Livestock — 5,490 million gallons per day

The quantity of water withdrawn for total livestock purposes (livestock, animal specialties) during 1995 was an estimated 5,490 Mgal/d, or 22 percent more than withdrawn during 1990. Livestock use represents nearly 2 percent of freshwater use for all offstream categories. Idaho reported a substantial increase in withdrawals for animal specialties based on more reliable information.

The source and disposition of water for total livestock use are shown in the chart below. Surface water was the source for about 59 percent of withdrawals for total livestock use, and ground water was the source for the remaining 41 percent. The consumptive use of water for total livestock during 1995 was about 3,200 Mgal/d, or 58 percent of withdrawals.

Livestock water use includes water for livestock, feed lots, dairies, fish farms, and other on-farm needs. The "Livestock category" includes livestock water use, which is defined as water associated with the production of red meat, poultry, eggs, milk, and wool; and animal specialities water use, which is defined as water use associated with the production of fish in captivity (except fish hatcheries), fur-bearing animals in captivity, horses, rabbits, and pets (Office of Management and Budget, 1987, p. 27-29). A few States, such as Arkansas, Oregon, and California, have some offstream fish hatcheries that are included in the commercial category in this report. Water used instream for fish hatcheries is not included in this compilation.

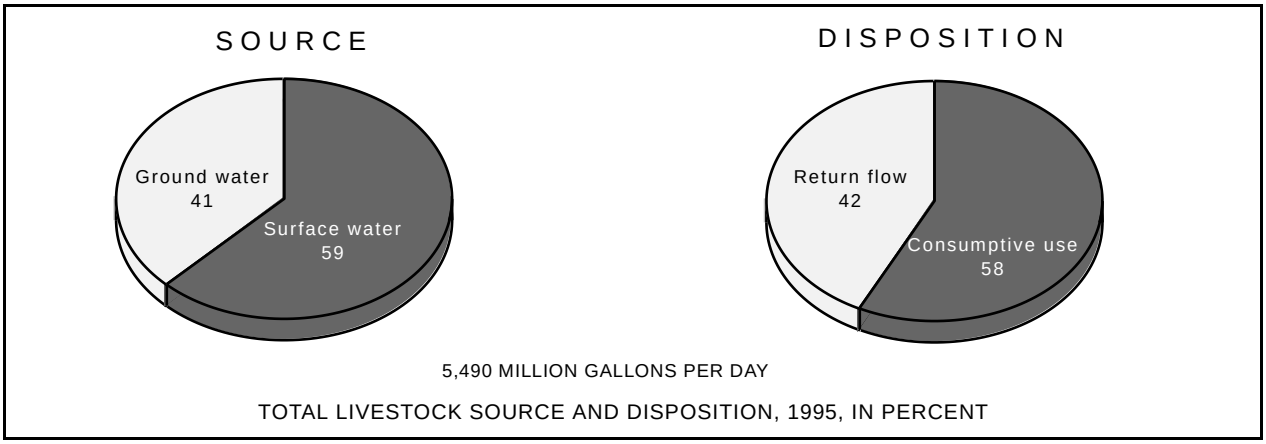
Livestock use in this report is equivalent to the livestock category listed under "Livestock" or "Rural use" in previous water-use circulars in this series. Beginning in 1990, animal specialties were identified as a subset of livestock activities because of the large increase in fish-farming water use. Fish farms are primarily engaged in the production of food fish under controlled feeding, sanitation, and harvesting procedures (Office of Management and Budget, 1987, p. 29). Most water used for fish farms is required to maintain acceptable pond levels and water quality.

The quantities of surface water and ground water withdrawn for use by livestock are estimated from the numbers of animals in a county. The livestock and poultry numbers are available in most States from the U.S. Department of Agriculture Crop and Livestock Reporting Service or the Cooperative Extension Service. The number of each type of animal in each county is multiplied by an average water use per animal to obtain the water-use estimate. The Crop and Livestock Reporting Service or the Cooperative Extension Service generally have pond acreage for fish farms. Water use is estimated by multiplying pond acreage by an application rate. In some States, water use for fish farms is reported under a permit system.

