State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES
Northern District

SUMMARY OF OPERATIONS

FOR

WATERMASTER SERVICE IN NORTHERN CALIFORNIA

1995 Season

September 1996

PETE WILSON
Governor
State of California

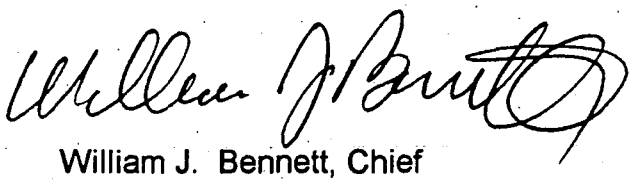
DOUGLAS P. WHEELER
Secretary for Resources
The Resources Agency

DAVID N. KENNEDY
Director
Department of Water Resources

FOREWORD

This report describes the watermaster service provided by the Department of Water Resources to areas in Northern California during the 1995 irrigation season. Authority for its preparation and publication is stated in the California Water Code, Division 2, Part 4, Chapter 7.

This report presents information about 1995 watermaster service in two sections. The first section gives general introductory information about water rights, water supply, service areas, and watermaster duties. The second section describes the 15 active service areas. Thirteen of these service areas are served by Northern District watermasters. The other two service areas, Indian Creek and Middle Fork Feather River, are in the vicinity of DWR's Beckwourth Field Office and are served by watermasters of the Division of Operations and Maintenance, Oroville Field Division. Each of these service area descriptions gives detailed information on the area, the basis of watermaster service, sources of water supply, methods of distribution, 1995 water distribution, and personnel used.



William J. Bennett, Chief
Northern District

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INTRODUCTION

Purpose and Benefits

The main purpose of watermaster service is to distribute water according to established water rights. This is done by apportioning to the rightful users the available supplies in streams that have had water right determinations.

Distribution of water in watermaster service areas is the lawful duty of the Department of Water Resources as directed in Part 4 of Division 2 of the California Water Code. Under watermaster service, water right holders are assured that their rights are protected without their having to take legal action against other users.

A major benefit of watermaster service to water users and the State is that court litigation and violent conflict, which in the past happened often, are now rare. Also, available supplies of water are better used, as waste is reduced through careful management.

Because both the water right holders and the State receive benefits from watermaster service, the costs of performing the service are shared. The State General Fund pays one-half of the cost of operating each service area and the water right holders in the service area pay the other half. Individual users' shares are determined in accordance with Article 3 of Chapter 7 of the above-mentioned Part 4 of Division 2 of the Water Code. Although this work is done as efficiently as possible, considerable public funds are needed to maintain skilled representatives in the field during the dry months of the growing season and maintain administrative support. Most clients find the benefits of fair, reliable, and comparatively worry-free distribution of water to be far superior to doing without State watermaster service.

Determination of Water Rights

Many of the streams under State watermaster service have had their water rights defined by the courts under one of three adjudication procedures. These judgments establish each holder's rights in terms of rate of diversion, season of use, point of diversion, and place of use. They also establish priorities whereby each holder's rights are ranked according to the rights of all other decreed holders. Under this system, all rights of any one priority must be fully satisfied before water can be diverted to holders of lower priority rights. The determinations of the courts are commonly called decrees.

Water rights decisions necessary for establishing watermaster service areas are accomplished by the following methods: (1) a statutory adjudication which defines all water rights on the stream; (2) a court adjudication which results when two or more

water rights on the stream; (2) a court adjudication which results when two or more parties have their water rights defined; and (3) a court reference whereby the State Water Resources Control Board makes an investigation and reports to the court regarding water rights of the parties involved.

Statutory Adjudication

The California Water Code (Sections 2500-2900) gives a procedure whereby water users of any stream may petition SWRCB, Division of Water Rights, to make a legal determination of all water rights on that stream. If SWRCB finds that such a determination is in the best public interest, it proceeds with a legally binding decision. This results in a court decree that defines all water rights on the stream.

Figure 1 contains a location map of the service areas, the number of decreed holders, and the amounts of water rights for each area. Table 1 lists the water right, Superior Court decrees, and their type.

Court Adjudication

A less extensive method of defining water rights is the "court adjudication" procedure. This type of adjudication results when two or more parties involved in a water rights dispute seek a solution to their problem under civil law. A decision handed down in such a civil action determines only the water rights of the parties involved in the action and therefore does not necessarily define all water rights on the stream. As a result, serious conflicts sometimes arise between decreed water right holders and persons claiming longer-standing riparian or appropriative rights that were not specified in the decree.

Court Reference

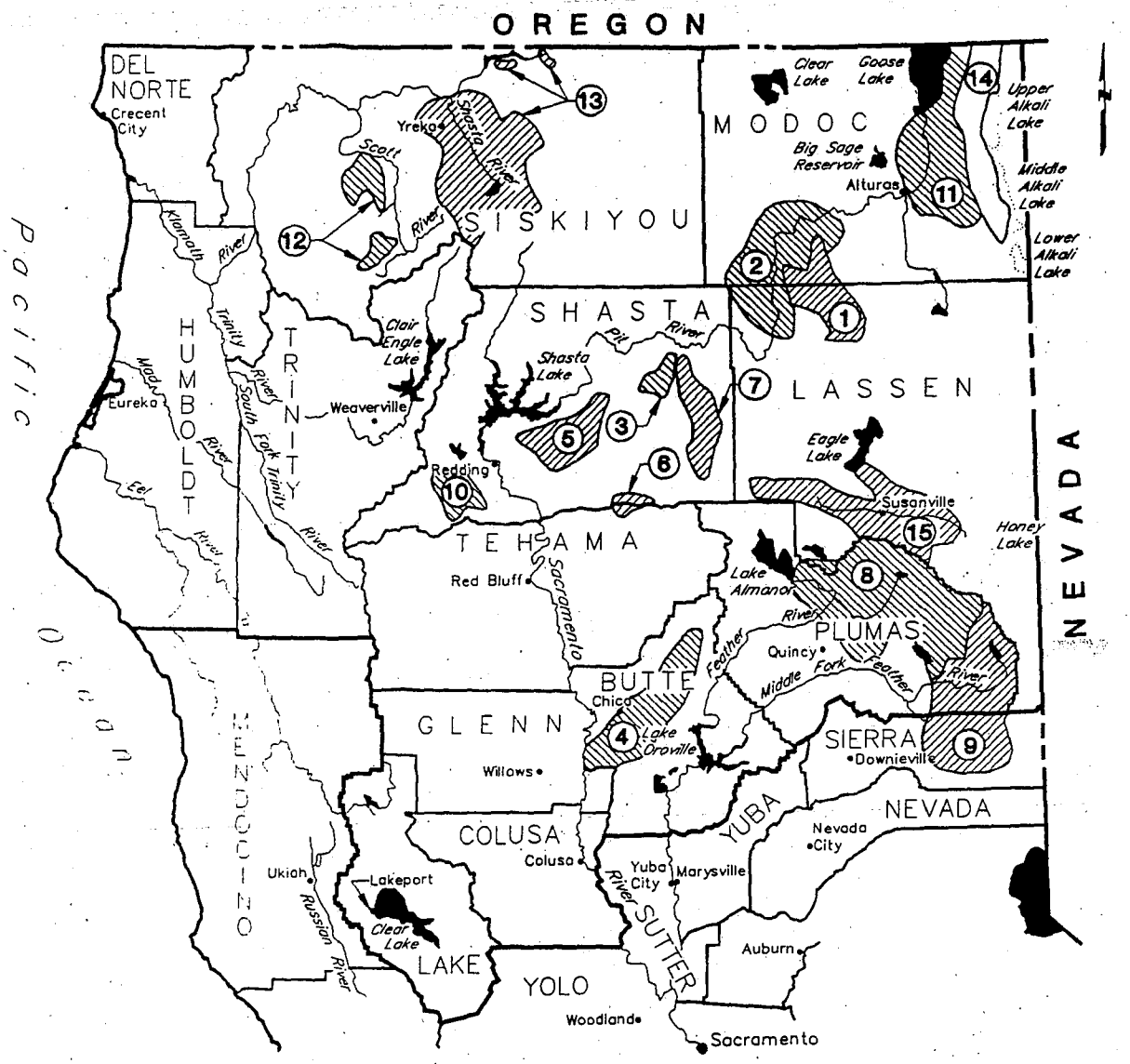
The "court reference" type of adjudication arises when a civil action, as discussed, is referred to SWRCB for a determination under authority contained in Sections 2000-2076 of the Water Code. SWRCB's report becomes the basis for the court's decision. As in court adjudications, a court referee determines only the water rights of the parties involved in the action.

Non-Judicial Decisions

A permit or "license to appropriate" can be issued by SWRCB, or agreement can be reached by mutual consent of the water users involved.

Figure 1

Watermaster Service Areas



1995 Decreed Water Rights

Service Area	Number of Decreed Water Users	Total Decreed Water Rights ft3/s
1. Ash Creek	40	123.560
2. Big Valley	58	202.730
3. Burney Creek	11	33.090
4. Butte Creek	50	432.396
5. Cow Creek	104	60.426
6. Digger Creek	106	23.226
7. Hat Creek	88	135.744 1/
8. Indian Creek	53	96.715
9. M.F. Feather River	128	378.738
10. N.F. Cottonwood Creek	12	29.050
11. N.F. Pit River	114	244.264 2/
12. Scott River	103	127.600
13. Shasta River	217	625.637 3/
14. Surprise Valley	181	373.020
15. Susan River	229	353.909

1313 NS
181 OFS
1494

1/ Average of Upper and Lower Rotation.

2/ Includes Pine Creek near Alturas.

3/ Includes Willow Creek near Ager which is based on a percentage of flow.

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TABLE 1

WATERMASTER SERVICE AREAS, STREAM SYSTEMS AND SUPERIOR COURT DECREES REGULATING WATER DISTRIBUTION

Watermaster Service Area	Name of Stream System[#]	County	Decree Number	Decree Date	Decree Type*	Date Watermaster Service Area Created	Remarks
Ash Creek	Ash Creek and Lassen	Modoc **	3670	10-27-47	CR	4-03-59	Included as part of Big Valley service area 1949 through 1958.
Big Valley	Pit River	Modoc ** and Lassen	6395	2-17-59	S	11-13-34	Service provided in accordance with recorded agreement in 1934. Service area operated under recorded agreement 1935 through 1958, and under decree since 1959. Service discontinued on December 31, 1981, and reactivated May 1, 1990.
Burney Creek	Burney Creek	Shasta	5111	1-30-26	CR	9-11-29	
Butte Creek	Butte Creek	Butte	18917	11-06-42	S	1-07-43	
Cow Creek[##]	North Cow Creek	Shasta	5804	4-29-32	CR	10-17-32	
	Oak Run Creek	Shasta	5701	7-22-32	CR	10-17-32	
	Clover Creek	Shasta	6904	10-04-37	CR	1-21-38	
Digger Creek	Digger Creek	Shasta and Tehama **	2213	8-12-99	C	6-11-64	
			3214	5-27-13	C		
			3327	10-16-17	C		
			4570	2-24-27	C		
Hat Creek	Hat Creek	Shasta	5724	5-14-24	CR	9-11-29	Service provided in accordance with decree since 1924.
			7858	5-07-35	CR		
Indian Creek	Indian Creek	Plumas	4185	12-19-50	S	2-19-51	
Middle Fork Feather River	Middle Fork Feather River	Plumas ** and Sierra	3095	1-19-40	S	3-29-40	
North Fork Cottonwood Cr.	North Fork Cottonwood Cr.	Shasta	5479	6-09-20	CR	9-11-29	Service provided intermittently in the accordance with the decree since 1924.
North Fork Pit River and all	North Fork Pit tributaries except Franklin Creek	Modoc	4074	12-14-39	S	12-18-39	All stream systems consolidated into Fork Pit River service area 12-13-40.
	New Pine Creek	Modoc	2621	6-14-32	CR	6-22-32	
	Davis Creek	Modoc	2782	6-30-32	CR	7-13-32	
	Franklin Creek	Modoc	3118	9-06-33	CR	9-14-33	
	Cottonwood Creek	Modoc	2344	5-03-40	CR	12-13-40	
	Pine Creek near Alturas	Modoc	Agreement	11-22-33		1-12-35	Pine Creek was transferred from Surprise Valley to North Fork Pit River watermaster service area in 1964.
Scott River	French Creek	Siskiyou	14478	7-01-58	CR	11-19-68	French, Shackleford, and Wildcat Creek were combined in 1980 to form the Scott River service area. Sniktaw Creek was added on April 1, 1981, and Oro Fino Creek in July 1, 1984.
	Shackleford Creek	Siskiyou	13775	4-10-50	S	11-06-50	
	Wildcat Creek	Siskiyou	30662	1-16-80	S	5-01-80	
	Sniktaw Creek	Siskiyou	30662	1-16-80	S	4-01-81	
	Oro Fino Creek	Siskiyou	30662	1-16-80	S	7-01-84	
Shasta River	Shasta River	Siskiyou	7035	12-29-32	S	3-01-33	
	Willow Creek	Siskiyou	24482	4-28-72	C	6-22-72	
	Cold Creek	Siskiyou	29348	7-05-78	S	4-01-81	
Surprise Valley	Cedar Creek	Modoc	1206	5-22-01	C	6-19-26	All adjudicated stream systems in Surprise Valley were consolidated into the Surprise Valley service area on 1-10-39. Bidwell Creek was added on March 16, 1960. Service started on Cedar Creek in 1926 in accordance with the decree. Service was provided on Soldier and Owl Creeks in 1929 in accordance with the decrees by order of the court. Cottonwood Creek was added on 7-1-77.
			2343	2-15-23	C		
	Soldier Creek	Modoc	2405	11-28-28	CR	9-11-29	
	Owl Creek	Modoc	2410	4-29-29	CR	9-11-29	
	Emerson Creek	Modoc	2840	3-25-30	CR	4-01-29	
	Mill Creek	Modoc	3024	12-19-31	CR	12-30-31	
	Deep Creek	Modoc	3101	1-25-34	CR	12-29-34	
	Pine Creek near Cedarville	Modoc	3391	12-07-36	CR	1-13-37	
	Rader Creek	Modoc	3626	6-04-37	CR	6-12-37	
	Eagle Creek	Modoc	2304	4-05-26	C	1-10-39	
			3284	11-05-37	CR		
	Cottonwood Creek	Modoc	6903	12-01-64	C	7-01-77	
	Bidwell Creek	Modoc	6420	1-13-60	S	3-16-60	
Susan River	Susan River	Lassen	4573	4-18-40	CR	11-10-41	
	Baxter Creek	Lassen	8174	12-15-55	S	2-16-56	
	Parker Creek	Lassen	8175	12-15-55	S	2-16-56	

* Explanation of type of decree:

C - Court adjudication (court makes determination from evidence submitted--no report of referee)
CR - Court reference (referred to State Water Resources Control Board for investigation and report)
S - Statutory adjudication (State Water Resources Control Board is petitioned by water users to make a determination of all water rights on a stream system)

** Decree entered by the Superior Court of this county.

[#] Major tributaries only; a complete listing is given in "Watermaster Service Areas and Stream Systems", page 6.
[##] Mainstem Cow Creek not in service area.

