

Ground water is the source of drinking water for 51 percent of the 4.76 million residents in Tennessee. In 1985, public-supply withdrawal of ground water from wells and springs in the nine principal aquifers in the State (fig. 1) averaged about 243 million gallons per day and accounted for 54 percent of the total ground water used in the State (fig. 2). This represents an increase of about 22 percent in the use of ground water for public supply since 1980 when public-supply withdrawals averaged about 200 million gallons per day.

Most of the ground water used for public supply in 1985 was withdrawn by public water-supply systems in West Tennessee. Ground-water withdrawals in West Tennessee averaged 185 million gallons per day and accounted for 76 percent of the ground water used for public supply in the State.

The principal public-supply systems that use ground water in Tennessee are shown in figure 3 and are listed by county in table 1. The county with the largest ground-water withdrawal for public supply in 1985 was Shelby County (Memphis), where withdrawals totaled 141 million gallons per day, or 58 percent of ground water withdrawn for public supply in the State. Thirty-two of the 181 principal public water-supply systems listed in table 1 (multiple public water-supply systems at map numbers 1, 10, 26, 48, and 52 on figure 3) withdraw 1 million gallons per day or more and accounted for 83 percent of the ground water withdrawn for public supply. The sources of ground water withdrawn by public-supply systems in Tennessee also are listed in table 1.

SELECTED REFERENCES

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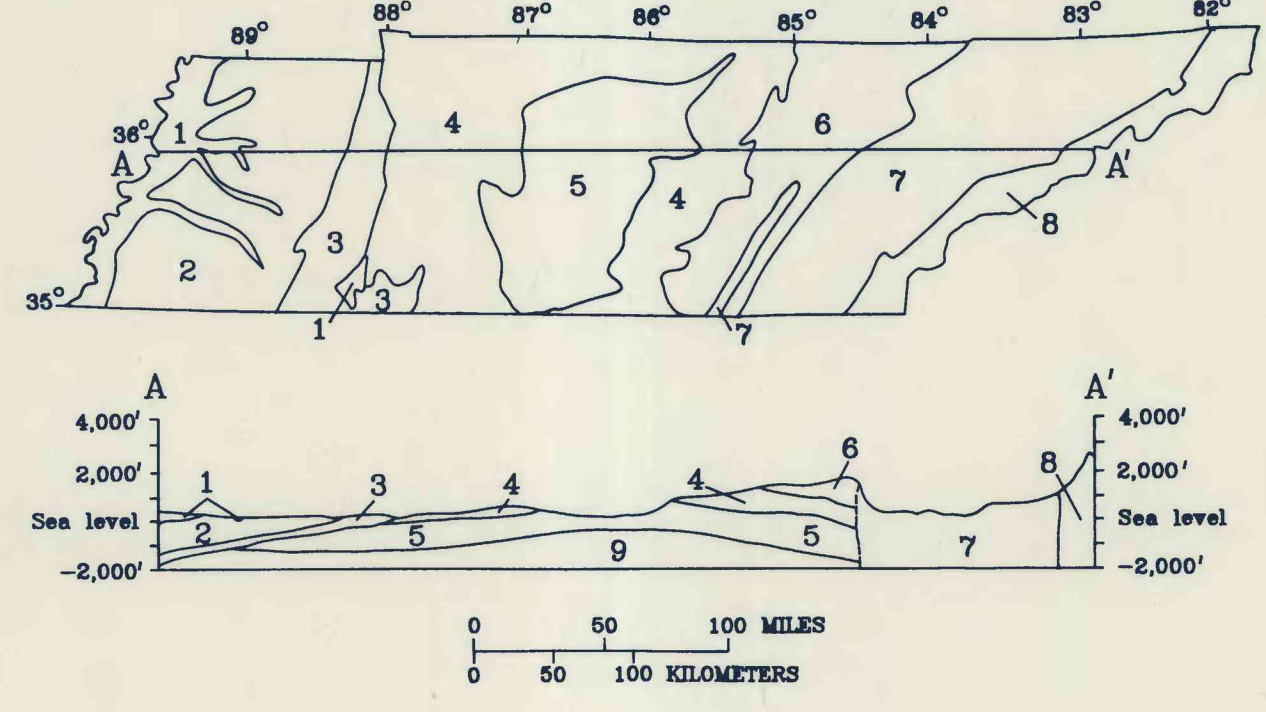
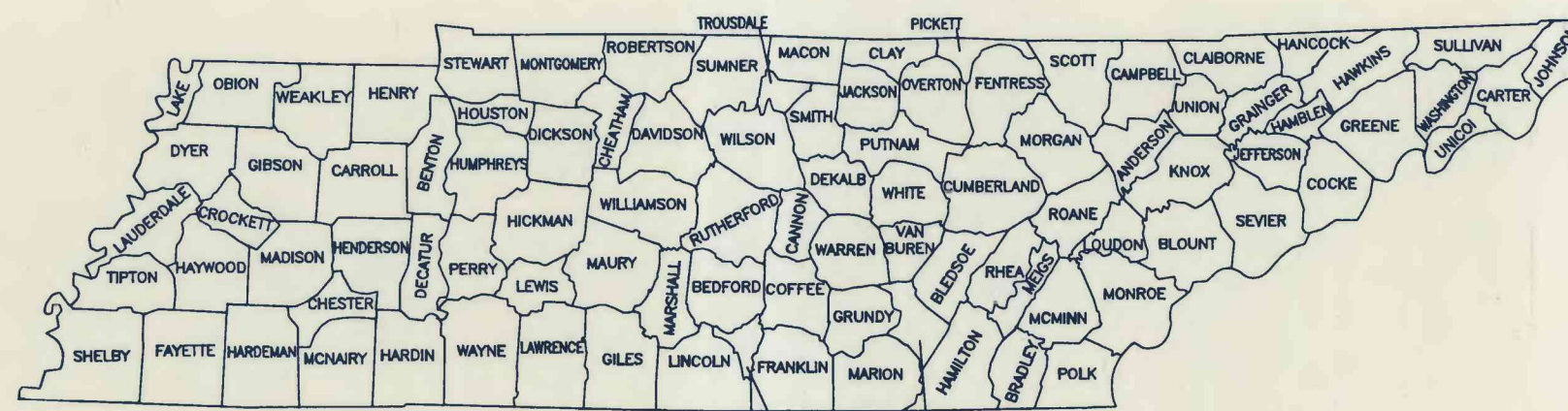
CONVERSION FACTORS

