

Table 37. Water Management Practices Used by Operators with Gravity Flow Systems: 2003 and 1998

[Excludes abnormal and horticultural specialty farms. For meaning of abbreviations and symbols, see introductory text]

Geographic area	All farms	Acres irrigated	Conservation technique used ¹					
			Farms	Acres irrigated	Tailwater pits		Restricting run-off by diking end of field	
					Farms	Acres irrigated	Farms	Acres irrigated
U.S. TOTAL	2003 .. 101,239 1998 .. 118,114	23,124,131 27,273,419	53,227 51,285	12,923,287 14,111,752	7,078 12,301	1,506,763 2,954,205	15,632 (NA)	2,641,308 (NA)
2003 DATA								
Alabama	27	572	8	91	-	-	-	-
Alaska	1	(D)	1	(D)	-	-	-	-
Arizona	2,021	751,568	1,377	577,856	95	41,257	701	134,825
Arkansas	3,972	3,390,951	1,948	1,558,024	340	162,168	660	299,412
California	21,549	5,261,073	12,015	3,430,433	1,993	830,856	3,747	681,915
Colorado	8,845	1,315,863	4,252	581,242	648	53,187	850	63,158
Connecticut	-	-	-	-	-	-	-	-
Delaware	-	-	-	-	-	-	-	-
Florida	1,183	531,476	501	201,019	12	31,099	371	45,278
Georgia	89	39,148	-	-	-	-	-	-
Hawaii	114	2,305	41	547	4	215	12	111
Idaho	8,206	929,177	4,158	553,159	969	46,216	1,538	95,330
Illinois	72	3,286	19	2,765	3	1,200	17	1,970
Indiana	39	2,426	3	495	3	270	-	-
Iowa	114	7,428	59	6,061	-	-	14	1,484
Kansas	1,815	278,088	1,477	209,705	362	38,710	672	83,113
Kentucky	39	1,232	15	(D)	1	(D)	1	(D)
Louisiana	1,891	737,470	940	365,267	14	4,503	285	122,907
Maine	4	70	2	(D)	-	-	-	-
Maryland	24	(D)	24	120	-	-	-	-
Massachusetts	82	1,073	71	557	8	(D)	37	(D)
Michigan	26	208	-	-	-	-	-	-
Minnesota	47	16,203	11	9,041	-	-	2	(D)
Mississippi	767	795,237	361	372,907	14	3,637	126	62,877
Missouri	985	602,552	412	283,448	2	(D)	64	25,413
Montana	6,267	1,361,731	2,744	655,634	21	1,485	362	44,095
Nebraska	9,016	1,957,597	6,155	1,426,244	1,810	177,109	1,459	341,955
Nevada	1,371	425,829	654	221,416	22	17,910	132	23,672
New Hampshire	9	77	2	(D)	-	-	-	-
New Jersey	38	699	14	675	4	190	10	555
New Mexico	5,573	370,202	3,275	172,686	11	2,480	931	27,640
New York	-	-	-	-	-	-	-	-