Watermaster Service Areas

Watermaster service is provided in areas where the rights have been defined by the superior court of the county, or by agreement, and where an unbiased qualified person is needed to properly apportion the available water according to the established rights. The Director of DWR creates watermaster service areas where these conditions exist, following either a request by the users or an order by the Superior Court.

The first watermaster service areas were created in September 1929. Before then, some watermaster service was provided in accordance with the Water Commission Act of 1913. About 50 streams in Northern California are now under State watermaster service. The newest service areas were created in 1980.

The counties and principal water sources of the various service areas in Northern California are listed in Table 2.

Of these 15 areas, 13 are in the Department's Northern District and two are in the Central District, served by watermasters assigned to the Division of Operations and Maintenance, Oroville Field Division.

Description of Region

The service areas are mainly in the mountainous northeastern part of the State where the growing season varies between about 100 and 140 days. Meadow hay and alfalfa are the principal crops under irrigation, although much land is used exclusively for pasturing livestock. Much irrigation is still done by gravity systems, with water users diverting directly from the streams at one or more diversion points. However, pumped diversions and sprinkler irrigation systems are becoming popular in some areas.

Watermaster Responsibilities

To assure the proper distribution of water within the service area, each watermaster must ascertain the amount of water available and distribute it both by amount and priority according to established water rights.

Authority

To accomplish this, the watermaster gets authority both from the California Water Code and from provisions of pertinent court decrees or voluntary agreements to physically regulate the streams in the service area. The watermaster is further authorized to supervise the design, construction, operation, and maintenance of diversion dams, headgates, and measuring devices.

Each watermaster supervises water distribution at around 100 to 200 diversions in one or more service areas. The need for frequently checking and regulating these diversion points increases substantially in years of short water supply.

TABLE 2

WATERMASTER SERVICE AREAS AND STREAM SYSTEMS

Service Area	County	PRINCIPAL WATER SOURCES: MAJOR STREAM and Tributaries[a]	PRINCIPAL WATER SOURCES: Reservoirs and Nontributary Streams
Ash Creek	Lassen, Modoc	ASH CREEK Butte, Rush, and Willow Creeks	
Big Valley	Modoc, Lassen	PIT RIVER Ash Creek	Roberts Reservoir
Burney Creek	Shasta	BURNEY CREEK	
Butte Creek	Butte	BUTTE CREEK	West Branch Feather River
Cow Creek	Shasta	COW CREEK[b] North Cow, Clover, Oak Run, and Cedar Creeks	
Digger Creek	Shasta, Tehama	DIGGER CREEK	
Hat Creek	Shasta	HAT CREEK	
Indian Creek	Plumas	INDIAN CREEK Lights Creek, Wolf Creek	
Middle Fork Feather River	Plumas, Sierra	MIDDLE FORK FEATHER RIVER Little Last Chance, Smithneck, Webber and Fletcher Creeks; Spring Channels; Westside Canal	Little Truckee River
North Fork Cottonwood Creek	Shasta	NORTH FORK COTTONWOOD CREEK	Rainbow Lake
North Fork Pit River	Modoc	NORTH FORK PIT RIVER Parker Creek, Shields Creek	Cottonwood, Davis, New Pine Creek, and Pine Creek near Alturas
Scott River	Siskiyou	FRENCH CREEK Shackleford, Mill, Miners, Wildcat, Oro Fino, Sniktaw Creeks	Cliff and Campbell Lakes
Shasta River	Siskiyou	SHASTA RIVER Little Shasta River Sacramento River	Dwinnell Reservoir (Lake Shastina), Cold Creek, WillowCreek, and North Fork
Surprise Valley	Modoc	NONE (All creeks listed at right are unconnected)	Bidwell, Mill, Soldier, Pine near Cedarville, Cedar, Deep, Cottonwood, Owl, Rader, Eagle, and Emerson
Susan River	Lassen	SUSAN RIVER Willow Creek	Lake Leavitt, Hog Flat, McCoy Flat Reservoirs; Baxter and Parker Creeks

[a] Major tributaries only.
[b] Mainstem Cow Creek not in service area.

Control Devices

Permanent measurement and control devices, which the State requires (Water Code Sections 4100-4104) at each property owner's main point of diversion, are constructed by the water users under supervision of the watermaster. Installation of accurate, easily set, and lockable structures is a continuing objective of watermaster service because once they are built, conflicts among water users usually stop. Also, the watermaster's ability to check and set each diversion regularly is greatly helped by engineered and properly built structures.

Interpretation of Decrees

The watermaster is often called upon to make on-the-spot interpretations of various court decrees, agreements, etc. Because most of these documents were written more than 30 years ago, many situations have developed that were not initially considered. Therefore, watermasters must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. To accomplish this, they must possess a good understanding of California water rights law.

Water Supply

Water supply in the watermaster service areas comes mainly from unregulated runoff of small streams. Peak runoff--snowmelt in most cases--occurs in the spring, with relatively small streamflow occurring in the summer and early fall. Additional supplies from storage reservoirs and groundwater pumping are used in some areas to supplement natural streamflow, but State watermasters do not supervise the use of groundwater in this part of the State.

In some service areas, the water supply must be predicted in advance to determine the date watermastering will begin and, to some extent, the work force needed. DWR's Bulletin 120 series, *"Water Conditions in California,"* is used to assist in these predictions.

Precipitation

The streamflow available for distribution is affected by total precipitation, amount of snowpack, air temperature, and the amount of rainfall received during the irrigation season. The latter is particularly important in the upper Pit River-Surprise Valley areas, where about 25 to 30 percent of the annual precipitation occurs normally in April, May, and June. Spring storms, which are normally accompanied by relatively cool temperatures, materially affect both the water supply and the demand. Temperatures in the spring affect the demand for water and the manner in which snowmelt runoff occurs. A hot, dry spring depletes the water supply very early, even in years of normal

snowpack. A cold, wet spring can extend the supply well into the irrigation season, but cold temperatures retard the growth of crops and are not necessarily desirable.

Table 3 reports the quantity of precipitation at selected stations in the service areas during the 1994-95 water year. The seasonal precipitation gives an indication of the related water supply available for distribution, and provides a basis for comparing the current year's supply with a long-term average.

Table 4 shows the snowpack on April 1, 1995 on all snow courses and the snowpack on May 1, 1995 on selected courses. This information comes from DWR's basic data files.

Streamflow

The general water supply available for diversion within each watermaster area is determined from stream gaging stations placed at key locations in the main stream channels. Several major stations are installed and maintained by DWR and the U.S. Geological Survey as part of federal and State programs for collection of year-round streamflow records. In addition, several stream gaging stations are installed and operated by the watermasters during the irrigation season to provide supplemental information. Also, water stage recorders are often installed by watermasters in selected diversion ditches to further assist them in proper distribution of the various water right allotments.

Table 5 presents runoff data at selected stream gaging stations in or near the service areas.

TABLE 3

PRECIPITATION AT SELECTED STATIONS - 1994-95 SEASON
(Units in Inches)

Current Season
Long-term Average

Station	County	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total	Percent of Normal
Lookout 3WSW	Lassen	0.03	3.49	3.07	7.23	1.72	9.45	5.80	2.11	2.43	0.12	0.00	0.05	35.50	165
		1.55	2.72	2.74	2.90	2.74	2.87	1.65	1.60	1.13	0.27	0.53	0.76	21.46	
Susanville 1WNW	Lassen	1.30	1.00	1.10	1.32	2.10	1.20	0.10	1.21	0.14	0.00	0.00	0.46	9.93	61
		1.22	1.80	2.59	2.99	2.38	1.90	0.74	0.77	0.69	0.34	0.32	0.45	16.19	
Alturas[1/] R.S.	Modoc	0.02	2.85	2.31	2.19	0.53	3.18	3.24	1.75	1.77	0.06	0.00	0.08	17.98	150
		0.85	1.55	1.37	1.39	1.19	1.27	1.06	1.15	0.90	0.23	0.48	0.57	12.01	
Cedarville	Modoc	0.32	2.01	1.60	2.94	0.46	2.84	3.52	1.89	1.84	0.04	0.04	T	17.50	136
		1.03	1.81	1.58	1.65	1.35	1.40	1.07	1.00	0.67	0.29	0.44	0.57	12.86	
Jess Valley	Modoc	0.10	5.32	2.08	3.84 M	1.87	3.05	4.01	3.33	3.14	0.47	0.00	0.00	27.21	144
		1.36	2.15	2.00	NO AVG	1.52	1.93	1.89	4.63	1.40	0.42	0.73	0.91	18.94	
Greenville R.S.	Plumas	0.80	8.21	6.37	24.83	2.14	19.66	8.24	3.82	3.21	0.77	0.00	0.00	78.05	197
		2.55	5.13	6.18	7.32	6.14	5.63	2.73	1.60	0.90	0.26	0.38	0.72	39.54	
Vinton 5SW	Plumas	0.21	3.53	2.04	7.63	0.55	6.44	1.60	2.61	1.35	0.79	0.00	0.00	26.75	197
		0.99	1.70	1.97	2.13	1.69	1.58	0.78	0.97	0.63	0.35	0.35	0.44	13.58	
Sierraville R.S.	Sierra	0.64	5.08	2.99	11.86	0.89	15.16	2.36	2.88	1.05	0.76	0.00	0.00	43.67	162
		2.00	4.35	4.12	4.66	3.95	3.31	1.43	1.04	0.63	0.28	0.44	0.73	26.94	
Hat Creek P.H. #1	Shasta	0.06	3.70	3.14	7.17	1.79	7.68	M	1.72	2.52	0.06	0.00	0.00	27.84	153
		1.50	2.46	2.86	2.97	2.46	2.68	NO AVG	1.25	0.80	0.14	0.43	0.66	18.23	
Redding, WSO	Shasta	0.04	5.01	5.45	22.93	1.65	14.78	4.26	0.97	1.93	T	0.00	0.00	57.02	171
		2.24	5.21	5.51	6.06	4.45	4.38	2.08	1.27	0.56	0.17	0.46	0.91	33.30	
Fort Jones R.S.	Sisk.	0.85	8.62	5.23	9.03	1.29	6.97	3.31	2.06	1.87	2.15	0.00	T	41.38	123
		-0.66	10.40	2.64	9.86	2.58	8.26	-1.51	-0.14	0.53	0.33	0.61	0.81	33.51	
Happy Camp R.S.	Sisk.	9.18	0.43	12.18	5.27	20.76	3.67	15.45	6.91	2.39	1.39	0.00	0.25	77.88	144
		9.43	3.57	8.79	10.03	9.43	-0.05	6.81	2.63	1.38	0.22	0.65	1.20	54.09	
Yreka	Sisk.	5.63	0.69	8.10	5.46	5.65	1.13	4.94	2.84	2.14	2.08	0.00	0.16	36.82	128
		2.98	2.73	6.56	7.11	2.98	2.16	1.88	1.00	1.15	0.46	0.60	0.73	30.34	

[1/] Alturas R.S. data ends October 31, 1994; new Alturas observer and gauge location beginning November 1, 1994.
E - Estimated
NOTE: Current season above line; long-term averages below line.

