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Mississippi Department of Natural Resources
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WATER USE IN MISSISSIPPI
1980

by J. A. Callahan

Prepared by
U. S. GEOLOGICAL SURVEY
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INTRODUCTION

Mississippi's water, fresh and saline, is perhaps its most vital and important natural resource. Large quantities of good quality ground and surface water are readily available in nearly all parts of the State, and there is also an abundant supply of saline water in the estuaries along the Mississippi Gulf Coast. The total estimated water use in the State in 1980 from ground water and surface water was 3532 million gallons per day (Mgal/d), including 662 Mgal/d of saline water. Figure 1 shows the 1980 use of surface- and ground-water resources by county. The term "water use", as presented here, refers to water withdrawals from any source. After use, some water may be returned to a source and used again. Water use is counted each time water is withdrawn. Where water is recirculated it is counted only once when withdrawn from the source.

Freshwater used from all sources in Mississippi during the period 1975 through 1980 increased from 2510 Mgal/d to over 2870 Mgal/d, a 14 percent increase. Although modest increases of freshwater use may be expected in public, self-supplied industrial, and thermo-electric supplies, large future increases in the use of freshwater may be expected primarily as a result of growth in irrigation and aquaculture (fish farming). Management and protection of the quantity and quality of the available freshwater supply are often problems associated with increased use. Water use data, both temporal and spatial, are needed by the State of Mississippi to provide for intelligent, long-term management of the resource. Table 1 gives data on the principal categories of water use, sources, and use by county.

The water-use inventory program in Mississippi began in 1972 as a cooperative program between the Mississippi Board of Water Commissioners and the U.S. Geological Survey, Water Resources Division. It has continued with the Board's successor, the Mississippi Department of Natural Resources, Bureau of Land and Water Resources. The purpose of this program is to quantitatively measure and document all facets of water use in Mississippi.,

PUBLIC SUPPLIES

The data on public water-supply use from 920 water systems in the 82 counties of Mississippi were furnished by officials of municipal water utilities and associations and owners of private utilities. Distribution of use is shown in figure 2a. The counties with the largest public supply uses (5 to 50 Mgal/d) are also the most populous in the State. Ground water is the source for all public supplies in the State except at Columbus, Jackson, and Meridian where ground and surface water are used conjunctively.

RURAL SELF-SUPPLIED

The counties in which rural self-supplied water use is large (1 to 5 Mgal/d) are shown in figure 2b. The domestic water supplies are chiefly from ground water whereas most livestock water is withdrawn from surface-water bodies. The total rural self-supplied water use for 1980 was estimated to be over 42 Mgal/d--about 16 percent less than reported in 1975.

INDUSTRIAL SELF-SUPPLIED

Self-supplied industrial water use for 1980 was about 424 Mgal/d--a total that included saline water. Owing to the inclusion of saline water, the 1980 use shows an increase over the-1975 reported use of 347 Mgal/d. It is important to note, however, that freshwater use declined about 24 percent in 1980. The decline may be attributed to a combination of conservation measures and to a decline in industrial activity and water requirements. The largest industrial water use was in Jackson County (fig. 2c).

IRRIGATION

Underlying northwestern Mississippi in the area commonly referred to as the "Delta" is a shallow, highly productive ground-water bearing unit, the Mississippi River valley alluvial aquifer (fig. 1). Approximately 98 percent of all irrigation water used in Mississippi is applied in the Delta, principally on rice. Eighty-two percent of the irrigation water is from the alluvial aquifer. Rice acreage planted in 1975 in Mississippi was 169,000 acres and in 1980 the acreage was over 246,000. The water use for rice culture during this time rose from 640 Mgal/d to over 961 Mgal/d, or about a 50 percent increase in water use. Irrigation for row or other crops for the five-year period decreased about nine percent. The largest irrigation water use was in Bolivar, Sunflower, and Washington Counties (fig. 2d).

AQUACULTURE

Aquaculture, mostly catfish farming, is one of the fastest growing industries in Mississippi. Over 90 percent of this industry is located in the Delta. In 1975 approximately 16,000 acres were in aquaculture but by 1980 the acreage had increased to 39,000. Aquaculture water use increased from 154 Mgal/d in 1975 to 264 Mgal/d in 1980. Humphreys County leads the State in aquaculture with about 18,000 acres and proudly bills itself as the "Catfish Capitol" of the world. In 1980 water use for fish farming in Humphreys County was 109 Mgal/d (fig.2e).

THERMOELECTRIC POWER GENERATION

In Mississippi, water withdrawn for thermoelectric power generation in 1980 totaled about 1528 Mgal/d, down about 4 percent from 1599 Mgal/d reported in 1975. The decreased use may be attributed to more efficient operation and conservation.