For those readers who may prefer to use metric units (International System) rather than inch-pound units, conversion factors for the terms used in this report are listed below:

Multiply inch-pound by	To obtain metric units
gallon per minute (gal/min)	0.06309 liter per second (L/s)
million gallons per day (Mgal/d)	0.003785 cubic meters per day (m ³ /d)
billion gallons per day (Bgal/d)	3.785 cubic meters per day (m ³ /d)

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geoid datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Sea Level Datum of 1929."

LOCATION OF COUNTIES



EXPLANATION

1 ALLUVIAL AQUIFER	5 ORDOVICIAN CARBONATE AQUIFER
2 TERTIARY SAND AQUIFER	6 CRETACEOUS SAND AQUIFER
3 PENNSYLVANIAN SANDSTONE AQUIFER	7 CAMBRIAN-ORDOVICIAN CARBONATE AQUIFER
4 MISSISSIPPIAN CARBONATE AQUIFER	8 CRYSTALLINE ROCK AQUIFER

A-A' TRACE OF CROSS SECTION

Figure 1.—Geographic distribution of principal aquifers in Tennessee. (From M.W. Bradley and E.F. Hollyday, 1985).

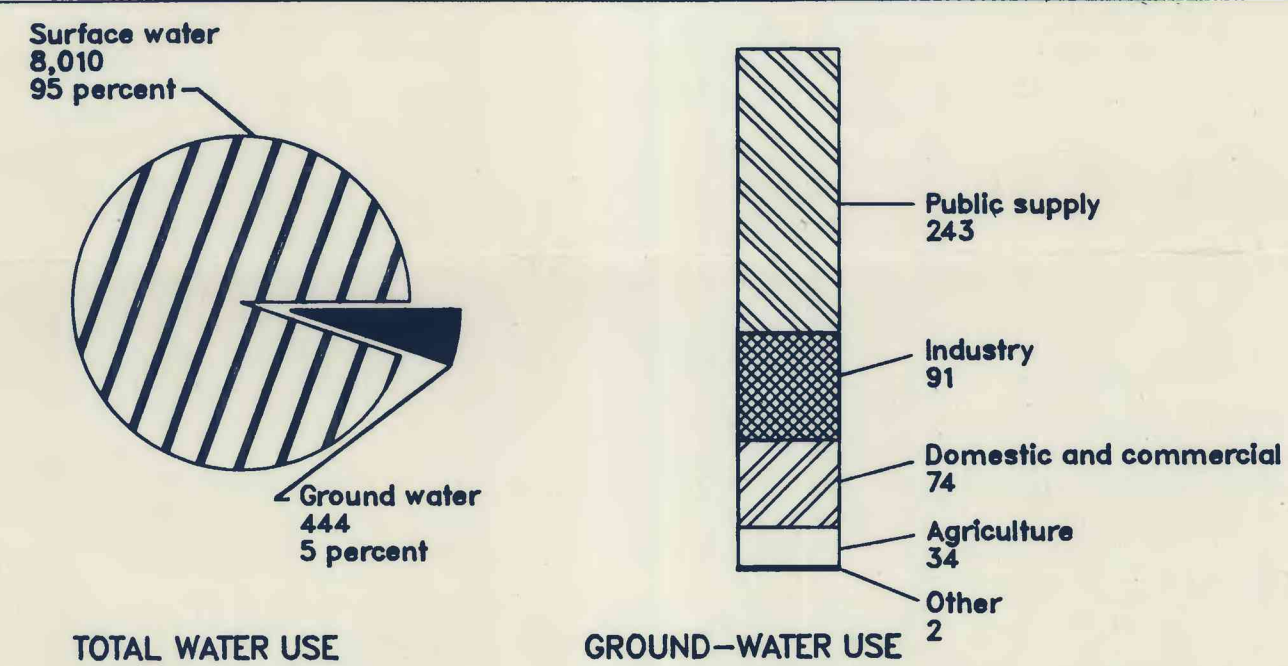


Figure 2.—Estimated total water and ground-water withdrawals, by category of use for Tennessee during 1985, in million gallons per day.

Table 1.—An inventory of community public-supply systems withdrawing at least 50,000 gallons per day of ground water. (Aquifer designations are: 1, Alluvial; 2, Tertiary sand; 3, Cretaceous sand; 6, Pennsylvanian sandstone; 4, Mississippian carbonate; 5, Ordovician carbonate; 9, Knox; 7, Cambrian-Ordovician carbonate; and 8, Crystalline rock. Mgal/d, million gallons per day)