TABLE 4

SNOWPACK AS OF APRIL 1 AND MAY 1, 1995, AT REPRESENTATIVE SNOW COURSES

Watermaster Service Areas	Snow Course* Group Related to Each Service Area	Calif. I. D. No.	Elevation (in feet)	WATER CONTENT OF SNOW				
				April 1 Average (in inches)	April 1, 1995		May 1, 1995**	
					In inches	In Percent of April 1 Average	In inches	In Percent of April 1 Average
Ash Creek	Blue Lake Ranch (BLU)	28	6,800	10.6	16.0	151		
Burney Creek	Thousand Lakes (THL)	33	6,500	34.0	47.8	141	54.4	160
Butte Creek	Silver Lake Meadows (SVR)	45	6,450	30.2	52.0	172	50.8	168
Cow Creek	New Manzanita Lake (NMN)	343	5,900	7.3	15.8	216	11.8	162
Digger Creek	Burney Springs (BNS)	41	4,700	2.0	2.3	115		
Hat Creek	New Manzanita Lake (NMN)	343	5,900	7.3	15.8	216	11.8	162
Indian Creek	Independence Lake (IDN)	86	8,450	43.2			86.0	199
Middle Fork Feather River	Rowland Creek (RWL)	280	6,700	17.3	29.5	171	28.6	165
	Yuba Pass (YBP)	74	6,700	29.4	56.4	192	53.0	180
	Mount Dyer No. 1 (MDY)	48	7,100	25.3	45.3	179	47.6	188
North Fork Pit River	Cedar Pass (CDP)	30	7,100	17.3	21.0	121		
Scott River	Middle Boulder No. 3 (MB3)	5	6,200	27.2	48.2	177	40.4	149
Shasta River	Little Shasta (LSH)	2	6,200	19.8	19.2	97		
	Parks Creek (PRK)	1	6,700	36.5	60.0	164		
South Fork Pit River	Adin Mountain (ADM)	35	6,750	12.8	20.5	160	16.9	132

* Snow courses are listed in order of elevation with each geographical group of watermaster areas.
** Data collected only at courses listed.

TABLE 5

1994-95 RUNOFF AT SELECTED STATIONS
(Acre-Feet)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Annual Total	Long Term Average	Percent of Average
Bidwell Creek near Fort Bidwell	175	363	531	860	1,712	1,997	2,715	5,962	5,986	2,208	614	391	17,528	18,000	97
Burney Creek at Burney	468	411	1,556	14,350	NR	NR	18,220	14,880	6,329	1,902	1,016	831	NR	57,000	NR
Butte Creek near Chico	1,666	5,341	13,880	152,000	42,670	136,100	79,910	78,800	25,580	8,529	6,526	3,233	554,235	288,700	192
Hat Creek near Hat Creek	NR	NR	NR	NR	NR	NR	NR	NR	17,610	15,930	10,770	8,680	NR	102,900	NR
Pit River near Canby	2,990	4,360	8,600	48,540	24,580	77,710	43,560	133,800	44,230	11,910	3,990	3,920	408,190	174,800	234
Scott River near Fort Jones	589	639	3,240	105,700	112,700	140,500	92,150	110,900	80,470	31,100	5,660	2,910	686,558	451,300	152
Shasta River near Yreka	6,370	8,570	8,370	15,800	13,190	29,890	19,680	16,050	9,650	9,010	3,370	3,740	143,690	131,900	109
Susan River at Susanville	NO RECORD FOR YEAR.														

SERVICE AREA DESCRIPTIONS AND 1995 WATER SUPPLY STATISTICS

SERVICE AREA DESCRIPTIONS AND 1995 WATER SUPPLY STATISTICS

This portion of the report consists of 15 sections, one for each service area active in 1995, presented in alphabetical order. Each of these sections presents a description of the particular service area, including location, geography, and general characteristics. Following this is a section entitled "Basis of Service," which includes such data as the case number, date, type of decrees, a brief summary of the decree or agreement that defines the water rights, the date the service area was created, and other related information.

These service area descriptions also give data on the water supply, methods of distribution, significant events of the watermaster season, and daily streamflow records. The listings of water right holders are updated as of March 1 each year from County Assessors' records.

As in previous years, watermaster service was activated on different dates in the various areas depending upon the streamflow conditions, the ranchers' needs for the water, or, as on some streams, the terms of the decrees. Service was continued in all areas through the growing season as long as needed. The date service was started and ended in each service area and the name of the watermaster in charge are listed on Table 6.

TABLE 6

1995 SERVICE DATES AND WATERMASTERS

Service Area	Service Dates		Watermaster
	Began	End	
Ash Creek	April 1	September 30	James P. Langley
Big Valley	May 1	September 30	Kenneth E. Morgan
Burney Creek	May 1	September 30	Kenneth E. Morgan
Butte Creek	April 1	October 15	John A. Nolan
Cow Creek	May 1	October 30	John A. Nolan
Digger Creek	June 1	September 30	John A. Nolan
Hat Creek	May 1	October 28	Kenneth E. Morgan
Indian Creek	March 26	October 1	Charles D. Hand
M. F. Feather River	March 15 April 18	September 30 September 30	Ronald A. Vanscoy Ralph D. Howell
N. F. Cottonwood Creek	June 1	September 30	John A. Nolan
N. F. Pit River	April 1	September 30	James P. Langley
Scott River	April 1	September 30	Keithal B. Dick
Shasta River	April 1 April 1	September 30 September 30	Keithal B. Dick Lester L. Lighthall
Surprise Valley	March 19	September 30	George M. Fitzmorris
Susan River	March 1	November 1	Virgil D. Buechler

ASH CREEK WATERMASTER SERVICE AREA

ASH CREEK WATERMASTER SERVICE AREA

The Ash Creek service area is in Modoc and Lassen counties near the town of Adin, about 100 miles northeast of Redding via Highway 299E. The major source of water for the service area are Ash Creek and three tributaries; Willow, Rush and Butte creeks. Ash Creek rises in Ash Valley in the southeastern part of the service area and flows northwesterly about 18 miles to its confluence with Rush Creek, then southwesterly to the town of Adin, and then westerly to Ash Creek Swamp and Pit River. Butte and Willow creeks head in the mountains to the east and flow northwesterly into Big Valley. Butte Creek meets Ash Creek near the head of the Valley at Adin. Willow Creek flows into Ash Creek about 3 miles farther west, near the head of Ash Creek Swamp. The valley floor elevation in this vicinity is about 4,200 feet.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 3670, Modoc County Superior Court, dated October 27, 1947. From 1949 through 1958, Ash Creek was included as a part of Big Valley watermaster service area. The Ash Creek service area has been served separately since April 3, 1959.

About 85 percent of the water rights in the service area are in Big Valley, west of the town of Adin. The rest are along the upstream tributaries and in Ash Valley, east of Adin. The part of Big Valley served is about 10 miles long by 6 miles wide, extending from Adin to the confluence of Ash Creek and the Pit River. The Ash Creek Decree establishes the number of priority classes on the individual streams within the service area as follows: Ash Creek - five, Willow Creek - four, Rush Creek - one, and Butte Creek - two. Each of these streams is independently regulated.

Water Supply

The water supply for Ash and Rush creeks comes mainly from snowmelt, because most of the watershed is between 5,000 and 6,000 feet in elevation. Willow Creek and Butte Creek get much of their water from springs. These creeks normally have enough water to satisfy demands until about June 1, after which the supply decreases rapidly. By the end of June, Ash Creek normally has receded to about 20 cubic feet per second (cfs), and Butte Creek to less than 1 cfs. The flow of these creeks then remains nearly constant for the rest of the season. Records of the daily mean discharge of stream gaging station, Ash Creek at Adin, is presented in Table 7. The flow in Willow Creek above Diversion No. 92 and 93 is presented in Table 8.

Method of Distribution

Irrigation from Ash Creek and its tributaries uses numerous small dams to divert flow into systems of ditches. The ditches deliver the water to the various fields for spreading. Wild flooding is the method most used, but some ranchers have checks and ditches and some use pumps to operate sprinklers or to lift water to higher spreading ditches. In some cases, runoff water is captured and reused before it returns to the stream.

1995 Distribution

Watermaster service began in the Ash Creek watermaster service area on April 1 and continued until September 30. Jim Langley, Water Resources Engineering Associate, served as watermaster. The snowpack was about 150% of normal which along with rains caused flooding in and around the town of Adin on May 1. Surplus water was available through June then slowly decreased with an average irrigation season the rest of the year.

Ash Creek

Fifth priority water was available through May then decreased to first priority the first of July and stayed fairly constant the rest of the watermaster season.

Willow Creek

There was surplus water above fourth priority (12.4 cfs) until the middle of June, then quickly decreased to about 6 cfs (75% of second priority) by the end of June. The flow slowly decreased to 4.3 cfs at the close of the watermaster season.

Rush Creek

Full-priority water was available until the first week of July, then slowly decreased to 3.1 cfs at the close of the watermaster season.

Butte Creek

Surplus water was available until the end of July, then gradually dropped to slightly less than first priority by the end of the watermaster season.

ASH CREEK WATERMASTER SERVICE AREA

TABLE 7

1995 Daily Mean Discharge
(In cubic feet per second)

ASH CREEK AT ADIN

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	177	363	2670E	85	49	33	21
2	585	330	1800	79	35	30	19
3	680	281	1160	86	29	29	21
4	540	249	979	72	26	27	22
5	430	245	1000	72	25	21	22
6	309	536	1000	68	24	20	20
7	241	586	821	69	23	21	21
8	215	496	687	72	26	22	24
9	673	442	604	61	29	21	32
10	1250	395	554	54	27	20	28
11	1650	357	557	47	24	19	22
12	1200	324	612	38	31	21	20
13	790	442	609	36	35	23	18
14	695	398	519	45	29	23	18
15	756	337	478	90	27	23	19
16	544	372	462	129	27	23	18
17	464	300	426	96	26	23	18
18	585	442	378	111	28	23	19
19	611	390	331	96	26	23	18
20	860	417	297	79	25	11	18
21	721	397	273	68	23	21	18
22	607	348	250	61	23	21	23
23	529	281	226	55	23	19	23
24	528	238	204	49	22	18	23
25	490	220	188	45	20	23	22
26	464	214	169	45	18	20	22
27	448	246	153	43	16	19	22
28	452	240	137	39	17	19	21
29	439	1290	123	35	19	17	20
30	408	1250	112	43	30	20	20
31	363	—	108	—	44	20	—
MEAN	603	414	577	65.6	26.6	21.7	21.1
AC-FT	37100	24650	35480	3903	1638	1335	1254

E estimated

ASH CREEK WATERMASTER SERVICE AREA

TABLE 8

1995 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK ABOVE DIVERSIONS 92 AND 93

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			NR	17	6.7	4.7	4.7
2			NR	17	6.2	4.9	4.7
3			NR	15	5.9	4.9	4.7
4			NR	14	5.9	5.1	4.7
5			NR	15	5.9	5.1	4.7
6			NR	13	5.9	4.9	4.7
7			NR	14	5.9	4.7	4.7
8			NR	13	6.2	4.7	4.7
9			NR	12	6.2	4.7	4.7
10			NR	11	6.2	4.7	4.7
11			NR	9.9	6.2	4.9	4.7
12			NR	8.7	6.2	4.9	4.7
13			NR	9.0	6.2	4.7	4.7
14			NR	8.7	5.9	4.7	4.7
15			NR	12	6.2	4.9	4.7
16			NR	24	6.2	4.9	4.7
17			NR	17	6.2	4.7	4.4
18			NR	15	5.6	4.7	4.4
19			NR	15	5.4	4.7	4.4
20			NR	12	5.4	4.7	4.4
21			NR	10	5.1	4.9	4.4
22			NR	12	4.9	4.9	4.4
23			NR	7.8	4.9	4.9	4.4
24			NR	7.0	4.9	4.7	4.4
25			NR	6.7	4.7	4.7	4.4
26			NR	5.9	4.4	4.0	4.4
27			NR	6.2	4.4	4.9	4.4
28			NR	6.7	4.4	4.9	4.4
29			NR [1]	7.8	4.4	4.9	4.4
30			19	6.4	4.4	4.9	4.4
31			21		4.7	4.7	4.4
MEAN			NR	11.6	5.5	4.8	4.6
AC-FT			NR	692	341	297	271

[1] No record before May 30.

BIG VALLEY WATERMASTER SERVICE AREA

BIG VALLEY WATERMASTER SERVICE AREA

The Big Valley service area is in Modoc and Lassen counties in the vicinity of the towns of Lookout and Bieber, about 90 miles northeast of Redding via State Route 299E.

The Pit River is the major source of water regulated by the watermaster. The river enters the valley north of the town of Lookout and flows southerly through the western part of the valley and out at the southern end. The major area of use is along approximately 13 miles of valley floor, up to 6 miles wide, along the Pit River at an approximate elevation of 4,200 feet.

Basis of Service

The Big Valley watermaster service area was created on November 13, 1934 and service began with the 1935 season, operating under an agreement to determine water rights recorded in 1934. The water rights in this service area were set forth in Decree No. 6395, Modoc County Superior Court, a statutory decree, dated February 17, 1959.

Distributing the water on a continuous flow basis, as provided by the decree, has proven impracticable to the users who employ wild flooding or border irrigation practices because of the wide variation of flows. By mutual agreement, an alternative procedure allowing each user a definite amount of water in acre-feet for each cubic foot per second of right allocated by the degree has been adopted. The watermaster estimates the probable amount of water available for the next 15 to 30 days and chooses the appropriate ac-ft/cfs ratio with a view to completing the rotation through the valley in not more than 30 days.

The irrigators using pumps and sprinklers have elected to receive their water on a more or less continuous flow basis. Over the years, different ways have been employed to insure that applications of small amounts over extended periods result in no advantage over the flooders who use large amounts for very short periods.

Water Supply

The flow in the Pit River at the head of Big Valley is from direct runoff, mainly snowmelt and return flow which is mostly from irrigation water released from West Valley Reservoir above South Fork Pit River and Big Sage Reservoir above Hot Springs Irrigation District.

The available water supply in the Pit River as it flows through Big Valley used to be adequate to satisfy all demands until about June 1. The irrigation practices in Hot Springs Irrigation District, about 20 miles upstream from Big Valley, have a significant effect on the available water supply in Big Valley. Water users in Hot Springs Irrigation District divert most of the flow of the Pit River for two- or three-week periods. In recent years, Hot Springs Irrigation District has improved the use and coordinated the distribution of its water, so releases from its system are less than they were 10 years ago. However, Big Valley Irrigation District water users are unable to keep much stock water in August and September.