Surface water is the chief source of water used for cooling in thermoelectric power generation, usually a one-time through operation. Power plants that use large amounts of surface water are located on the major streams and estuaries. Saline surface water, 502 Mgal/d, accounts for about 33 percent of the total use. Ground water is generally used as makeup and boiler feed water. Distribution and magnitude of this use is shown in figure 2f.

WILDLIFE IMPOUNDMENTS

Waterfowl impoundments are often low-lying, wet areas reserved principally as waterfowl refuges. The impounded water is usually supplied by surface water diversions or by water wells. Total water use (impounded) is small.

WITHDRAWAL AND DISPOSITION

Mississippi's total water use of 3532 Mgal/d is graphically illustrated in figure 3, which shows the source, use, disposition, and percentages associated with each. Thermoelectric power generation, the largest user, represents 43 percent of the total water withdrawn and is followed in rank by irrigation (36 percent) and industrial water use (12 percent). Thermoelectric power generation with its one-time through use also has the largest return of withdrawn water to the system (98 percent); public supply (75 percent) ranks second in return flow. The larger comsumptive water users are industry at about 60 percent, and irrigation at about 50 percent.

AQUIFERS

In Mississippi, freshwater aquifers (water-bearing sediments) range in geologic age from Paleozoic (the oldest) to Holocene (the youngest). One or more aquifers containing good quality water underlie almost all of the State. Depth to the aquifers varies depending on location. In some areas the depth is less than 100 ft whereas in other areas freshwater may be found more than 2000 ft deep. Ground-water withdrawals from aquifers, by county, are given in table 2.

In 1980, ground water accounted for 54 percent of the total freshwater use. About three-fourths of the ground water was withdrawn from the Mississippi River valley alluvial aquifer, chiefly for agriculture and aquaculture. The second largest user of ground water was statewide public water-supply and third was industrial water use.

Table 1.— Water use in Mississippi, 1980, by principal use and source (in million gallons per day).
(Due to rounding of numbers, columns may not total)

