
HENRY	0.00	0.00	0.00	0.03	0.03	0.00
HICKMAN	0.00	0.00	0.00	0.00	0.00	0.00
HOPKINS	0.00	0.00	0.00	0.12	0.12	0.01
JACKSON	0.00	0.00	0.00	0.00	0.00	0.00
JEFFERSON	3.99	0.02	4.01	6.32	10.33	0.45
JESSAMINE	0.00	0.00	0.00	0.26	0.26	0.01
JOHNSON	0.00	0.00	0.00	0.08	0.08	0.00
KENTON	0.00	0.00	0.00	0.24	0.24	0.01
KNOTT	0.00	0.00	0.00	0.01	0.01	0.00

Table 3.--Commercial water use, by county, in 1985--Continued

County	Self-supplied water withdrawals, in million gallons per day			Public-supplied water deliveries, in million gallons per day	Total, in million gallons per day	
	Source					
	Ground water	Surface water	Total		Withdrawals and deliveries	Consumptive use
KNOX	0.00	0.00	0.00	0.04	0.04	0.00
LARUE	0.00	0.00	0.00	0.01	0.01	0.00
LAUREL	0.00	0.00	0.00	0.09	0.09	0.00
LAWRENCE	0.00	0.00	0.00	0.01	0.01	0.00
LEE	0.00	0.00	0.00	0.02	0.02	0.00
LESLIE	0.00	0.00	0.00	0.03	0.03	0.00
LETCHER	0.00	0.00	0.00	0.06	0.06	0.00
LEWIS	0.00	0.00	0.00	0.01	0.01	0.00
LINCOLN	0.00	0.00	0.00	0.01	0.01	0.00
LIVINGSTON	0.00	0.00	0.00	0.01	0.01	0.00
LOGAN	0.00	0.00	0.00	0.08	0.08	0.00
LYON	0.02	0.24	0.26	0.02	0.28	0.01
MCCRACKEN	0.00	5.94	5.94	0.21	6.15	0.25
MCCREARY	0.00	0.00	0.00	0.03	0.03	0.00
MCLEAN	0.00	0.00	0.00	0.04	0.04	0.01
MADISON	0.00	1.40	1.40	0.20	1.60	0.06
MAGOFFIN	0.00	0.00	0.00	0.01	0.01	0.00
MARION	0.00	0.00	0.00	0.05	0.05	0.00
MARSHALL	0.00	0.00	0.00	0.18	0.18	0.01
MARTIN	0.00	0.00	0.00	0.02	0.02	0.00
MASON	0.00	0.00	0.00	0.04	0.04	0.00
MEADE	0.00	0.00	0.00	0.03	0.03	0.00
MENIFEE	0.00	0.00	0.00	0.00	0.00	0.00
MERCER	0.00	0.00	0.00	0.00	0.00	0.00
METCALFE	0.00	0.00	0.00	0.01	0.01	0.00
MONROE	0.00	0.00	0.00	0.01	0.01	0.00
MONTGOMERY	0.00	0.00	0.00	0.04	0.04	0.00
MORGAN	0.00	0.00	0.00	0.03	0.03	0.00
MUHLENBERG	0.00	0.00	0.00	0.10	0.10	0.00
NELSON	0.00	0.00	0.00	0.07	0.07	0.00
NICHOLAS	0.00	0.00	0.00	0.05	0.05	0.00
OHIO	0.00	0.00	0.00	0.05	0.05	0.00
OLDHAM	0.00	0.00	0.00	0.29	0.29	0.01
OWEN	0.00	0.00	0.00	0.02	0.02	0.00
OWSLEY	0.00	0.00	0.00	0.01	0.01	0.00
PENDLETON	0.00	0.00	0.00	0.02	0.02	0.00
PERRY	0.00	0.03	0.03	0.06	0.09	0.00
PIKE	0.00	0.00	0.00	0.14	0.14	0.01
POWELL	0.00	0.05	0.05	0.03	0.08	0.00
PULASKI	0.00	0.00	0.00	0.06	0.06	0.00
ROBERTSON	0.00	0.00	0.00	0.01	0.01	0.00
ROCKCASTLE	0.00	0.00	0.00	0.03	0.03	0.00
ROWAN	0.00	0.43	0.43	0.04	0.47	0.00
RUSSELL	0.00	0.00	0.00	0.04	0.04	0.00
SCOTT	0.00	0.00	0.00	0.31	0.31	0.01
SHELBY	0.00	0.04	0.04	0.05	0.09	0.00
SIMPSON	0.00	0.00	0.00	0.07	0.07	0.00
SPENCER	0.00	0.00	0.00	0.01	0.01	0.00
TAYLOR	0.00	0.00	0.00	0.19	0.19	0.00
TODD	0.00	0.00	0.00	0.01	0.01	0.00
TRIGG	0.00	0.00	0.00	0.03	0.03	0.00
TRIMBLE	0.00	0.00	0.00	0.00	0.00	0.00
UNION	0.00	0.00	0.00	0.46	0.46	0.02
WARREN	0.00	0.00	0.00	0.36	0.36	0.02
WASHINGTON	0.00	0.03	0.03	0.04	0.07	0.00
WAYNE	0.00	0.00	0.00	0.03	0.03	0.00
WEBSTER	0.00	0.00	0.00	0.01	0.01	0.00
WHITLEY	0.00	0.00	0.00	0.48	0.48	0.02
WOLFE	0.00	0.00	0.00	0.01	0.01	0.00
WOODFORD	0.02	0.00	0.02	0.06	0.08	0.00
Total	5.11	10.81	15.92	18.60	34.52	1.33

Industrial Use

Combined self-supplied withdrawals and public-supplied deliveries for industrial purposes during 1985 was 408 Mgal/d. Of that amount, self-supplied industrial withdrawals were 241 Mgal/d, and about 73 percent of the self-supplied withdrawals came from surface-water sources (fig. 8A). About 167 Mgal/d or 41 percent of the water for industry was delivered by public-supply systems (fig. 8B).

Industrial water data (withdrawals, deliveries, consumptive use) by county are listed in table 4. Jefferson County accounted for 37 percent of all industrial water use (self-supplied withdrawals and public-supplied deliveries) in the State (including about one-half of all self-supplied surface-water withdrawals for industrial purposes). Hancock County leads all counties in industrial withdrawals (over 23 Mgal/d) of ground water. Statewide, industrial use of water (withdrawals and deliveries) represented almost 10 percent of the total offstream water use, surpassed only by the thermoelectric power generation category. Consumptive use of industrial water averaged about 7 percent of withdrawals of deliveries, which was lower than the thermoelectric, domestic, and agricultural (livestock) categories.

The distribution of self-supplied industrial withdrawals are shown in figure 9. Most of the major water-using industries are along the Ohio River. Many industries that receive public-water supplies are in the Fayette County area. The extreme western part of the State, with plentiful ground-water sources, also attracts industries that use large quantities of water. The industries that are the greatest users of water in Kentucky include those that manufacture or produce food, textile, pulp and paper, chemical, metal, and distillery products.

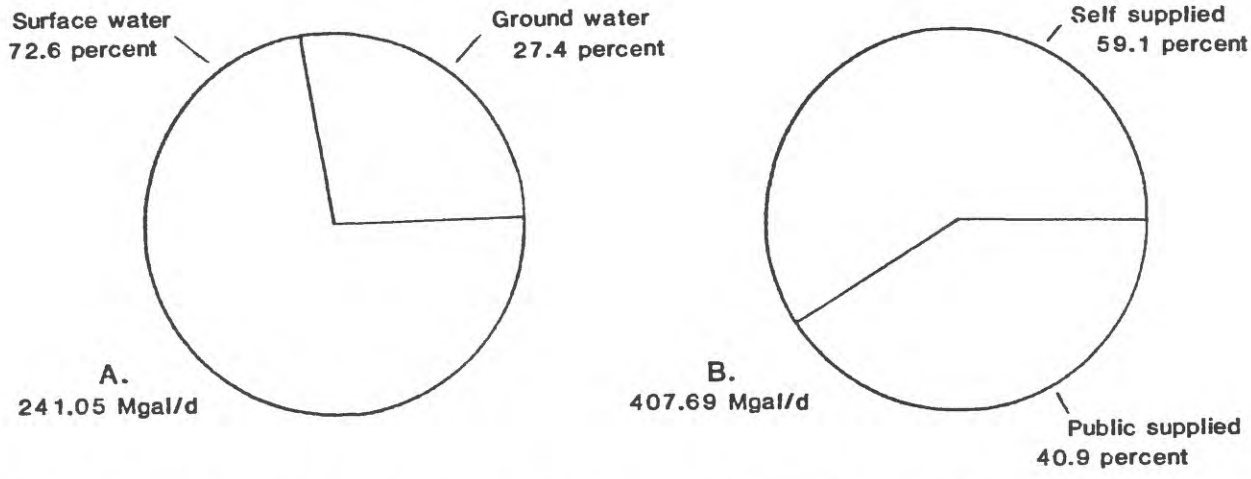


Figure 8.--Industrial water use in 1985. A. Self-supplied withdrawals by source. B. Total industrial use (self-supplied withdrawals and public-supplied deliveries). (Mgal/d = million gallons per day)

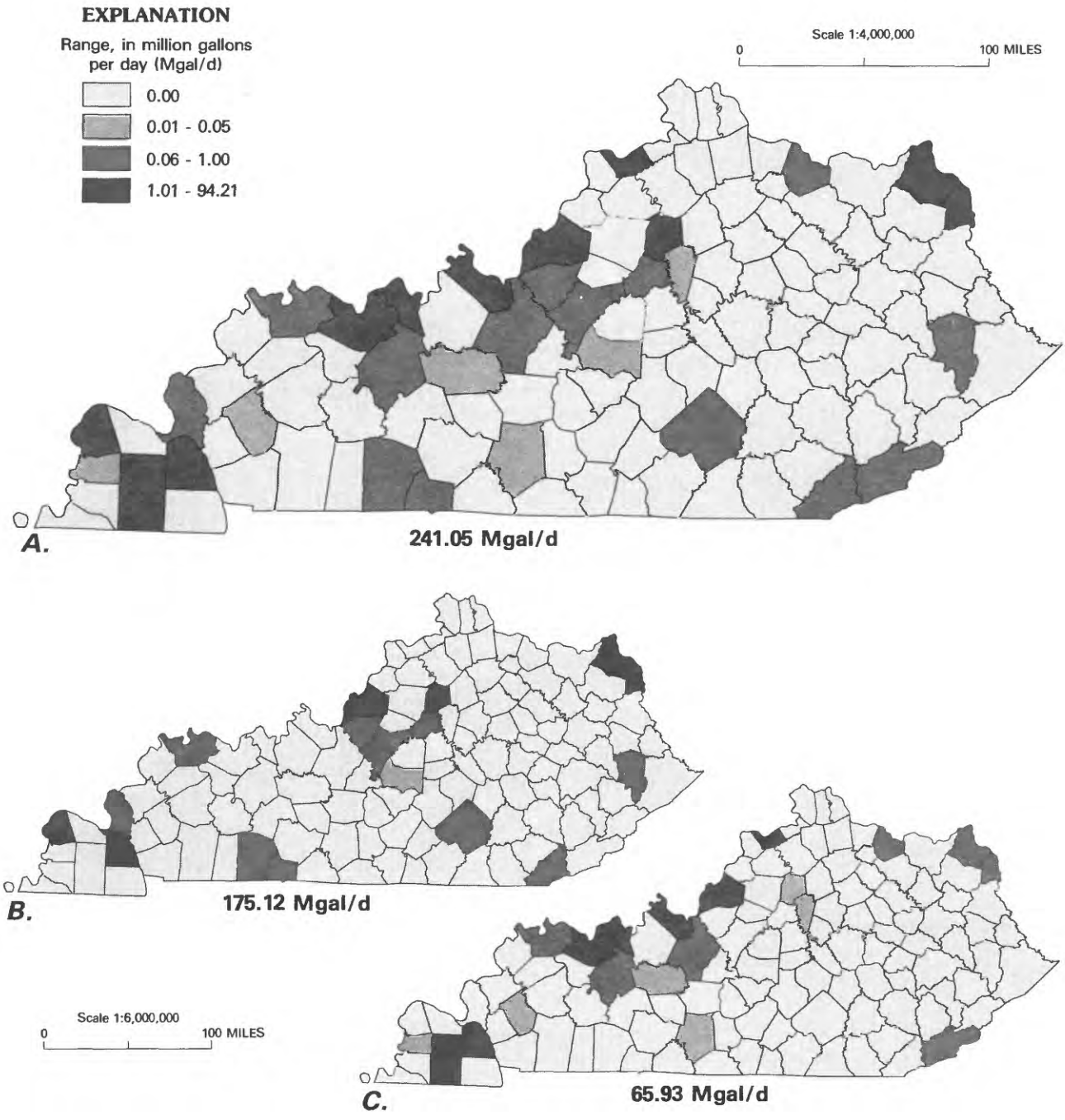


Figure 9.--Self-supplied industrial water withdrawals, by county, in 1985. A. Total. B. Surface water. C. Ground water.

Table 4.--Industrial water use, by county, in 1985

County	Self-supplied withdrawals, in million gallons per day			Public supplied deliveries, in million gallons per day	Total, in million gallons per day	
	Source					
	Ground water	Surface water	Total		Withdrawals and deliveries	Consumptive use
ADAIR	0.00	0.00	0.00	0.01	0.01	0.00
ALLEN	0.00	0.00	0.00	0.14	0.14	0.01
ANDERSON	0.00	0.96	0.96	0.33	1.29	0.07
BALLARD	0.00	17.93	17.93	0.06	17.99	0.72
BARREN	0.02	0.00	0.02	2.09	2.11	0.09
BATH	0.00	0.00	0.00	0.04	0.04	0.00
BELL	0.00	0.23	0.23	0.59	0.82	0.04
BOONE	0.00	0.00	0.00	0.40	0.40	0.04
BOURBON	0.00	0.00	0.00	0.51	0.51	0.02
BOYD	0.14	42.07	42.21	2.63	44.84	1.81
BOYLE	0.00	0.00	0.00	1.57	1.57	0.07
BRACKEN	0.00	0.00	0.00	0.53	0.53	0.02
BREATHITT	0.00	0.00	0.00	0.07	0.07	0.00
BRECKINRIDGE	0.00	0.00	0.00	1.79	1.79	0.08
BULLITT	0.00	0.84	0.84	0.13	0.97	0.00
BUTLER	0.00	0.00	0.00	0.20	0.20	0.01
CALDWELL	0.03	0.00	0.03	0.08	0.11	0.00
CALLOWAY	0.00	0.00	0.00	3.66	3.66	0.16
CAMPBELL	0.00	0.00	0.00	10.68	10.68	0.47
CARLISLE	0.02	0.00	0.02	0.02	0.04	0.00
CARROLL	13.20	0.00	13.20	0.34	13.54	0.55
CARTER	0.00	0.00	0.00	0.30	0.30	0.01
CASEY	0.00	0.00	0.00	0.04	0.04	0.00
CHRISTIAN	0.00	0.00	0.00	2.11	2.11	0.09
CLARK	0.00	0.00	0.00	1.58	1.58	0.07
CLAY	0.00	0.00	0.00	0.12	0.12	0.01
CLINTON	0.00	0.00	0.00	0.04	0.04	0.00
CRITTENDEN	0.00	0.00	0.00	0.14	0.14	0.01
CUMBERLAND	0.00	0.00	0.00	0.01	0.01	0.00
DAVIESS	5.49	0.00	5.49	4.19	9.68	0.41
EDMONSON	0.00	0.00	0.00	0.12	0.12	0.01
ELLIOTT	0.00	0.00	0.00	0.04	0.04	0.00
ESTILL	0.00	0.00	0.00	0.03	0.03	0.00
FAYETTE	0.00	0.00	0.00	16.64	16.64	0.74
FLEMING	0.00	0.00	0.00	0.12	0.12	0.01
FLOYD	0.00	0.09	0.09	0.88	0.97	0.04
FRANKLIN	0.04	1.48	1.52	2.63	4.15	0.18
FULTON	0.00	0.00	0.00	0.81	0.81	0.04
GALLATIN	0.00	0.00	0.00	0.01	0.01	0.00
GARRARD	0.00	0.00	0.00	0.13	0.13	0.01
GRANT	0.00	0.00	0.00	0.25	0.25	0.01
GRAVES	7.88	0.00	7.88	0.27	8.15	0.33
GRAYSON	0.04	0.00	0.04	0.23	0.27	0.01
GREEN	0.00	0.00	0.00	0.14	0.14	0.01
GREENUP	0.14	6.62	6.76	0.66	7.42	0.30
HANCOCK	23.05	0.00	23.05	0.06	23.11	0.92
HARDIN	0.50	0.00	0.50	2.16	2.66	0.12
HARLAN	0.71	0.00	0.71	1.60	2.31	0.10
HARRISON	0.00	0.00	0.00	0.76	0.76	0.03
HART	0.00	0.00	0.00	0.65	0.65	0.03
HENDERSON	0.31	0.47	0.78	1.37	2.15	0.09
HENRY	0.00	0.00	0.00	0.26	0.26	0.01
HICKMAN	0.00	0.00	0.00	0.02	0.02	0.00
HOPKINS	0.00	0.00	0.00	1.04	1.04	0.05
JACKSON	0.00	0.00	0.00	0.04	0.04	0.00
JEFFERSON	7.16	87.05	94.21	56.63	150.84	6.39
JESSAMINE	0.00	0.00	0.00	2.36	2.36	0.10
JOHNSON	0.00	0.00	0.00	0.72	0.72	0.03
KENTON	0.00	0.00	0.00	2.22	2.22	0.10
KNOTT	0.00	0.00	0.00	0.10	0.10	0.00