Several users, who irrigate crops by sprinkling, have drilled wells to supplement their water supply. Some of these are several miles upstream from the place of use and the Pit River is used to convey it downstream to where it is pumped out. The users who irrigate by flooding have not changed nor improved their practices.

Roberts Reservoir, which stores runoff of a minor tributary to the Pit River near the upper end of Big Valley above Lookout, serves as a supplemental source of water to those users in the area who are members of the Big Valley Mutual Water Company. Water from this reservoir is released into the Pit River and distributed to members of the water company along with the natural flow to which they are entitled.

The daily mean discharge of the Pit River near Canby stream gaging station is presented in Table 9.

Method of Distribution

Most water users in the Big Valley service area irrigate on a rotation schedule, either by wild flooding or by checks and borders. Large flashboard dams placed in the channel make it possible to use the large heads of water characteristic of the supply in the area. In addition, some pumps are used for diversion, both in ditches and directly into sprinkler systems. The ranches which irrigate by wild flooding must use large heads of water in order to cover unleveled or high ground. Some of the runoff is recaptured for use by downstream lands.

1995 Distribution

Watermaster service in Big Valley began May 1 and continued through September 30, with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

The water supply in the Pit River for the Big Valley area during 1995 was one of the best on record. The May snowmelt along with a storm in the first week in May caused

There was a surplus of river water from May 1 until the first week of August at which time the first cutting of hay was completed.

Robert Reservoir was full on May 1. Between August 14 and August 22, 411 acre-feet was released to shareholders of the reservoir.

The gravity flow diversions rotated irrigating between August 1 and September 30 and each user received two or more irrigations. About 38 acre-feet was imported to the Pit River from ground water wells and pumped from the river to irrigate alfalfa fields.

BIG VALLEY WATERMASTER SERVICE AREA

TABLE 9

1995 Daily Mean Discharge
(In cubic feet per second)

PIT RIVER NEAR CANBY[1/]

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	229	601	3890	776	437	56	93
2	367	561	5300	792	449	52	91
3	953	527	4880	799	441	85	104
4	1360	473	4120	844	408	104	107
5	1310	431	3620	824	349	80	127
6	818	655	3320	861	312	63	129
7	537	987	3420	895	181	66	120
8	435	1020	3440	933	266	53	105
9	1320	929	3300	925	231	50	96
10	1810	819	3060	822	282	60	64
11	2020	705	2770	683	196	55	66
12	2150	651	2540	609	201	29	69
13	2320	609	2350	377	166	17	73
14	2290	655	2160	418	183	13	56
15	2220	686	1970	512	150	22	46
16	1820	641	1810	663	214	28	41
17	1400	609	1640	801	187	25	34
18	1090	596	1490	974	143	20	36
19	1020	658	1350	1080	101	20	29
20	1370	724	1200	1050	74	22	28
21	1610	801	1100	1020	49	20	35
22	1470	839	1030	936	71	16	33
23	1310	787	994	808	110	19	27
24	1210	688	973	702	111	30	23
25	1230	607	923	606	117	116	26
26	1140	568	850	555	108	179	38
27	1020	576	801	534	117	220	34
28	974	599	768	515	103	164	34
29	908	971	798	503	98	123	121
30	783	1990	806	480	87	100	89
31	682	—	794	—	63	105	—
MEAN	1264	732	2176	743	194	64.9	65.8
AC-FT	77710	43560	133800	44230	11910	3990	3920

BURNEY CREEK WATERMASTER SERVICE AREA

BURNEY CREEK WATERMASTER SERVICE AREA

The Burney Creek service area is in eastern Shasta County above and below the town of Burney. The source of water for this service area is Burney Creek, which enters the southern part of the service area and flows through Burney in a northerly direction to the Pit River. The part of the valley served by this stream is about 11 miles long and 2 miles wide and extends both north and south of Burney.

Basis of Service

The rights on this creek system were determined by a court reference and set forth in Decree No. 5111, Shasta County Superior Court, dated January 30, 1926. Watermaster service was provided on the creek from 1926 to 1929 under the Water Commission Act of 1913. The present service area was created on September 11, 1929.

The Burney Creek decree sets forth a rotation schedule of distribution. The water users, however, have found it more beneficial to irrigate on a continuous-flow basis (one priority class plus surplus allotments), which is now normal practice. The water allotted to the Greer-Cornaz Ditch is distributed according to supplemental court decrees.

Water Supply

The water supply for Burney Creek comes from springs and snowmelt. Most of the watershed lies between the elevations of 4,000 and 7,500 on the northwest slopes of Burney Mountain. The creek normally has enough water for all demands until about the middle of June. The supply then gradually decreases until the end of July. For the rest of the irrigation season, runoff from perennial springs keeps the flow nearly constant at about 40 percent of allotments.

The daily mean discharge of Burney Creek near Burney is presented in Table 10. The stream gaging station on Burney Creek is downstream from four points of diversion, so the records do not show all of the available water supply of the creek.

Method of Distribution

Water is diverted from Burney Creek, in most cases, by means of low diversion dams into ditches that convey it to the individual users. Some users are still using flood irrigation, while some of the lower users are pressurizing the water with low lift pumps and sprinkler irrigation.

1995 Distribution

Watermaster service on Burney Creek began on May 1 and continued through September 30, with Kenneth E. Morgan, Water Resource Engineering Associate, as watermaster.

The water supply on Burney Creek was much above normal due to an excellent snowpack. A surplus of water was available to all users until the first week of August at which time the snow runoff was nearly depleted. The Cayton Diversion Dam was installed about August 3, at which time 75 percent of the water rights were available. The available flow decreased to 50 percent by mid-August and remained fairly constant through September 30.

BURNEY CREEK WATERMASTER SERVICE AREA

TABLE 10

1995 Daily Mean Discharge
(In cubic feet per second)

BURNEY CREEK NEAR BURNEY

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	138	245	NR	121	50	21	15
2	285	236	NR	118	48	19	14
3	465	220	461	115	46	18	14
4	312	215	406	111	42	19	14
5	257	229	382	108	39	17	14
6	225	375	343	99	38	16	14
7	200	617	305	95	36	16	14
8	214	516	281	85	34	16	14
9	NR	399	268	80	34	16	14
10	NR	339	254	77	34	16	15
11	NR	309	269	75	33	18	15
12	NR	301	254	71	33	18	14
13	NR	394	240	68	34	18	13
14	NR	329	219	110	32	17	13
15	NR	286	214	243	30	17	14
16	NR	260	212	243	29	17E	13
17	NR	243	200	177	25	17E	14
18	NR	266	190	192	30	17E	14
19	NR	239	186	155	29	17E	14
20	784	244	181	125	27	16E	14
21	678	212	176	106	26	16E	15
22	471	197	173	94	24	16E	15
23	437	190	166	85	24	15E	13
24	405	189	157	79	24	15E	13
25	360	190	151	72	24	15E	13
26	322	186	146	67	24	15	14
27	296	220	139	61	23	15	14
28	278	251	139	56	22	15	14
29	264	728	134	53	21	14	14
30	249	560	131	50	22	15	14
31	239	—	126	—	22	15	—
MEAN	NR	306	NR	106	30.9	16.5E	14.0
AC-FT	NR	18220	NR	6329	1902	1016	831

E estimated

BUTTE CREEK WATERMASTER SERVICE AREA

BUTTE CREEK WATERMASTER SERVICE AREA

The Butte Creek service area is in Butte County a few miles southeast of the City of Chico. The watermaster service area runs about 11 miles along Butte Creek, starting about 4 miles east of Chico and running downstream to the crossing of the Western Canal. It contains about 20,000 acres of valley floor lands at an average elevation of 150 feet.

Basis of Service

The rights on this stream system were determined by a statutory adjudication and set forth in Decree No. 18917, Butte County Superior Court, dated November 6, 1942. The Butte Creek watermaster service area was created on January 7, 1943.

The Butte Creek decree established three priority classes for summer use under Schedule 7, a surplus class inferior to the above rights, and a special class for Hamlin Slough. Schedule 3 of the decree defines the rights for rediversion (Diversion 50) of foreign water delivered into Butte Creek from the West Branch of the Feather River.

On September 18, 1969, the State Water Resources Control Board granted permits for the following applications to take water from Butte Creek: application 22321, Gorrill Land Company; 22534, Garrison Patrick; and 22564, Louis C. Camenzind, Jr. These appropriative rights are also under control of the watermaster.

Water Supply

Butte Creek, the major source of water, drains about 150 square miles of the western slope of the Sierra Nevada in the northeasterly part of Butte County above the watermaster service area. The highest elevation in the watershed is about 7,000 feet.

Normally, snowmelt produces sustained high flows in the creek until about the end of June, after which perennial springs above Diversion 50 continue to produce flows of more than 40 cfs. Additional water is imported for distribution from the West Branch Feather River by means of the Hendricks (Toadtown) Canal through De Sabla Reservoir and Powerhouse into Butte Creek.

Records of the daily mean discharge at stream gaging stations in the Butte Creek service area are presented in Tables 11, 12, and 13.

Method of Distribution

Water is diverted from Butte Creek by pumping and by gravity diversions. Parrott Investment Company, M & T, Inc., Dayton Mutual Water Company, and Durham Mutual Water Company divert relatively large amounts of water by gravity into ditches leading to their individual distribution systems. Various methods of irrigation are in general practice, including contour checks, strip or border checks, basin checks, furrows, wild flooding, and sprinklers. The use of sprinklers has increased in the past few years, especially for orchards.

1995 Distribution

Watermaster service began April 1 in the Butte Creek service area and continued until October 15 with John A. Nolan, Water Resources Engineering Associate, as watermaster.

The water supply for the 1995 irrigation season was well above normal. The appropriative rights that are in addition to the Butte Creek decree were partially filled until late June, at which time all of the rice fields were flooded. The surplus class priority was filled until the second week in August and thereafter, partially filled for the remainder of the rice growing season. The natural flow of Butte Creek was adequate to supply 100 percent of the first, second, and third priority allotments throughout the entire season.

The import water from the West Branch of the Feather River was sufficient to supply full allotments (110 cfs) through the middle of August. Flows gradually decreased thereafter until the middle of October when the flow was reduced to about 30 cfs.

Diversion 50 was shut down to about 1/3 of its water right from the middle of August to the end of the season for construction of a fish ladder project at the head of the ditch. The water that normally would have been diverted here went on downstream to provide water for the downstream users.

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 11

1995 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR CHICO[1/]

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	470	1530	4790	784	403	196	e142
2	556	1520	3160	795	386	195	e140
3	911	1480	2390	792	376	196	e139
4	783	1490	2050	762	369	194	e137
5	673	1480	1850	765	360	192	e133
6	611	1830	1660	710	353	189	e131
7	580	3710	1500	656	343	187	129
8	766	3100	1350	605	340	186	127
9	6280	2330	1250	575	334	189	128
10	7110	1880	1170	565	327	191	127
11	5960	1580	1130	555	306	191	127
12	4150	1410	1110	534	287	185	126
13	4200	1720	1160	531	284	172	124
14	5220	1420	1040	581	268	169	117
15	4690	1240	1040	841	256	168	119
16	3250	1130	980	820	240	169	122
17	2700	1020	938	691	222	170	121
18	2630	1000	933	675	206	169	113
19	2360	936	934	653	211	181	91
20	3290	946	925	603	205	179	82
21	2980	872	909	572	198	176	82
22	3350	814	908	544	200	177	82
23	2980	784	894	532	195	179	83
24	2440	778	883	517	191	173	83
25	2090	778	867	473	201	166	79
26	1820	778	836	465	196	e162	86
27	1670	839	837	462	192	e160	96
28	1590	887	837	448	188	e158	117
29	1510	3190	816	433	189	e150	119
30	1490	2840	808	421	199	e142	119
31	1530	—	782	—	193	e146	—
MEAN	2601	1510	1314	612	265	176	114
AC-FT	159900	89880	80800	36420	16300	10820	6790

e Estimated
[1/] USGS station.