The uncertainties in the livestock water-use estimates include difficulties in determining the sources of water and great variations in estimates of consumptive use. Consumptive-use estimates generally are based on coefficients ranging from 10 to 100 percent of withdrawals.

State agencies in Hawaii and Maryland reported 18 Mgal/d and 3.3 Mgal/d, respectively, of saline withdrawals for animal specialties. These saline withdrawals are not listed in the tables or included in the totals.

In 1995, the Pacific Northwest and Lower Mississippi water-resources regions had the most water withdrawn for total livestock (figure 18; table 17) and accounted for nearly 46 percent of the Nation's total livestock use. The Missouri Basin and Arkansas-White-Red regions have the most water withdrawn for livestock, and the Pacific Northwest and Lower Mississippi regions have the most water withdrawn for animal specialties. By State, Idaho accounts for the largest use of water for total livestock (figure 19; table 18). Idaho, Mississippi, Louisiana, and Arkansas account for 76 percent of the Nation's animal-specialties water use, largely because of fish farming.



TOTAL LIVESTOCK SOURCE AND DISPOSITION, 1995, IN PERCENT

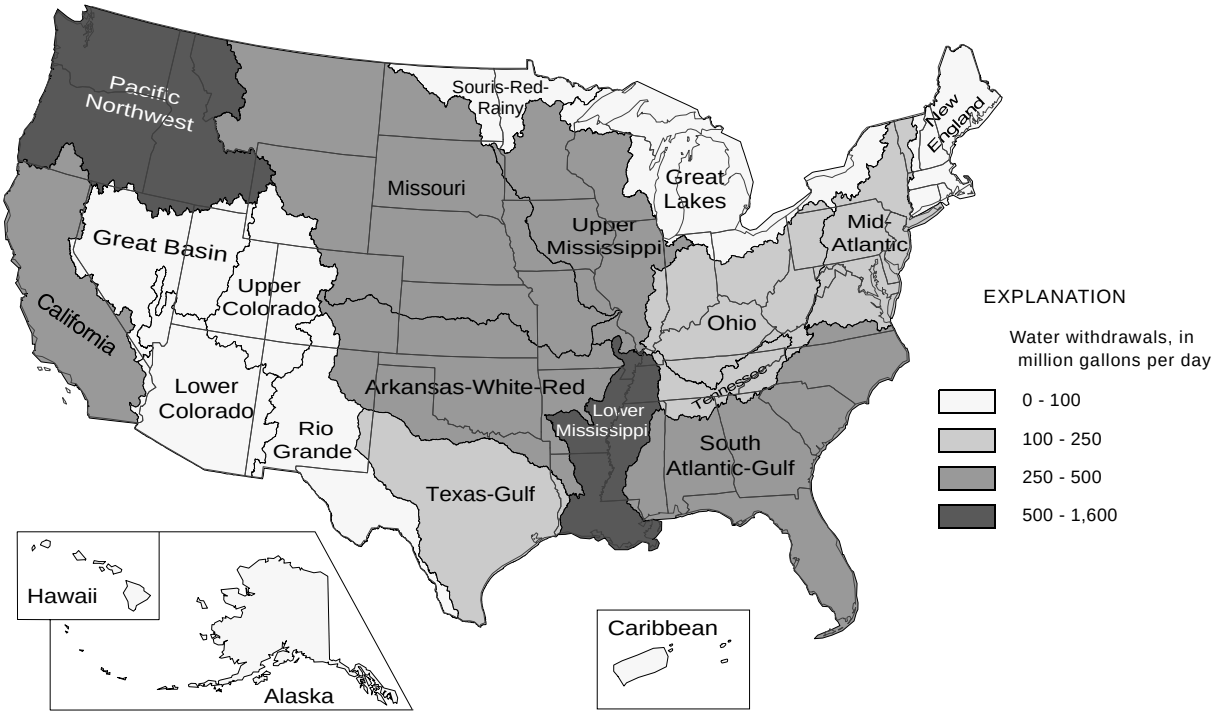


Figure 18. Total livestock freshwater withdrawals by water-resources region, 1995.