Table 4.--Industrial water use, by county, in 1985--Continued

County	Self-supplied withdrawals, in million gallons per day			Public supplied deliveries, in million gallons per day	Total, in million gallons per day	
	Source					
	Ground water	Surface water	Total		Withdrawals and deliveries	Consumptive Use
KNOX	0.00	0.00	0.00	0.36	0.36	0.02
LARUE	0.00	0.00	0.00	0.04	0.04	0.00
LAUREL	0.00	0.00	0.00	0.80	0.80	0.04
LAWRENCE	0.00	0.00	0.00	0.10	0.10	0.00
LEE	0.00	0.00	0.00	0.14	0.14	0.01
LESLIE	0.00	0.00	0.00	0.23	0.23	0.01
LETCHER	0.00	0.00	0.00	0.61	0.61	0.03
LEWIS	0.00	0.00	0.00	0.09	0.09	0.00
LINCOLN	0.00	0.00	0.00	0.09	0.09	0.00
LIVINGSTON	0.00	0.12	0.12	0.03	0.15	0.01
LOGAN	0.00	0.28	0.28	0.69	0.97	0.04
LYON	0.00	0.00	0.00	0.20	0.20	0.01
MCCRACKEN	0.00	0.00	0.00	1.91	1.91	0.08
MCCREARY	0.00	0.00	0.00	0.20	0.20	0.01
MCLEAN	0.00	0.00	0.00	0.31	0.31	0.08
MADISON	0.00	0.00	0.00	1.75	1.75	0.08
MAGOFFIN	0.00	0.00	0.00	0.08	0.08	0.00
MARION	0.00	0.01	0.01	0.51	0.52	0.02
MARSHALL	1.59	15.64	17.23	1.58	18.81	0.76
MARTIN	0.00	0.00	0.00	0.16	0.16	0.01
MASON	0.46	0.00	0.46	0.35	0.81	0.03
MEADE	4.99	0.00	4.99	0.22	5.21	0.21
MENIFEE	0.00	0.00	0.00	0.05	0.05	0.00
MERCER	0.00	0.00	0.00	0.02	0.02	0.00
METCALFE	0.00	0.00	0.00	0.04	0.04	0.00
MONROE	0.00	0.00	0.00	0.08	0.08	0.00
MONTGOMERY	0.00	0.00	0.00	0.43	0.43	0.02
MORGAN	0.00	0.00	0.00	0.27	0.27	0.01
MUHLENBERG	0.00	0.00	0.00	0.86	0.86	0.04
NELSON	0.00	0.76	0.76	0.63	1.39	0.06
NICHOLAS	0.00	0.00	0.00	0.46	0.46	0.02
OHIO	0.14	0.00	0.14	0.51	0.65	0.02
OLDHAM	0.00	0.00	0.00	2.59	2.59	0.12
OWEN	0.00	0.00	0.00	0.12	0.12	0.01
OWSLEY	0.00	0.00	0.00	0.03	0.03	0.00
PENDLETON	0.00	0.00	0.00	0.21	0.21	0.01
PERRY	0.00	0.00	0.00	0.56	0.56	0.02
PIKE	0.00	0.00	0.00	1.29	1.29	0.06
POWELL	0.00	0.00	0.00	0.25	0.25	0.01
PULASKI	0.00	0.32	0.32	0.57	0.89	0.04
ROBERTSON	0.00	0.00	0.00	0.04	0.04	0.00
ROCKCASTLE	0.00	0.00	0.00	0.20	0.20	0.01
ROWAN	0.00	0.00	0.00	0.35	0.35	0.02
RUSSELL	0.00	0.00	0.00	0.28	0.28	0.01
SCOTT	0.00	0.00	0.00	2.82	2.82	0.13
SHELBY	0.00	0.00	0.00	0.51	0.51	0.02
SIMPSON	0.00	0.25	0.25	0.64	0.89	0.05
SPENCER	0.00	0.00	0.00	0.08	0.08	0.00
TAYLOR	0.00	0.00	0.00	1.67	1.67	0.07
TODD	0.00	0.00	0.00	0.11	0.11	0.00
TRIGG	0.00	0.00	0.00	0.26	0.26	0.01
TRIMBLE	0.00	0.00	0.00	0.00	0.00	0.00
UNION	0.00	0.00	0.00	4.09	4.09	0.18
WARREN	0.00	0.00	0.00	3.28	3.28	0.15
WASHINGTON	0.00	0.00	0.00	0.33	0.33	0.01
WAYNE	0.00	0.00	0.00	0.27	0.27	0.01
WEBSTER	0.00	0.00	0.00	0.10	0.10	0.00
WHITLEY	0.00	0.00	0.00	4.25	4.25	0.19
WOLFE	0.00	0.00	0.00	0.04	0.04	0.00
WOODFORD	0.02	0.00	0.02	0.55	0.57	0.03
Total	65.93	175.12	241.05	166.64	407.69	17.20

Mining Use

The primary uses of water for mining are in conjunction with dewatering deep-mine operations and for coal washing. Self-supplied mining withdrawals in the State were 25 Mgal/d during 1985. More than 86 percent of this amount came from surface-water sources, and almost 14 percent from ground-water sources (fig. 10). No public-supplied deliveries were reported for the mining category during 1985.

The distribution of mining withdrawals is shown in figure 11. Hopkins County led the State during 1985 where 4.24 Mgal/d was withdrawn for mining. Withdrawals in Hopkins County, when combined with withdrawals in Floyd, Ohio, Harlan, and Muhlenberg Counties, accounted for 65 percent of the water withdrawn for mining in the State. A detailed listing of mining water use (withdrawals and consumptive use) by county is contained in table 5.

Statewide, less water is withdrawn for mining than any other category except irrigation. However, because of the high consumptive-use rate in irrigation, mining consumptive use is less than any other category.

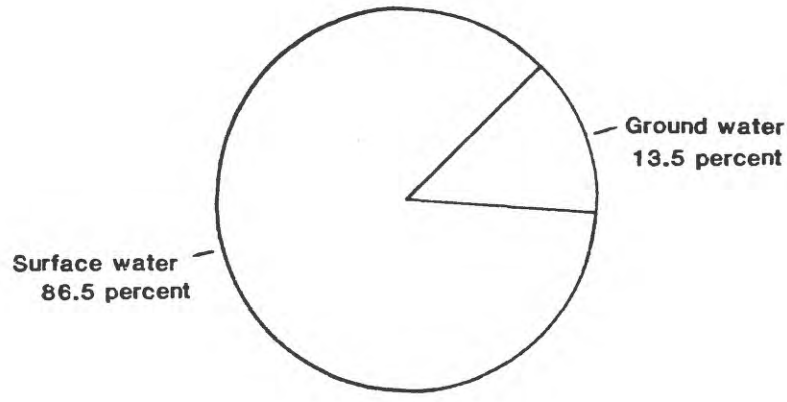


Figure 10.--Water withdrawn for mining, by source, in 1985. (Mgal/d=million gallons per day)

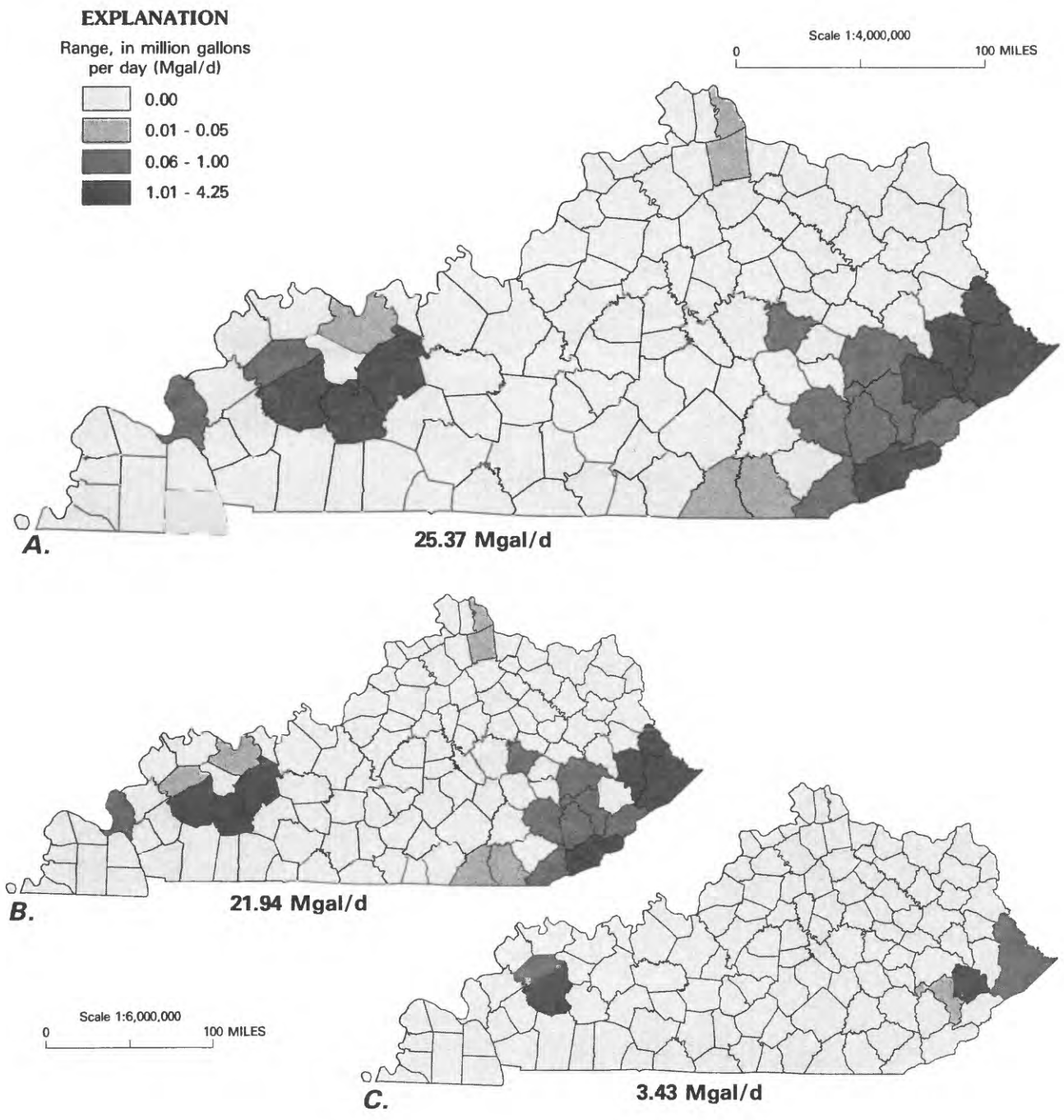


Figure 11.--Mining water withdrawals, by county, in 1985. A. Total. B. Surface water. C. Ground water.

Table 5.--Mining water use, by county, in 1985

County	Withdrawals, in million gallons per day			
	Source			
	Ground water	Surface water	Total	Consumptive use
ADAIR	0.00	0.00	0.00	0.00
ALLEN	0.00	0.00	0.00	0.00
ANDERSON	0.00	0.00	0.00	0.00
BALLARD	0.00	0.00	0.00	0.00
BARREN	0.00	0.00	0.00	0.00
BATH	0.00	0.00	0.00	0.00
BELL	0.00	0.11	0.11	0.00
BOONE	0.00	0.00	0.00	0.00
BOURBON	0.00	0.00	0.00	0.00
BOYD	0.00	0.00	0.00	0.00
BOYLE	0.00	0.00	0.00	0.00
BRACKEN	0.00	0.00	0.00	0.00
BREATHITT	0.00	0.11	0.11	0.00
BRECKINRIDGE	0.00	0.00	0.00	0.00
BULLITT	0.00	0.00	0.00	0.00
BUTLER	0.00	0.00	0.00	0.00
CALDWELL	0.00	0.00	0.00	0.00
CALLOWAY	0.00	0.00	0.00	0.00
CAMPBELL	0.00	0.02	0.02	0.00
CARLISLE	0.00	0.00	0.00	0.00
CARROLL	0.00	0.00	0.00	0.00
CARTER	0.00	0.00	0.00	0.00
CASEY	0.00	0.00	0.00	0.00
CHRISTIAN	0.00	0.00	0.00	0.00
CLARK	0.00	0.00	0.00	0.00
CLAY	0.00	0.20	0.20	0.01
CLINTON	0.00	0.00	0.00	0.00
CRITTENDEN	0.00	0.00	0.00	0.00
CUMBERLAND	0.00	0.00	0.00	0.00
DAVIESS	0.00	0.02	0.02	0.03
EDMONSON	0.00	0.00	0.00	0.00
ELLIOTT	0.00	0.00	0.00	0.00
ESTILL	0.00	1.00	1.00	0.03
FAYETTE	0.00	0.00	0.00	0.00
FLEMING	0.00	0.00	0.00	0.00
FLOYD	0.00	3.12	3.12	0.09
FRANKLIN	0.00	0.00	0.00	0.00
FULTON	0.00	0.00	0.00	0.00
GALLATIN	0.00	0.00	0.00	0.00
GARRARD	0.00	0.00	0.00	0.00
GRANT	0.00	0.00	0.00	0.00
GRAVES	0.00	0.00	0.00	0.00
GRAYSON	0.00	0.00	0.00	0.00
GREEN	0.00	0.00	0.00	0.00
GREENUP	0.00	0.00	0.00	0.00
HANCOCK	0.00	0.00	0.00	0.00
HARDIN	0.00	0.00	0.00	0.00
HARLAN	0.00	3.05	3.05	0.09
HARRISON	0.00	0.00	0.00	0.00
HART	0.00	0.00	0.00	0.00
HENDERSON	0.00	0.00	0.00	0.00
HENRY	0.00	0.00	0.00	0.00
HICKMAN	0.00	0.00	0.00	0.00
HOPKINS	1.05	3.19	4.24	0.13
JACKSON	0.00	0.00	0.00	0.00
JEFFERSON	0.00	0.00	0.00	0.00
JESSAMINE	0.00	0.00	0.00	0.00
JOHNSON	0.00	0.00	0.00	0.00
KENTON	0.00	0.00	0.00	0.00
KNOTT	1.96	0.00	1.96	0.06

Table 5.--Mining water use, by county, in 1985--Continued

County	Withdrawals, in million gallons per day			Consumptive use
	Source			
	Ground water	Surface water	Total	
KNOX	0.00	0.00	0.00	0.00
LARUE	0.00	0.00	0.00	0.00
LAUREL	0.00	0.00	0.00	0.00
LAWRENCE	0.00	0.00	0.00	0.00
LEE	0.00	0.00	0.00	0.00
LESLIE	0.00	0.20	0.20	0.01
LETCHER	0.00	0.93	0.93	0.03
LEWIS	0.00	0.00	0.00	0.00
LINCOLN	0.00	0.00	0.00	0.00
LIVINGSTON	0.00	0.18	0.18	0.01
LOGAN	0.00	0.00	0.00	0.00
LYON	0.00	0.00	0.00	0.00
MCCRACKEN	0.00	0.00	0.00	0.00
MCCREARY	0.00	0.03	0.03	0.00
MCLEAN	0.00	0.00	0.00	0.00
MADISON	0.00	0.00	0.00	0.00
MAGOFFIN	0.00	0.00	0.00	0.00
MARION	0.00	0.00	0.00	0.00
MARSHALL	0.00	0.00	0.00	0.00
MARTIN	0.23	1.11	1.34	0.04
MASON	0.00	0.00	0.00	0.00
MEADE	0.00	0.00	0.00	0.00
MENIFEE	0.00	0.00	0.00	0.00
MERCER	0.00	0.00	0.00	0.00
METCALFE	0.00	0.00	0.00	0.00
MONROE	0.00	0.00	0.00	0.00
MONTGOMERY	0.00	0.00	0.00	0.00
MORGAN	0.00	0.00	0.00	0.00
MUHLENBERG	0.00	2.97	2.97	0.04
NELSON	0.00	0.00	0.00	0.00
NICHOLAS	0.00	0.00	0.00	0.00
OHIO	0.00	3.09	3.09	0.09
OLDHAM	0.00	0.00	0.00	0.00
OWEN	0.00	0.00	0.00	0.00
OWSLEY	0.00	0.00	0.00	0.00
PENDLETON	0.00	0.04	0.04	0.00
PERRY	0.01	0.91	0.92	0.03
PIKE	0.09	1.60	1.69	0.05
POWELL	0.00	0.00	0.00	0.00
PULASKI	0.00	0.00	0.00	0.00
ROBERTSON	0.00	0.00	0.00	0.00
ROCKCASTLE	0.00	0.00	0.00	0.00
ROWAN	0.00	0.00	0.00	0.00
RUSSELL	0.00	0.00	0.00	0.00
SCOTT	0.00	0.00	0.00	0.00
SHELBY	0.00	0.00	0.00	0.00
SIMPSON	0.00	0.00	0.00	0.00
SPENCER	0.00	0.00	0.00	0.00
TAYLOR	0.00	0.00	0.00	0.00
TODD	0.00	0.00	0.00	0.00
TRIGG	0.00	0.00	0.00	0.00
TRIMBLE	0.00	0.00	0.00	0.00
UNION	0.00	0.00	0.00	0.00
WARREN	0.00	0.00	0.00	0.00
WASHINGTON	0.00	0.00	0.00	0.00
WAYNE	0.00	0.00	0.00	0.00
WEBSTER	0.09	0.02	0.11	0.00
WHITLEY	0.00	0.04	0.04	0.00
WOLFE	0.00	0.00	0.00	0.00
WOODFORD	0.00	0.00	0.00	0.00
Total	3.43	21.94	25.37	0.74

Thermoelectric Power Generation Use

Water withdrawn for thermoelectric power generation in the State accounted for more than 81 percent of the total offstream withdrawals during 1985. Over 3,407 Mgal/d was withdrawn by 22 thermoelectric power plants in 17 counties. This amount represented a 690 Mgal/d decrease from withdrawals reported for the thermoelectric category in 1980 (Solley and others, 1983, p. 38). All thermoelectric withdrawals were from self-supplied sources, as no public-water suppliers delivered water to Kentucky's thermoelectric power generation plants in 1985. Almost 99 percent of the withdrawals came from surface water, and 1 percent from ground water (fig. 12).

The distribution and ranges of water withdrawals for thermoelectric power generation are shown in figure 13. The largest amount of water withdrawn for thermoelectric power generation (973 Mgal/d) was in McCracken County, but the most energy (10,000 gWh), or 17 percent of the State's total power was produced in Muhlenberg County. The only thermoelectric plant where ground water was withdrawn was in Mason County. Thermoelectric water-use (withdrawals and consumptive use) and power-generation data are shown by county in table 6.

In 1985, fossil fuel was used in all of the thermoelectric plants in Kentucky to produce energy. Water is used in these plants mainly for cooling purposes. Although less than 4 percent of the water withdrawn for thermoelectric power during 1985 was consumed, the thermoelectric power category accounted for almost 48 percent of the total consumptive use in the State during 1985.