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 12

1995 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR DURHAM

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	399	1040	4300	608	200	96	73
2	474	1020	3280	575	194	103	69
3	919	961	2640	583	190	94	70
4	822	975	2290	560	183	97	71
5	668	977	2130	559	182	114	69
6	606	1290	1930	474	176	104	64
7	565	2870	1630	435	167	108	65
8	671	2650	1400	412	166	110	63
9	5280E	2140	1260	388	164	126	59
10	5730E	1750	1130	347	162	129	56
11	5180E	1470	1060	338	158	129	58
12	3660	1340	1060	346	152	126	58
13	3570	1860	1100	356	151	126	57
14	4450	1520	995	463	141	127	55
15	4090	1290	1010	770	128	127	50
16	2970	1160	951	712	123	124	55
17	2470	1040	903	557	119	116	64
18	2380	1020	902	511	118	112	62
19	2150	938	877	484	120	106	46
20	2750	940	866	430	118	117	41
21	2620	852	820	385	115	120	38
22	2890	779	823	368	115	117	39
23	2600	733	796	342	115	119	38
24	2160	726	777	321	114	116	38
25	1730	725	775	307	109	113	35
26	1400	715	719	284	111	88	36
27	1230	796	672	283	110	75	38
28	1130	910	685	257	109	72	49
29	1040	3020	660	222	106	74	55
30	996	2780	653	214	104	72	59
31	1030	—	633	—	96	70	—
MEAN	2214	1343	1282	430	139	107	54.3
AC-FT	136100	79910	78800	25570	8561	6599	3233

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 13

1995 Daily Mean Discharge
(In cubic feet per second)

TOADTOWN CANAL ABOVE BUTTE CANAL[1/]

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	122	118	98	120	122	115	42
2	108	115	108	120	121	115	41
3	112	119	121	119	120	117	41
4	113	122	117	117	121	115	41
5	114	120	117	118	122	114	41
6	118	121	115	118	118	112	40
7	113	126	113	117	118	111	40
8	107	116	112	120	119	112	40
9	82	119	112	115	121	117	39
10	87	119	120	119	120	117	39
11	84	120	125	122	120	116	39
12	66	110	122	122	114	115	39
13	62	104	113	120	110	113	39
14	88	99	109	121	110	112	38
15	99	99	109	111	109	111	38
16	111	109	114	109	106	115	38
17	104	107	122	111	105	114	37
18	110	114	122	112	109	113	14
19	106	119	123	114	112	111	.85
20	99	118	127	119	108	109	0
21	73	119	123	123	107	108	0
22	59	115	121	123	114	107	0
23	6.4	117	122	123	110	106	0
24	10	121	121	123	107	104	0
25	10	125	121	124	111	96	0
26	9.6	124	121	125	110	54	0
27	9.4	111	121	124	115	52	10
28	7.9	102	121	123	114	51	34
29	20	113	120	121	111	50	35
30	80	93	120	122	109	45	35
31	117	---	118	---	110	43	---
MEAN	77.7	114	118	119	114	99.7	26.7
AC-FT	4770	6810	7240	7090	6990	6130	1590

[1/] PG&E station

COW CREEK WATERMASTER SERVICE AREA

COW CREEK WATERMASTER SERVICE AREA

The Cow Creek service area is in central Shasta County in the foothills east of Redding. Water for this service area comes from three major creek systems. They are North Cow Creek (sometimes referred to as Little Cow Creek), Oak Run Creek, and Clover Creek. These creeks flow westerly to their confluence in the Millville-Palo Cedro area, then south to the Sacramento River east of the City of Anderson. The service area is generally a narrow strip of land on both sides of each of these creeks. In some cases, water is exported from one creek to the other.

Basis of Service

The water rights on each of these creek systems were determined by court references and set forth in separate decrees. Water rights for these creeks were set forth by Shasta County Superior Court decrees as follows:

Creek	Decree No.	Date
North Cow	5804	April 29, 1932
Oak Run	5701	July 22, 1932
Clover	6904	October 4, 1937

The North Cow Creek decree, which includes Cedar Creek, sets forth a rotation schedule of distribution. However, the water users have found it more beneficial to irrigate on a continuous-flow basis, which is now normal practice. Only one priority allotment was provided in each of the Cow Creek service area decrees, except for the Oak Run Creek decree, which contains a surplus allotment.

The Cow Creek watermaster service area was originally created on October 17, 1932, including North Cow Creek and Oak Run Creek water rights. On January 21, 1938, the service area was expanded to include the Clover Creek rights.

Water Supply

Water for this service area comes mostly from springs and seepage, with some early snowmelt runoff. The watershed varies in elevation from 500 to 5,000 feet and consists mainly of low, brushy hills that do not accumulate a heavy snowpack. Relatively large amounts of precipitation during the winter normally produce substantial seepage and

springs that flow through the irrigation season. The creeks normally have sufficient water to supply all demands until late July. The supply then gradually decreases to an average of about 60 to 70 percent of allotments by around mid-September.

The stream gaging station on North Cow Creek is downstream of many of the diversions and is used by the watermaster, mainly to indicate changes in flow conditions rather than amounts of water available. Consequently, the records do not show all the available water supply of the creek.

Method of Distribution

Water is diverted from the creeks, in most cases by means of low diversion dams, into ditches that convey it to the place of use. Lateral ditches are then used to spread it over the land. Irrigation has been on a continuous-flow basis instead of by rotation since 1934.

1995 Distribution

Watermaster service for North Cow Creek began on May 1 and continued through October 30 with John A. Nolan, Water Resources Engineering Associate, as watermaster.

Cedar Creek

The flow in Cedar Creek was adequate to supply all demands throughout the season.

Clover Creek

The flow was adequate to supply 100 percent of all allotments throughout the season. There was approximately 5 to 6 cfs going past the Millville Ditch diversion dam throughout September and October.

North Cow Creek

The flow was adequate to supply well over 100 percent of all allotments throughout the season. The Cook and Butcher Ditch, the lowest gravity ditch, received 205 percent of its allotment throughout September and October, and there was ample flow in the channel below this diversion to satisfy the downstream pump diverters.

Oak Run Creek

The flow was adequate to supply 100 percent of all allotments throughout the season.

DIGGER CREEK WATERMASTER SERVICE AREA

DIGGER CREEK WATERMASTER SERVICE AREA

The Digger Creek service area is situated in southeastern Shasta County and northeastern Tehama County.

Digger Creek forms part of the boundary between Shasta and Tehama counties. It drains about 45 miles on the western slopes of the Sierra, just west of Lassen National Park. The creek flows west through the town of Manton to its confluence with North Fork Battle Creek. Manton, the only community in the area, lies about 40 miles northeast of Red Bluff.

Basis of Service

The rights to use of the waters of Digger Creek were determined by four court adjudications. Crooker Ditch, now combined with the Harrison Ditch, may divert all the water in the creek at its point of diversion. Diversions below this point, though defined by decree, are not in the service area.

Four Tehama County Superior Court decrees define the rights included in the service area. These decrees are listed in Table 15.

TABLE 15

DECREES DEFINING DIGGER CREEK WATER RIGHTS

Case	Decree No.	Date Entered
Gransbury et al. vs. Edwards et al.	2213	August 12, 1899
Wells et al. vs. Pritchard et al.	3214	May 27, 1913
Harrison et al. vs. Kaler et al.	3327	October 16, 1917
Herrick et al. vs. Forward et al.	4570	February 24, 1927

The four decrees have, in effect, divided the water rights on the creek into two groups, the upper users and the lower users. The three upper users irrigate land alongside the stream so that all run off water returns to Digger Creek. The lower users are located within a 5-square-mile area. No runoff from the lower users returns to the creek.

The water rights of the three upper users are absolute and not related to those of lower users; therefore, allotments are not cut proportionally as Digger Creek flows decrease. Since the lower users have to stand all deficiencies, the upper users, in effect, have first-priority allotments and the lower users have second- and third-priority allotments.

Water Supply

Snowmelt contributes to the early runoff, but the summer streamflow is primarily from springs. In average runoff years, there is sufficient flow in Digger Creek, with careful regulation, to satisfy all decreed allotments throughout the irrigation season, but serious deficiencies occur in dry years.

Method of Distribution

Irrigation is done mainly by wild flooding, although border checks and sprinklers are used on a few fields. Small diversion dams are placed in the stream channel to divert water into ditches for conveyance to the fields.

1995 Distribution

Watermaster service on Digger Creek began on June 1 and continued until September 30 with John A. Nolan, Water Resources Engineering Associate, as watermaster.

The winter of 1994 and spring of 1995 provided a very good snowpack. The available water supply was adequate to fill 100 percent of all allotments throughout the entire season.

HAT CREEK WATERMASTER SERVICE AREA

HAT CREEK WATERMASTER SERVICE AREA

The Hat Creek service area is in the eastern part of Shasta County, north of Lassen Volcanic Park. Hat Creek flows north through the area and is the only source of water in the service area. The place of use is Hat Creek Valley, which is about 20 miles long and 2 miles wide, running north from about 3 miles south of the town of Old Station to the confluence with Rising River. The irrigable lands, which consist primarily of volcanic ash, are interlaced with large volcanic rock outcropping.

Basis of Service

Hat Creek water is distributed under provisions of court reference adjudications which resulted in Decree No. 5724, dated May 14, 1924, and Decree No. 7858, dated May 7, 1935, Shasta Superior Court. Decree No. 5724 established irrigation and nonirrigation allotments for 18 periods of rotation between "upper" and "lower" user groups from May 1 to October 28 annually. Decree No. 7858 established three additional water right allotments for continuous irrigation, May 1 through October 28, and allotments for October 28 to May 1 annually for all users. These latter rights are not normally supervised by the watermaster.

Watermaster service in the Hat Creek area has been provided in accordance with the decree since 1924. The existing service area was created on September 11, 1929.

Decree No. 5724 defines the allotments in the separate schedules: upper and lower users, requiring 10-day rotations beginning at 6 a.m., May 1, and ending at 6 a.m., October 28. All water rights have the same priority, with the surplus flows distributed according to the users that are on rotation. The upper users' water rights require 153.135 cfs and lower users require 166.285 cfs. When the upper users are being served, the lower users receive a minimum flow for stock water.

Water Supply

The water supply for Hat Creek comes from snowmelt runoff from Lassen Peak and from large springs. Snowmelt creates a high flow during May and June, but most of the summer supply comes from large springs that decrease only slightly in output. Only after a series of dry years does the flow of these springs decrease below 75 percent of total allotments. Records of mean daily discharge of Hat Creek near Hat Creek are in Table 16. There is one major diversion above the recorder and is not reflected in this table.

HAT CREEK WATERMASTER SERVICE AREA

TABLE 16

1995 Daily Mean Discharge
(In cubic feet per second)

HAT CREEK NEAR HAT CREEK

DAY	MAY	JUN	JUL	AUG	SEP
1	278	295	295	204	152
2	281	306	290	202	151
3	220	317	306	200	150
4	204	313	297	199	149
5	195	315	293	197	149
6	173	272	300	197	148
7	157	248	292	194	146
8	165	228	294	189	154
9	163	231	290	177	157
10	163	242	289	172	156
11	NR	264	275	169	154
12	NR	268	261	167	154
13	NR	261	251	165	153
14	NR	320	255	164	152
15	NR	393	260	163	152
16	NR	362	262	164	151
17	NR	298	274	163	150
18	NR	287	333	161	142
19	NR	279	283	168	139
20	NR	272	253	172	138
21	NR	276	246	173	135
22	NR	280	236	173	136
23	NR	291	226	174	136
24	NR	307	221	174	134
25	NR	327	216	172	135
26	232	332	208	171	135
27	239	334	203	170	134
28	239	322	204	169	143
29	256	322	207	159	146
30	270	314	206	154	145
31	284	—	205	154	—
MEAN	NR	296	259	175	146
AC-FT	NR	17610	15930	10770	8680

Method of Distribution

Most irrigation in the area is done by wild flooding. Large heads of water are needed to cover the land rapidly, thereby preventing excessive loss from percolation in the porous soil. Diversion dams built across the creek divert water into large ditches. The fields, many of which have checks and borders, are then flooded from the main diversion ditches or from laterals. Several domestic rights are met by pumping directly from Hat Creek. Some ranchers have leveled their fields in recent years, thus improving their irrigation efficiency.

1995 Distribution

Watermaster service on Hat Creek began on May 1 and continued through October 28, with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

A near record snowpack and rainfall in the watershed increased the base flow of the springs by about 60 percent during 1995.

The trial program of switching lower users rights with upper users to have a larger minimum flow in the lower stream continued again this season with success.

The percentages of available water for the upper and lower rotations during the 1995 irrigation season were as follows:

Percentage of Entitlement

Period				Upper Rotation	Lower Rotation
May	1	-	May 10	100	
May	11	-	May 20		100
May	21	-	May 30	100	
May	31	-	June 9		100
June	10	-	June 19	100	
June	20	-	June 29		100
June	30	-	July 9	100	
July	10	-	July 19		100
July	20	-	July 29	100	
July	30	-	August 8		100
August	9	-	August 18	100	
August	19	-	August 28		100
August	29	-	September 7	100	
September	8	-	September 17		100
September	18	-	September 27	100	
September	28	-	October 7		100
October	8	-	October 17	100	

INDIAN CREEK WATERMASTER SERVICE AREA

INDIAN CREEK WATERMASTER SERVICE AREA

The Indian Creek service area is in north central Plumas County near Greenville. The major sources of supply in the service area are Indian Creek and two tributaries, Wolf Creek and Lights Creek. Indian Creek, along with minor tributaries, rises in the mountains east of the service area. It flows through Genesee and Indian valleys and past Taylorsville and Crescent Mills to where it joins the North Fork Feather River. Indian Creek is joined on the north by Lights Creek in southeast Indian Valley and by Wolf Creek in the northwest part of the valley. The major place of use is in Indian Valley, an irregular-shaped area of about 20 square miles. The average elevation is about 3,500 feet.

Basis of Service

The Indian Creek watermaster service area was created on February 19, 1951. It includes, with certain exceptions, the water rights set forth in Decree No. 4185, entered December 19, 1950, by the Superior Court of Plumas County, and the rights under Permit 7665 issued in approval of Application 12642 after entry of the decree. The statutory proceeding leading to the decree was entitled, "In the Matter of the Determination of the Rights of the Various Claimants to the Water of Indian Creek Stream System in Plumas County, California."

The service area has been amended twice. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports show the work accomplished. There are 49 water right holders in the service area, with allotments totaling 96.715 cfs. Indian Creek decree establishes three priority classes for each major stream within the service area.

Water Supply

The water supply in the Indian Creek service area comes mainly from snowmelt, with springs and seepage maintaining some late summer flows. The flow of Wolf Creek is normally sufficient to supply all allotments until June 1. Indian and Lights creeks normally have sufficient flow to supply all allotments until July 1. After these dates, flows decrease throughout the season and by the end of August, only a small part of the allotments are available.

Method of Distribution

The basic method of irrigation in Indian Valley is wild flooding. Small diversion dams are constructed in the stream channels to divert water into distribution ditches for conveyance to the fields. Small check dams, located throughout the fields in swales, help to spread the water over the ground. There is a limited amount of check and border irrigation in the valley and a few sprinkler systems are in use.