Table 17. Livestock freshwater use by water-resources region, 1995

[Figures may not add to totals because of independent rounding. All values in million gallons per day]

REGION	LIVESTOCK				ANIMAL SPECIALTIES				TOTAL LIVESTOCK			
	Withdrawals				Withdrawals				Withdrawals			
	Ground water	Surface water	Total	Consump-tive use	Ground water	Surface water	Total	Consump-tive use	Ground water	Surface water	Total	Consump-tive use
New England	5.4	1.8	7.2	6.0	1.0	11	12	9.5	6.4	13	19	16
Mid-Atlantic	70	37	107	92	8.6	18	26	1.3	79	55	134	94
South Atlantic-Gulf	156	100	256	256	33	117	150	122	188	217	405	378
Great Lakes	45	17	61	53	4.8	3.7	8.6	1.8	50	20	70	55
Ohio	47	77	123	111	13	4.2	18	4.6	60	81	141	115
Tennessee	6.6	11	18	18	12	176	188	26	19	187	205	44
Upper Mississippi	188	35	223	205	28	4.4	32	13	216	39	255	219
Lower Mississippi	9.2	13	22	22	730	259	990	760	740	272	1,010	782
Souris-Red-Rainy	17	3.0	20	20	0	0	0	0	17	3.0	20	20
Missouri Basin	230	157	386	386	24	16	40	5.3	253	173	426	391
Arkansas-White-Red	178	192	370	370	12	12	24	15	190	205	395	385
Texas-Gulf	77	118	195	194	5.0	8.1	13	13	82	126	208	207
Rio Grande	26	6.3	32	31	1.0	2.2	3.2	1.2	27	8.5	35	32
Upper Colorado	3.5	9.7	13	12	.7	40	41	.3	4.2	50	54	13
Lower Colorado	33	6.8	39	39	.4	.1	.5	.5	33	6.8	40	40
Great Basin	9.0	11	20	13	.2	66	66	.4	9.2	77	86	14
Pacific Northwest	43	43	86	60	1.0	1,420	1,420	1.5	44	1,470	1,510	62
California	128	165	293	293	103	58	160	32	231	222	453	325
Alaska	0	.3	.3	.3	.1	.2	.2	.2	.1	.4	.5	.5
Hawaii	2.7	1.9	4.6	4.6	4.8	.6	5.4	.1	7.5	2.6	10	4.7
Caribbean	4.5	1.8	6.3	6.3	0	0	.1	.1	4.5	1.8	6.4	6.4
Total	1,280	1,010	2,290	2,190	982	2,220	3,200	1,010	2,260	3,230	5,490	3,200