Map No.	County	Public supply	Source name	Aquifer No.	Ground water (Mgal/d)	Surface water (Mgal/d)
1	Shelby	Memphis Light, Gas and Water	Malory well field	2	21.9	
1	Shelby	Memphis Light, Gas and Water	McCord well field	2	21.1	
1	Shelby	Memphis Light, Gas and Water	Allen well field	2	24.7	
1	Shelby	Memphis Light, Gas and Water	Davis well field	2	11.2	
1	Shelby	Memphis Light, Gas and Water	Lichterman well field	2	21.4	
1	Shelby	Memphis Light, Gas and Water	Shahan well field	2	20.4	
1	Shelby	Memphis Light, Gas and Water	LNG well field	2	.51	
1	Shelby	Memphis Light, Gas and Water	Morton well field	2	11.3	
2	Shelby	Bartlett-Elizaville Water System	2 wells	2	1.86	
3	Shelby	Germanatown Water Department	2 wells	2	3.15	
4	Shelby	Collinsville Water Department	2 wells	2	1.52	
5	Shelby	Arlington Water System	2 wells	2	.41	
6	Shelby	Willington Water Department	4 wells	2	1.06	
7	Tipton	Munford Water Department	2 wells	2	.51	
8	Tipton	Ripley Grove Utility Department	2 wells	2	.61	
9	Tipton	Brighton Water Department	well	2	.11	
10	Tipton	Covington Water Department	3 wells	2	1.50	
10	Tipton	First Utility District of Tipton County	4 deep wells	2	1.17	
11	Tipton	Mason Water Department	2 deep wells	2	.11	
12	Fayette	Galloway Water Department	3 wells	2	.22	
13	Fayette	Oakland Water Department	2 wells	2	.12	
14	Fayette	Rossville Water System	2 wells	2	.08	
15	Fayette	Moscow Water Department	1 well	2	.08	
16	Fayette	Somerville Water System	4 wells	2	.63	
17	Shelby	Pine Lake Cooperative, Inc.	2 wells	2	.05	
18	Haywood	Stanton Water System	well	2	.09	
19	Haywood	Brownsville Water District	well	2	1.48	
20	Lauderdale	Fort Pillow State Prison	2 wells	2	.54	
21	Lauderdale	Hennings Water Department	well	2	.10	
22	Lauderdale	Ripley Water System	4 wells	2	1.49	
23	Lauderdale	Lauderdale Water System	4 wells	2	.46	
24	Lauderdale	Gates Water Department	2 wells	2	.06	
25	Lauderdale	Galls Water Department	2 wells	2	.55	
26	Dyer	Dyersburg Sub. Com. Utility District	3 wells	2	.35	
26	Dyer	Dyersburg Water Department	4 wells	2	3.66	
27	Dyer	Nashboro Water Department	3 deep wells	2	.71	
28	Dyer	Trible Water System	2 wells	2	.13	
29	Dyer	Northwest Dyersburg Utility Department	2 wells	2	.21	
30	Lake	Ridgely Water System	2 wells	2	.16	
31	Lake	Tiptonville Water System	3 wells	2	.68	
32	Lake	Reelfoot Utility District	2 wells	2	.14	
33	Obion	Hornbeak Utility District	3 wells	2	.09	
34	Obion	Elbridge Utility District	2 deep wells	2	.29	
35	Obion	Obion Water Department	2 wells	2	.24	