North Carolina	5	1,550	2	(D)	-	-	2	(D)
North Dakota	140	36,365	71	24,832	-	-	30	2,942
Ohio	75	918	16	550	-	-	16	340
Oklahoma	359	77,402	224	56,405	41	7,872	114	19,246
Oregon	3,610	685,264	1,817	313,206	61	9,655	285	60,627
Pennsylvania	12	148	3	6	3	3	-	-
Rhode Island	5	80	1	(D)	1	(D)	1	(D)
South Carolina	27	2,570	12	220	2	(D)	10	60
South Dakota	566	105,123	359	57,894	13	374	119	11,573
Tennessee	80	1,431	1	(D)	-	-	1	(D)
Texas	7,901	1,401,607	3,586	880,403	260	39,539	2,048	416,689
Utah	6,961	602,590	2,651	341,398	160	14,150	659	43,564
Vermont	22	63	12	18	-	-	-	-
Virginia	-	-	-	-	-	-	-	-
Washington	3,346	268,122	2,065	174,854	105	8,686	148	8,662
West Virginia	1	(D)	-	-	-	-	-	-
Wisconsin	23	1,726	6	468	-	-	6	468
Wyoming	3,920	1,155,461	1,862	441,485	96	12,144	202	19,237
Water Resources Areas								
WRA 01 New England	112	1,318	88	683	9	338	38	243
WRA 02 Mid-Atlantic	82	1,026	38	795	4	190	10	555
WRA 03 South Atlantic-Gulf	1,333	576,352	523	202,580	14	31,219	383	46,588
WRA 04 Great Lakes	52	286	-	-	-	-	-	-
WRA 05 Ohio	134	2,455	34	(D)	3	3	16	340
WRA 06 Tennessee	18	(D)	-	-	-	-	-	-
WRA 07 Upper Mississippi	193	21,209	56	9,461	6	1,470	23	2,438
WRA 08 Lower Mississippi	6,612	4,961,696	3,257	2,352,758	333	158,148	922	470,747
WRA 09 Souris-Red-Rainy	31	15,545	11	7,641	-	-	4	1,730
WRA 10 Missouri	21,880	4,680,387	12,852	2,775,538	2,240	222,646	2,627	460,265
WRA 11 Arkansas-White-Red	5,194	1,411,668	2,757	767,329	773	92,300	1,167	204,349
WRA 12 Texas-Gulf	5,828	1,057,809	2,144	611,272	49	6,239	1,433	321,650
WRA 13 Rio Grande	6,050	370,828	4,087	240,389	24	5,792	1,332	50,073
WRA 14 Upper Colorado	6,349	1,035,866	2,573	341,194	236	21,353	387	25,679
WRA 15 Lower Colorado	2,270	779,022	1,475	591,828	95	41,257	766	138,026
WRA 16 Great Basin	7,419	911,009	3,064	505,828	164	36,404	783	69,015
WRA 17 Pacific Northwest	15,594	1,940,866	8,058	1,051,660	1,115	57,693	1,960	155,293
WRA 18 California	21,973	5,354,436	12,168	3,463,160	2,009	831,496	3,769	694,206
WRA 19 Alaska	1	(D)	1	(D)	-	-	-	-
WRA 20 Hawaii	114	2,305	41	547	4	215	12	111