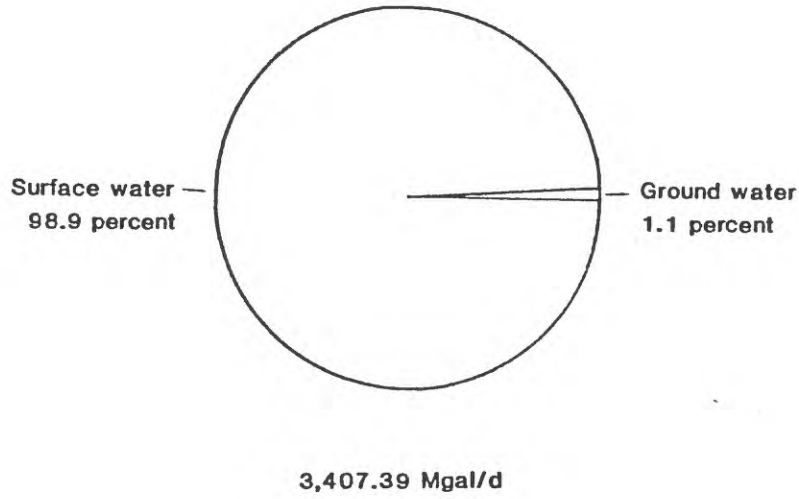


Figure 12.--Water withdrawn for the generation of thermoelectric power, by source, in 1985. (Mgal/d = million gallons per day)

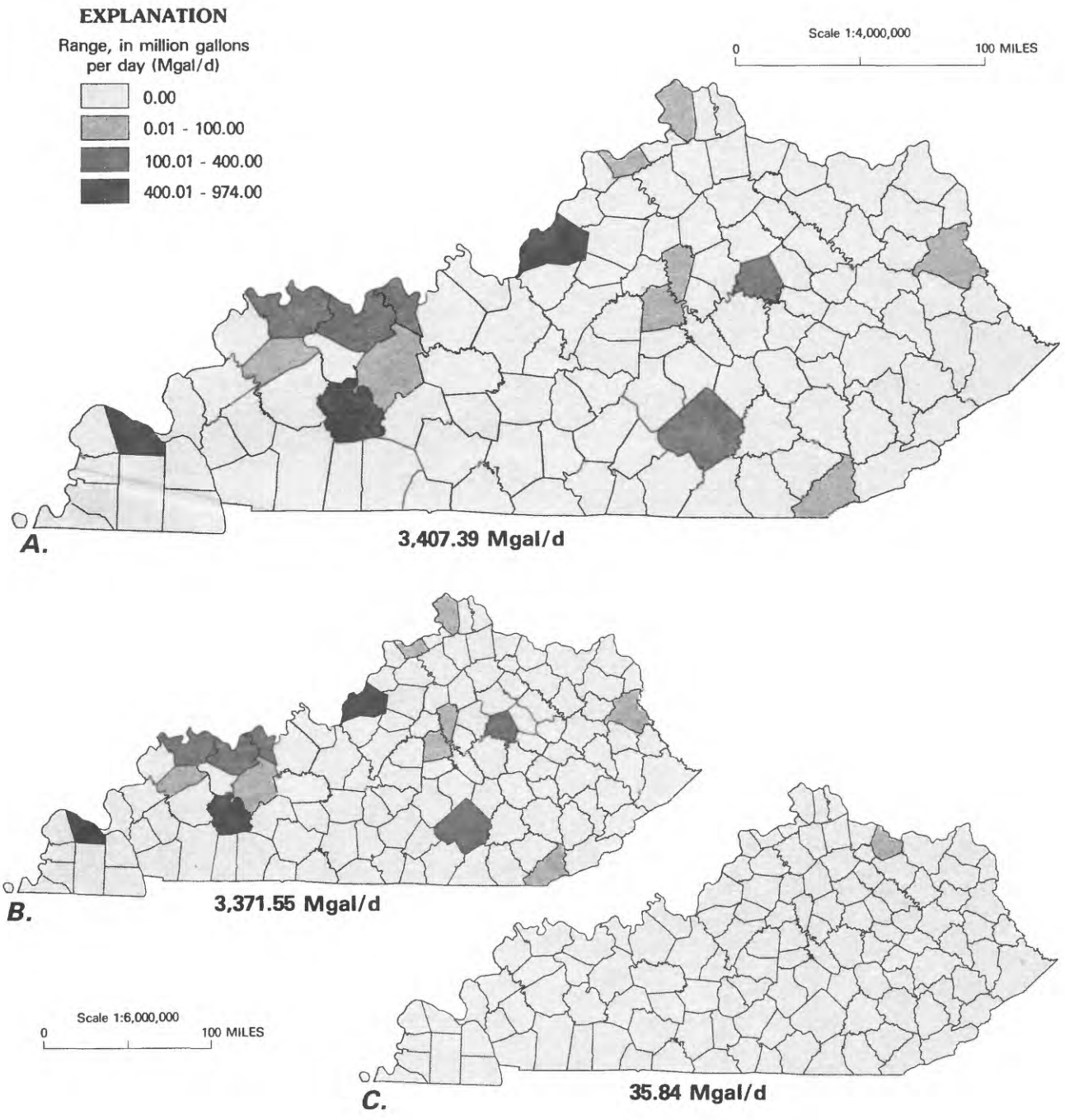


Figure 13.--Thermoelectric power water withdrawals, by county, in 1985. A. Total. B. Surface water. C. Ground water.

Table 6.--Thermoelectric power, by county, in 1985

County	By source, in million gallons per day			Total, in million gallons per day		Total power generated, in gigawatthours
	Self-supplied withdrawals		Public supplied deliveries	Withdrawals and deliveries	Consumptive use	
	Ground water	Surface water				
ADAIR	0.00	0.00	0.00	0.00	0.00	0.00
ALLEN	0.00	0.00	0.00	0.00	0.00	0.00
ANDERSON	0.00	0.00	0.00	0.00	0.00	0.00
BALLARD	0.00	0.00	0.00	0.00	0.00	0.00
BARREN	0.00	0.00	0.00	0.00	0.00	0.00
BATH	0.00	0.00	0.00	0.00	0.00	0.00
BELL	0.00	0.23	0.00	0.23	0.06	28.36
BOONE	0.00	6.92	0.00	6.92	5.33	4,137.66
BOURBON	0.00	0.00	0.00	0.00	0.00	0.00
BOYD	0.00	0.00	0.00	0.00	0.00	0.00
BOYLE	0.00	0.00	0.00	0.00	0.00	0.00
BRACKEN	0.00	0.00	0.00	0.00	0.00	0.00
BREATHITT	0.00	0.00	0.00	0.00	0.00	0.00
BRECKINRIDGE	0.00	0.00	0.00	0.00	0.00	0.00
BULLITT	0.00	0.00	0.00	0.00	0.00	0.00
BUTLER	0.00	0.00	0.00	0.00	0.00	0.00
CALDWELL	0.00	0.00	0.00	0.00	0.00	0.00
CALLOWAY	0.00	0.00	0.00	0.00	0.00	0.00
CAMPBELL	0.00	0.00	0.00	0.00	0.00	0.00
CARLISLE	0.00	0.00	0.00	0.00	0.00	0.00
CARROLL	0.00	22.79	0.00	22.79	15.13	6,499.43
CARTER	0.00	0.00	0.00	0.00	0.00	0.00
CASEY	0.00	0.00	0.00	0.00	0.00	0.00
CHRISTIAN	0.00	0.00	0.00	0.00	0.00	0.00
CLARK	0.00	111.60	0.00	111.60	1.50	485.28
CLAY	0.00	0.00	0.00	0.00	0.00	0.00
CLINTON	0.00	0.00	0.00	0.00	0.00	0.00
CRITTENDEN	0.00	0.00	0.00	0.00	0.00	0.00
CUMBERLAND	0.00	0.00	0.00	0.00	0.00	0.00
DAVIESS	0.00	151.50	0.00	151.50	0.00	1,369.46
EDMONSON	0.00	0.00	0.00	0.00	0.00	0.00
ELLIOTT	0.00	0.00	0.00	0.00	0.00	0.00
ESTILL	0.00	0.00	0.00	0.00	0.00	0.00
FAYETTE	0.00	0.00	0.00	0.00	0.00	0.00
FLEMING	0.00	0.00	0.00	0.00	0.00	0.00
FLOYD	0.00	0.00	0.00	0.00	0.00	0.00
FRANKLIN	0.00	0.00	0.00	0.00	0.00	0.00
FULTON	0.00	0.00	0.00	0.00	0.00	0.00
GALLATIN	0.00	0.00	0.00	0.00	0.00	0.00
GARRARD	0.00	0.00	0.00	0.00	0.00	0.00
GRANT	0.00	0.00	0.00	0.00	0.00	0.00
GRAVES	0.00	0.00	0.00	0.00	0.00	0.00
GRAYSON	0.00	0.00	0.00	0.00	0.00	0.00
GREEN	0.00	0.00	0.00	0.00	0.00	0.00
GREENUP	0.00	0.00	0.00	0.00	0.00	0.00
HANCOCK	0.00	249.63	0.00	249.63	0.07	2,917.56
HARDIN	0.00	0.00	0.00	0.00	0.00	0.00
HARLAN	0.00	0.00	0.00	0.00	0.00	0.00
HARRISON	0.00	0.00	0.00	0.00	0.00	0.00
HART	0.00	0.00	0.00	0.00	0.00	0.00
HENDERSON	0.00	246.68	0.00	246.68	0.00	2,106.54
HENRY	0.00	0.00	0.00	0.00	0.00	0.00
HICKMAN	0.00	0.00	0.00	0.00	0.00	0.00
HOPKINS	0.00	0.00	0.00	0.00	0.00	0.00
JACKSON	0.00	0.00	0.00	0.00	0.00	0.00
JEFFERSON	0.00	625.47	0.00	625.47	13.32	8,001.63
JESSAMINE	0.00	0.00	0.00	0.00	0.00	0.00
JOHNSON	0.00	0.00	0.00	0.00	0.00	0.00
KENTON	0.00	0.00	0.00	0.00	0.00	0.00
KNOTT	0.00	0.00	0.00	0.00	0.00	0.00

Table 6.--Thermoelectric power, by county, in 1985--Continued

County	By source, in million gallons per day			Total, in million gallons per day		Total power generated, in gigawatthours
	Self-supplied withdrawals		Public supplied deliveries	Withdrawals and deliveries	Consumptive use	
	Ground water	Surface water				
KNOX	0.00	0.00	0.00	0.00	0.00	0.00
LARUE	0.00	0.00	0.00	0.00	0.00	0.00
LAUREL	0.00	0.00	0.00	0.00	0.00	0.00
LAWRENCE	0.00	9.47	0.00	9.47	7.03	4,277.58
LEE	0.00	0.00	0.00	0.00	0.00	0.00
LESLIE	0.00	0.00	0.00	0.00	0.00	0.00
LETCHER	0.00	0.00	0.00	0.00	0.00	0.00
LEWIS	0.00	0.00	0.00	0.00	0.00	0.00
LINCOLN	0.00	0.00	0.00	0.00	0.00	0.00
LIVINGSTON	0.00	0.00	0.00	0.00	0.00	0.00
LOGAN	0.00	0.00	0.00	0.00	0.00	0.00
LYON	0.00	0.00	0.00	0.00	0.00	0.00
MCCRACKEN	0.00	973.35	0.00	973.35	0.31	5,717.33
MCCREARY	0.00	0.00	0.00	0.00	0.00	0.00
MCLEAN	0.00	0.00	0.00	0.00	0.00	0.00
MADISON	0.00	0.00	0.00	0.00	0.00	0.00
MAGOFFIN	0.00	0.00	0.00	0.00	0.00	0.00
MARION	0.00	0.00	0.00	0.00	0.00	0.00
MARSHALL	0.00	0.00	0.00	0.00	0.00	0.00
MARTIN	0.00	0.00	0.00	0.00	0.00	0.00
MASON	35.84	0.00	0.00	35.84	6.94	4,219.72
MEADE	0.00	0.00	0.00	0.00	0.00	0.00
MENIFEE	0.00	0.00	0.00	0.00	0.00	0.00
MERCER	0.00	25.76	0.00	25.76	6.51	3,166.27
METCALFE	0.00	0.00	0.00	0.00	0.00	0.00
MONROE	0.00	0.00	0.00	0.00	0.00	0.00
MONTGOMERY	0.00	0.00	0.00	0.00	0.00	0.00
MORGAN	0.00	0.00	0.00	0.00	0.00	0.00
MUHLENBERG	0.00	637.83	0.00	637.83	50.08	10,027.62
NELSON	0.00	0.00	0.00	0.00	0.00	0.00
NICHOLAS	0.00	0.00	0.00	0.00	0.00	0.00
OHIO	0.00	2.63	0.00	2.63	2.09	1,900.57
OLDHAM	0.00	0.00	0.00	0.00	0.00	0.00
OWEN	0.00	0.00	0.00	0.00	0.00	0.00
OWSLEY	0.00	0.00	0.00	0.00	0.00	0.00
PENDLETON	0.00	0.00	0.00	0.00	0.00	0.00
PERRY	0.00	0.00	0.00	0.00	0.00	0.00
PIKE	0.00	0.00	0.00	0.00	0.00	0.00
POWELL	0.00	0.00	0.00	0.00	0.00	0.00
PULASKI	0.00	227.28	0.00	227.28	2.50	1,651.83
ROBERTSON	0.00	0.00	0.00	0.00	0.00	0.00
ROCKCASTLE	0.00	0.00	0.00	0.00	0.00	0.00
ROWAN	0.00	0.00	0.00	0.00	0.00	0.00
RUSSELL	0.00	0.00	0.00	0.00	0.00	0.00
SCOTT	0.00	0.00	0.00	0.00	0.00	0.00
SHELBY	0.00	0.00	0.00	0.00	0.00	0.00
SIMPSON	0.00	0.00	0.00	0.00	0.00	0.00
SPENCER	0.00	0.00	0.00	0.00	0.00	0.00
TAYLOR	0.00	0.00	0.00	0.00	0.00	0.00
TODD	0.00	0.00	0.00	0.00	0.00	0.00
TRIGG	0.00	0.00	0.00	0.00	0.00	0.00
TRIMBLE	0.00	0.00	0.00	0.00	0.00	0.00
UNION	0.00	0.00	0.00	0.00	0.00	0.00
WARREN	0.00	0.00	0.00	0.00	0.00	0.00
WASHINGTON	0.00	0.00	0.00	0.00	0.00	0.00
WAYNE	0.00	0.00	0.00	0.00	0.00	0.00
WEBSTER	0.00	64.71	0.00	64.71	12.65	3,530.73
WHITLEY	0.00	0.00	0.00	0.00	0.00	0.00
WOLFE	0.00	0.00	0.00	0.00	0.00	0.00
WOODFORD	0.00	15.70	0.00	15.70	0.00	75.72
Total	35.84	3,371.55	0.00	3,407.39	123.52	60,113.29

Agricultural Use

Water withdrawals for agricultural purposes (irrigation and livestock) in Kentucky averaged 58 Mgal/d during 1985. About 13 percent of the water withdrawn for agriculture was for irrigation, whereas 87 percent was withdrawn for livestock production (fig. 14).

Water withdrawn for supplemental irrigation was almost 8 Mgal/d during 1985. More than 96 percent of the water withdrawn for irrigation was from surface-water sources (fig. 15A). Withdrawals increased by more than 56 percent from 1980 to 1985 for this category. Almost 22,000 acres were irrigated during 1985 with over 98 percent of the acres irrigated by spray-type irrigation systems (fig. 15B). It was estimated that in Harrison County more water was withdrawn for irrigation than any other county in the State in 1985, averaging 0.52 Mgal/d. Nearly one-third of all water withdrawn for irrigation in the State was used by five northcentral counties (Harrison, Henry, Scott, Fayette and Owen).

Water withdrawn for livestock production was about 50 Mgal/d. Surface-water sources, such as streams and ponds, accounted for about 95 percent of the water (fig. 15C). Barren County led all Kentucky counties in livestock withdrawals use by withdrawing 1.7 Mgal/d.

The distribution of irrigation withdrawals is shown in figure 16 and individual county data (withdrawals, conveyance losses, and consumptive use) are listed in table 7. The distribution of livestock withdrawals for the State is shown in figure 17. Specific county use data (withdrawals and consumptive use) for livestock are shown in table 8.

Water withdrawn for agricultural purposes does not seem significant when compared to overall water withdrawals in the State. In fact, during 1985, less than 2 percent of Kentucky's total offstream withdrawals were attributable to irrigation and livestock. But even though withdrawals for the irrigation and livestock categories were small, these categories accounted for 22 percent of the total consumptive use in 1985. This is because of the inherently high consumptive use rates for the irrigation and livestock categories.

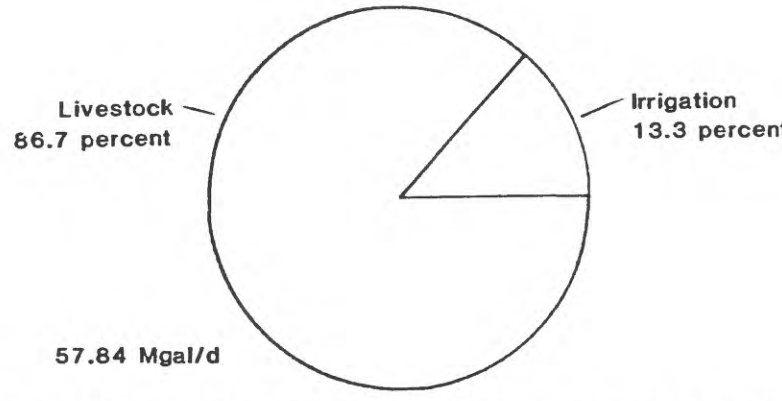


Figure 14.--Water withdrawn for agricultural uses, by category, in 1985. (Mgal/d =million gallons per day)

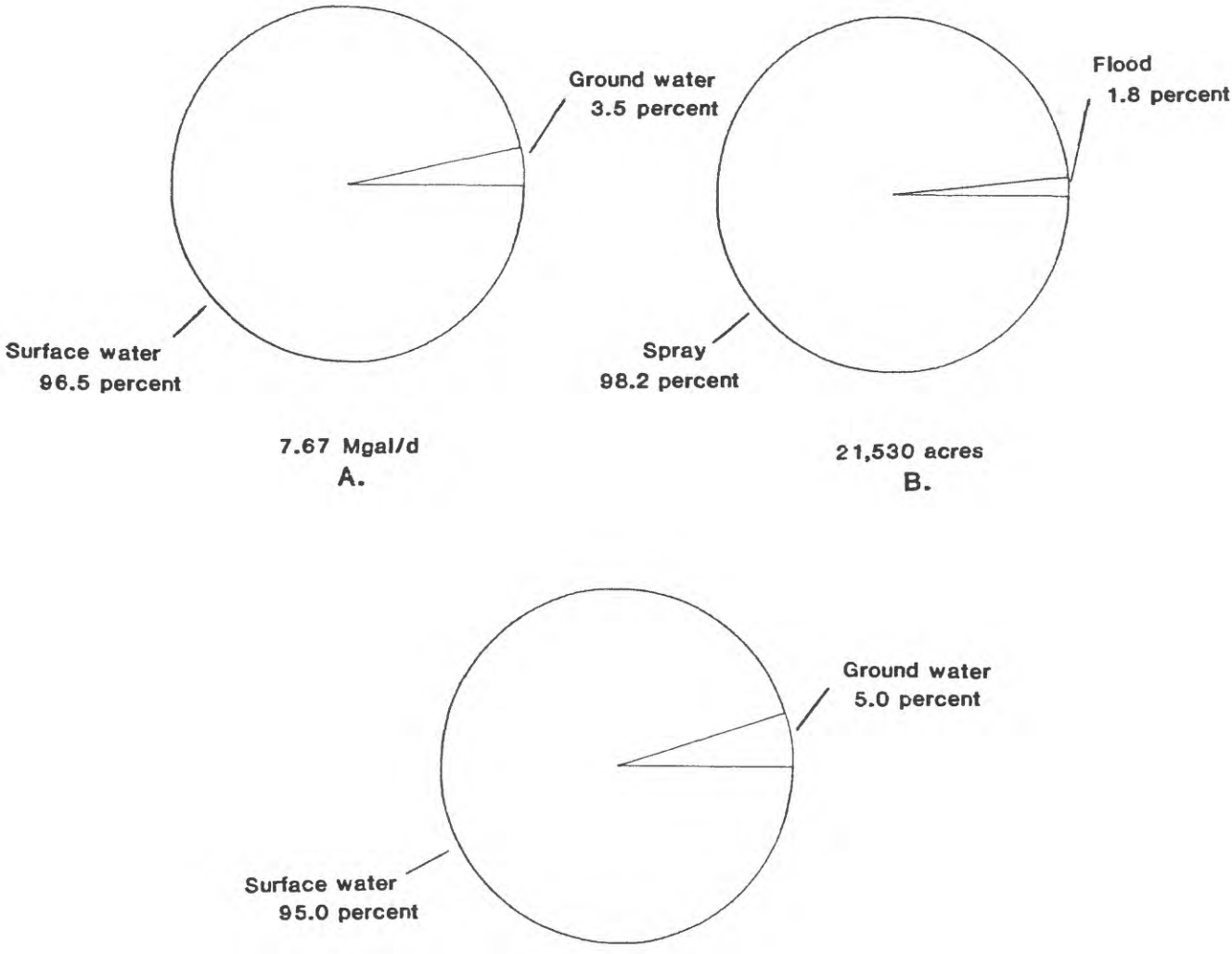


Figure 15.--Water use for agricultural purposes in 1985. A. Irrigation withdrawals by source. B. Irrigation acreage by type of application. C. Livestock withdrawals by source. (Mgal/d = million gallons per day)