COUNTY	PUBLIC SUPPLY: MUNICIPAL USE: POPULATION SERVED	DOMESTIC GW	DOMESTIC SW	INDUSTRIAL GW	INDUSTRIAL SW	TOTAL	RURAL SYSTEMS: POPULATION SERVED	DOM.	IND.	TOTAL	RURAL SELF-SUPPLIED: POPULATION SERVED	DOMESTIC GW	LIVESTOCK GW	LIVESTOCK SW	TOTAL
ADAMS	22750	3.170	-	.058	-	3.228	14370	1.043	-	1.043	555	.025	.050	.076	.151
ALCORN	15030	1.264	-	1.801	-	3.065	13305	.775	-	.775	4700	.216	.050	.076	.342
AMITE	7205	.630	-	.026	-	.656	3175	.231	-	.231	2990	.137	.213	.319	.669
ATTALA	111'0	1.140	-	.768	-	1.908	5585	.332	-	.332	3170	.145	.094	.140	.379
BENTON	2355	.129	-	.025	-	.154	1050	.063	-	.063	4750	.218	.053	.079	.350
BOLIVAR	33380	5.086	-	.283	-	5.369	2720	.164	-	.164	9865	.453	.023	.034	.510
CALHOUN	6395	.710	-	.041	-	.751	6945	.480	-	.480	2310	.106	.099	.146	.353
CARROLL	2405	.287	-	-	-	.287	3365	.201	-	.201	4006	.184	.151	.227	.562
CHICKASAW	8315	.831	-	.259	-	1.090	4720	.292	-	.292	4820	.221	.120	.180	.521
CHOCTAW	2730	.559	-	.186	-	.745	3565	.271	-	.271	2701	.124	.044	.066	.234
CLAIBORNE	6085	.599	-	.368	-	.967	3820	.239	.015	.254	2374	.109	.102	.152	.363
CLARKE	6170	.544	-	.770	-	1.314	7700	.485	-	.485	1917	.088	.067	.099	.254
CLAY	9100	.888	-	.822	-	1.710	6625	.344	-	.344	5357	.246	.110	.165	.521
COAHOMA	27100	3.008	-	.360	-	3.368	4830	.322	-	.322	4988	.229	.013	.020	.262
COPIAH	10895	1.573	-	.650	-	2.223	12175	.575	-	.575	3433	.157	.170	.254	.581
COVINGTON	4260	.336	-	.016	-	.352	8235	.509	-	.509	3432	.157	.093	.139	.389
DESOTO	5650	.697	-	.161	-	.858	42525	2.795	.209	3.004	5755	.264	.095	.142	.501
FORREST	40280	7.845	-	.452	-	8.297	22050	2.006	-	2.006	3688	.169	.070	.106	.345
FRANKLIN	3130	.383	-	.024	-	.407	3405	.199	-	.199	1673	.076	.052	.078	.206
GEORGE	3500	.365	-	.035	-	.400	3035	.208	.004	.212	8762	.403	.046	.068	.517
GREENE	3165	.203	-	.003	-	.206	3285	.198	-	.198	3377	.155	.039	.074	.268
GRENADA	11165	1.606	-	.115	-	1.721	10670	.577	.043	.620	3803	.174	.087	.131	.392
HANCOCK	10800	1.009	-	-	-	1.009	2570	.653	-	.653	11167	.513	.028	.043	.584
HARRISON	115010	14.43	-	2.537	-	16.97	32450	2.075	-	2.075	1578	.072	.024	.037	.133
HINDS	221850	6.243	15.11	.078	15.11	36.54	13230	1.091	-	1.091	15918	.732	.352	.527	1.611
HOLMES	10690	1.509	-	.053	-	1.562	7770	.453	-	.453	4510	.207	.102	.152	.461
HUMPHREYS	5290	.658	-	.076	-	.734	1520	.092	-	.092	7151	.328	.015	.023	.366
ISSAQUENA	375	.018	-	-	-	.018	575	.035	-	.035	1560	.071	.016	.024	.111
ITAWAMBA	4540	.715	-	.205	-	.920	8295	.547	-	.547	7681	.353	.069	.103	.525
JACKSON	65015	8.300	-	.263	-	8.563	25830	1.881	-	1.881	27025	1.243	.015	.023	1.281
JASPER	5515	.763	-	.268	-	1.031	10565	.786	.005	.791	1185	.054	.121	.181	.356
JEFFERSON	2010	.307	-	.010	-	.317	4700	.300	-	.300	2471	.113	.067	.101	.281
JEFF DAVIS	1785	.227	-	.024	-	.251	9580	.672	-	.672	2481	.114	.079	.119	.312
JONES	29395	4.929	-	1.719	-	6.648	29270	1.973	-	1.973	3247	.149	.153	.229	.531
KEMPER	1675	.312	-	.001	-	.313	6405	.455	.008	.463	2068	.095	.115	.172	.382
LAFAYETTE	23655	2.650	-	.025	-	2.675	10445	.627	-	.627	6530	.360	.093	.139	.592
LAMAR	6440	.608	-	.074	-	.682	21555	.967	-	.967	2265	.104	.070	.114	.288
LAUDERDALE	52865	1.443	.500	.931	5.289	8.163	15170	1.114	.003	1.117	1630	.074	.084	.126	.284
LAWRENCE	2575	.292	-	.007	-	.299	6090	.361	-	.361	3855	.177	.047	.071	.295
LEAKE	4320	.478	-	.088	-	.566	11280	.781	.001	.782	3190	.146	.133	.199	.478