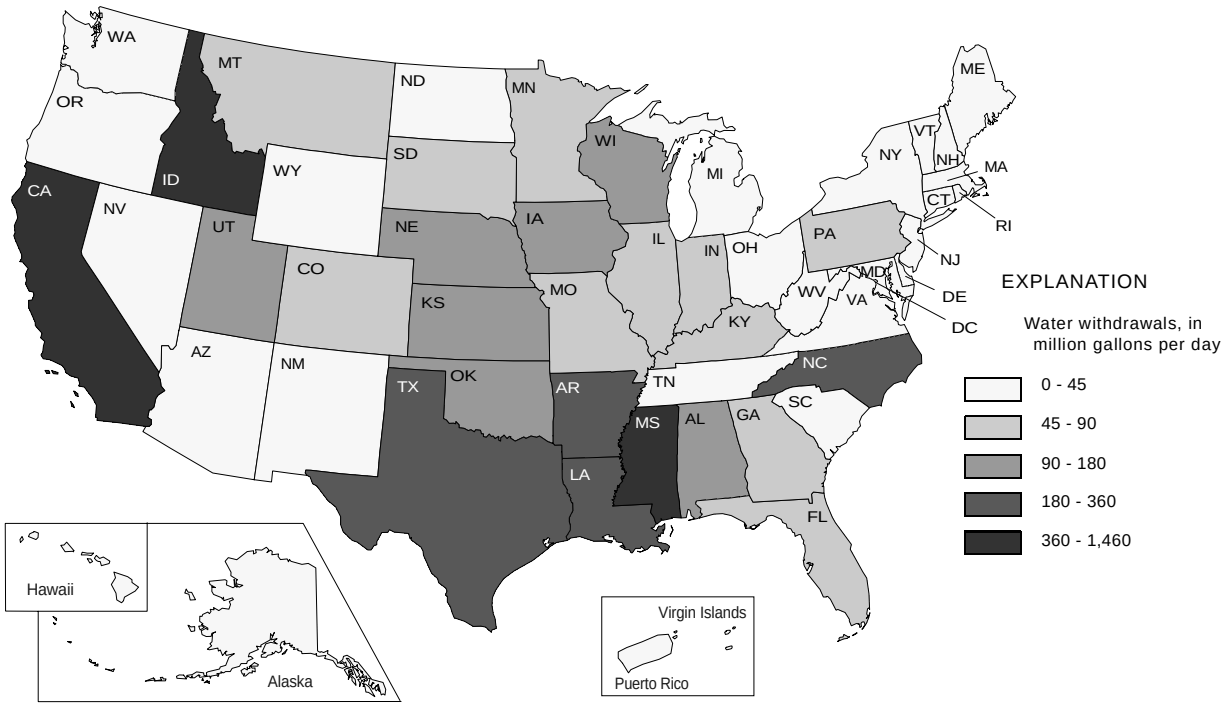


Figure 19. Total livestock freshwater withdrawals by State, 1995.

Table 18. Livestock freshwater use by State, 1995

[Figures may not add to totals because of independent rounding. All values in million gallons per day]