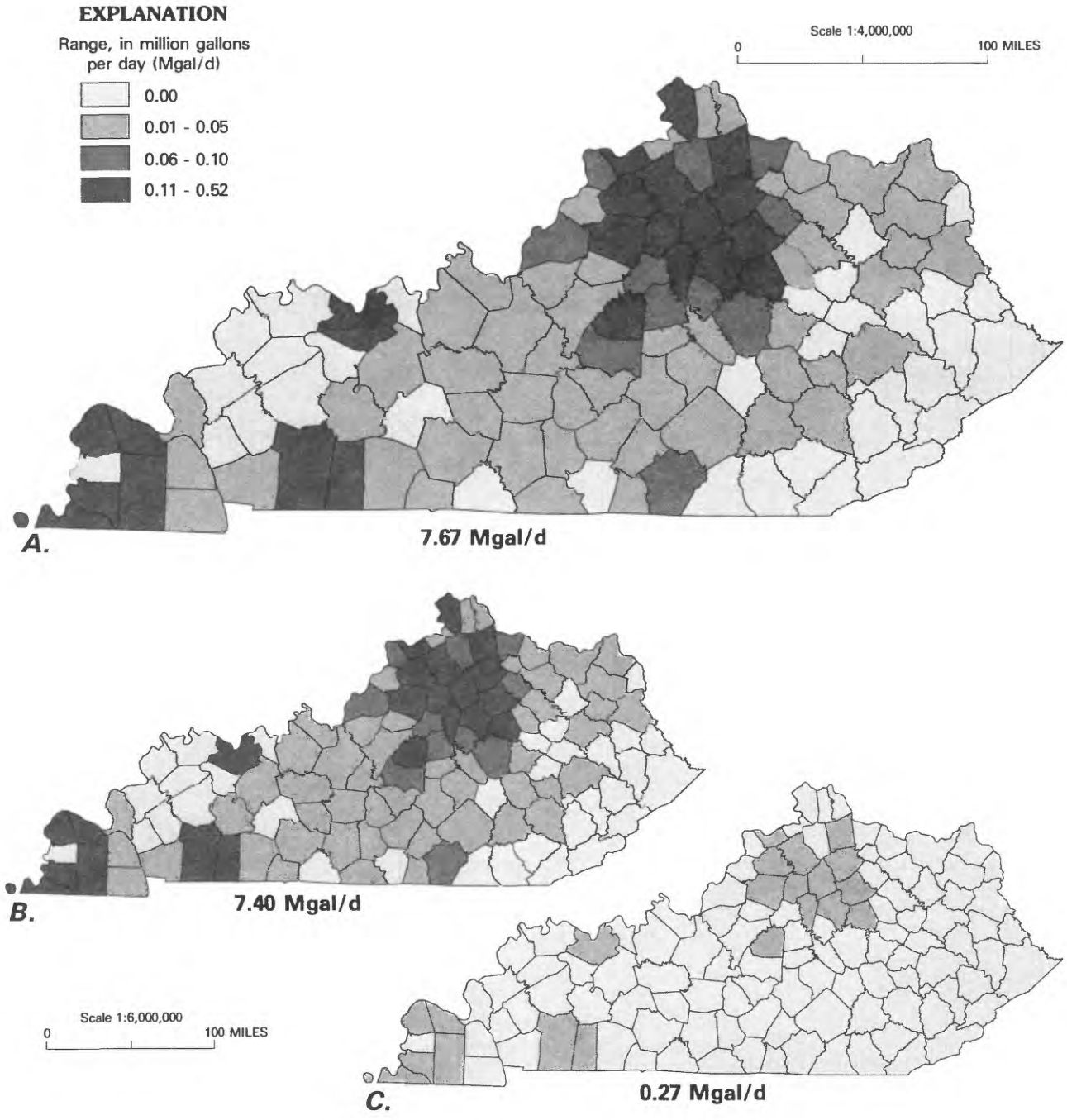


Figure 16.--Irrigation water withdrawals, by county, in 1985. A. Total. B. Surface water. C. Ground water.

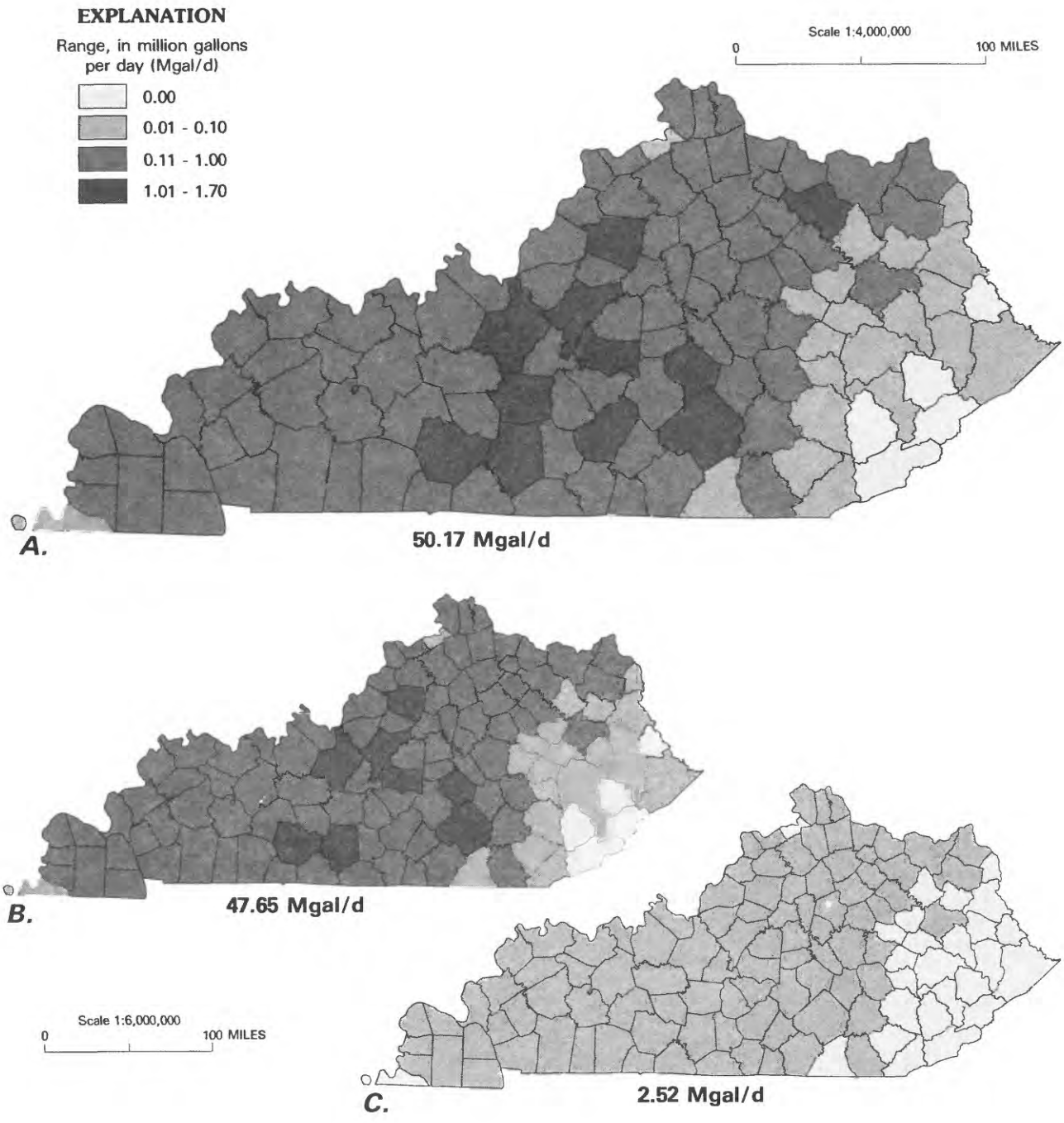


Figure 17.--Livestock water withdrawals, by county, in 1985. A. Total. B. Surface water. C. Ground water.

Table 7.--Irrigation water use, by county, in 1985

County	Irrigated land by type, in thousand acres		Thousand acre-feet per year					Million gallons per day				
			Withdrawals					Withdrawals				
			Source					Source				
	Spray	Flood	Ground water	Surface water	Total	Conveyance losses	Consumptive use, fresh water	Ground water	Surface water	Total	Conveyance losses	Consumptive use, fresh water
ADAIR	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
ALLEN	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ANDERSON	0.18	0.00	0.00	0.07	0.07	0.00	0.07	0.00	0.06	0.06	0.00	0.06
BALLARD	0.51	0.00	0.01	0.19	0.20	0.01	0.19	0.01	0.17	0.18	0.01	0.17
BARREN	0.11	0.00	0.00	0.04	0.04	0.00	0.04	0.00	0.04	0.04	0.00	0.04
BATH	0.09	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.03	0.03	0.00	0.03
BELL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BOONE	0.34	0.00	0.00	0.13	0.13	0.01	0.12	0.00	0.12	0.12	0.01	0.11
BOURBON	0.72	0.00	0.01	0.28	0.29	0.01	0.27	0.01	0.25	0.26	0.01	0.24
BOYD	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BOYLE	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
BRACKEN	0.28	0.00	0.00	0.11	0.11	0.01	0.11	0.00	0.10	0.10	0.01	0.10
BREATHITT	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
BRECKINRIDGE	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
BULLITT	0.05	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.02	0.02	0.00	0.02
BUTLER	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CALDWELL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CALLOWAY	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
CAMPBELL	0.12	0.00	0.00	0.04	0.04	0.00	0.04	0.00	0.04	0.04	0.00	0.04
CARLISLE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CARROLL	0.60	0.00	0.01	0.22	0.24	0.01	0.22	0.01	0.20	0.21	0.01	0.20
CARTER	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
CASEY	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
CHRISTIAN	0.40	0.00	0.01	0.16	0.17	0.01	0.16	0.01	0.14	0.15	0.01	0.14
CLARK	0.45	0.00	0.01	0.17	0.18	0.01	0.17	0.01	0.15	0.16	0.01	0.15
CLAY	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
CLINTON	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
CRITTENDEN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CUMBERLAND	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DAVIESS	0.42	0.00	0.01	0.16	0.17	0.01	0.16	0.01	0.14	0.15	0.01	0.14
EDMONSON	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
ELLIOTT	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
ESTILL	0.15	0.00	0.00	0.06	0.06	0.00	0.06	0.00	0.05	0.05	0.00	0.05
FAYETTE	1.18	0.06	0.02	0.48	0.50	0.02	0.47	0.02	0.43	0.45	0.02	0.42
FLEMING	0.11	0.00	0.00	0.04	0.04	0.00	0.04	0.00	0.04	0.04	0.00	0.04
FLOYD	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FRANKLIN	0.37	0.00	0.01	0.15	0.16	0.01	0.15	0.01	0.13	0.14	0.01	0.13
FULTON	0.58	0.01	0.01	0.22	0.24	0.01	0.22	0.01	0.20	0.21	0.01	0.20
GALLATIN	0.15	0.00	0.00	0.06	0.06	0.00	0.06	0.00	0.05	0.05	0.00	0.05
GARRARD	0.06	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.02	0.02	0.00	0.02
GRANT	0.24	0.01	0.00	0.10	0.10	0.00	0.10	0.00	0.09	0.09	0.00	0.09
GRAVES	0.79	0.02	0.01	0.31	0.33	0.01	0.30	0.01	0.28	0.29	0.01	0.27
GRAYSON	0.05	0.01	0.00	0.02	0.02	0.00	0.02	0.00	0.02	0.02	0.00	0.02
GREEN	0.08	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.03	0.03	0.00	0.03
GREENUP	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
HANCOCK	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HARDIN	0.10	0.00	0.00	0.04	0.04	0.00	0.04	0.00	0.04	0.04	0.00	0.04
HARLAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HARRISON	1.39	0.07	0.02	0.56	0.58	0.03	0.56	0.02	0.50	0.52	0.03	0.50
HART	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
HENDERSON	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HENRY	1.39	0.00	0.02	0.54	0.56	0.02	0.53	0.02	0.48	0.50	0.02	0.47
HICKMAN	1.06	0.00	0.02	0.40	0.43	0.02	0.40	0.02	0.36	0.38	0.02	0.36
HOPKINS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
JACKSON	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
JEFFERSON	0.23	0.01	0.00	0.09	0.09	0.00	0.09	0.00	0.08	0.08	0.00	0.08
JESSAMINE	0.25	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.09	0.09	0.00	0.09
JOHNSON	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
KENTON	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
KNOTT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 7.--Irrigation water use, by county, in 1985--Continued

County	Irrigated land by type, in thousand acres		Thousand acre-feet per year					Million gallons per day				
			Withdrawals					Withdrawals				
			Source					Source				
	Spray	Flood	Ground water	Surface water	Total	Conveyance losses	Consumptive use, fresh water	Ground water	Surface water	Total	Conveyance losses	Consumptive use, fresh water
KNOX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LARUE	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
LAUREL	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
LAWRENCE	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
LEE	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LESLIE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LETCHER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEWIS	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
LINCOLN	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
LIVINGSTON	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
LOGAN	0.05	0.01	0.00	0.02	0.02	0.00	0.02	0.00	0.02	0.02	0.00	0.02
LYON	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MCCRACKEN	0.42	0.00	0.01	0.16	0.17	0.01	0.16	0.01	0.14	0.15	0.01	0.14
MCCREARY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MCLEAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MADISON	0.20	0.00	0.00	0.08	0.08	0.00	0.08	0.00	0.07	0.07	0.00	0.07
MAGOFFIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MARION	0.18	0.00	0.00	0.07	0.07	0.00	0.07	0.00	0.06	0.06	0.00	0.06
MARSHALL	0.08	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.03	0.03	0.00	0.03
MARTIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MASON	0.06	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.02	0.02	0.00	0.02
MEADE	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
MENIFEE	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MERCER	0.17	0.00	0.00	0.07	0.07	0.00	0.07	0.00	0.06	0.06	0.00	0.06
METCALFE	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
MONROE	0.04	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
MONTGOMERY	0.09	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.03	0.03	0.00	0.03
MORGAN	0.07	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.03	0.03	0.00	0.03
MUHLENBERG	0.06	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.02	0.02	0.00	0.02
NELSON	0.07	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.02	0.02	0.00	0.02
NICHOLAS	0.20	0.00	0.00	0.08	0.08	0.00	0.08	0.00	0.07	0.07	0.00	0.07
OHIO	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
OLDHAM	0.06	0.00	0.00	0.02	0.02	0.00	0.02	0.00	0.02	0.02	0.00	0.02
OWEN	1.11	0.00	0.02	0.43	0.45	0.02	0.43	0.02	0.38	0.40	0.02	0.38
OWSLEY	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
PENDLETON	0.77	0.00	0.01	0.30	0.31	0.01	0.29	0.01	0.27	0.28	0.01	0.26
PERRY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PIKE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
POWELL	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PULASKI	0.10	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.03	0.03	0.00	0.03
ROBERTSON	0.12	0.00	0.00	0.04	0.04	0.00	0.04	0.00	0.04	0.04	0.00	0.04
ROCKCASTLE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ROWAN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RUSSELL	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
SCOTT	1.17	0.13	0.02	0.49	0.52	0.02	0.49	0.02	0.44	0.46	0.02	0.44
SHELBY	0.47	0.00	0.01	0.18	0.19	0.01	0.18	0.01	0.16	0.17	0.01	0.16
SIMPSON	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
SPENCER	0.10	0.00	0.00	0.03	0.03	0.00	0.03	0.00	0.03	0.03	0.00	0.03
TAYLOR	0.03	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
TODD	0.51	0.00	0.01	0.19	0.20	0.01	0.19	0.01	0.17	0.18	0.01	0.17
TRIGG	0.02	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
TRIMBLE	0.19	0.00	0.00	0.08	0.08	0.00	0.07	0.00	0.07	0.07	0.00	0.06
UNION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WARREN	0.11	0.00	0.00	0.04	0.04	0.00	0.04	0.00	0.04	0.04	0.00	0.04
WASHINGTON	0.49	0.00	0.01	0.19	0.20	0.01	0.19	0.01	0.17	0.18	0.01	0.17
WAYNE	0.11	0.04	0.00	0.07	0.07	0.00	0.07	0.00	0.06	0.06	0.00	0.06
WEBSTER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WHITLEY	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WOLFE	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WOODFORD	0.88	0.00	0.01	0.34	0.35	0.02	0.34	0.01	0.30	0.31	0.02	0.30
Total	21.15	0.38	0.27	8.20	8.52	0.31	8.13	0.27	7.40	7.67	0.31	7.33

Table 8.--Livestock water use, by county, in 1985

County	Withdrawals, in million gallons per day			Consumptive use
	Source			
	Ground water	Surface water	Total	
ADAIR	0.05	0.97	1.02	1.02
ALLEN	0.03	0.60	0.63	0.63
ANDERSON	0.02	0.38	0.40	0.40
BALLARD	0.01	0.24	0.25	0.25
BARREN	0.08	1.62	1.70	1.70
BATH	0.02	0.43	0.45	0.45
BELL	0.00	0.01	0.01	0.01
BOONE	0.02	0.31	0.33	0.33
BOURBON	0.04	0.77	0.81	0.81
BOYD	0.00	0.07	0.07	0.07
BOYLE	0.03	0.50	0.53	0.53
BRACKEN	0.02	0.36	0.38	0.38
BREATHITT	0.00	0.03	0.03	0.03
BRECKINRIDGE	0.04	0.79	0.83	0.83
BULLITT	0.02	0.30	0.32	0.32
BUTLER	0.01	0.28	0.29	0.29
CALDWELL	0.02	0.38	0.40	0.40
CALLOWAY	0.01	0.23	0.24	0.24
CAMPBELL	0.01	0.16	0.17	0.17
CARLISLE	0.01	0.28	0.29	0.29
CARROLL	0.01	0.14	0.15	0.15
CARTER	0.01	0.15	0.16	0.16
CASEY	0.04	0.75	0.79	0.79
CHRISTIAN	0.01	0.15	0.16	0.16
CLARK	0.03	0.59	0.62	0.62
CLAY	0.00	0.07	0.07	0.07
CLINTON	0.02	0.36	0.38	0.38
CRITTENDEN	0.02	0.34	0.36	0.36
CUMBERLAND	0.01	0.28	0.29	0.29
DAVIESS	0.02	0.43	0.45	0.45
EDMONSON	0.01	0.26	0.27	0.27
ELLIOTT	0.00	0.07	0.07	0.07
ESTILL	0.01	0.10	0.11	0.11
FAYETTE	0.03	0.49	0.52	0.52
FLEMING	0.07	0.98	1.05	1.05
FLOYD	0.00	0.01	0.01	0.01
FRANKLIN	0.01	0.26	0.27	0.27
FULTON	0.00	0.07	0.07	0.07
GALLATIN	0.00	0.09	0.09	0.09
GARRARD	0.04	0.68	0.72	0.72
GRANT	0.02	0.33	0.35	0.35
GRAVES	0.02	0.48	0.50	0.50
GRAYSON	0.04	0.69	0.73	0.73
GREEN	0.04	0.76	0.80	0.80
GREENUP	0.01	0.13	0.14	0.14
HANCOCK	0.01	0.11	0.12	0.12
HARDIN	0.05	1.02	1.07	1.07
HARLAN	0.00	0.00	0.00	0.00
HARRISON	0.03	0.62	0.65	0.65
HART	0.05	0.98	1.03	1.03
HENDERSON	0.02	0.34	0.36	0.36
HENRY	0.04	0.67	0.71	0.71
HICKMAN	0.01	0.20	0.21	0.21
HOPKINS	0.01	0.22	0.23	0.23
JACKSON	0.01	0.22	0.23	0.23
JEFFERSON	0.01	0.21	0.22	0.22
JESSAMINE	0.02	0.39	0.41	0.41
JOHNSON	0.00	0.02	0.02	0.02
KENTON	0.01	0.14	0.15	0.15
KNOTT	0.00	0.00	0.00	0.00