See footnote(s) at end of table.

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Table 37. Water Management Practices Used by Operators with Gravity Flow Systems: 2003 and 1998 - Con.

[Excludes abnormal and horticultural specialty farms. For meaning of abbreviations and symbols, see introductory text]

Geographic area	Conservation technique used ¹ - con.							
	Surge flow or cablegation		Shortening of furrow length		Reducing set time or number of irrigations		Alternate row irrigation	
	Farms	Acres irrigated	Farms	Acres irrigated	Farms	Acres irrigated	Farms	Acres irrigated
U.S. TOTAL	1,859	374,966	1,682	434,168	21,145	2,794,661	11,826	2,572,135
2003	4,409	872,951	2,973	725,104	21,754	3,447,670	18,930	4,083,609
1998								
2003 DATA								
Alabama	-	-	-	-	-	-	-	-
Alaska	-	-	-	-	-	-	-	-
Arizona	77	8,405	23	22,834	415	110,050	142	72,029
Arkansas	15	3,840	37	7,400	246	129,295	797	314,539
California	38	22,476	409	224,045	4,037	546,868	1,247	356,509
Colorado	195	13,074	177	15,665	2,448	220,977	1,181	88,167
Connecticut	-	-	-	-	-	-	-	-
Delaware	-	-	-	-	-	-	-	-
Florida	-	-	-	-	30	19,294	-	-
Georgia	-	-	-	-	-	-	-	-
Hawaii	-	-	-	-	8	40	17	197
Idaho	15	2,076	191	2,871	2,720	190,033	566	52,721
Illinois	-	-	16	140	1	(D)	14	70
Indiana	-	-	-	-	-	-	-	-
Iowa	-	-	1	(D)	34	2,191	28	2,860
Kansas	242	39,492	106	17,266	418	59,468	776	95,415
Kentucky	-	-	-	-	7	21	-	-
Louisiana	21	2,920	5	1,400	126	48,266	220	59,155
Maine	-	-	-	-	-	-	2	(D)
Maryland	-	-	-	-	24	120	-	-
Massachusetts	-	-	-	-	31	(D)	-	-
Michigan	-	-	-	-	-	-	-	-
Minnesota	-	-	-	-	-	-	-	-
Mississippi	4	340	20	8,183	65	44,711	181	130,361
Missouri	63	27,440	7	3,404	104	56,656	229	125,252
Montana	31	1,948	24	7,510	1,222	229,479	172	39,701
Nebraska	520	95,843	119	16,128	1,868	273,624	3,612	779,867
Nevada	1	(D)	5	1,620	173	35,137	2	(D)
New Hampshire	-	-	-	-	-	-	-	-
New Jersey	-	-	-	-	7	(D)	4	60
New Mexico	59	5,971	81	2,800	1,049	61,301	634	22,770
New York	-	-	-	-	-	-	-	-
North Carolina	-	-	-	-	-	-	-	-
North Dakota	2	(D)	4	335	9	5,030	11	2,872
Ohio	-	-	-	-	-	-	-	-
Oklahoma	15	2,236	14	4,432	55	13,291	60	18,957
Oregon	9	2,748	25	6,437	1,213	134,001	155	31,287
Pennsylvania	3	6	-	-	-	-	-	-
Rhode Island	-	-	-	-	1	(D)	-	-
South Carolina	-	-	-	-	-	-	-	-
South Dakota	3	900	3	(D)	170	18,760	69	8,370
Tennessee	-	-	-	-	-	-	-	-
Texas	405	122,548	235	63,570	739	176,508	774	243,521
Utah	22	6,687	12	5,778	1,442	146,105	183	6,285
Vermont	-	-	-	-	-	-	6	6
Virginia	-	-	-	-	-	-	-	-
Washington	26	1,599	64	8,479	1,250	72,527	455	59,742
West Virginia	-	-	-	-	-	-	-	-
Wisconsin	-	-	-	-	-	-	-	-
Wyoming	93	13,617	104	13,646	1,233	200,209	289	61,118
Water Resources Areas								
WRA 01 New England	-	-	-	-	32	99	8	(D)
WRA 02 Mid-Atlantic	-	-	-	-	31	335	4	(D)
WRA 03 South Atlantic-Gulf	-	-	-	-	30	19,294	-	-
WRA 04 Great Lakes	-	-	-	-	-	-	-	-
WRA 05 Ohio	3	6	-	-	7	21	-	-
WRA 06 Tennessee	-	-	-	-	-	-	-	-
WRA 07 Upper Mississippi	-	-	16	140	12	615	28	1,511
WRA 08 Lower Mississippi	90	30,161	69	20,387	467	243,237	1,356	586,778
WRA 09 Souris-Red-Rainy	-	-	-	-	-	-	-	-
WRA 10 Missouri	901	134,098	333	46,791	5,252	766,749	5,044	993,327
WRA 11 Arkansas-White-Red	332	79,729	260	59,827	996	197,491	890	216,204
WRA 12 Texas-Gulf	241	68,680	121	31,999	474	114,979	588	142,547
WRA 13 Rio Grande	67	16,371	62	2,040	1,040	76,441	587	21,756
WRA 14 Upper Colorado	44	4,105	92	920	1,758	150,710	586	31,986
WRA 15 Lower Colorado	77	8,405	23	22,834	429	113,410	146	73,907
WRA 16 Great Basin	16	4,512	17	7,398	1,502	147,341	99	3,537
WRA 17 Pacific Northwest	50	6,423	278	16,697	4,942	406,114	1,224	142,940
WRA 18 California	38	22,476	411	225,135	4,165	557,785	1,249	357,369
WRA 19 Alaska	-	-	-	-	-	-	-	-
WRA 20 Hawaii	-	-	-	-	8	40	17	197

See footnote(s) at end of table.

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Table 37. Water Management Practices Used by Operators with Gravity Flow Systems: 2003 and 1998 - Con.

[Excludes abnormal and horticultural specialty farms. For meaning of abbreviations and symbols, see introductory text]