LEE	34110	5.265	-	.104	-	5.369	13785	.950	-	.950	9166	.421	.035	.052	.508
LEFLORE	28115	5.056	-	.569	-	5.625	5370	.337	-	.337	8040	.369	.033	.049	.451
LINCOLN	12000	1.116	-	.167	-	1.283	7545	.531	.001	.532	10629	.488	.167	.251	.906
LOWNDES	35030	3.937	1.238	.851	.348	6.374	10945	.981	-	.981	11329	.521	.097	.146	.764
MADISON	21685	2.311	-	.450	-	2.761	13780	.902	-	.902	6148	.282	.207	.311	.800
MARION	7995	.999	-	.053	-	1.052	8700	.455	-	.455	9013	.414	.141	.211	.766
MARSHALL	9265	1.421	-	.433	-	1.854	520	.038	-	.038	19511	.897	.139	.209	1.245
MONROE	16000	2.229	-	1.362	-	3.591	5260	.615	.004	.619	15144	.696	.170	.254	1.120
MONTGOMERY	7795	.671	-	.170	-	.841	4935	.330	.017	.347	636	.029	.092	.137	.258
NESHOBA	9360	.964	-	.196	-	1.160	3910	.513	.017	.530	10519	.483	.167	.250	.900
NEWTON	7450	.774	-	.068	-	.842	5345	.301	-	.301	7149	.328	.162	.242	.732
NOXUBEE	3975	.445	-	.145	-	.590	2235	.139	-	.139	7002	.322	.187	.280	.789
OKTIBBEHA	29465	4.257	-	.368	-	4.625	13325	.783	.017	.800	6398	.294	.126	.190	.610
PANOLA	13925	1.442	-	.046	-	1.488	10990	.857	-	.857	3249	.149	.174	.262	.585
PEARL RIVER	15900	1.204	-	.246	-	1.450	5405	.316	-	.316	13340	.613	.146	.220	.979
PERRY	2905	.581	-	.115	-	.696	4015	.224	-	.224	2944	.135	.043	.064	.242
PIKE	22875	3.422	-	.366	-	3.788	8580	.572	.021	.593	5493	.252	.117	.176	.545
PONTOTOC	7710	1.163	-	.145	-	1.308	10160	.609	-	.609	3048	.140	.109	.163	.412
PRENTISS	8275	1.037	-	.373	-	1.410	12940	.927	-	.927	2810	.129	.093	.140	.362
QUITMAN	7480	.754	-	.067	-	.821	1240	.074	-	.074	3916	.180	.014	.020	.214
RANKIN	28650	3.741	-	.152	-	3.893	37970	3.226	.038	3.264	2787	.128	.175	.262	.565
SCOTT	10070	1.238	-	2.864	-	4.102	9895	.758	-	.758	4591	.211	.153	.229	.593
SHARKEY	3995	.431	-	.004	-	.435	330	.026	-	.026	3669	.168	.010	.014	.192
SIMPSON	6705	.964	-	.017	-	.981	14995	1.064	-	1.064	1741	.080	.135	.202	.417
SMITH	4565	.384	-	.532	-	.916	5795	.449	.003	.452	4717	.219	.144	.217	.580
STONE	4080	.850	-	.096	-	.946	1740	.112	-	.112	3896	.179	.038	.058	.275
SUNFLOWER	26710	3.273	-	.675	-	3.948	5835	.349	-	.349	2299	.105	.063	.095	.263
TALLAHATCHIE	7773	.666	-	.007	-	.673	4840	.298	-	.298	4544	.209	.060	.090	.359
TATE	6500	.926	-	.235	-	1.161	3380	.230	-	.230	10239	.470	.157	.236	.863
TIPPAH	6775	.752	-	.022	-	.774	8310	.435	-	.435	4059	.186	.074	.111	.371
TISHOMINGO	5545	.892	-	.137	-	1.029	5545	.425	-	.425	4625	.212	.052	.078	.342
TUNICA	1360	.409	-	.003	-	.412	3400	.203	-	.203	4866	.223	.012	.018	.253
UNION	12345	.617	-	.381	-	.998	5110	.284	-	.284	4308	.198	.084	.127	.409
WALTHALL	2995	.407	-	.030	-	.437	4475	.263	.010	.273	6291	.289	.211	.317	.817
WARREN	25585	5.281	-	2.786	-	8.067	19720	1.506	-	1.506	6322	.290	.101	.152	.543
WASHINGTON	53100	7.812	-	.778	-	8.590	4595	.296	-	.296	14649	.673	.037	.056	.766
WAYNE	5315	.832	-	.068	-	.900	5425	.337	-	.337	8395	.386	.061	.091	.538
WEBSTER	3745	.406	-	.092	-	.498	5975	.325	-	.325	580	.026	.073	.110	.209
WILKINSON	3905	.236	-	-	-	.236	2215	.148	-	.148	3901	.179	.133	.199	.511
WINSTON	7900	.874	-	.506	-	1.380	8060	.510	-	.510	3514	.161	.154	.230	.545
YALOBUSHA	5820	.865	-	.945	-	1.810	6045	.263	-	.263	1274	.058	.064	.096	.218
YAZOO	12865	1.496	-	.093	-	1.589	11525	1.010	-	1.010	27349	1.258	.170	.256	1.684
TOTALS	1353600	149.1	16.85	30.30	2[illegible].75	217.0	728600	50.14	.416	50.60	478000	20.01	8.004	12.03	42.04