Table 8.--Livestock water use, by county, in 1985--Continued

County	Withdrawals, in million gallons per day			Consumptive use
	Source			
	Ground water	Surface water	Total	
KNOX	0.00	0.06	0.06	0.06
LARUE	0.04	0.74	0.78	0.78
LAUREL	0.02	0.33	0.35	0.35
LAWRENCE	0.00	0.08	0.08	0.08
LEE	0.00	0.02	0.02	0.02
LESLIE	0.00	0.00	0.00	0.00
LETCHER	0.00	0.00	0.00	0.00
LEWIS	0.02	0.34	0.36	0.36
LINCOLN	0.06	1.17	1.23	1.23
LIVINGSTON	0.02	0.31	0.33	0.33
LOGAN	0.04	0.75	0.79	0.79
LYON	0.03	0.57	0.60	0.60
MCCRACKEN	0.01	0.14	0.15	0.15
MCCREARY	0.00	0.02	0.02	0.02
MCLEAN	0.01	0.15	0.16	0.16
MADISON	0.04	0.76	0.80	0.80
MAGOFFIN	0.00	0.02	0.02	0.02
MARION	0.06	1.05	1.11	1.11
MARSHALL	0.01	0.19	0.20	0.20
MARTIN	0.00	0.00	0.00	0.00
MASON	0.04	0.72	0.76	0.76
MEADE	0.02	0.45	0.47	0.47
MENIFEE	0.00	0.05	0.05	0.05
MERCER	0.05	0.88	0.93	0.93
METCALFE	0.04	0.70	0.74	0.74
MONROE	0.04	0.75	0.79	0.79
MONTGOMERY	0.02	0.47	0.49	0.49
MORGAN	0.01	0.12	0.13	0.13
MUHLENBERG	0.01	0.21	0.22	0.22
NELSON	0.07	1.25	1.32	1.32
NICHOLAS	0.02	0.35	0.37	0.37
OHIO	0.01	0.28	0.29	0.29
OLDHAM	0.02	0.38	0.40	0.40
OWEN	0.02	0.41	0.43	0.43
OWSLEY	0.00	0.02	0.02	0.02
PENDLETON	0.02	0.38	0.40	0.40
PERRY	0.00	0.01	0.01	0.01
PIKE	0.00	0.01	0.01	0.01
POWELL	0.00	0.06	0.06	0.06
PULASKI	0.06	1.17	1.23	1.23
ROBERTSON	0.01	0.13	0.14	0.14
ROCKCASTLE	0.02	0.29	0.31	0.31
ROWAN	0.00	0.09	0.09	0.09
RUSSELL	0.03	0.62	0.65	0.65
SCOTT	0.03	0.51	0.54	0.54
SHELBY	0.08	1.43	1.51	1.51
SIMPSON	0.02	0.35	0.37	0.37
SPENCER	0.03	0.65	0.68	0.68
TAYLOR	0.04	0.74	0.78	0.78
TODD	0.02	0.47	0.49	0.49
TRIGG	0.02	0.35	0.37	0.37
TRIMBLE	0.01	0.17	0.18	0.18
UNION	0.04	0.72	0.76	0.76
WARREN	0.06	1.04	1.10	1.10
WASHINGTON	0.05	0.93	0.98	0.98
WAYNE	0.03	0.50	0.53	0.53
WEBSTER	0.01	0.19	0.20	0.20
WHITLEY	0.01	0.12	0.13	0.13
WOLFE	0.00	0.05	0.05	0.05
WOODFORD	0.02	0.42	0.44	0.44
Total	2.52	47.65	50.17	50.17

Instream Use

Instream uses of water such as hydroelectric power, navigation, wastewater dilution, recreation, fish and wildlife, and aesthetic concerns are all legitimate uses of water that must be maintained and given protection equal to that given to the offstream uses. Even though it is recognized that these instream uses are important to the overall accounting of water use in the State, with the exception of hydroelectric power, they are not evaluated in this report because of the lack of data. The Kentucky Division of Water recognizes the need to maintain and protect our water resources for instream uses and is working to institutionalize mechanisms designed to protect these uses that are often difficult to quantify.

Hydroelectric power water use is the one instream use that, by its very nature, is more easily quantified. This category is different from the offstream use categories previously presented in this report in that the water is not actually withdrawn from the stream. But the sheer magnitude of use (91,000 Mgal/d), is important because this represents almost 96 percent of all quantified water use in the State, including all of the offstream uses.

Water was used to generate electricity by hydroelectric power in only seven counties in Kentucky. Figure 18 shows the ranges of hydroelectric power water use and table 9 lists specific county data for this category. Hydroelectric power plants in Kentucky produced about 2,940 gWh of electricity in 1985. This amount represented less than 5 percent of all power generated in the State but accounted for more than 96 percent of the water used for power generation. Consumptive use is basically from evaporation, and is considered negligible in this report.

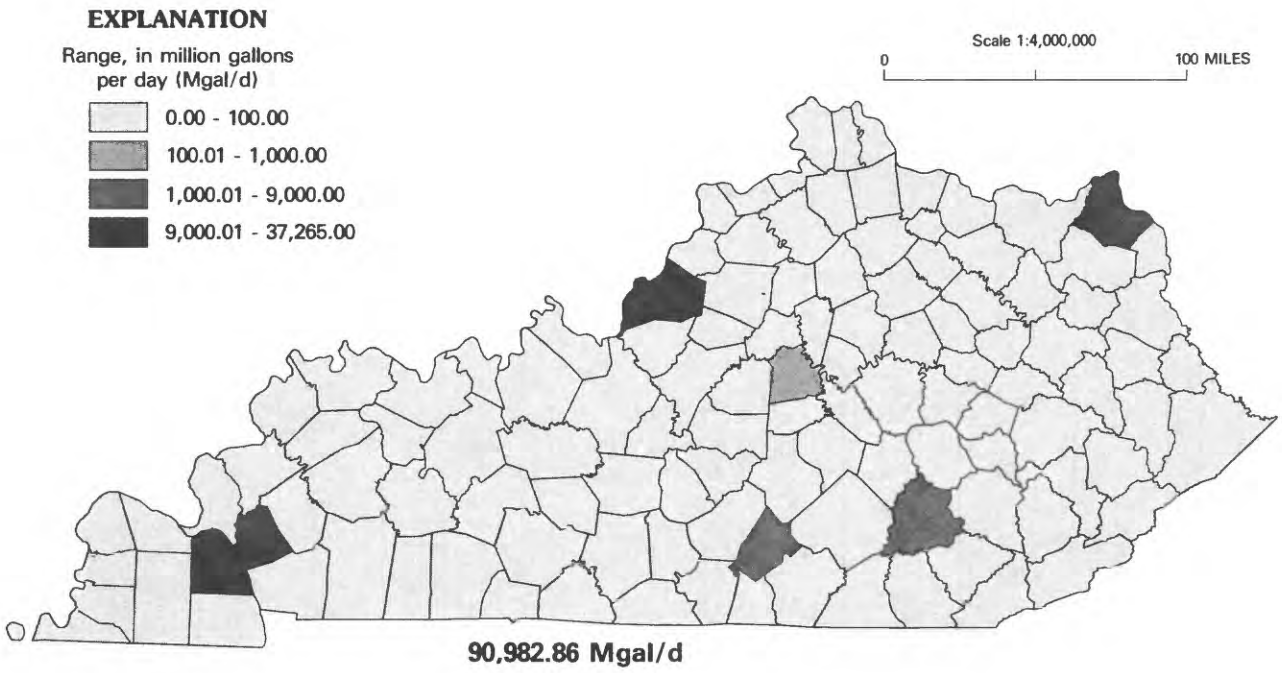


Figure 18.--Hydroelectric power water use, by county, in 1985.

Table 9.--Hydroelectric power water use, by county, in 1985

County	Water use		Power generated, in gigawatthours
	Million gallons per day	Thousand acre-feet per year	
ADAIR	0.00	0.00	0.00
ALLEN	0.00	0.00	0.00
ANDERSON	0.00	0.00	0.00
BALLARD	0.00	0.00	0.00
BARREN	0.00	0.00	0.00
BATH	0.00	0.00	0.00
BELL	0.00	0.00	0.00
BOONE	0.00	0.00	0.00
BOURBON	0.00	0.00	0.00
BOYD	0.00	0.00	0.00
BOYLE	0.00	0.00	0.00
BRACKEN	0.00	0.00	0.00
BREATHITT	0.00	0.00	0.00
BRECKINRIDGE	0.00	0.00	0.00
BULLITT	0.00	0.00	0.00
BUTLER	0.00	0.00	0.00
CALDWELL	0.00	0.00	0.00
CALLOWAY	0.00	0.00	0.00
CAMPBELL	0.00	0.00	0.00
CARLISLE	0.00	0.00	0.00
CARROLL	0.00	0.00	0.00
CARTER	0.00	0.00	0.00
CASEY	0.00	0.00	0.00
CHRISTIAN	0.00	0.00	0.00
CLARK	0.00	0.00	0.00
CLAY	0.00	0.00	0.00
CLINTON	0.00	0.00	0.00
CRITTENDEN	0.00	0.00	0.00
CUMBERLAND	0.00	0.00	0.00
DAVIESS	0.00	0.00	0.00
EDMONSON	0.00	0.00	0.00
ELLIOTT	0.00	0.00	0.00
ESTILL	0.00	0.00	0.00
FAYETTE	0.00	0.00	0.00
FLEMING	0.00	0.00	0.00
FLOYD	0.00	0.00	0.00
FRANKLIN	0.00	0.00	0.00
FULTON	0.00	0.00	0.00
GALLATIN	0.00	0.00	0.00
GARRARD	0.00	0.00	0.00
GRANT	0.00	0.00	0.00
GRAVES	0.00	0.00	0.00
GRAYSON	0.00	0.00	0.00
GREEN	0.00	0.00	0.00
GREENUP	10,775.37	12,079.19	324.57
HANCOCK	0.00	0.00	0.00
HARDIN	0.00	0.00	0.00
HARLAN	0.00	0.00	0.00
HARRISON	0.00	0.00	0.00
HART	0.00	0.00	0.00
HENDERSON	0.00	0.00	0.00
HENRY	0.00	0.00	0.00
HICKMAN	0.00	0.00	0.00
HOPKINS	0.00	0.00	0.00
JACKSON	0.00	0.00	0.00
JEFFERSON	15,675.91	17,572.70	349.28
JESSAMINE	0.00	0.00	0.00
JOHNSON	0.00	0.00	0.00
KENTON	0.00	0.00	0.00
KNOTT	0.00	0.00	0.00

Table 9.--Hydroelectric power water use, by county, in 1985--Continued

County	Water use		Power generated, in gigawatthours
	Million gallons per day	Thousand acre-feet per year	
KNOX	0.00	0.00	0.00
LARUE	0.00	0.00	0.00
LAUREL	1,348.47	1,511.63	50.74
LAWRENCE	0.00	0.00	0.00
LEE	0.00	0.00	0.00
LESLIE	0.00	0.00	0.00
LETCHER	0.00	0.00	0.00
LEWIS	0.00	0.00	0.00
LINCOLN	0.00	0.00	0.00
LIVINGSTON	0.00	0.00	0.00
LOGAN	0.00	0.00	0.00
LYON	37,265.76	41,774.92	605.29
MCCRACKEN	0.00	0.00	0.00
MCCREARY	0.00	0.00	0.00
MCLEAN	0.00	0.00	0.00
MADISON	0.00	0.00	0.00
MAGOFFIN	0.00	0.00	0.00
MARION	0.00	0.00	0.00
MARSHALL	21,796.69	24,434.09	917.41
MARTIN	0.00	0.00	0.00
MASON	0.00	0.00	0.00
MEADE	0.00	0.00	0.00
MENIFEE	0.00	0.00	0.00
MERCER	200.99	225.31	42.12
METCALFE	0.00	0.00	0.00
MONROE	0.00	0.00	0.00
MONTGOMERY	0.00	0.00	0.00
MORGAN	0.00	0.00	0.00
MUHLENBERG	0.00	0.00	0.00
NELSON	0.00	0.00	0.00
NICHOLAS	0.00	0.00	0.00
OHIO	0.00	0.00	0.00
OLDHAM	0.00	0.00	0.00
OWEN	0.00	0.00	0.00
OWSLEY	0.00	0.00	0.00
PENDLETON	0.00	0.00	0.00
PERRY	0.00	0.00	0.00
PIKE	0.00	0.00	0.00
POWELL	0.00	0.00	0.00
PULASKI	0.00	0.00	0.00
ROBERTSON	0.00	0.00	0.00
ROCKCASTLE	0.00	0.00	0.00
ROWAN	0.00	0.00	0.00
RUSSELL	3,919.67	4,393.95	651.83
SCOTT	0.00	0.00	0.00
SHELBY	0.00	0.00	0.00
SIMPSON	0.00	0.00	0.00
SPENCER	0.00	0.00	0.00
TAYLOR	0.00	0.00	0.00
TODD	0.00	0.00	0.00
TRIGG	0.00	0.00	0.00
TRIMBLE	0.00	0.00	0.00
UNION	0.00	0.00	0.00
WARREN	0.00	0.00	0.00
WASHINGTON	0.00	0.00	0.00
WAYNE	0.00	0.00	0.00
WEBSTER	0.00	0.00	0.00
WHITLEY	0.00	0.00	0.00
WOLFE	0.00	0.00	0.00
WOODFORD	0.00	0.00	0.00
Total	90,982.86	101,991.79	2,941.24

Total Water Use

It was estimated that for all offstream uses, about 4,200 Mgal/d of water was withdrawn in Kentucky during 1985. This amount was 600 Mgal/d, or about 12 percent, less than the Kentucky withdrawals reported for 1980 (Solley and others, 1983, p. 38). This difference mostly was attributed to a 690 Mgal/d decrease in thermoelectric withdrawals from 1980 to 1985. More than 95 percent of the total withdrawals in 1985 came from surface-water sources, with less than 5 percent from ground water (fig. 19). Hydroelectric power generation water use, the only instream use reported in 1985, used 91,000 Mgal/d.

Withdrawals in McCracken County were larger than any of the other counties in Kentucky in 1985. More than 986 Mgal/d was withdrawn in this county, of which 973 Mgal/d was used for cooling in the production of thermoelectric power. The geographic distribution by county of the total offstream withdrawals and the total surface- and ground-water withdrawals are shown in figure 20. Offstream water use (withdrawals, conveyance losses, consumptive use) by county is summarized in table 10.

Thermoelectric, public-water supply, and industrial withdrawals accounted for almost 97 percent of withdrawals for all offstream water use in 1985. Water withdrawn for cooling in the production of thermoelectric power generation was 3,410 Mgal/d, the most for any category of offstream use. Offstream water use by category is summarized in figure 21 and tables 11-13.

Consumptive use for all categories was about 260 Mgal/d during 1985, as compared with 290 Mgal/d during 1980. The thermoelectric, domestic, and livestock categories accounted for almost 90 percent of the consumptive use in the State. These categories were led by thermoelectric power generation which account for almost one-half of the total consumptive use in the State during 1985. Consumptive use in Muhlenberg County (almost 51 Mgal/d) was the largest of any county in the State, and most of the consumptive use was attributed to evaporation losses from thermoelectric power generation cooling water. Total offstream consumptive use by county and by category is shown in figure 22.

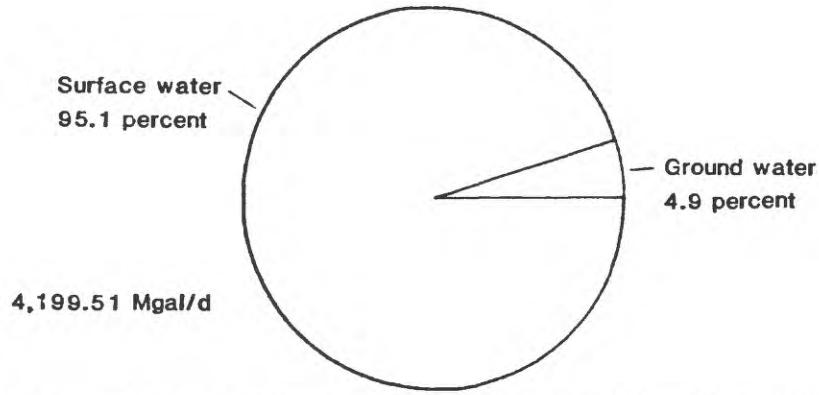


Figure 19.--Total offstream water withdrawals, by source, in 1985. (Mgal/d = million gallons per day)

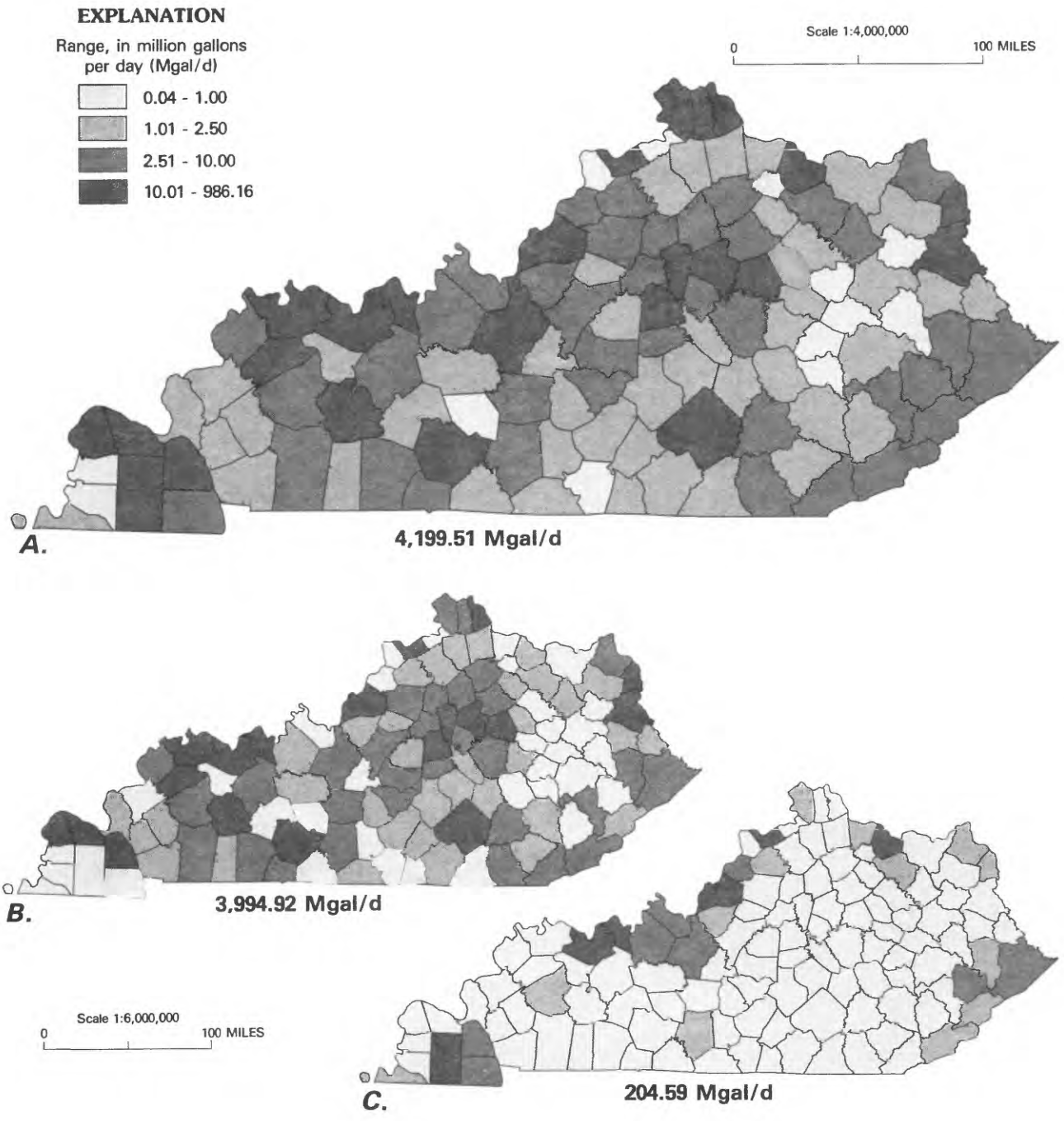


Figure 20.--Offstream water withdrawals, by county, in 1985. A. Total. B. Surface water. C. Ground water.