36	Obion	Kenton Water Department	2 wells	2	.16	
37	Obion	Troy Water System	2 wells	2	.20	
38	Obion	Union City Water Department	2 wells	2	.44	
39	Obion	South Fulton Water System	2 wells	2	.28	
40	Weakley	Martin Water Department	4 wells	2	1.42	
41	Weakley	Dresden Water Department	2 wells	2	.50	
42	Weakley	Gleason Water Department	2 wells	2	.23	
43	Weakley	Sharon Water System	2 wells	2	.24	
44	Weakley	Greenfield Water Department	2 wells	2	.29	
45	Gibson	Bradford Water System	2 wells	2	.29	
46	Gibson	Rutherford Water System	2 deep wells	2	.15	
47	Gibson	Dyer Water Department	3 wells	2	.85	
48	Gibson	Gibson County Mun. Water	2 wells	2	.32	
48	Gibson	Tranton Water System	3 wells	2	.68	
49	Gibson	Utian Water Department	3 wells	2	1.38	
50	Gibson	Gibson Water Department	2 wells	2	.10	
51	Gibson	Medina Water Department	2 wells	2	.07	
52	Gibson	Humboldt Water Department	2 wells	2	1.51	
53	Crockett	Crockett Mills Utility District	2 deep wells	2	.05	
54	Crockett	Friendship Water Company	3 wells	2	.10	
55	Crockett	Maury City Water Department	2 wells	2	.10	
56	Crockett	Alamo Water Department	4 wells	2	.30	
56	Crockett	County Wide Utility District	2 wells	2	1.09	
57	Crockett	Bellis Public Utility District	well	2	0.14	
58	Madison	Jackson Water System	2 wells	2	8.85	
59	Hardeman	Toone Water System	3 wells	3	.21	
60	Hardeman	Whiteville Water Department	2 wells	2	.12	
61	Hardeman	Bolivar Water System	well	3	1.30	
62	Hardeman	Midleton Water Department	2 wells	3	.11	
63	Hardeman	Grand Junction Water Department	2 wells	3	.20	
64	McNairy	Wichle Water Department	2 wells	3	.19	
65	McNairy	Seimer Water System	2 wells	3	1.67	
66	McNairy	Bethel Springs Water System	well	3	.06	
67	Chester	Meridian Water Department	5 wells	3	.71	
68	Henderson	Scotts Hills Water System	2 wells	3	.14	
68	Henderson	Clarksburg Utility District	2 wells	3	.13	
69	Carroll	Carroll Water System	2 wells	2	.07	
70	Carroll	Cedar Grove Utility District	2 wells	2	.90	
71	Gibson	Milan Arsenal	well	2	.11	
72	Carroll	Atwood Water System	2 wells	2	.10	
73	Carroll	Trezevant Water System	2 wells	2	.59	
74	Carroll	Huntingdon Water Department	3 wells	2	.19	
75	Carroll	McKenzie Water Department	2 wells	2	.67	
76	Carroll	Bruckton Water System	well	3	.34	
77	Carroll	Hollow Rock Water Department	2 wells	3	.08	
78	Benton	Big Sandy Water System	well	2	.06	
79	Henry	Henry Water System	2 wells	3	.08	

Table 1.—An inventory of community public-supply systems withdrawing at least 50,000 gallons per day of ground water—Continued