COUNTY	INDUSTRIAL SELF-SUPPLIED: GW	SW	TOTAL	THERMO ELECTRIC POWER: GW	SW	TOTAL	IRRIGATION: RICE GW	RICE SW	RICE TOTAL	OTHER CROPS GW	OTHER CROPS SW	TOTAL	AQUACULTURE: GW	SW	TOTAL	WATERFOWL IMPOUNDMENTS: GW	SW	TOTAL	COUNTY TOTALS: GW	SW	TOTAL ALL WATER
ADAMS	41.45	1.370	42.82	.648		.648													46.44	1.446	47.89
ALCORN	.002	-	.002										.129		.129				4.237	.076	4.313
AMITE	.172	-	.172										.005		.005				1.414	.319	1.733
ATTALA	-	-											.054		.054				2.533	.140	2.673
BENTON	-	-																	.488	.079	.567
BOLIVAR	3.659	-	3.659	.720	9.360	10.08	248.1	54.46	302.5	2.766	.607	3.373	5.561		5.561				266.8	64.46	331.3
CALHOUN	.002	-	.002										.334		.334				1.782	.148	1.930
CARROLL	-	-											.226		.226				1.049	.227	1.276
CHICKASAW	.021	-	.021																1.744	.180	1.924
CHOCTAW	-	-											.021		.021				1.205	.066	1.271
CLAIBORNE	.360	-	.360																1.792	.152	1.944
CLARKE	.166	-	.166										.011		.011				2.131	.099	2.230
CLAY	1.800	-	1.800										.075		.075				4.285	.165	4.450
COAHOMA	2.662	-	2.662	10.57		10.57	38.71	8.497	47.21	1.781	.391	2.172	.134		.134				57.79	8.908	66.69
COPIAH	2.092	-	2.092										.005		.005				5.222	.254	5.476
COVINGTON	.551	-	.551																1.662	.139	1.801
DESOTO	1.414	-	1.414				6.158	1.352	7.510	.733	.160	.893							12.53	1.654	14.18
FORREST	8.763	2.844	11.61	.200	76.80	77.00				.095		.095	.021		.021				19.62	79.75	99.37
FRANKLIN	-	-																	.734	.078	.812
GEORGE	.035	-	.035										.016		.016				1.112	.068	1.180
GREENE	-	-											.054		.054				.652	.074	.726
GRENADA	3.688	-	3.688				5.098	1.119	6.217				.038		.038		.089	.089	11.43	1.339	12.77
HANCOCK	.545	-	.545				1.292		1.292				.739		.739				4.779	.043	4.822
HARRISON	3.385	-	3.385	1.650	502.1[1]	503.7							.066	.073	.139				24.24	502.2	526.4
HINDS	2.208	-	2.208	3.456		3.456													14.16	30.75	44.91
HOLMES	.468	.141	.609				9.853	2.163	12.02				4.619		4.619				17.26	2.456	19.72
HUMPHREYS	.015	-	.015				26.74	5.870	32.61	1.692	.372	2.064	109.1		109.1				138.7	6.265	145.0
ISSAQUENA	.001	-	.001				6.218	1.365	7.583	.873	.191	1.064	1.890		1.890				9.122	1.580	10.70
ITAWAMBA	-	-																	1.889	.103	1.992
JACKSON	9.964	201.0[2]	211.0	.158	13.89	14.05				.082		.082							21.91	215.0	236.9
JASPER	.029	-	.029										.134		.134				2.160	.181	2.341
JEFFERSON	.026	-	.026																.823	.101	.924
JEFF DAVIS	.090	-	.090																1.206	.119	1.325
JONES	3.590	-	3.590	2.088		2.088							.155		.155				14.76	.229	14.99
KEMPER	-	-																	.986	.172	1.158
LAFAYETTE	.100	-	.100																3.855	.139	3.994
LAMAR	2.997	-	2.997	2.082		2.082													6.902	.114	7.016
LAUDERDALE	.814	-	.814	.150		.150				.008		.008	.823		.823				5.444	5.915	11.36
LAWRENCE	.174	27.93	28.10										.032		.032				1.090	28.00	29.09
LEAKE	.423	-	.423										.161		.161				2.211	.199	2.410
LEE	2.241	-	2.241										.428		.428				9.444	.052	9.496
LEFLORE	.723	-	.723	11.13		11.13	64.75	14.21	78.96	2.357	.518	2.875	19.17		19.17	.495		.495	105.0	14.78	119.8
LINCOLN	-	-											.032		.032				2.502	.251	2.753
LOWNDES	18.53	-	18.53										.032		.032				24.95	1.732	26.68
MADISON	.267	-	.267										.161		.161		1.953	1.953	4.580	2.264	6.844
MARION	.120	-	.120										.301		.301				2.483	.211	2.694
MARSHALL	.041	-	.041																2.969	.209	3.178
MONROE	15.64	-	15.64																20.72	.254	20.97
MONTGOMERY	-	-								.015		.015	.086		.086				1.410	.137	1.547
NESHOBA	.323	-	.323										.038		.038				2.701	.250	2.951
NEWTON	.045	-	.045										.016		.016				1.694	.242	1.936
NOXUBEE	-	-	1.175										.118		.118		10.93	10.93	1.356	11.21	12.57
OKTIBBEHA	1.175	-	.980										.027		.027				7.047	.190	7.237
PANOLA	.980	-	1.464				5.400	1.185	6.585				.268		.268				9.316	1.447	10.76
PEARL RIVER	1.464	-											.193		.193				4.182	.220	4.402
PERRY	.106	.288	.394																1.204	.352	1.556
PIKE	.615	-	.615										.134		.134				5.499	.176	5.675
PONTOTOC	-	-											.070		.070				2.236	.163	2.399
PRENTISS	-	-																	2.559	.140	2.699
QUITMAN	.168	-	.168				31.77	6.974	38.75	1.673	.357	2.040	.285		.285	.893		.893	35.88	7.361	43.24
RANKIN	1.061	-	1.061																8.521	.262	8.783
SCOTT	.779	-	.779										.371		.371				6.374	.229	6.603
SHARKEY	.135	-	.135				20.84	4.578	25.42	1.651	.362	2.013	9.023		9.023	.491	1.607	2.098	32.78	6.561	39.34
SIMPSON	.180	-	.180																2.440	.202	2.642
SMITH	.437	-	.437										.016		.016				2.184	.217	2.401
STONE	1.030	-	1.030																2.305	.058	2.363
SUNFLOWER	-	-					144.6	31.75	176.4	2.716	.596	3.312	31.69		31.69				183.5	32.44	215.9
TALLAHATCHIE	-	-					30.99	6.803	37.80	1.346	.295	1.641	4.614		4.614				38.19	7.188	45.38
TATE	.081	-	.081				1.130	.248	1.378				.011		.011				3.240	.484	3.724
TIPPAH	.389	-	.389																1.858	.111	1.969
TISHOMINGO	-	-																	1.718	.078	1.796
TUNICA	-	-					45.68	10.03	55.71	1.607	.353	1.960	5.623		5.623				53.76	10.40	64.16
UNION	.434	-	.434										.043		.043				2.041	.127	2.168
WALTHALL	.615	-	.615							.050		.050	.021		.021				1.896	.317	2.213
WARREN	.428	24.00	24.43		604.8	604.8	.995	.219	1.214										11.39	629.2	640.6
WASHINGTON	8.447	-	8.447		287.5	287.5	97.72	21.45	119.2	2.412	.530	2.942	49.90		49.90				168.1	309.5	477.6
WAYNE	.080	-	.080							.125		.125							1.889	.091	1.980
WEBSTER	-	-																	.922	.110	1.032
WILKINSON	-	-						.364	.364										.696	.563	1.259
WINSTON	.020	-	.020										.038		.038				2.263	.230	2.493
YALOBUSHA	.600	-	.600																2.795	.096	2.891
YAZOO	17.42	-	17.42	.412		.412	2.110	.464	2.574	2.070	.454	2.524	16.36		16.36	.384		.384	42.78	1.174	43.96
TOTALS	166.2	257.6	423.9	33.26	1494	1528	788.2	173.1	961.3	24.05	5.196	29.25	263.5	.073	263.5	2.263	14.58	16.84	1537	1995	3532