Table 10.--Total offstream water use, by county, in 1985

County	Population, in thousands	Per capita use, in gallons per day	Withdrawals (includes irrigation conveyance losses)			Conveyance losses in million gallons per day	Consumptive use in million gallons per day
			Source				
			Ground water	Surface water	Total		
ADAIR	15.90	123.90	0.47	1.50	1.97	0.00	1.45
ALLEN	14.60	104.11	0.79	0.73	1.52	0.00	1.00
ANDERSON	13.50	201.48	0.14	2.58	2.72	0.00	0.71
BALLARD	8.20	2,310.98	0.43	18.52	18.95	0.01	1.28
BARREN	34.20	188.89	1.08	5.38	6.46	0.00	2.80
BATH	10.20	103.92	0.41	0.65	1.06	0.00	0.84
BELL	34.30	102.92	0.52	3.01	3.53	0.00	0.73
BOONE	51.20	216.99	1.31	9.80	11.11	0.01	6.71
BOURBON	19.30	151.81	0.32	2.61	2.93	0.01	1.40
BOYD	53.60	941.23	1.03	49.42	50.45	0.00	3.08
BOYLE	25.30	203.56	0.36	4.79	5.15	0.00	1.30
BRACKEN	7.60	214.47	1.16	0.47	1.63	0.01	0.63
BREATHITT	16.50	68.48	0.63	0.50	1.13	0.00	0.60
BRECKINRIDGE	16.90	239.64	2.81	1.24	4.05	0.00	1.36
BULLITT	45.70	73.30	1.42	1.93	3.35	0.00	1.66
BUTLER	11.20	90.18	0.13	0.88	1.01	0.00	0.44
CALDWELL	13.30	107.52	0.13	1.30	1.43	0.00	0.55
CALLOWAY	28.90	235.99	6.57	0.25	6.82	0.00	0.69
CAMPBELL	81.70	234.03	0.19	18.93	19.12	0.00	1.37
CARLISLE	5.10	117.65	0.31	0.29	0.60	0.00	0.41
CARROLL	9.70	3,857.73	14.28	23.14	37.42	0.01	16.14
CARTER	25.80	82.17	0.53	1.59	2.12	0.00	0.74
CASEY	15.00	111.33	0.56	1.11	1.67	0.00	1.29
CHRISTIAN	64.10	108.89	0.96	6.02	6.98	0.01	1.53
CLARK	29.00	4,004.83	0.56	115.58	116.14	0.01	2.94
CLAY	23.63	76.17	0.61	1.19	1.80	0.00	0.70
CLINTON	9.80	108.16	0.18	0.88	1.06	0.00	0.58
CRITTENDEN	9.00	121.11	0.20	0.89	1.09	0.00	0.57
CUMBERLAND	7.50	105.33	0.10	0.69	0.79	0.00	0.41
DAVIESS	87.70	1,947.09	18.50	152.26	170.76	0.01	3.04
EDMONSON	11.30	78.76	0.10	0.79	0.89	0.00	0.41
ELLIOTT	6.70	70.15	0.36	0.11	0.47	0.00	0.32
ESTILL	15.00	121.33	0.15	1.67	1.82	0.00	0.37
FAYETTE	211.90	177.11	1.00	36.53	37.53	0.02	4.32
FLEMING	12.40	228.23	1.25	1.58	2.83	0.00	1.36
FLOYD	50.80	145.28	1.21	6.17	7.38	0.00	1.36
FRANKLIN	43.90	196.58	0.26	8.37	8.63	0.01	1.09
FULTON	8.10	223.46	1.53	0.28	1.81	0.01	0.41
GALLATIN	4.90	89.80	0.28	0.16	0.44	0.00	0.28
GARRARD	11.60	143.97	0.18	1.49	1.67	0.00	0.94
GRANT	14.10	115.60	0.25	1.38	1.63	0.00	0.72
GRAVES	32.90	340.43	10.42	0.78	11.20	0.01	1.48
GRAYSON	21.50	109.77	0.60	1.76	2.36	0.00	1.29
GREEN	10.90	149.54	0.15	1.48	1.63	0.00	0.98
GREENUP	38.20	251.83	1.08	8.54	9.62	0.00	0.83
HANCOCK	8.10	33,748.15	23.25	250.11	273.36	0.00	1.31
HARDIN	92.20	155.10	9.10	5.20	14.30	0.00	2.43
HARLAN	42.30	194.80	1.97	6.27	8.24	0.00	1.29
HARRISON	15.70	199.36	0.21	2.92	3.13	0.03	2.17
HART	16.40	190.24	0.18	2.94	3.12	0.00	1.25
HENDERSON	42.40	5,952.36	0.53	251.85	252.38	0.00	0.90
HENRY	13.30	193.98	1.28	1.30	2.58	0.02	1.34
HICKMAN	5.70	166.67	0.38	0.57	0.95	0.02	0.70
HOPKINS	46.60	202.58	1.54	7.90	9.44	0.00	0.95
JACKSON	12.50	82.40	0.29	0.74	1.03	0.00	0.53
JEFFERSON	683.40	1,234.88	13.76	830.16	843.92	0.00	25.92
JESSAMINE	28.60	187.76	0.12	5.25	5.37	0.00	1.62
JOHNSON	25.70	94.16	0.64	1.78	2.42	0.00	0.70
KENTON	136.90	75.16	0.63	9.66	10.29	0.00	1.44
KNOTT	18.40	164.13	2.93	0.09	3.02	0.00	0.77

Table 10.--Total offstream water use, by county, in 1985--Continued

County	Population, in thousands	Per capita use, in gallons per day	Withdrawals (includes irrigation conveyance losses)			Conveyance losses in million gallons per day	Consumptive use in million gallons per day
			Source				
			Ground water	Surface water	Total		
KNOX	30.20	61.59	0.66	1.20	1.86	0.00	0.73
LARUE	12.40	115.32	0.43	1.00	1.43	0.00	1.15
LAUREL	41.70	98.56	0.38	3.73	4.11	0.00	0.96
LAWRENCE	14.70	715.65	0.44	10.08	10.52	0.00	7.55
LEE	8.00	80.00	0.28	0.36	0.64	0.00	0.29
LESLIE	15.30	85.62	0.57	0.74	1.31	0.00	0.54
LETCHER	30.20	111.26	1.10	2.26	3.36	0.00	0.99
LEWIS	14.30	81.12	0.76	0.40	1.16	0.00	0.77
LINCOLN	19.20	111.98	0.47	1.68	2.15	0.00	1.64
LIVINGSTON	9.10	123.08	0.06	1.06	1.12	0.00	0.43
LOGAN	25.80	139.53	0.39	3.21	3.60	0.00	1.29
LYON	6.40	242.19	0.07	1.48	1.55	0.00	0.67
MCCRACKEN	60.80	16,219.74	0.73	985.43	986.16	0.01	1.42
MCCREARY	16.50	61.82	0.31	0.71	1.02	0.00	0.34
MCLEAN	9.90	119.19	0.22	0.96	1.18	0.00	0.41
MADISON	54.50	148.26	0.42	7.66	8.08	0.00	1.67
MAGOFFIN	14.30	61.54	0.53	0.35	0.88	0.00	0.51
MARION	17.80	165.73	0.31	2.64	2.95	0.00	1.50
MARSHALL	25.80	820.54	4.88	16.29	21.17	0.00	1.27
MARTIN	14.30	165.73	0.60	1.77	2.37	0.00	0.42
MASON	17.20	2,262.21	36.73	2.18	38.91	0.00	7.95
MEADE	23.20	301.29	6.35	0.64	6.99	0.00	1.46
MENIFEE	5.30	79.25	0.14	0.28	0.42	0.00	0.19
MERCER	19.00	1,475.79	0.20	27.84	28.04	0.00	7.75
METCALFE	9.80	118.37	0.41	0.75	1.16	0.00	1.09
MONROE	12.20	134.43	0.30	1.34	1.64	0.00	1.08
MONTGOMERY	20.50	118.54	0.14	2.29	2.43	0.00	0.77
MORGAN	12.00	95.83	0.68	0.47	1.15	0.00	0.57
MUHLENBERG	32.00	20,134.06	0.14	644.15	644.29	0.00	50.72
NELSON	29.30	163.48	0.40	4.39	4.79	0.00	1.85
NICHOLAS	7.20	206.94	0.05	1.44	1.49	0.00	0.53
OHIO	21.60	381.94	0.40	7.85	8.25	0.00	2.76
OLDHAM	29.80	102.01	2.64	0.40	3.04	0.00	0.90
OWEN	9.40	167.02	0.20	1.37	1.57	0.02	1.00
OWSLEY	5.60	58.93	0.14	0.19	0.33	0.00	0.17
PENDLETON	10.90	152.29	0.21	1.45	1.66	0.01	0.88
PERRY	34.80	105.17	0.99	2.67	3.66	0.00	1.01
PIKE	82.90	95.05	2.98	4.90	7.88	0.00	2.71
POWELL	12.00	96.67	0.24	0.92	1.16	0.00	0.33
PULASKI	48.00	4,848.96	0.43	232.32	232.75	0.00	4.41
ROBERTSON	2.30	152.17	0.08	0.27	0.35	0.00	0.25
ROCKCASTLE	14.60	101.37	0.22	1.26	1.48	0.00	0.57
ROWAN	19.30	132.12	0.09	2.46	2.55	0.00	0.34
RUSSELL	15.00	124.00	0.49	1.37	1.86	0.00	1.11
SCOTT	21.90	266.21	0.45	5.38	5.83	0.02	1.57
SHELBY	24.00	167.92	0.10	3.93	4.03	0.01	1.87
SIMPSON	15.10	195.36	0.09	2.86	2.95	0.00	0.64
SPENCER	6.20	200.00	0.04	1.20	1.24	0.00	0.76
TAYLOR	22.00	195.00	0.29	4.00	4.29	0.00	1.20
TODD	10.80	137.96	0.17	1.32	1.49	0.01	0.84
TRIGG	9.70	157.73	0.06	1.47	1.53	0.00	0.50
TRIMBLE	6.20	82.26	0.26	0.25	0.51	0.00	0.32
UNION	17.80	393.82	0.16	6.85	7.01	0.00	1.17
WARREN	82.00	134.76	0.08	10.97	11.05	0.00	1.91
WASHINGTON	10.20	212.75	0.38	1.79	2.17	0.01	1.47
WAYNE	17.70	110.17	0.49	1.46	1.95	0.00	1.06
WEBSTER	14.90	4,439.60	0.30	65.85	66.15	0.00	13.00
WHITLEY	35.50	216.62	0.58	7.11	7.69	0.00	0.94
WOLFE	7.10	67.61	0.27	0.21	0.48	0.00	0.29
WOODFORD	18.70	983.42	0.29	18.10	18.39	0.02	1.05
Total	3,725.73	1,127.16	204.59	3,994.92	4,199.51	0.31	259.97

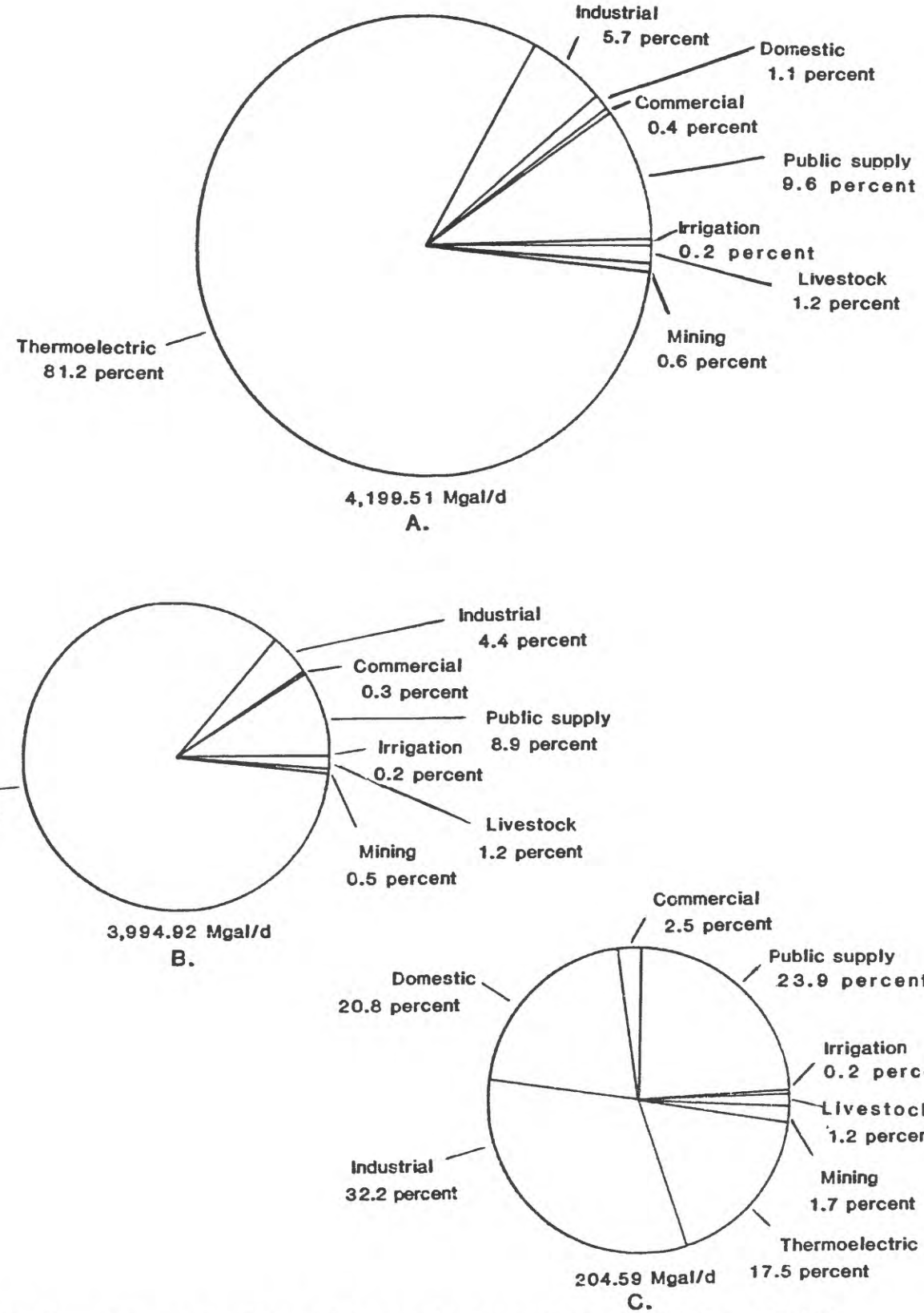
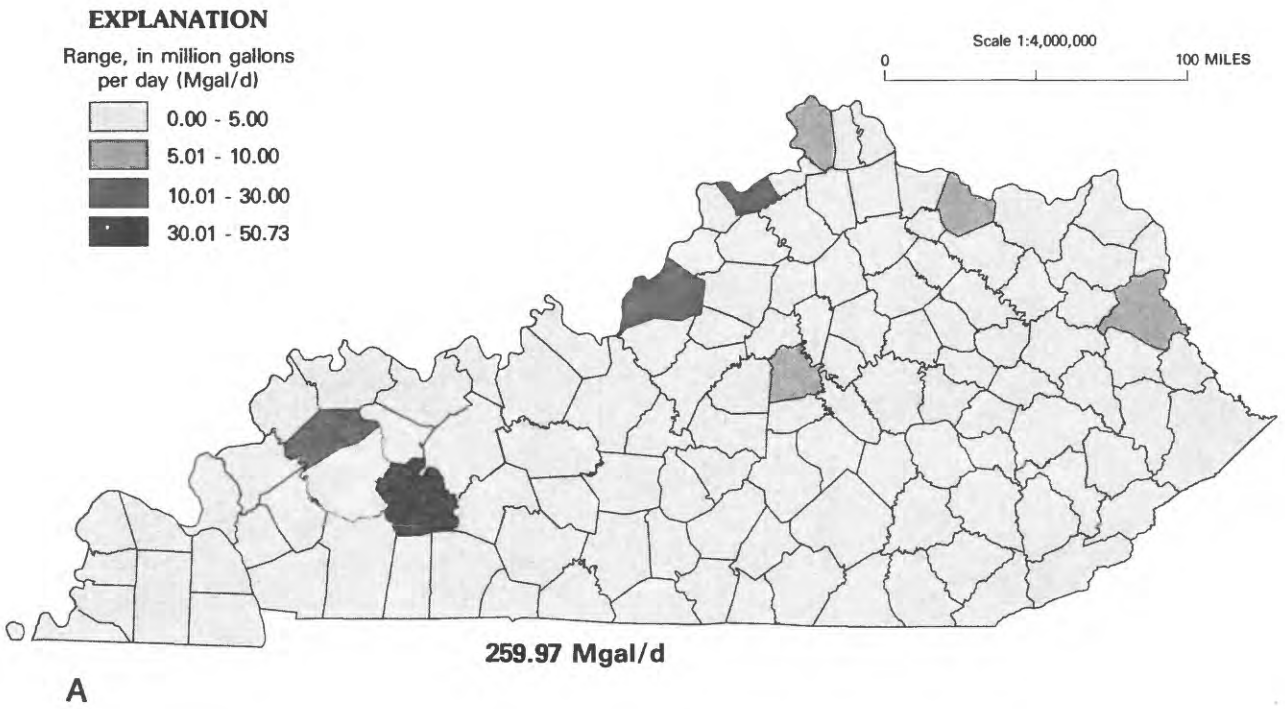