Map No.	County	Public supply	Source name	Aquifer No.	Ground water (Mgal/d)	Surface water (Mgal/d)
80	Henry	Paris Board of Public Utilities	well	3	1.04	
81	Henry	Henry County Water Company	3 wells	3	.34	
82	Henry	West Tennessee Water Company	2 deep wells	3	.11	
83	Henry	Puryear Water System	2 wells	2	.07	
84	Houston	Tennessee Ridge Water System	2 wells	4	.16	
85	Humphreys	McEwen Water Department	2 wells	4	.20	
86	Humphreys	Maverly Water Plant	2 wells	4	1.00	
87	Decatur	Decaturville Water System	Duck River	5	.12	
88	Hardin	Savannah Public Utility District	6 wells	1	1.55	
89	Wayne	Collinswood Water Department	well	4	.87	
90	Lawrence	St. Joseph Water System	springs	4	.91	
91	Lawrence	Loretto Water Department	Still Horse Spring	4	.85	
92	Lawrence	Looma Utility District	springs	4	.27	
93	Lawrence	Lawrenceburg Water System	springs	4	2.27	
94	Lawrence	Summertown Water System	Shoal Creek	2 wells	4	.98
95	Lewis	Hohenwald Water System	Downey Spring	4	.31	
96	Dickson	Harpheth Utility District	Baker Spring	4	.14	
97	Dickson	Vanleer Water System	springs	4	.08	
98	Williamson	Fairview Water System	well and spring	4	.43	
99	Williamson	Franklin Water Department	46 springs	4	.37	2.23
100	Williamson	Nolanville Utility District	well	5	.18	
101	Williamson	College Grove Utility District	well	5	.05	
102	Maury	Mt. Pleasant Water System	5 springs	5	.93	
103	Giles	Armore Water System	well	5	.24	
104	Lincoln	Fayetteville Water System	springs	4	.69	1.78
105	Lincoln	Lincoln County Board of Public Utilities	well	4	.70	
106	Beaufort	Wartrace Water System	springs	5	.46	
107	Rutherford	Esquiville Water Department	2 wells	5	.05	
108	Rutherford	Murfreesboro Water Department	2 wells	5	.53	4.64
109	Wilson	Waterston Water System	well	5	.16	
110	Wacon	Lafayette	Adams Spring	4	.68	
111	Wacon	Red Boiling Springs Water System	springs	4	.44	
112	DeKalb	Dowdell-Library Utility District	well	4	.69	
113	Canon	Woodbury Water System	springs	5	.25	
114	Franklin	Estill Springs Water Department	Estill Spring	4	.28	
115	Franklin	Huntland Water System	well	4	.16	
116	Franklin	Belvidere Rural Utility District	well	4	.11	
117	Franklin	Decherd Water Department	2 wells	4	.31	
118	Franklin	Coan Board of Public Utilities	springs	4	.24	
119	Grundy	Tracy City Water System	well	6	.32	
120	Marion	Jasper Water System	Blue Spring	7	.60	.01
121	Marion	Squatotic Water Works	Blowing Cave Spring	7	.72	
122	Hamilton	Walden Ridge Utility District	2 wells	7	.46	
123	Hamilton	Union Fork-Bakewell Utility District	2 wells	7	.16	
124	Hamilton	Sale Creek Utility District	2 wells	7	.23	
125	Hamilton	Soddy-Daisy-Falling Water Utility District	well	7	.30	.68
126	Hamilton	Hixson Utility District	Cave Springs	7	2.98	
127	Hamilton	Eastside Utility District	well	7	.38	
128	Hamilton	Savannah Valley Utility District	well	7	.65	
129	Bradley	Cleveland Water Department	Wellsville Spring	7	1.13	5.10
130	Polk	Ocoee Utility District	Wildwood Spring	7	.46	
131	Polk	Copperhill Water System	springs	7	.13	
132	Polk	Benton Water System	springs	7	.17	
133	Polk	Crockett Mills Utility District	4 springs	7	.84	
134	Monroe	Tellico Plains Water Department	well	7	.26	
135	Monroe	Sweetwater Utility Board	Cannon Spring	7	.48	.72
136	McMinn	Athens Utilities Board	Sweetwater Creek	7	.98	.95
137	Meigs	Decatur Water Department	Ingleside Spring	7	.26	
138	Rhea	Graysville Water System	springs	6	.17	
139	Rhea	Spring City Water System	Spring River	7	.25	.48
140	Bladwell	Pikeville Water System	3 wells	7	.29	
141	Roane	Kingsport Water System	springs	7	.20	.43
142	Roane	Cumberland Utility District	Watts Bar Lake	7	.65	.28
143	Roane	Oliver Springs Water Board	Little River	7	.4	