1/ Saline

2/ 159.7 Mgal/d Saline

CRITERIA FOR DETERMINING USE

Municipal Supply

Municipal supplies, whether publicly or privately owned, include systems in cities, towns, and villages listed in Mississippi Municipal Directory, 1977-1981. Sixty gallons (227 liters) per day per capita was used to estimate domestic use where actual figures were not available.

Rural Systems

Rural systems include all private water companies, water associations, and other sources that furnish water to the public outside the cities, towns, and villages. The source is ground water unless otherwise noted. Fifty gallons (190 liters) per capita was used to estimate use for unmetered systems. The estimated population served is 3.5 persons per water meter.

Rural Self-Supplied

Persons served by municipal and rural water systems were subtracted from the county population total. The remainder of the county population was then classified as rural self-supplied. Fifty gallons (190 liters) per day per capita was the estimated use for families with indoor plumbing facilities. Ten gallons (38 liters) per day per capita was the estimated use for families without plumbing facilities. Population with indoor plumbing was determined from the U.S. Census, 1980.

Water for livestock was estimated using Mississippi Agricultural Statistics, 1980, and applying the following factors:

	Gallons	Liters
Milk cows	20	76
Other cattle	10	38
Hogs	3	11
Chickens	.04	.2

Gross estimate: 40 percent of water used for livestock is derived from ground-water sources and 60 percent is from surface-water sources. All water used is consumed.

Thermoelectric power

Thermoelectric power was tabulated separately owing to the magnitude of water use and was not included as part of the public supply.

Irrigation Requirements

Rice: 4.1 feet (1.25 meters); 1980 application.

Others: 1.3 feet (0.4 meter).

Although given in (Mgal/d)/yr, withdrawals occur at a much higher rate over a period of several months. The source is estimated to be 18 percent surface water and 82 percent ground water.