Figure 21.--Offstream water withdrawals, by category, in 1985. A. Total. B. Surface water. C. Ground water. (Mgal/d = million gallons per day)



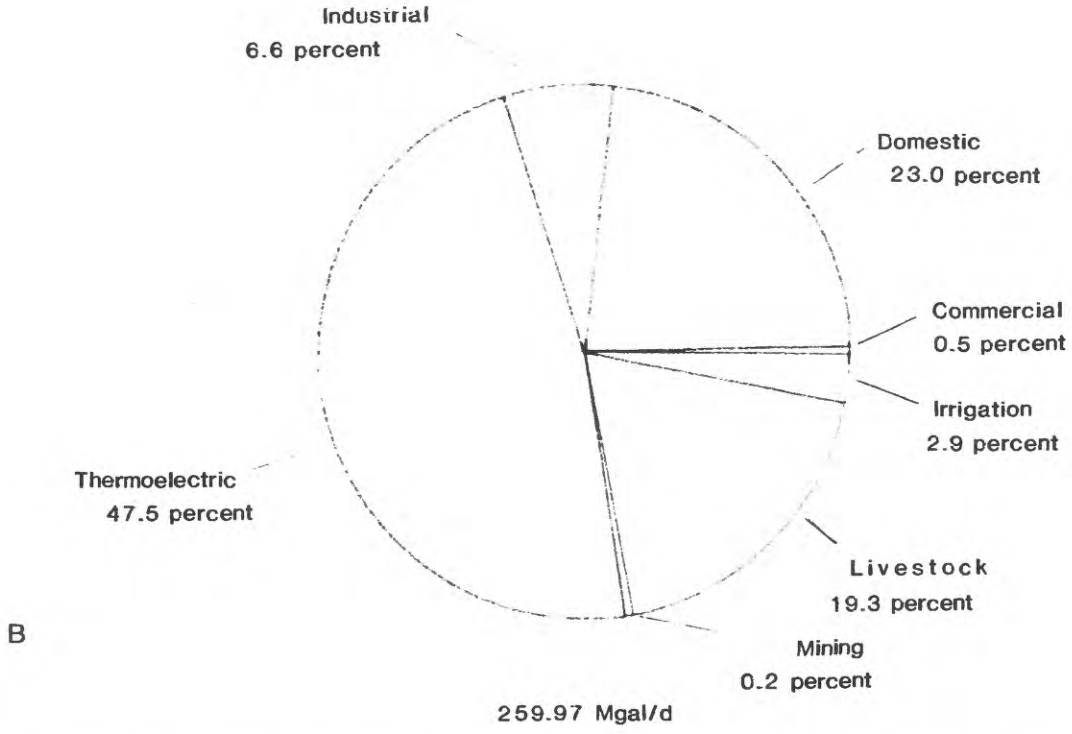


Figure 22.--Total offstream consumptive water use in 1985. A. By county. B. By category. (Mgal/d = million gallons per day)

Table 11.--Total water withdrawals for offstream water-use categories, by county, in 1985

County	In million gallons per day								
	Public supply	Domestic	Commercial	Industrial	Mining	Thermo-electric	Irrigation	Livestock	Total
ADAIR	0.47	0.47	0.00	0.00	0.00	0.00	0.01	1.02	1.97
ALLEN	0.47	0.42	0.00	0.00	0.00	0.00	0.00	0.63	1.52
ANDERSON	1.17	0.13	0.00	0.96	0.00	0.00	0.06	0.40	2.72
BALLARD	0.46	0.13	0.00	17.93	0.00	0.00	0.18	0.25	18.95
BARREN	3.61	1.09	0.00	0.02	0.00	0.00	0.04	1.70	6.46
BATH	0.15	0.43	0.00	0.00	0.00	0.00	0.03	0.45	1.06
BELL	2.35	0.57	0.03	0.23	0.11	0.23	0.00	0.01	3.53
BOONE	2.92	0.82	0.00	0.00	0.00	6.92	0.12	0.33	11.11
BOURBON	1.56	0.30	0.00	0.00	0.00	0.00	0.26	0.81	2.93
BOYD	7.18	0.99	0.00	42.21	0.00	0.00	0.00	0.07	50.45
BOYLE	4.04	0.37	0.20	0.00	0.00	0.00	0.01	0.53	5.15
BRACKEN	1.03	0.12	0.00	0.00	0.00	0.00	0.10	0.38	1.63
BREATHITT	0.30	0.68	0.00	0.00	0.11	0.00	0.01	0.03	1.13
BRECKINRIDGE	2.74	0.47	0.00	0.00	0.00	0.00	0.01	0.83	4.05
BULLITT	0.57	1.60	0.00	0.84	0.00	0.00	0.02	0.32	3.35
BUTLER	0.59	0.13	0.00	0.00	0.00	0.00	0.00	0.29	1.01
CALDWELL	0.91	0.09	0.00	0.03	0.00	0.00	0.00	0.40	1.43
CALLOWAY	6.49	0.08	0.00	0.00	0.00	0.00	0.01	0.24	6.82
CAMPBELL	18.76	0.11	0.02	0.00	0.02	0.00	0.04	0.17	19.12
CARLISLE	0.16	0.13	0.00	0.02	0.00	0.00	0.00	0.29	0.60
CARROLL	1.00	0.07	0.00	13.20	0.00	22.79	0.21	0.15	37.42
CARTER	1.37	0.58	0.00	0.00	0.00	0.00	0.01	0.16	2.12
CASEY	0.29	0.58	0.00	0.00	0.00	0.00	0.01	0.79	1.67
CHRISTIAN	5.63	1.04	0.00	0.00	0.00	0.00	0.15	0.16	6.98
CLARK	3.18	0.58	0.00	0.00	0.00	111.60	0.16	0.62	116.14
CLAY	0.86	0.66	0.00	0.00	0.20	0.00	0.01	0.07	1.80
CLINTON	0.49	0.18	0.00	0.00	0.00	0.00	0.01	0.38	1.06
CRITTENDEN	0.53	0.20	0.00	0.00	0.00	0.00	0.00	0.36	1.09
CUMBERLAND	0.40	0.10	0.00	0.00	0.00	0.00	0.00	0.29	0.79
DAVIESS	11.41	1.71	0.03	5.49	0.02	151.50	0.15	0.45	170.76
EDMONSON	0.51	0.10	0.00	0.00	0.00	0.00	0.01	0.27	0.89
ELLIOTT	0.09	0.30	0.00	0.00	0.00	0.00	0.01	0.07	0.47
ESTILL	0.50	0.16	0.00	0.00	1.00	0.00	0.05	0.11	1.82
FAYETTE	35.50	1.06	0.00	0.00	0.00	0.00	0.45	0.52	37.53
FLEMING	0.54	0.22	0.98	0.00	0.00	0.00	0.04	1.05	2.83
FLOYD	2.85	1.29	0.02	0.09	3.12	0.00	0.00	0.01	7.38
FRANKLIN	6.48	0.22	0.00	1.52	0.00	0.00	0.14	0.27	8.63
FULTON	1.45	0.08	0.00	0.00	0.00	0.00	0.21	0.07	1.81
GALLATIN	0.14	0.16	0.00	0.00	0.00	0.00	0.05	0.09	0.44
GARRARD	0.77	0.16	0.00	0.00	0.00	0.00	0.02	0.72	1.67
GRANT	0.93	0.26	0.00	0.00	0.00	0.00	0.09	0.35	1.63
GRAVES	2.30	0.23	0.00	7.88	0.00	0.00	0.29	0.50	11.20
GRAYSON	0.99	0.58	0.00	0.04	0.00	0.00	0.02	0.73	2.36
GREEN	0.52	0.12	0.16	0.00	0.00	0.00	0.03	0.80	1.63
GREENUP	2.12	0.28	0.31	6.76	0.00	0.00	0.01	0.14	9.62
HANCOCK	0.35	0.21	0.00	23.05	0.00	249.63	0.00	0.12	273.36
HARDIN	10.29	0.46	1.94	0.50	0.00	0.00	0.04	1.07	14.30
HARLAN	3.26	1.20	0.02	0.71	3.05	0.00	0.00	0.00	8.24
HARRISON	1.78	0.18	0.00	0.00	0.00	0.00	0.52	0.65	3.13
HART	2.00	0.08	0.00	0.00	0.00	0.00	0.01	1.03	3.12
HENDERSON	4.34	0.22	0.00	0.78	0.00	246.68	0.00	0.36	252.38
HENRY	1.30	0.07	0.00	0.00	0.00	0.00	0.50	0.71	2.58
HICKMAN	0.22	0.14	0.00	0.00	0.00	0.00	0.38	0.21	0.95
HOPKINS	4.74	0.23	0.00	0.00	4.24	0.00	0.00	0.23	9.44
JACKSON	0.48	0.31	0.00	0.00	0.00	0.00	0.01	0.23	1.03
JEFFERSON	118.70	1.23	4.01	94.21	0.00	625.47	0.08	0.22	843.92
JESSAMINE	4.76	0.11	0.00	0.00	0.00	0.00	0.09	0.41	5.37
JOHNSON	1.69	0.71	0.00	0.00	0.00	0.00	0.00	0.02	2.42
KENTON	9.44	0.69	0.00	0.00	0.00	0.00	0.01	0.15	10.29
KNOTT	0.18	0.88	0.00	0.00	1.96	0.00	0.00	0.00	3.02

Table 11.--Total water withdrawals for offstream water-use categories, by county, in 1985--Continued

County	In million gallons per day								
	Public supply	Domestic	Commercial	Industrial	Mining	Thermo-electric	Irrigation	Livestock	Total
KNOX	1.07	0.73	0.00	0.00	0.00	0.00	0.00	0.06	1.86
LARUE	0.21	0.43	0.00	0.00	0.00	0.00	0.01	0.78	1.43
LAUREL	3.35	0.40	0.00	0.00	0.00	0.00	0.01	0.35	4.11
LAWRENCE	0.47	0.49	0.00	0.00	0.00	9.47	0.01	0.08	10.52
LEE	0.31	0.31	0.00	0.00	0.00	0.00	0.00	0.02	0.64
LESLIE	0.48	0.63	0.00	0.00	0.20	0.00	0.00	0.00	1.31
LETCHER	1.34	1.09	0.00	0.00	0.93	0.00	0.00	0.00	3.36
LEWIS	0.32	0.47	0.00	0.00	0.00	0.00	0.01	0.36	1.16
LINCOLN	0.45	0.46	0.00	0.00	0.00	0.00	0.01	1.23	2.15
LIVINGSTON	0.44	0.04	0.00	0.12	0.18	0.00	0.01	0.33	1.12
LOGAN	2.12	0.39	0.00	0.28	0.00	0.00	0.02	0.79	3.60
LYON	0.68	0.01	0.26	0.00	0.00	0.00	0.00	0.60	1.55
MCCRACKEN	6.47	0.10	5.94	0.00	0.00	973.35	0.15	0.15	986.16
MCCREARY	0.63	0.34	0.00	0.00	0.03	0.00	0.00	0.02	1.02
MCLEAN	0.89	0.13	0.00	0.00	0.00	0.00	0.00	0.16	1.18
MADISON	5.39	0.42	1.40	0.00	0.00	0.00	0.07	0.80	8.08
MAGOFFIN	0.27	0.59	0.00	0.00	0.00	0.00	0.00	0.02	0.88
MARION	1.49	0.28	0.00	0.01	0.00	0.00	0.06	1.11	2.95
MARSHALL	3.57	0.14	0.00	17.23	0.00	0.00	0.03	0.20	21.17
MARTIN	0.62	0.41	0.00	0.00	1.34	0.00	0.00	0.00	2.37
MASON	1.74	0.09	0.00	0.46	0.00	35.84	0.02	0.76	38.91
MEADE	0.60	0.92	0.00	4.99	0.00	0.00	0.01	0.47	6.99
MENIFEE	0.21	0.16	0.00	0.00	0.00	0.00	0.00	0.05	0.42
MERCER	1.12	0.17	0.00	0.00	0.00	25.76	0.06	0.93	28.04
METCALFE	0.00	0.41	0.00	0.00	0.00	0.00	0.01	0.74	1.16
MONROE	0.55	0.29	0.00	0.00	0.00	0.00	0.01	0.79	1.64
MONTGOMERY	1.78	0.13	0.00	0.00	0.00	0.00	0.03	0.49	2.43
MORGAN	0.51	0.48	0.00	0.00	0.00	0.00	0.03	0.13	1.15
MUHLENBERG	3.11	0.14	0.00	0.00	2.97	637.83	0.02	0.22	644.29
NELSON	2.32	0.37	0.00	0.76	0.00	0.00	0.02	1.32	4.79
NICHOLAS	1.02	0.03	0.00	0.00	0.00	0.00	0.07	0.37	1.49
OHIO	1.93	0.16	0.00	0.14	3.09	2.63	0.01	0.29	8.25
OLDHAM	2.60	0.02	0.00	0.00	0.00	0.00	0.02	0.40	3.04
OWEN	0.56	0.18	0.00	0.00	0.00	0.00	0.40	0.43	1.57
OWSLEY	0.14	0.16	0.00	0.00	0.00	0.00	0.01	0.02	0.33
PENDLETON	0.74	0.20	0.00	0.00	0.04	0.00	0.28	0.40	1.66
PERRY	1.63	1.07	0.03	0.00	0.92	0.00	0.00	0.01	3.66
PIKE	3.15	3.03	0.00	0.00	1.69	0.00	0.00	0.01	7.88
POWELL	0.78	0.27	0.05	0.00	0.00	0.00	0.00	0.06	1.16
PULASKI	3.48	0.41	0.00	0.32	0.00	227.28	0.03	1.23	232.75
ROBERTSON	0.09	0.08	0.00	0.00	0.00	0.00	0.04	0.14	0.35
ROCKCASTLE	0.95	0.22	0.00	0.00	0.00	0.00	0.00	0.31	1.48
ROWAN	1.93	0.10	0.43	0.00	0.00	0.00	0.00	0.09	2.55
RUSSELL	0.69	0.51	0.00	0.00	0.00	0.00	0.01	0.65	1.86
SCOTT	4.38	0.45	0.00	0.00	0.00	0.00	0.46	0.54	5.83
SHELBY	2.30	0.01	0.04	0.00	0.00	0.00	0.17	1.51	4.03
SIMPSON	2.24	0.08	0.00	0.25	0.00	0.00	0.01	0.37	2.95
SPENCER	0.52	0.01	0.00	0.00	0.00	0.00	0.03	0.68	1.24
TAYLOR	3.22	0.28	0.00	0.00	0.00	0.00	0.01	0.78	4.29
TODD	0.66	0.16	0.00	0.00	0.00	0.00	0.18	0.49	1.49
TRIGG	1.11	0.04	0.00	0.00	0.00	0.00	0.01	0.37	1.53
TRIMBLE	0.19	0.07	0.00	0.00	0.00	0.00	0.07	0.18	0.51
UNION	6.12	0.13	0.00	0.00	0.00	0.00	0.00	0.76	7.01
WARREN	9.89	0.02	0.00	0.00	0.00	0.00	0.04	1.10	11.05
WASHINGTON	0.62	0.36	0.03	0.00	0.00	0.00	0.18	0.98	2.17
WAYNE	0.85	0.51	0.00	0.00	0.00	0.00	0.06	0.53	1.95
WEBSTER	1.06	0.07	0.00	0.00	0.11	64.71	0.00	0.20	66.15
WHITLEY	6.99	0.53	0.00	0.00	0.04	0.00	0.00	0.13	7.69
WOLFE	0.14	0.29	0.00	0.00	0.00	0.00	0.00	0.05	0.48
WOODFORD	1.68	0.22	0.02	0.02	0.00	15.70	0.31	0.44	18.39
TOTAL	404.48	47.46	15.92	241.05	25.37	3,407.39	7.67	50.17	4,199.51

Table 12.--Total surface water withdrawals for offstream water-use categories, by county, in 1985

County	In million gallons per day								
	Public supply	Domestic	Commercial	Industrial	Mining	Thermo-electric	Irrigation	Livestock	Total
ADAIR	0.47	0.05	0.00	0.00	0.00	0.00	0.01	0.97	1.50
ALLEN	0.09	0.04	0.00	0.00	0.00	0.00	0.00	0.60	0.73
ANDERSON	1.17	0.01	0.00	0.96	0.00	0.00	0.06	0.38	2.58
BALLARD	0.17	0.01	0.00	17.93	0.00	0.00	0.17	0.24	18.52
BARREN	3.61	0.11	0.00	0.00	0.00	0.00	0.04	1.62	5.38
BATH	0.15	0.04	0.00	0.00	0.00	0.00	0.03	0.43	0.65
BELL	2.34	0.06	0.03	0.23	0.11	0.23	0.00	0.01	3.01
BOONE	2.37	0.08	0.00	0.00	0.00	6.92	0.12	0.31	9.80
BOURBON	1.56	0.03	0.00	0.00	0.00	0.00	0.25	0.77	2.61
BOYD	7.18	0.10	0.00	42.07	0.00	0.00	0.00	0.07	49.42
BOYLE	4.04	0.04	0.20	0.00	0.00	0.00	0.01	0.50	4.79
BRACKEN	0.00	0.01	0.00	0.00	0.00	0.00	0.10	0.36	0.47
BREATHITT	0.28	0.07	0.00	0.00	0.11	0.00	0.01	0.03	0.50
BRECKINRIDGE	0.39	0.05	0.00	0.00	0.00	0.00	0.01	0.79	1.24
BULLITT	0.57	0.20	0.00	0.84	0.00	0.00	0.02	0.30	1.93
BUTLER	0.59	0.01	0.00	0.00	0.00	0.00	0.00	0.28	0.88
CALDWELL	0.91	0.01	0.00	0.00	0.00	0.00	0.00	0.38	1.30
CALLOWAY	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.23	0.25
CAMPBELL	18.70	0.01	0.00	0.00	0.02	0.00	0.04	0.16	18.93
CARLISLE	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.28	0.29
CARROLL	0.00	0.01	0.00	0.00	0.00	22.79	0.20	0.14	23.14
CARTER	1.37	0.06	0.00	0.00	0.00	0.00	0.01	0.15	1.59
CASEY	0.29	0.06	0.00	0.00	0.00	0.00	0.01	0.75	1.11
CHRISTIAN	5.63	0.10	0.00	0.00	0.00	0.00	0.14	0.15	6.02
CLARK	3.18	0.06	0.00	0.00	0.00	111.60	0.15	0.59	115.58
CLAY	0.85	0.06	0.00	0.00	0.20	0.00	0.01	0.07	1.19
CLINTON	0.49	0.02	0.00	0.00	0.00	0.00	0.01	0.36	0.88
CRITTENDEN	0.53	0.02	0.00	0.00	0.00	0.00	0.00	0.34	0.89
CUMBERLAND	0.40	0.01	0.00	0.00	0.00	0.00	0.00	0.28	0.69
DAVIESS	0.00	0.17	0.00	0.00	0.02	151.50	0.14	0.43	152.26
EDMONSON	0.51	0.01	0.00	0.00	0.00	0.00	0.01	0.26	0.79
ELLIOTT	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.07	0.11
ESTILL	0.50	0.02	0.00	0.00	1.00	0.00	0.05	0.10	1.67
FAYETTE	35.50	0.11	0.00	0.00	0.00	0.00	0.43	0.49	36.53
FLEMING	0.54	0.02	0.00	0.00	0.00	0.00	0.04	0.98	1.58
FLOYD	2.82	0.13	0.00	0.09	3.12	0.00	0.00	0.01	6.17
FRANKLIN	6.48	0.02	0.00	1.48	0.00	0.00	0.13	0.26	8.37
FULTON	0.00	0.01	0.00	0.00	0.00	0.00	0.20	0.07	0.28
GALLATIN	0.00	0.02	0.00	0.00	0.00	0.00	0.05	0.09	0.16
GARRARD	0.77	0.02	0.00	0.00	0.00	0.00	0.02	0.68	1.49
GRANT	0.93	0.03	0.00	0.00	0.00	0.00	0.09	0.33	1.38
GRAVES	0.00	0.02	0.00	0.00	0.00	0.00	0.28	0.48	0.78
GRAYSON	0.99	0.06	0.00	0.00	0.00	0.00	0.02	0.69	1.76
GREEN	0.52	0.01	0.16	0.00	0.00	0.00	0.03	0.76	1.48
GREENUP	1.46	0.03	0.29	6.62	0.00	0.00	0.01	0.13	8.54
HANCOCK	0.35	0.02	0.00	0.00	0.00	249.63	0.00	0.11	250.11
HARDIN	2.16	0.05	1.93	0.00	0.00	0.00	0.04	1.02	5.20
HARLAN	3.08	0.12	0.02	0.00	3.05	0.00	0.00	0.00	6.27
HARRISON	1.78	0.02	0.00	0.00	0.00	0.00	0.50	0.62	2.92
HART	1.94	0.01	0.00	0.00	0.00	0.00	0.01	0.98	2.94
HENDERSON	4.34	0.02	0.00	0.47	0.00	246.68	0.00	0.34	251.85
HENRY	0.14	0.01	0.00	0.00	0.00	0.00	0.48	0.67	1.30
HICKMAN	0.00	0.01	0.00	0.00	0.00	0.00	0.36	0.20	0.57
HOPKINS	4.47	0.02	0.00	0.00	3.19	0.00	0.00	0.22	7.90
JACKSON	0.48	0.03	0.00	0.00	0.00	0.00	0.01	0.22	0.74
JEFFERSON	117.21	0.12	0.02	87.05	0.00	625.47	0.08	0.21	830.16
JESSAMINE	4.76	0.01	0.00	0.00	0.00	0.00	0.09	0.39	5.25
JOHNSON	1.69	0.07	0.00	0.00	0.00	0.00	0.00	0.02	1.78
KENTON	9.44	0.07	0.00	0.00	0.00	0.00	0.01	0.14	9.66
KNOTT	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.09