Geographic area	Conservation technique used ¹ - con.							
	Polyacrylamide (PAM)		Mulch or other type of row covers		Laser leveling		Special furrowing	
	Farms	Acres irrigated	Farms	Acres irrigated	Farms	Acres irrigated	Farms	Acres irrigated
U.S. TOTAL	1,817	385,231	1,942	227,497	13,181	3,716,712	6,205	1,278,474
1998	3,044	382,987	(NA)	(NA)	(NA)	(NA)	8,011	2,003,570
2003 DATA								
Alabama	-	-	7	14	1	(D)	-	-
Alaska	1	(D)	-	-	-	-	-	-
Arizona	14	15,550	16	8,504	632	363,265	119	54,789
Arkansas	-	-	37	14,070	890	440,609	440	185,386
California	45	22,624	1,157	60,452	5,851	1,517,713	1,816	291,008
Colorado	275	33,848	54	19,208	152	18,392	292	62,953
Connecticut	-	-	-	-	-	-	-	-
Delaware	-	-	-	-	-	-	-	-
Florida	-	-	47	14,207	30	38,850	160	39,191
Georgia	-	-	-	-	-	-	-	-
Hawaii	-	-	1	(D)	1	(D)	8	(D)
Idaho	704	132,840	113	17,551	454	50,714	168	41,720
Illinois	-	-	-	-	3	1,510	2	(D)
Indiana	-	-	-	-	-	-	-	-
Iowa	-	-	-	-	14	857	4	380
Kansas	-	-	140	11,433	147	17,268	221	27,846
Kentucky	-	-	14	28	1	(D)	7	21
Louisiana	-	-	6	3,946	520	182,898	79	11,379
Maine	-	-	-	-	-	-	2	(D)
Maryland	-	-	24	96	-	-	-	-
Massachusetts	-	-	31	31	3	255	-	-
Michigan	-	-	-	-	-	-	-	-
Minnesota	-	-	-	-	11	9,041	-	-
Mississippi	-	-	9	2,250	190	179,599	59	31,481
Missouri	6	2,172	22	7,992	235	158,479	56	18,653
Montana	164	35,687	10	5,100	940	196,603	289	73,824
Nebraska	1	(D)	36	21,780	194	53,665	279	31,520
Nevada	4	1,260	2	(D)	369	82,100	32	10,036
New Hampshire	-	-	-	-	-	-	2	(D)
New Jersey	-	-	-	-	4	140	-	-
New Mexico	10	2,500	8	1,760	1,421	90,958	183	15,238
New York	-	-	-	-	-	-	-	-
North Carolina	-	-	-	-	-	-	-	-
North Dakota	-	-	-	-	22	15,716	17	5,349
Ohio	-	-	14	280	-	-	-	-
Oklahoma	2	(D)	1	(D)	9	3,090	7	2,102
Oregon	135	26,994	63	8,414	92	12,193	219	20,382
Pennsylvania	-	-	-	-	-	-	-	-
Rhode Island	-	-	-	-	-	-	-	-
South Carolina	-	-	-	-	-	-	-	-
South Dakota	-	-	29	909	17	4,350	64	11,085
Tennessee	-	-	-	-	1	(D)	-	-
Texas	29	508	37	18,015	372	161,483	964	235,957
Utah	16	2,682	35	5,917	527	103,667	135	21,708
Vermont	-	-	12	18	-	-	6	(D)
Virginia	-	-	-	-	-	-	-	-
Washington	298	69,800	15	3,946	3	2,700	291	24,503
West Virginia	-	-	-	-	-	-	-	-
Wisconsin	-	-	-	-	-	-	-	-
Wyoming	113	36,813	2	(D)	75	9,855	284	61,513
Water Resources Areas								
WRA 01 New England	-	-	43	49	3	255	10	42
WRA 02 Mid-Atlantic	-	-	24	(D)	4	(D)	-	-
WRA 03 South Atlantic-Gulf	-	-	54	14,221	31	38,920	160	39,191
WRA 04 Great Lakes	-	-	-	-	-	-	-	-
WRA 05 Ohio	-	-	28	308	1	(D)	7	21
WRA 06 Tennessee	-	-	-	-	-	-	-	-
WRA 07 Upper Mississippi	-	-	-	-	22	6,341	2	(D)
WRA 08 Lower Mississippi	6	2,172	64	25,376	1,701	869,900	465	222,083
WRA 09 Souris-Rainy	-	-	-	-	9	6,041	-	-
WRA 10 Missouri	398	91,626	98	34,799	1,226	290,065	942	181,377
WRA 11 Arkansas-White-Red	134	15,650	189	27,480	274	117,958	695	195,302
WRA 12 Texas-Gulf	4	(D)	16	10,640	330	135,989	355	110,944
WRA 13 Rio Grande	10	2,500	6	1,700	1,465	115,352	564	17,950
WRA 14 Upper Colorado	48	1,522	20	7,230	20	810	159	39,875
WRA 15 Lower Colorado	14	15,550	16	8,504	636	365,725	141	57,163
WRA 16 Great Basin	20	3,942	35	6,715	891	184,307	140	26,755
WRA 17 Pacific Northwest	1,137	229,634	191	29,911	714	66,511	737	94,255
WRA 18 California	45	22,624	1,157	60,452	5,853	1,518,373	1,820	293,108
WRA 19 Alaska	1	(D)	-	-	-	-	-	-
WRA 20 Hawaii	-	-	1	(D)	1	(D)	8	(D)

¹ More than one technique can be used on an irrigated acre during the survey year.