WATER USE IN MISSISSIPPI
1980

J. A. CALLAHAN

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To convert English units to International units:

Multiply	by	To obtain
foot (ft)	0.04381	meter (m)
gallon (gal)	3.785	liter (L)
million gallons per day (Mgal/d)	0.4381	cubic meter per second (m^3/s)

Table 2.-- Ground-water withdrawals by county and aquifer in Mississippi, 1980 (in million gallons per day).
(Due to rounding of numbers, columns may not total)

COUNTY	AQUIFER: ALLUVIUM	CITRONELLE	GRAHAM FERRY	MIOCENE	OLIGOCENE	COCKFIELD	SPARTA	WINONA-TALLAHATTA	MERIDIAN-UP.WILCOX	LOWER WILCOX	EUTAW	TUSCALOOSA	PALEOZOIC	COUNTY TOTALS
ADAMS	38.00	--	--	8.444	--	--	--	--	--	--	--	--	--	46.44
ALCORN	--	--	--	--	--	--	--	--	--	--	.720	--	3.517	4.237
AMITE	--	.350	--	1.064	--	--	--	--	--	--	--	--	--	1.414
ATTALA	--	--	--	--	--	--	.020	.239	2.171	.103	--	--	--	2.533
BENTON	--	--	--	--	--	--	--	--	.443	--	.045	--	--	.488
BOLIVAR	256.6	--	--	--	--	2.176	6.930	.285	.759	--	--	--	--	266.8
CALHOUN	--	--	--	--	--	--	--	--	.002	.447	.186	1.147	--	1.782
CARROLL	--	--	--	--	--	--	.100	.361	.588	--	--	--	--	1.049
CHICKASAW	--	--	--	--	--	--	--	--	--	--	1.744	--	--	1.744
CHOCTAW	--	--	--	--	--	--	--	--	.363	.842	--	--	--	1.205
CLAIBORNE	.150	--	--	1.642	--	--	--	--	--	--	--	--	--	1.792
CLARKE	--	--	--	.069	--	.026	.735	--	.894	.407	--	--	--	2.131
CLAY	--	--	--	--	--	--	--	--	--	--	2.767	1.518	--	4.285
COAHOMA	41.61	--	--	--	--	--	8.885	.020	7.133	.140	--	--	--	57.79
COPIAH	--	1.137	--	4.050	.035	--	--	--	--	--	--	--	--	5.222
COVINGTON	--	.050	--	1.612	--	--	--	--	--	--	--	--	--	1.662
DESOTO	6.891	--	--	--	--	--	5.338	.100	.072	.125	--	--	--	12.53
FORREST	.945	.036	--	18.64	--	--	--	--	--	--	--	--	--	19.62
FRANKLIN	--	.051	--	.683	--	--	--	--	--	--	--	--	--	.734
GEORGE	--	.083	--	1.029	--	--	--	--	--	--	--	--	--	1.112
GREENE	--	--	--	.652	--	--	--	--	--	--	--	--	--	.652
GRENADA	5.098	--	--	--	--	--	--	.144	5.848	.336	--	--	--	11.43
HANCOCK	--	.271	1.892	2.616	--	--	--	--	--	--	--	--	--	4.779
HARRISON	--	.048	21.91	2.285	--	--	--	--	--	--	--	--	--	24.24
HINDS	--	--	--	.178	.757	3.091	10.13	--	--	--	--	--	--	14.16
HOLMES	14.50	--	--	--	--	.046	.185	.209	2.321	--	--	--	--	17.26
HUMPHREYS	137.4	--	--	--	--	.017	1.267	--	--	--	--	--	--	138.7
ISSAQUENA	9.051	--	--	--	--	.018	.053	--	--	--	--	--	--	9.122
ITAWAMBA	--	--	--	--	--	--	--	--	--	--	1.552	.337	--	1.889
JACKSON	--	.874	14.42	6.615	--	--	--	--	--	--	--	--	--	21.91
JASPER	--	--	--	.009	--	.508	1.561	--	.082	--	--	--	--	2.160
JEFFERSON	--	--	--	.823	--	--	--	--	--	--	--	--	--	.823
JEFFERSON DAVIS	--	.097	--	1.109	--	--	--	--	--	--	--	--	--	1.206
JONES	--	--	--	13.69	.090	.908	.070	--	--	--	--	--	--	14.76
KEMPER	--	--	--	--	--	--	--	--	--	.680	.046	.260	--	.986
LAFAYETTE	--	--	--	--	--	--	--	.045	3.518	.232	--	.060	--	3.855