STATE	LIVESTOCK				ANIMAL SPECIALTIES				TOTAL LIVESTOCK			
	Withdrawals			Consumptive use	Withdrawals			Consumptive use	Withdrawals			Consumptive use
	Ground water	Surface water	Total		Ground water	Surface water	Total		Ground water	Surface water	Total	
Alabama	15	20	35	35	6.9	87	94	94	22	107	129	129
Alaska	0	.3	.3	.3	.1	.2	.2	.2	.1	.4	.5	.5
Arizona	29	2.3	31	31	.4	.1	.5	.5	29	2.4	32	32
Arkansas	15	23	39	39	228	87	315	176	244	110	354	215
California	132	167	299	299	103	58	160	32	234	225	459	331
Colorado	23	21	45	45	0	14	14	0	23	36	59	45
Connecticut	1.1	.1	1.2	1.0	.3	0	.3	.3	1.4	.1	1.4	1.3
Delaware	3.8	.4	4.1	3.7	0	0	0	0	3.8	.4	4.1	3.7
D.C.	0	0	0	0	0	0	0	0	0	0	0	0
Florida	45	4.9	50	50	5.2	1.0	6.2	6.2	50	5.9	56	56
Georgia	1.6	29	30	30	8.1	9.2	17	17	9.7	38	48	47
Hawaii	2.7	1.9	4.6	4.6	4.8	.6	5.4	.1	7.5	2.6	10	4.7
Idaho	16	11	27	5.4	.3	1,430	1,430	0	17	1,440	1,460	5.4
Illinois	45	0	45	36	9.0	2.2	11	11	54	2.2	56	47
Indiana	28	18	46	37	.6	0	.6	.5	28	18	46	37
Iowa	82	27	109	109	.5	0	.5	.5	82	27	110	110
Kansas	89	18	107	107	1.5	1.2	2.7	2.5	91	19	109	109
Kentucky	2.3	43	45	45	0	.9	.9	.9	2.3	44	46	46
Louisiana	4.2	4.8	9.0	9.0	140	176	316	316	144	181	325	325
Maine	1.4	.5	1.8	1.6	0	0	0	0	1.4	.5	1.9	1.7
Maryland	7.8	3.5	11	10	5.0	19	24	0	13	23	35	10
Massachusetts	1.0	.8	1.8	1.4	.4	7.7	8.2	6.5	1.5	8.5	10	7.9
Michigan	12	1.3	13	12	.6	.1	.6	.6	13	1.4	14	13
Minnesota	62	0	62	62	.4	0	.4	.4	62	0	62	62
Mississippi	7.0	11	18	18	370	8.8	378	280	377	19	396	298
Missouri	19	57	76	76	.8	.2	1.0	1.0	20	57	76	76
Montana	16	35	51	51	.3	.6	.9	.9	16	35	52	52
Nebraska	94	22	116	115	14	12	26	2.0	108	33	142	117
Nevada	1.0	4.2	5.1	2.1	0	.5	.5	0	1.0	4.7	5.7	2.1
New Hampshire	.6	.2	.8	.5	0	0	.1	.1	.6	.2	.8	.6
New Jersey	1.2	0	1.2	1.2	.3	0	.3	.3	1.5	0	1.5	1.5
New Mexico	26	3.6	30	28	0	0	0	0	26	3.6	30	28
New York	22	12	33	30	.4	.1	.5	.5	22	12	34	30
North Carolina	86	35	121	121	3.7	172	175	4.1	89	207	297	125
North Dakota	14	9.2	23	23	0	.6	.7	0	14	9.9	24	23
Ohio	6.9	19	26	25	.7	0	.7	0	7.6	19	27	25
Oklahoma	45	101	146	146	0	.7	.7	0	45	101	147	146
Oregon	3.3	19	23	23	.1	.5	.6	.6	3.4	20	23	23
Pennsylvania	48	7.1	55	41	.6	0	.6	.6	48	7.1	55	42
Rhode Island	.3	0	.4	.3	.2	3.1	3.2	2.6	.5	3.1	3.6	2.8
South Carolina	4.0	4.9	8.9	8.9	8.3	7.5	16	.8	12	12	25	9.7
South Dakota	18	28	46	46	0	0	0	0	18	28	46	46
Tennessee	4.0	4.4	8.4	8.4	17	11	28	28	21	15	37	37
Texas	132	166	298	298	6.7	10	17	17	139	176	315	315
Utah	6.8	9.4	16	12	.8	91	92	.5	7.6	100	108	13
Vermont	3.8	1.3	5.1	4.6	.2	0	.2	.2	4.0	1.3	5.3	4.8
Virginia	7.8	28	36	36	0	.1	.1	.1	7.8	28	36	36
Washington	23	10	34	29	.5	.2	.7	.7	24	11	34	29
West Virginia	1.6	3.5	5.1	4.4	13	.1	13	.1	15	3.6	18	4.4
Wisconsin	57	6.4	64	51	22	6.2	29	2.8	79	13	92	54
Wyoming	5.5	11	16	16	7.9	.4	8.3	.5	13	11	25	17
Puerto Rico	4.4	1.8	6.2	6.2	0	0	.1	.1	4.5	1.8	6.3	6.3
Virgin Islands	.1	0	.1	.1	0	0	0	0	.1	0	.1	.1
Total	1,280	1,010	2,290	2,190	982	2,220	3,200	1,010	2,260	3,230	5,490	3,200