1995 Distribution

Watermaster service began in the Indian Creek service area on June 15, 1995 and continued through October 1, 1995 with Don Hand, Water Services Supervisor as watermaster. The 1995 water season was a watermaster's answer to prayer. This was one of the two best years in the history of the Indian Valley Watermaster Service.

Wolf Creek

The water supply of Wolf Creek started the season with adequate water for all priorities. There was sufficient water for first priority through mid-July. By the end of July, the flow was down to 60 percent of the first priority where it remained for the rest of the season.

Lights Creek and Tributaries

The available water supply of Lights and Cooks creeks was adequate to supply 100 percent of all demands throughout the season.

Indian Creek

The available water supply of Indian Creek was adequate to supply all demands throughout the season.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

The Middle Fork Feather River service area is in Sierra Valley on the west slope of the Sierra Nevada in eastern Sierra and Plumas counties.

Major sources of supply for this service area are the Middle Fork Feather River and its tributaries in Sierra Valley. The area comprises five major stream groups. Starting in the northeast corner of the valley and proceeding in a clockwise direction, these are Little Last Chance Creek, Smithneck Creek, Weber Creek and tributaries, West Side Canal, Fletcher Creek and Spring Channels. The Middle Fork Feather River flows generally north for about 15 miles through Sierra Valley. It then flows out of the valley in a westerly direction near Beckwourth. The major place of use is in Sierra Valley which is about 15 miles long and 10 miles wide. The average elevation of the valley floor is 4,900 feet.

Basis of Service

The Middle Fork Feather River watermaster service area was created on March 29, 1940, to include, with the exception of certain tributaries and springs, all water rights set forth in Decree No. 3095, entered in the Middle Fork Feather River statutory adjudication proceeding on January 19, 1940, Superior Court, Plumas County. The decree establishes the number of priority classes for each of the major stream systems within the Middle Fork Feather River service area as follows: Little Last Chance Creek - eight; Smithneck Creek - five; West Side Canal Group - five; Fletcher Creek and Spring Channels - three; Weber Creek and tributaries - six; and Sierra Valley Water Company- one.

The service area has been amended three times. Watermaster service has been provided during each irrigation season since the service area was created, and annual reports have been prepared to show the work accomplished.

There are currently 120 water right owners in the service area, with total allotments amounting to about 377 cfs.

Water Supply

The major water supply in the Middle Fork Feather River service area comes from runoff, with minor flow from springs and supplemental and foreign water.

Natural flows of Little Last Chance Creek are supplemented by reservoir storage provided by Frenchman Dam, which was built by the Department of Water Resources in 1961. Stored water is released as needed under provisions of a water supply contract.

Smithneck Creek flow is normally sufficient to supply all allotments until about the middle of May. It then decreases until about the first of June when only first and second priority allotments are available for the remainder of the season.

The natural flow of Weber Creek is normally sufficient to supply all allotments until the middle of May. At that time, up to 60 cfs is diverted from the Little Truckee River to supplement the natural flow. This imported water is diverted through the Little Truckee Ditch into Onion Creek and then into Weber Creek, via Cold Stream, for use of shareholders in the Sierra Valley Water Company. This supplemental supply decreases rapidly in July, producing only a small quantity during the latter part of the season.

The West Side Canal streams normally supply all allotments until early June. The flow then gradually declines throughout the remainder of the season. The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. Then it gradually declines for the rest of the season.

Records of the daily mean discharges of the Little Truckee Ditch and the Middle Fork Feather River near Portola are presented in the following tables.

Method of Distribution

Wild flooding is used by most ranches to irrigate their fields. Small diversion dams are placed in the stream channels to divert the water into individual distribution systems. Check dams are constructed in the swales to implement flooding once the water reaches the fields.

1995 Distribution

Watermaster service began May 8 in the Middle Fork Feather River service area and continued until September 30, with Ronald A. Vanscoy, Water Resources Engineering Associate, as watermaster. The available water supply in the service area was one of the best in history.

Little Last Chance Creek

Frenchman Dam and Reservoir began its thirty-third season of operation. A five-year contract concerning storage, distribution, and sale was negotiated during 1989 with the Last Chance Creek Water District. Delivery and distribution of water was made in accordance with the provisions of the contract and the instructions of the District's Board of Directors. Deliveries for Little Last Chance Water District started July 13, 1995. A total of 8,916 acre-feet of water was delivered. Ralph Howell, Water Resources Engineering Associate, performed the duties of watermaster in the District.

Smithneck Creek

The normal two-week rotation schedule for water users below Loyalton did not occur this year. There was sufficient water to supply users below Loyalton during the entire season.

Weber Creek

By late August, the flow in this system still supplied approximately 100 percent of the first-priority. Importation of water from the Little Truckee River began July 6, 1995 to supplement the natural flow of Weber Creek to satisfy all allotments of the Sierra Valley Water Company shareholders (one priority). A total of 3,337 acre-foot of water was delivered through Little Truckee Ditch during the irrigation season. This diversion shut off on September 29, 1995. The release was consistent throughout the season.

West Side Canal Group

By late August, the flow in this system had remained at 100 percent of first priority and nearly 100 percent of second priority.

Fletcher Creek and Spring Creek

By late August, the flow in this system remained at 100 percent of first priority and nearly 100 percent of second priority.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 17

1995 Daily Mean Discharge
(In cubic feet per second)

LITTLE TRUCKEE DITCH AT HEAD

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						30.0	15.2
2						30.5	14.8
3						34.6	14.5
4						33.5	14.5
5						30.5	13.7
6					3.0	28.9	13.3
7					5.0	29.5	11.2
8					5.0	40.0	11.2
9					5.0	41.8	11.2
10					8.1	41.8	11.2
11					14.6	41.8	10.8
12					16.6	39.5	10.5
13					15.1	38.4	10.5
14					15.1	38.9	10.2
15					15.1	40.6	9.8
16					15.1	41.2	9.5
17					15.1	41.2	9.5
18					15.1	36.8	8.9
19					15.1	33.6	7.9
20					13.6	32.0	7.9
21					13.6	33.0	7.6
22					13.1	30.5	7.3
23					13.1	29.5	6.5
24					12.6	30.0	5.9
25					12.1	29.0	5.4
26					14.1	26.5	4.9
27					25.7	24.6	2.0
28					34.8	20.1	2.6
29					34.8	18.5	1.0
30					31.8	17.3	—
31					30.2	16.4	—
MEAN							
AC-FT					818	1984	535

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 18

1995 Daily Mean Discharge
(In cubic feet per second)

MIDDLE FORK FEATHER RIVER NEAR PORTOLA

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	262	1588	1717	747	196	67	25
2	270	1479	2492	711	198	61	25
3	511	1349	2886	721	196	55	25
4	1375	1226	2328	742	196	52	25
5	1322	1114	1961	742	202	49	26
6	721	1074	1820	721	200	49	28
7	519	1074	1756	640	198	47	28
8	425	1108	1648	599	192	43	27
9	799	1212	1451	603	188	41	27
10	5124	1169	1342	573	169	36	26
11	10120	1029	1233	523	145	34	27
12	7811	918	1197	469	133	34	27
13	4066	1042	1219	369	123	32	27
14	2492	1335	1233	341	117	32	28
15	2082	1566	1226	326	111	32	27
16	1844	1329	1205	324	107	30	28
17	1529	1169	1121	324	107	29	28
18	1342	1101	1035	366	111	28	28
19	1416	1035	960	398	113	25	28
20	1986	991	900	402	111	24	27
21	2996	942	877	375	111	24	26
22	3063	894	866	338	109	25	26
23	1725	826	894	306	105	25	27
24	1241	762	912	274	103	25	27
25	1270	721	930	259	103	26	26
26	1529	711	912	244	99	27	18
27	1369	742	877	240	95	28	14
28	1315	821	821	222	95	27	29
29	1396	972	799	210	90	26	28
30	1566	1205	778	204	82	25	29
31	1678	—	762	—	72	25	
MEAN	2102	1083	1295	444	135	34.9	26.2
AC-FT	129250	64470	79650	26410	8280	2150	1560

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

The North Fork Cottonwood Creek service area is in Shasta County near the town of Ono, west of Redding. The source of water for this service area is the North Fork of Cottonwood Creek and its two major tributaries, Moon Creek and Jerusalem Creek. North Fork Cottonwood Creek flows through the service area in a southeasterly direction to where it joins the other two major forks of Cottonwood Creek and then to the Sacramento River east of the town of Cottonwood. The service area consists of sparsely scattered parcels, some in hilly terrain and some in the valleys.

Basis of Service

The water rights of this creek system were determined by court reference and set forth in Decree No. 5479, Shasta County Superior Court, dated June 9, 1920. The North Fork Cottonwood Creek watermaster service area was created September 11, 1929, although service had been provided intermittently in accordance with the decree since 1924. All water rights have equal priority.

Water Supply

Snowmelt contributes to the flow in the North Fork Cottonwood Creek system during the early part of the irrigation season, and perennial springs provide the major source of supply during the summer and fall months. The flow is normally sufficient to supply all demands except in dry years, when the available supply may be as low as 20 to 40 percent of the decreed allotments.

Method of Distribution

The general practice throughout the area is to irrigate by wild flooding. One water user pumps directly from the creek, using a sprinkler system to irrigate his crops. Pumping is necessary at this diversion point because the irrigated land is considerably higher than the creek channel.

1995 Distribution

Watermaster service for North Fork Cottonwood Creek began June 1 and continued through September 30 with John A. Nolan, Water Resources Engineering Associate, as watermaster.

The available water supply for the service area was well above normal. However, the Bee Ditch diversion dam was in such poor condition that very little was diverted into this ditch allowing for full entitlement diversions to the remaining ditches for the entire season.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

The North Fork Pit River service area lies along the west slopes of the Warner Mountains in northeastern Modoc County and extends southward from the Oregon border about 45 miles to just south of Alturas.

The North Fork Pit River flows in a southerly direction from the south rim of Goose Lake Basin to its confluence with the South Fork Pit River west of Alturas. The basins of Goose Lake and the North Fork Pit River may be considered completely separate, because the lake has not spilled into the river since 1890.

Eight small independent streams flowing in a westerly direction from the west slope of the Warner Mountains constitute the major source of water. Three of these (New Pine, Cottonwood, and Davis creeks) are tributary to Goose Lake. Five are tributary to the North Fork Pit River. From north to south, they are: Linville, Franklin, Joseph, Thoms, and Parker creeks.

The place of use in the northern half of the area is a relatively long, narrow, sloping strip of land between the east shore of Goose Lake and the foothills of the Warner Mountains. The places of use in the southern half of the area, which are supplied from the North Fork Pit River and its tributaries, are primarily in the narrow valleys bordering the streams. The elevation of the places of use range from about 4,350 feet just below Alturas to about 5,200 feet at the upper portions on some of the creeks.

Basis of Service

Table 20 briefly outlines the five decrees covering the area and presents data on the establishment of watermaster service and water rights.

Water Supply

The water supply comes mainly from snowmelt for all streams in the North Fork Pit River service area except Linville Creek, which, having a relatively small drainage area, is almost entirely spring-fed. After mid-June, the rest of the streams also depend on springs, but diminish rapidly until mid-July, after which the flow remains fairly constant. There are several small reservoirs in the area, but they are used essentially for regulatory storage. The mean daily discharge of various tributaries is presented in Tables 21 through 29.

TABLE 20

DECREES AND RELATED DATA - NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

Stream	Modoc County Superior Court Decree No.	Date	Type a/	Service Area Created	No. of Decree Water Right Holders	Total cfs	Remarks
New Pine	2821	6-14-32	CR	6-22-32	21	22.19	Four priorities.
Cottonwood	2344	5-03-40	CR	12-13-40	5	15.35	When water for Diversion No. 3 is insufficient to reach the area of use, it is diverted at Diversion No. 4.
Davis	2782	6-30-32	CR	7-13-32	19	68.75	Four priorities, 4-1 to 9-30. Some rights vary according to flow available. Most first & second priorities are year-round. One second priority right is for 0.40 cfs export for Roberts Creek.
					2b/		Appropriative Permit 9825 allows diversion from North Fork Davis Creek and License 10549 to divert from Davis Creek, both for the period from 10-1 to 5-1.
Franklin	3118	9-08-33	CR	9-14-33	3	11.66	Four priorities. The first priority and all second priority rights are year-round, except one which is equal to the sum of all the others (1.46 cfs) and is for the period 9-15 to 3-31 annually. Third and fourth priorities are for 4-1 to 9-30 each year.
North Fork	4074	12-14-39	S	12-18-39	10	52.08	Five priorities, 4-1 to 9-30. Pit River Dorris Reservoir water diverted through Parker Creek ditch on Parker Creek. Fourth and fifth priorities are special class.
Linville	4074	12-14-39	S	12-18-39	3	8.30	Two priorities.
Joseph	4074	12-14-39	S	12-18-39	6	11.98	Four priorities, 4-1 to 9-30. Diversions on south side of stream, with the exception of No. 26, are on net consumptive use basis.
Parker	4074	12-14-39	S	12-18-39	9	17.87	Four priorities, 4-1 to 9-30. Diversion on Dorris Reservoir shown on North Fork Pit River schedule is made at No. 122, Parker Creek Ditch.
Shields	4074	12-14-39	S	12-18-39	7	7.70	Four priorities, 4-1 to 9-30.
Thoms	4074	12-14-39	S	12-18-39	9	6.44	Three priorities, 4-1 to 9-30.
						9.40	5.0 cfs export to Cedar Creek; and 4.40 cfs export to Stony Canyon.
Gleason	4074	12-14-39	S	12-18-39	4	4.55	Five priorities.

a/ S-Statutory, CR-Court Reference.
b/ Appropriative rights, junior to the decreed rights.