LAMAR	--	.154	--	6.748	--	--	--	--	--	--	--	--	--	6.902
LAUDERDALE	--	--	--	--	--	--	--	--	.326	5.118	--	--	--	5.444
LAWRENCE	--	.243	--	.847	--	--	--	--	--	--	--	--	--	1.090
LEAKE	--	--	--	--	--	--	.818	.098	.802	.493	--	--	--	2.211
LEE	--	--	--	--	--	--	--	--	--	--	6.882	2.562	--	9.444
LEFLORE	97.90	--	--	--	--	--	.901	.311	5.876	--	--	--	--	105.0
LINCOLN	--	1.123	--	1.379	--	--	--	--	--	--	--	--	--	2.502
LOWNDES	--	--	--	--	--	--	--	--	--	--	.650	24.30	--	24.95
MADISON	--	--	--	--	--	1.426	3.127	--	.027	--	--	--	--	4.580
MARION	--	.055	--	2.428	--	--	--	--	--	--	--	--	--	2.483
MARSHALL	--	--	--	--	--	--	--	.932	1.624	--	.413	--	--	2.969
MONROE	--	--	--	--	--	--	--	--	--	--	3.898	16.82	--	20.72
MONTGOMERY	--	--	--	--	--	--	--	.073	1.150	.187	--	--	--	1.410
NESHOBA	--	--	--	--	--	--	--	.195	.691	1.815	--	--	--	2.701
NEWTON	--	--	--	--	--	--	.663	.172	.706	.153	--	--	--	1.694
NOXUBEE	--	--	--	--	--	--	--	--	--	--	.617	.739	--	1.356
OKTIBBEHA	--	--	--	--	--	--	--	--	--	--	.463	6.584	--	7.047
PANOLA	5.400	--	--	--	--	--	1.006	.292	.612	2.006	--	--	--	9.316
PEARL RIVER	--	.100	--	4.082	--	--	--	--	--	--	--	--	--	4.182
PERRY	--	.045	--	1.159	--	--	--	--	--	--	--	--	--	1.204
PIKE	--	.976	--	4.523	--	--	--	--	--	--	--	--	--	5.499
PONTOTOC	--	--	--	--	--	--	--	--	--	--	.932	1.304	--	2.236
PRENTISS	--	--	--	--	--	--	--	--	--	--	2.150	.409	--	2.559
QUITMAN	34.62	--	--	--	--	--	--	.106	.547	.604	--	--	--	35.88
RANKIN	--	--	--	.228	.015	4.253	4.025	--	--	--	--	--	--	8.521
SCOTT	--	--	--	--	--	1.328	1.933	.070	3.043	--	--	--	--	6.374
SHARKEY	32.05	--	--	--	--	.010	.697	--	.026	--	--	--	--	32.78
SIMPSON	--	1.374	--	1.021	--	.045	--	--	--	--	--	--	--	2.440
SMITH	--	--	--	1.475	.102	.160	.447	--	--	--	--	--	--	2.184
STONE	--	.118	--	2.187	--	--	--	--	--	--	--	--	--	2.305
SUNFLOWER	179.0	--	--	--	--	--	.378	.129	3.958	--	--	--	--	183.5
TALLAHATCHIE	36.95	--	--	--	--	--	.108	.240	.697	.195	--	--	--	38.19
TATE	1.130	--	--	--	--	--	1.012	--	.084	1.014	--	--	--	3.240
TIPPAH	--	--	--	--	--	--	--	--	--	.100	1.758	--	--	1.858
TISHOMINGO	--	--	--	--	--	--	--	--	--	--	.198	.472	1.048	1.718
TUNICA	52.91	--	--	--	--	--	--	--	.044	.806	--	--	--	53.76
UNION	--	--	--	--	--	--	--	--	--	--	1.971	.070	--	2.041
WALTHALL	--	.521	--	1.375	--	--	--	--	--	--	--	--	--	1.896
WARREN	10.33	--	--	.078	.836	.142	--	--	--	--	--	--	--	11.39
WASHINGTON	150.1	--	--	--	--	16.61	.094	--	1.281	--	--	--	--	168.1
WAYNE	--	--	--	.832	1.057	--	--	--	--	--	--	--	--	1.889
WEBSTER	--	--	--	--	--	--	--	--	.028	.576	--	.318	--	.922
WILKINSON	--	.094	--	.602	--	--	--	--	--	--	--	--	--	.696
WINSTON	--	--	--	--	--	--	--	--	.341	1.922	--	--	--	2.263
YALOBUSHA	--	--	--	--	--	--	--	.061	2.391	.343	--	--	--	2.795
YAZOO	31.28	.173	--	--	--	.791	10.41	--	.126	--	--	--	--	42.78
	1142	7.973	38.22	94.17	2.892	31.56	60.90	4.082	48.57	18.64	26.99	56.90	4.565	1537