Table 12.--Total surface water withdrawals for offstream water-use categories, by county, in 1985 -- Continued

County	In million gallons per day								
	Public supply	Domestic	Commercial	Industrial	Mining	Thermo-electric	Irrigation	Livestock	Total
KNOX	1.07	0.07	0.00	0.00	0.00	0.00	0.00	0.06	1.20
LARUE	0.21	0.04	0.00	0.00	0.00	0.00	0.01	0.74	1.00
LAUREL	3.35	0.04	0.00	0.00	0.00	0.00	0.01	0.33	3.73
LAWRENCE	0.47	0.05	0.00	0.00	0.00	9.47	0.01	0.08	10.08
LEE	0.31	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.36
LESLIE	0.48	0.06	0.00	0.00	0.20	0.00	0.00	0.00	0.74
LETCHER	1.22	0.11	0.00	0.00	0.93	0.00	0.00	0.00	2.26
LEWIS	0.00	0.05	0.00	0.00	0.00	0.00	0.01	0.34	0.40
LINCOLN	0.45	0.05	0.00	0.00	0.00	0.00	0.01	1.17	1.68
LIVINGSTON	0.44	0.00	0.00	0.12	0.18	0.00	0.01	0.31	1.06
LOGAN	2.12	0.04	0.00	0.28	0.00	0.00	0.02	0.75	3.21
LYON	0.67	0.00	0.24	0.00	0.00	0.00	0.00	0.57	1.48
MCCRACKEN	5.85	0.01	5.94	0.00	0.00	973.35	0.14	0.14	985.43
MCCREARY	0.63	0.03	0.00	0.00	0.03	0.00	0.00	0.02	0.71
MCLEAN	0.80	0.01	0.00	0.00	0.00	0.00	0.00	0.15	0.96
MADISON	5.39	0.04	1.40	0.00	0.00	0.00	0.07	0.76	7.66
MAGOFFIN	0.27	0.06	0.00	0.00	0.00	0.00	0.00	0.02	0.35
MARION	1.49	0.03	0.00	0.01	0.00	0.00	0.06	1.05	2.64
MARSHALL	0.42	0.01	0.00	15.64	0.00	0.00	0.03	0.19	16.29
MARTIN	0.62	0.04	0.00	0.00	1.11	0.00	0.00	0.00	1.77
MASON	1.43	0.01	0.00	0.00	0.00	0.00	0.02	0.72	2.18
MEADE	0.09	0.09	0.00	0.00	0.00	0.00	0.01	0.45	0.64
MENIFEE	0.21	0.02	0.00	0.00	0.00	0.00	0.00	0.05	0.28
MERCER	1.12	0.02	0.00	0.00	0.00	25.76	0.06	0.88	27.84
METCALFE	0.00	0.04	0.00	0.00	0.00	0.00	0.01	0.70	0.75
MONROE	0.55	0.03	0.00	0.00	0.00	0.00	0.01	0.75	1.34
MONTGOMERY	1.78	0.01	0.00	0.00	0.00	0.00	0.03	0.47	2.29
MORGAN	0.27	0.05	0.00	0.00	0.00	0.00	0.03	0.12	0.47
MUHLENBERG	3.11	0.01	0.00	0.00	2.97	637.83	0.02	0.21	644.15
NELSON	2.32	0.04	0.00	0.76	0.00	0.00	0.02	1.25	4.39
NICHOLAS	1.02	0.00	0.00	0.00	0.00	0.00	0.07	0.35	1.44
OHIO	1.82	0.02	0.00	0.00	3.09	2.63	0.01	0.28	7.85
OLDHAM	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.38	0.40
OWEN	0.56	0.02	0.00	0.00	0.00	0.00	0.38	0.41	1.37
OWSLEY	0.14	0.02	0.00	0.00	0.00	0.00	0.01	0.02	0.19
PENDLETON	0.74	0.02	0.00	0.00	0.04	0.00	0.27	0.38	1.45
PERRY	1.61	0.11	0.03	0.00	0.91	0.00	0.00	0.01	2.67
PIKE	2.99	0.30	0.00	0.00	1.60	0.00	0.00	0.01	4.90
POWELL	0.78	0.03	0.05	0.00	0.00	0.00	0.00	0.06	0.92
PULASKI	3.48	0.04	0.00	0.32	0.00	227.28	0.03	1.17	232.32
ROBERTSON	0.09	0.01	0.00	0.00	0.00	0.00	0.04	0.13	0.27
ROCKCASTLE	0.95	0.02	0.00	0.00	0.00	0.00	0.00	0.29	1.26
ROWAN	1.93	0.01	0.43	0.00	0.00	0.00	0.00	0.09	2.46
RUSSELL	0.69	0.05	0.00	0.00	0.00	0.00	0.01	0.62	1.37
SCOTT	4.38	0.05	0.00	0.00	0.00	0.00	0.44	0.51	5.38
SHELBY	2.30	0.00	0.04	0.00	0.00	0.00	0.16	1.43	3.93
SIMPSON	2.24	0.01	0.00	0.25	0.00	0.00	0.01	0.35	2.86
SPENCER	0.52	0.00	0.00	0.00	0.00	0.00	0.03	0.65	1.20
TAYLOR	3.22	0.03	0.00	0.00	0.00	0.00	0.01	0.74	4.00
TODD	0.66	0.02	0.00	0.00	0.00	0.00	0.17	0.47	1.32
TRIGG	1.11	0.00	0.00	0.00	0.00	0.00	0.01	0.35	1.47
TRIMBLE	0.00	0.01	0.00	0.00	0.00	0.00	0.07	0.17	0.25
UNION	6.12	0.01	0.00	0.00	0.00	0.00	0.00	0.72	6.85
WARREN	9.89	0.00	0.00	0.00	0.00	0.00	0.04	1.04	10.97
WASHINGTON	0.62	0.04	0.03	0.00	0.00	0.00	0.17	0.93	1.79
WAYNE	0.85	0.05	0.00	0.00	0.00	0.00	0.06	0.50	1.46
WEBSTER	0.92	0.01	0.00	0.00	0.02	64.71	0.00	0.19	65.85
WHITLEY	6.90	0.05	0.00	0.00	0.04	0.00	0.00	0.12	7.11
WOLFE	0.13	0.03	0.00	0.00	0.00	0.00	0.00	0.05	0.21
WOODFORD	1.66	0.02	0.00	0.00	0.00	15.70	0.30	0.42	18.10
TOTAL	355.65	4.80	10.81	175.12	21.94	3,371.55	7.40	47.65	3,994.92

Table 13.--Total ground-water withdrawals for offstream water-use categories, by county, in 1985

County	In million gallons per day								
	Public supply	Domestic	Commercial	Industrial	Mining	Thermo-electric	Irrigation	Livestock	Total
ADAIR	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.05	0.47
ALLEN	0.38	0.38	0.00	0.00	0.00	0.00	0.00	0.03	0.79
ANDERSON	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.02	0.14
BALLARD	0.29	0.12	0.00	0.00	0.00	0.00	0.01	0.01	0.43
BARREN	0.00	0.98	0.00	0.02	0.00	0.00	0.00	0.08	1.08
BATH	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.02	0.41
BELL	0.01	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.52
BOONE	0.55	0.74	0.00	0.00	0.00	0.00	0.00	0.02	1.31
BOURBON	0.00	0.27	0.00	0.00	0.00	0.00	0.01	0.04	0.32
BOYD	0.00	0.89	0.00	0.14	0.00	0.00	0.00	0.00	1.03
BOYLE	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.03	0.36
BRACKEN	1.03	0.11	0.00	0.00	0.00	0.00	0.00	0.02	1.16
BREATHITT	0.02	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.63
BRECKINRIDGE	2.35	0.42	0.00	0.00	0.00	0.00	0.00	0.04	2.81
BULLITT	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.02	1.42
BUTLER	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.01	0.13
CALDWELL	0.00	0.08	0.00	0.03	0.00	0.00	0.00	0.02	0.13
CALLOWAY	6.49	0.07	0.00	0.00	0.00	0.00	0.00	0.01	6.57
CAMPBELL	0.06	0.10	0.02	0.00	0.00	0.00	0.00	0.01	0.19
CARLISLE	0.16	0.12	0.00	0.02	0.00	0.00	0.00	0.01	0.31
CARROLL	1.00	0.06	0.00	13.20	0.00	0.00	0.01	0.01	14.28
CARTER	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.01	0.53
CASEY	0.00	0.52	0.00	0.00	0.00	0.00	0.00	0.04	0.56
CHRISTIAN	0.00	0.94	0.00	0.00	0.00	0.00	0.01	0.01	0.96
CLARK	0.00	0.52	0.00	0.00	0.00	0.00	0.01	0.03	0.56
CLAY	0.01	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.61
CLINTON	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.02	0.18
CRITTENDEN	0.00	0.18	0.00	0.00	0.00	0.00	0.00	0.02	0.20
CUMBERLAND	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.01	0.10
DAVIESS	11.41	1.54	0.03	5.49	0.00	0.00	0.01	0.02	18.50
EDMONSON	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.01	0.10
ELLIOTT	0.09	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.36
ESTILL	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.01	0.15
FAYETTE	0.00	0.95	0.00	0.00	0.00	0.00	0.02	0.03	1.00
FLEMING	0.00	0.20	0.98	0.00	0.00	0.00	0.00	0.07	1.25
FLOYD	0.03	1.16	0.02	0.00	0.00	0.00	0.00	0.00	1.21
FRANKLIN	0.00	0.20	0.00	0.04	0.00	0.00	0.01	0.01	0.26
FULTON	1.45	0.07	0.00	0.00	0.00	0.00	0.01	0.00	1.53
GALLATIN	0.14	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.28
GARRARD	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.04	0.18
GRANT	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.02	0.25
GRAVES	2.30	0.21	0.00	7.88	0.00	0.00	0.01	0.02	10.42
GRAYSON	0.00	0.52	0.00	0.04	0.00	0.00	0.00	0.04	0.60
GREEN	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.04	0.15
GREENUP	0.66	0.25	0.02	0.14	0.00	0.00	0.00	0.01	1.08
HANCOCK	0.00	0.19	0.00	23.05	0.00	0.00	0.00	0.01	23.25
HARDIN	8.13	0.41	0.01	0.50	0.00	0.00	0.00	0.05	9.10
HARLAN	0.18	1.08	0.00	0.71	0.00	0.00	0.00	0.00	1.97
HARRISON	0.00	0.16	0.00	0.00	0.00	0.00	0.02	0.03	0.21
HART	0.06	0.07	0.00	0.00	0.00	0.00	0.00	0.05	0.18
HENDERSON	0.00	0.20	0.00	0.31	0.00	0.00	0.00	0.02	0.53
HENRY	1.16	0.06	0.00	0.00	0.00	0.00	0.02	0.04	1.28
HICKMAN	0.22	0.13	0.00	0.00	0.00	0.00	0.02	0.01	0.38
HOPKINS	0.27	0.21	0.00	0.00	1.05	0.00	0.00	0.01	1.54
JACKSON	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.01	0.29
JEFFERSON	1.49	1.11	3.99	7.16	0.00	0.00	0.00	0.01	13.76
JESSAMINE	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.02	0.12
JOHNSON	0.00	0.64	0.00	0.00	0.00	0.00	0.00	0.00	0.64
KENTON	0.00	0.62	0.00	0.00	0.00	0.00	0.00	0.01	0.63
KNOTT	0.18	0.79	0.00	0.00	1.96	0.00	0.00	0.00	2.93

Table 13.--Total ground-water withdrawals for offstream water-use categories, by county, in 1985 --Continued

County	In million gallons per day								
	Public supply	Domestic	Commercial	Industrial	Mining	Thermo-electric	Irrigation	Livestock	Total
KNOX	0.00	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.66
LARUE	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.04	0.43
LAUREL	0.00	0.36	0.00	0.00	0.00	0.00	0.00	0.02	0.38
LAWRENCE	0.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.44
LEE	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.28
LESLIE	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.57
LETCHER	0.12	0.98	0.00	0.00	0.00	0.00	0.00	0.00	1.10
LEWIS	0.32	0.42	0.00	0.00	0.00	0.00	0.00	0.02	0.76
LINCOLN	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.06	0.47
LIVINGSTON	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.06
LOGAN	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.04	0.39
LYON	0.01	0.01	0.02	0.00	0.00	0.00	0.00	0.03	0.07
MCCRACKEN	0.62	0.09	0.00	0.00	0.00	0.00	0.01	0.01	0.73
MCCREARY	0.00	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.31
MCLEAN	0.09	0.12	0.00	0.00	0.00	0.00	0.00	0.01	0.22
MADISON	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.04	0.42
MAGOFFIN	0.00	0.53	0.00	0.00	0.00	0.00	0.00	0.00	0.53
MARION	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.06	0.31
MARSHALL	3.15	0.13	0.00	1.59	0.00	0.00	0.00	0.01	4.88
MARTIN	0.00	0.37	0.00	0.00	0.23	0.00	0.00	0.00	0.60
MASON	0.31	0.08	0.00	0.46	0.00	35.84	0.00	0.04	36.73
MEADE	0.51	0.83	0.00	4.99	0.00	0.00	0.00	0.02	6.35
MENIFEE	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14
MERCER	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.05	0.20
METCALFE	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.04	0.41
MONROE	0.00	0.26	0.00	0.00	0.00	0.00	0.00	0.04	0.30
MONTGOMERY	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.02	0.14
MORGAN	0.24	0.43	0.00	0.00	0.00	0.00	0.00	0.01	0.68
MUHLENBERG	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.01	0.14
NELSON	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.07	0.40
NICHOLAS	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.02	0.05
OHIO	0.11	0.14	0.00	0.14	0.00	0.00	0.00	0.01	0.40
OLDHAM	2.60	0.02	0.00	0.00	0.00	0.00	0.00	0.02	2.64
OWEN	0.00	0.16	0.00	0.00	0.00	0.00	0.02	0.02	0.20
OWSLEY	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.14
PENDLETON	0.00	0.18	0.00	0.00	0.00	0.00	0.01	0.02	0.21
PERRY	0.02	0.96	0.00	0.00	0.01	0.00	0.00	0.00	0.99
PIKE	0.16	2.73	0.00	0.00	0.09	0.00	0.00	0.00	2.98
POWELL	0.00	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.24
PULASKI	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.06	0.43
ROBERTSON	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.01	0.08
ROCKCASTLE	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.02	0.22
ROWAN	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.09
RUSSELL	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.03	0.49
SCOTT	0.00	0.40	0.00	0.00	0.00	0.00	0.02	0.03	0.45
SHELBY	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.08	0.10
SIMPSON	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.02	0.09
SPENCER	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03	0.04
TAYLOR	0.00	0.25	0.00	0.00	0.00	0.00	0.00	0.04	0.29
TODD	0.00	0.14	0.00	0.00	0.00	0.00	0.01	0.02	0.17
TRIGG	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.02	0.06
TRIMBLE	0.19	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.26
UNION	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.04	0.16
WARREN	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.06	0.08
WASHINGTON	0.00	0.32	0.00	0.00	0.00	0.00	0.01	0.05	0.38
WAYNE	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.03	0.49
WEBSTER	0.14	0.06	0.00	0.00	0.09	0.00	0.00	0.01	0.30
WHITLEY	0.09	0.48	0.00	0.00	0.00	0.00	0.00	0.01	0.58
WOLFE	0.01	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.27
WOODFORD	0.02	0.20	0.02	0.02	0.00	0.00	0.01	0.02	0.29
TOTAL	48.83	42.66	5.11	65.93	3.43	35.84	0.27	2.52	204.59

SUMMARY

Water-use information was collected for eight major categories of use. Estimated water withdrawals for seven major categories of offstream use in Kentucky averaged 4,200 Mgal/d during 1985. This was about 12 percent less than 1980 withdrawals. Most of this difference was attributed to a 690 Mgal/d decrease in thermoelectric withdrawals from 1980 to 1985. More than 95 percent of total water withdrawn in 1985 came from surface-water sources, with less than 5 percent from ground water. Three categories of water use (thermoelectric, public supply, and industrial) accounted for almost 97 percent of the total offstream water withdrawals. Water was withdrawn for cooling in thermoelectric power generation (the largest offstream use) at an average rate of 3,410 Mgal/d. Water use for hydroelectric power generation, the only instream use reported in 1985, averaged 91,000 Mgal/d.

Consumptive water use in Kentucky declined from about 290 Mgal/d in 1980 to about 260 Mgal/d in 1985. The thermoelectric, domestic, and agricultural water-use categories accounted for almost 90 percent of the consumptive water use. Almost half (124 Mgal/d) of the total consumptive use in 1985 was in the thermoelectric category.

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