Method of Distribution

Distribution is accomplished by diversion structures in the main channels diverting into ditches that convey the water to its place of use. Wild flooding from small feeder ditches is the common method of application. There is, however, increasing use of sprinkler systems, some directly from ditches, with supplemental groundwater being added as the surface flow diminishes. Sub-irrigation by the use of large flashboard dams to raise the water level in the channel is practiced along the North Fork Pit River between Parker Creek and Alturas.

1995 Distribution

Watermaster service began in the North Fork Pit River watermaster service area on April I and continued through September 30, with James P. Langley, Water Resources Engineering Associate, as watermaster.

The snowpack was about 150 percent of normal at the start of the watermaster season. Snow and rain continued to fall in April and May causing some local flooding. All things considered, it was a great watermaster season.

New Pine Creek

The flow was 10 cfs (45% of total water rights) on April 1, increased rapidly to over 100% of total rights by April 11, and stayed above 100% until the end of July. The water gradually receded to close the watermaster season on September 30 at 4 cfs (137% of first priority).

The diversion boards of the California ditch were pulled once again but when replaced and wedged in were not tampered with again. The watermaster met with one of the downstream complainers to explain the situation to her. This personal contact seemed to console her and helped alleviate the problem.

Cottonwood Creek

The flow was 4.5 cfs on April, rose to 20 cfs the first week, and stayed at 20± cfs until the first week of July. It gradually dropped to less than 2 cfs at the end of July, ending the watermaster season at about .15 cfs.

Davis Creek

The flow in Davis Creek on April 1 was 15 cfs. It increased until the weir boards used for measuring had to be pulled to prevent flooding. The estimated peak flow the first of May was about 90 cfs. It gradually decreased to 5 cfs at the end of the watermaster season.

Linville Creek

Because this creek is almost entirely spring-fed, there was little variation during the season. The maximum flow of 6 cfs occurred the first of May, slowly decreasing to 2.5 cfs at the end of the watermaster season.

Franklin Creek

The flow on April 1 was 4.6 cfs (35% of third priority). The creek stayed fairly constant until the end of April when it rose rapidly to 20 cfs. Surplus water was available until the middle of June when the creek started to slowly recede to 2.6 by the end of the watermaster season.

Joseph Creek

There was a surplus flow in Joseph Creek from April 1 until the middle of July. The flow quickly dropped to 3 cfs when it was supplemented by releases from Halls Meadow Reservoir.

Thoms Creek

Surplus water was available the entire watermaster season.

Parker Creek

The flow in Parker Creek was sufficient to fill all priorities until the users shut down to hay, around the first July. When they wanted water again several weeks later there was 10 cfs in the creek which stayed pretty constant the rest of the watermaster season.

The U.S. Fish and Wildlife Service diverted very little water from Parker Creek due to heavy localized inflow to Dorris Reservoir from snow and rain. This caused Dorris Reservoir to spill causing some localized flooding down ditch. Water was also diverted from Pine Creek to help alleviate flooding conditions in that drainage.

Shields Creek

Shields Creek had surplus water the entire watermaster season.

North Fork Pit River

Water was available all season long for all users. This was due in part to a major diversion dam that washed out last season having not been repaired.

Pine Creek near Alturas

There was some flooding on Pine Creek in May and June. Without diverting some water through Dorris Reservoir it would have been worse.

After the early floods the creek had surplus water which was diverted through Dorris to prevent more flooding through the middle of July. The flow gradually dropped to 12 cfs at the end of the watermaster season.

The State Water Resources Control Board required the USFWS to closely monitor the inflow and outflow of Dorris Reservoir. This meant water was diverted into Diversion 1d all season long for the small down ditch users. In the past these rights have been met by verbal agreement with the USFWS contributing Dorris Reservoir water. Next year more sophisticated monitoring gages will be installed on the USFWS refuge.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 21

1995 Daily Mean Discharge
(In cubic feet per second)

NEW PINE CREEK ABOVE ALL DIVERSIONS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		10[1/]	43	67	44	13	6.0
2		10	50	62	43	13	5.6
3		11	47	52	42	12	5.6
4		12	45	50	41	12	5.2
5		13	44	49	40	11	5.2
6		44	43	49	39	11	5.0
7		41	40	46	38	10	4.7
8		38	39	44	37	10	4.7
9		33	38	43	36	10	4.5
10		31	37	43	35	9.8	4.5
11		30	39	44	34	9.5	4.5
12		28	38	45	33	9.2	4.5
13		30	37	45	31	8.9	4.5
14		27	36	46	28	8.9	4.5
15		22	38	46	27	8.9	4.5
16		20	41	47	25	8.9	4.4
17		19	50	46	24	8.6	4.4
18		17	52	53	24	8.6	4.4
19		16	52	52	22	8.3	4.4
20		17	54	50	22	8.0	4.4
21		17	57	49	21	8.0	4.4
22		17	65	48	20	7.7	4.4
23		17	68	48	19	7.7	4.4
24		18	58	49	18	7.2	4.3
25		22	56	49	17	7.2	4.3
26		25	54	50	17	7.2	4.3
27		28	53	49	16	6.8	4.2
28		30	53	48	15	6.8	4.2
29		30	54	46	15	6.8	4.2
30		31	60	46	14	6.4	4.2
31		—	64	—	13	6.4	—
MEAN		23.5	48.5	48.7	27.4	9.0	4.6
AC-FT		1396	2985	2898	1686	551	275

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 22

1995 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK ABOVE ALL DIVERSIONS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		5.3 1/	30	26	13	1.6	0.4
2		5.1	28	26	13	1.6	0.4
3		5.5	22	27	12	1.4	0.4
4		6.2	20	27	11	1.4	0.4
5		7.7	19	25	11	1.4	0.4
6		26	19	24	10	1.3	0.4
7		24	18	20	9	1.3	0.4
8		20	17	17	8.2	1.3	0.4
9		15	15	16	7.4	1.2	0.4
10		14	15	15	6.9	1.2	0.4
11		12	16	16	6.5	1.0	0.4
12		13	16	17	6.0	1.0	0.4
13		13	15	19	5.5	0.9	0.4
14		12	13	21	4.9	0.9	0.4
15		11	13	NR	4.2	0.9	0.4
16		11	14	NR	3.8	0.8	0.4
17		9.5	18	NR	3.6	0.8	0.3
18		8.7	20	NR	3.5	0.7	0.3
19		8.2	20	NR	3.5	0.6	0.3
20		8.2	20	25	3.3	0.6	0.3
21		8.2	21	23	2.9	0.5	0.3
22		9.2	22	21	2.7	0.5	0.3
23		9.8	24	21	2.5	0.5	0.3
24		11	23	22	2.2	0.5	0.3
25		13	22	22	2.0	0.5	0.3
26		13	23	23	2.0	0.5	0.3
27		13	23	23	1.9	0.5	0.3
28		13	24	22	1.9	0.5	0.3
29		14	24	21	1.7	0.5	0.3
30		15	26	17	1.7	0.5	0.3
31		—	26	—	1.6	0.4	—
MEAN		11.8	20.2	NR	5.5	0.9	0.4
AC-FT		703.0	1242.0	NR	336.0	54.0	21.0

1/ No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 23

1995 Daily Mean Discharge
(In cubic feet per second)

DAVIS CREEK BELOW DIVERSIONS NO. 1, 3, AND 21

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		16 [1/]	NR	71	39	10	7.1
2		15	NR	67	37	10	6.9
3		15	NR	63	36	10	6.9
4		16	NR	72	34	9.5	6.7
5		17	NR	72	31	9.2	6.7
6		NR	NR	59	33	9.0	6.7
7		NR	NR	49	32	8.7	6.5
8		NR	NR	42	31	8.5	6.5
9		NR	NR	41	29	8.2	6.2
10		NR	NR	44	27	8.2	6.0
11		NR	NR	46	23	8.0	6.0
12		NR	NR	47	24	8.0	5.8
13		NR	NR	48	23	8.0	5.8
14		NR	NR	48	21	7.8	5.8
15		NR	NR	51	19	7.8	5.8
16		NR	NR	52	18	7.8	5.8
17		NR	NR	50	17	7.8	5.5
18		NR	44	57	17	7.6	5.5
19		NR	47	50	15	7.6	5.5
20		NR	48	47	15	7.6	5.5
21		NR	51	44	14	7.6	5.5
22		NR	55	43	14	7.6	5.5
23		NR	59	45	13	7.6	5.5
24		NR	53	44	13	7.6	5.3
25		NR	54	43	12	7.6	5.3
26		NR	55	42	12	7.4	5.3
27		NR	57	47	12	7.4	5.3
28		NR	59	45	11	7.3	5.1
29		NR	63	42	11	7.3	5.1
30		NR	75	41	10	7.1	5.1
31		—	NR	—	10	7.1	—
MEAN		NR	NR	50.6	21.1	8.1	5.9
AC-FT		NR	NR	3013	1295	498	349

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 24

1995 Daily Mean Discharge
(In cubic feet per second)

LINVILLE CREEK ABOVE ALL DIVERSIONS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		2.8[1/]	6.2	4.5	3.2	2.7	2.5
2		2.8	5.9	4.7	3.0	2.7	2.5
3		2.8	5.6	4.7	2.9	2.7	2.5
4		2.8	5.3	4.7	2.8	2.7	2.5
5		2.8	5.7	4.7	2.8	2.7	2.5
6		3.0	5.9	4.7	2.8	2.7	2.5
7		3.0	6.2	4.5	2.8	2.5	2.5
8		3.0	6.3	4.4	2.8	2.5	2.5
9		2.9	5.7	4.4	2.7	2.5	2.5
10		2.9	5.5	4.2	2.7	2.5	2.4
11		2.9	5.2	4.1	2.7	2.5	2.4
12		2.8	5.1	4.1	2.7	2.5	2.4
13		2.8	5.0	4.1	2.7	2.5	2.4
14		2.8	4.8	4.2	2.7	2.5	2.4
15		2.9	4.7	4.5	2.7	2.5	2.4
16		2.9	4.7	4.4	2.7	2.5	2.4
17		2.9	4.7	4.4	2.7	2.5	2.4
18		2.9	4.7	4.2	2.7	2.5	2.4
19		2.9	4.5	4.1	2.7	2.5	2.4
20		2.9	4.5	3.9	2.7	2.5	2.4
21		2.9	4.5	3.9	2.7	2.5	2.4
22		2.9	4.5	3.9	2.7	2.5	2.4
23		2.9	4.5	3.7	2.7	2.5	2.4
24		2.9	4.5	3.7	2.7	2.5	2.4
25		2.9	4.5	3.6	2.7	2.5	2.4
26		2.9	4.5	3.9	2.7	2.5	2.4
27		2.9	4.7	3.6	2.7	2.5	2.4
28		3.2	4.7	3.4	2.7	2.5	2.4
29		3.4	4.7	3.3	2.7	2.5	2.4
30		3.9	4.5	3.2	2.7	2.5	2.4
31		—	4.5	—	2.7	2.5	—
MEAN		2.9	5.0	4.1	2.7	2.5	2.4
AC-FT		175	310	245	169	156	145

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 25

1995 Daily Mean Discharge
(In cubic feet per second)

FRANKLIN CREEK ABOVE ALL DIVERSIONS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		4.5[1/]	20	19	7.0	2.9	2.7
2		4.5	16	18	6.6	2.8	2.7
3		4.5	15	17	6.1	2.8	2.7
4		4.6	15	16	5.9	2.8	2.7
5		6.4	15	17	5.6	2.8	2.7
6		7.8	15	16	6.0	2.8	2.7
7		7.5	16	15	5.9	2.7	2.7
8		6.7	15	14	5.4	2.7	2.7
9		6.4	15	13	5.0	2.7	2.7
10		5.9	15	12	4.7	2.6	2.7
11		5.9	14	11	4.7	2.7	2.7
12		5.9	13	10	4.7	2.7	2.7
13		5.9	12	10	4.3	2.7	2.7
14		5.7	12	10	4.1	2.7	2.7
15		5.7	12	11	4.1	2.8	2.7
16		5.6	11	12	4.1	2.8	2.7
17		5.4	12	9	4.1	2.8	2.7
18		5.4	12	10	4.1	2.8	2.7
19		5.4	12	10	4.1	2.7	2.7
20		5.4	13	9	3.9	2.7	2.7
21		5.4	14	9	3.7	2.6	2.7
22		5.7	14	9	3.5	2.6	2.7
23		5.4	15	8.8	3.4	2.6	2.7
24		5.6	15	8.6	3.2	2.7	2.7
25		5.9	15	8.5	3.2	2.7	2.7
26		6.0	16	9.1	3.2	2.7	2.7
27		7.2	18	8.1	3.2	2.7	2.6
28		7.2	19	7.8	3.2	2.7	2.6
29		11	19	7.5	3.1	2.7	2.6
30		15	19	7.3	3.1	2.7	2.6
31		—	19	—	3.1	2.7	—
MEAN		6.3	14.9	11.4	4.4	2.7	2.7
AC-FT		376	918	680	270	167	160

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 26

1995 Daily Mean Discharge
(In cubic feet per second)

JOSEPH CREEK BELOW COUCH CREEK

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		13[1/]	70	36	19	3.8	3.8
2		11	67	45	19	3.6	3.8
3		11	48	39	18	3.9	3.6
4		13	41	39	17	3.9	3.6
5		23	57	31	13	5.2	3.8
6		23	57	31	13	5.2	3.8
7		21	57	31	13	5.2	3.8
8		20	57	28	12	4.8	3.8
9		19	50	25	9.9	4.8	3.6
10		17	47	22	9.4	4.5	3.6
11		16	45	23	8.6	4.7	3.6
12		15	44	24	9.9	4.5	3.5
13		18	39	23	9.4	4.5	2.9
14		17	35	23	8.6	2.6	2.3
15		16	32	26	8.6	3.3	2.1
16		15	31	34	8.8	2.8	2.1
17		15	33	30	8.1	2.8	2.1
18		16	32	33	8.1	2.6	1.8
19		16	31	30	7.4	2.3	1.8
20		17	33	27	7.0	2.3	1.8
21		17	34	25	6.4	2.1	1.8
22		17	35	24	5.5	2.4	2.1
23		16	36	23	5.2	3.1	2.0
24		16	34	23	4.8	3.1	1.8
25		17	31	27	4.7	3.6	1.8
26		17	34	29	4.5	3.5	1.8
27		20	33	23	4.2	3.3	1.8
28		20	33	22	3.9	3.6	1.8
29		29	32	20	3.6	3.6	1.8
30		31	33	20	3.6	3.5	1.8
31		—	35	—	3.6	3.5	—
MEAN		17.4	44.3	28	9.1	3.6	2.6
AC-FT		1035	2725	1668	559	221	158

[1/] No record before April 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 27

1995 Daily Mean Discharge
(In cubic feet per second)

SHIELDS CREEK

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			NR[1/]	20	13	7.4	5.3
2			NR	21	13	7.4	5.3
3			NR	20	13	7.4	5.3
4			NR	20	13	7.4	5.3
5			NR	20	12	6.9	5.3
6			NR	19	12	6.9	5.3
7			NR	18	12	6.9	5.3
8			NR	17	12	6.9	5.3
9			NR	16	11	6.5	5.3
10			NR	15	11	6.5	5.3
11			NR	14	11	6.5	5.3
12			NR	14	11	6.5	5.3
13			NR	14	11	6.5	5.3
14			NR	14	10	6.5	5.3
15			14	15	10	6.3	5.3
16			14	20	10	6.3	5.3
17			14	17	9.7	6.1	5.3
18			14	18	9.4	6.1	5.3
19			14	24	9.4	5.9	5.3
20			14	18	9.4	5.9	5.3
21			14	16	9.4	5.7	5.3
22			16	16	9.4	5.7	5.3
23			21	16	8.9	5.7	5.3
24			21	16	8.9	5.7	5.3
25			22	15	8.9	5.7	5.3
26			22	15	8.9	5.5	5.3
27			22	14	8.3	5.5	5.3
28			21	14	8.3	5.5	5.3
29			21	14	7.8	5.5	5.3
30			21	13	7.8	5.3	5.3
31			20	—	7.8	5.3	5.3
MEAN			NR	16.8	10.2	6.3	5.3
AC-FT			NR	998	629	385	315

[1/] No record before May 1.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 28

1995 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK NEAR ALTURAS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	15	147E	87	85	28	17
2	59	15	54	95	75	27	16
3	33	15	40	97	71	26	15
4	22	16	36	103	71	25	15
5	17	16	150E	101	72	25	15
6	16	19	121E	89	70	24	15
7	16	21	63	81	65	24	15
8	15	20	50	68	64	23	15
9	18	19	46	60	63	23	15
10	25	18	51	58	60	23	14
11	39	17	50	58	58	23	14
12	58	18	50	59	55	22	14
13	26	19	43	65	51	22	14
14	23	18	42	69	47	21	13
15	22	17	41	73	43	21	13
16	20	17	40	96	41	21	13
17	19	16	41	81	40	20	13
18	20	19	43	81	40	20	13
19	20	28	43	90	40	20	13
20	20	36	44	79	39	20	13
21	20	26	45	71	40	19	13
22	20	19	46	65	39	19	13
23	19	17	47	62	38	19	13
24	24	17	50	64	37	19	13
25	25	19	54	69	35	19	12
26	23	21	58	77	34	19	12
27	20	23	61	87	33	19	12E
28	16	21	65	97	31	19	12E
29	16	126E	70	97	30	19	12E
30	15	89	74	93	30	19	12E
31	15	—	80	—	28	19	—
MEAN	23.1	25.2	59.5	79.1	49.2	21.5	13.6
AC-FT	1420	1501	3660	4705	3025	1323	811

E estimated

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 29

1995 Daily Mean Discharge
(In cubic feet per second)

NORTH FORK PIT RIVER AT ALTURAS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	NR	127	1220	248	74	3.2	4.4
2	NR	131	1190	275	55	3.2	2.5
3	NR	120	975	269	65	3.9	2.1
4	NR	121	852	240	54	5.7	2.1
5	NR	129	756	222	45	5.0	2.0
6	NR	197	780	223	59	2.2	1.9
7	NR	260	1040	221	57	1.6	3.2
8	NR	226	937	205	63	1.2	2.7
9	NR	196	887	168	59	0.9	2.1
10	NR	167	758	144	52	1.0	1.9
11	NR	156	673	147	46	1.0	1.6
12	NR	151	647	125	34	0.9	1.4
13	NR	162	598	115	28	0.9	0.9
14	NR	170	515	101	51	0.8	0.9
15	NR	150	454	116	48	0.8	0.8
16	NR	144	413	191	42	1.3	0.8
17	270	141	395	295	19	2.4	0.7
18	272	140	387	228	42	3.0	0.7
19	270	167	367	246	35	3.4	0.7
20	283	192	356	230	34	3.3	0.7
21	338	223	337	187	24	3.8	0.9
22	288	194	338	129	19	4.0	2.0
23	273	170	326	142	14	3.8	2.0
24	329	157	304	100	17	3.8	1.6
25	282	157	293	120	12	3.7	1.2
26	245	162	280	81	8.5	3.6	1.0
27	225	162	269	18	7.2	3.2	1.0
28	200	176	279	48	6.1	2.6	0.8
29	151	327	264	68	5.5	2.5	0.7
30	136	546	265	71	4.7	4.5	0.6
31	126	—	253	—	3.4	4.8	—
MEAN	NR	184	562	166	34.9	2.8	1.5
AC-FT	NR	10950	34530	9864	2149	171	91

SCOTT RIVER WATERMASTER SERVICE AREA

SCOTT RIVER WATERMASTER SERVICE AREA

The Scott River service area is in western Siskiyou County and consists of five tributaries of the Scott River: French Creek, Shackleford Creek, Sniktaw Creek, Oro Fino Creek, and Wildcat Creek. Before 1980, French Creek and Shackleford Creek were separate service areas. Wildcat Creek came into service in 1981, Oro Fino in 1984, and the five tributaries to the Scott River were combined to form the Scott River watermaster service area.

Scott River Service Area 1995 Distribution

Watermaster service began in the Scott River watermaster service area on April 1 and ended on September 30 with Keithal B. Dick, Water Resources Technician II, as watermaster.

French Creek

The French Creek service area is in Scott Valley, western Siskiyou County, near the town of Etna. The major sources of water supply are French, Miners, and North Fork French creeks. French Creek flows northeast through the center of the service area. Miners Creek begins east of the headwaters of French Creek and flows in a northerly direction, joining French Creek about three miles above its confluence with Scott River. North Fork French Creek begins north of the headwaters of French Creek and flows easterly, joining French Creek 1 mile upstream from the confluence with Miners Creek.

The service area encompasses the entire agricultural area within the French Creek Basin and some additional lands along the west side of the Scott River near the town of Etna. It is about 0.5 mile wide and 5 miles long, with the main axis and drainage running from south to north. Elevations of the agricultural area range from about 3,200 feet at the south to about 2,800 feet at the confluence of French Creek and Scott River.

Basis of Service. The rights of this creek system were determined by court reference and set forth in Decree No. 14478, Siskiyou County Superior Court, dated July 1, 1958.

The French Creek watermaster service area was created on November 19, 1968, and service was started on July 1, 1969.

Water is distributed according to three schedules: North Fork French Creek, with three priorities; Miners Creek with three; and French Creek, Horse Range Creek, Paynes Lake Creek, and Duck Lake system, with seven.

These schedules are independent of each other with two exceptions: (1) Miners Creek users have the option of diverting from French Creek when water is not available from Miners Creek, and (2) maximum allowable flows are specified at given points, regardless of the source of the water.

One peculiarity of this decree is that it included two water rights that have a specified amount, which are subject to the exclusive control of the other owners of the ditch.

Water Supply. The water supply comes from snowmelt runoff, springs and seepage, and occasional summer thundershowers.

The watershed of French Creek contains about 32 square miles of heavily forested, steep mountainous terrain of the easterly slopes of the Salmon Mountains. It varies in elevation from about 7,200 feet along its west rim to about 3,200 feet at the foot of the slopes bordering French Creek Valley. Snowmelt runoff is normally sufficient to supply all demands until about the middle of July. The daily mean discharge of French Creek above North Fork French Creek is presented in Table 30.

Method of Distribution

Irrigation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

The season started on French Creek with all users receiving full rights. Streamflows continued above 100 percent of all priorities until August 1. By August 25, distribution was down to fourth priority users only and continued at that rate until September 30, the end of the irrigation season.

Releases were started from Smith Lake to the North Fork Ditch users on August 24.

Shackleford Creek

The Shackleford Creek service area is in western Siskiyou County near the town of Fort Jones in Scott Valley. The major sources of water for this service area are Shackleford Creek, which flows through the central part of Quartz Valley, and its tributary, Mill Creek, which rises east of the headwaters of Shackleford Creek. Evans Creek, a small tributary to Mill Creek, enters from the south.

The service area encompasses the Quartz Valley region of Scott Valley and includes the entire agricultural area within the Shackleford Creek Basin. It is about 2 miles wide

by 6 miles long, with the main axis and drainage running from south to north. Elevations on the agricultural area range from about 3,100 feet at the south to about 2,650 feet at the confluence of Shackleford Creek and Scott River.

Basis of Service. The Shackleford Creek watermaster service area was created on November 6, 1950. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 13775, Siskiyou County Superior Court, dated April 3, 1950.

The allotments are defined in four separate schedules. The upper and lower Shackleford Creek groups each have seven priority classes. The upper Mill Creek group and lower Mill Creek group each have three priority classes.

The decree also includes two storage rights upstream of all diversions. This stored water is released late in the irrigation season to Shackleford Creek for use by water right holders.

Water Supply. The water supply for Shackleford Creek comes from snowmelt runoff, springs and seepage, and supplemental stored water released from Campbell Lake, near the headwaters of Shackleford Creek.

SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 30

1995 Daily Mean Discharge
(In cubic feet per second)

FRENCH CREEK ABOVE NORTH FORK FRENCH CREEK

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1			76	*	N	16	6.6
2			78	*		15	6.3
3			72	*	O	15	6.3
4			72	*		14	6.3
5			69	*		14	6.1
					R		
6			66	*		13	5.8
7			60	*	E	13	5.8
8			59	73		13	6.1
9			62	64	C	13	5.8
10			60	64		13	5.8
					O		
11			59	70		12	5.8
12			55	77	R	12	5.3
13			52	76		11	5.1
14			51	73	D	11	5.1
15			58	*		10	5.1
16			79	*		10	5.3
17			78	43	38	9.8	5.8
18		54[1]	78	72	44	9.4	5.8
19		48		78	37	8.5	6.1
20		50	A	69	35	8.5	6.1
			B				
21		44	O	66	30	7.9	6.1[1]
22		43	V	62	31	7.6	
23		44	E	66	28	7.4	N
24		46		N	25	7.4	O
25		50	R	O	24	7.1	
			A				R
26		52	T	R	20	7.1	E
27		56	I	E	20	7.1	C
28		56	N	C	18	7.1	O
29		55	G	O	19	6.9	R
30		52		R	17	6.9	D
31		—		D	17	6.6	
MEAN						10.3	
AC-FT						635	

[1] No record before April 18, and after September 21.
* Above Rating

The watershed of the Shackleford Creek stream system contains about 31 square miles, located in the heavily forested, steep mountainous terrain of the northeasterly slopes of the Salmon Mountains. It varies in elevation from about 7,000 feet along its west rim to about 3,000 feet at the foot of the slopes bordering Quartz Valley. Snowmelt runoff is normally sufficient to supply all demands until the middle of July. The supply then usually decreases until the first part of August when water is released from Cliff and Campbell Lakes to maintain sufficient flow in the Shackleford Ditch.

Method of Distribution. Irrigation is accomplished primarily by wild flooding of permanent pasture and alfalfa fields. Water is distributed by ditches and laterals to the places of use. Shackleford Ditch, the largest of these ditches, has a length of about 6 miles and a capacity of about 12 cfs.

Shackleford Creek 1995 Distribution

The season started on Shackleford Creek with all users receiving full rights and continued until August 10.

Releases were started from Campbell Lake to the Shackleford Ditch on August 20. One hundred percent of all third priority allotments was available through September 30.

Sniktaw Creek

The Sniktaw Creek service area is in western Siskiyou County, 7 miles west of the town of Fort Jones in Scott Valley. It encompasses an agricultural area about 3 miles long and 1 mile wide, running from south to north. Elevations in the Sniktaw watershed range from 6,700 feet in the southwest to about 2,650 feet at the confluence of Sniktaw Creek and Scott River.

Basis of Service. The Sniktaw Creek service area was added to the Scott River watermaster service area on April 1, 1981. Water is distributed under the provisions of a statutory adjudication which resulted in Decree No. 30662, Siskiyou County Superior Court, dated
January 16, 1980.

The allotments are defined in the Scott River Decree, Schedule B 38, which has three priority allotments.

Water Supply. The water supply for Sniktaw Creek comes from snowmelt, springs, and seepage. Water from Shackleford Creek (Diversions 3, 17, 19, 20, and 21) supplements available water in Sniktaw Creek.

Return water from Heide's Shackleford Creek Ditch, Diversion 3, commingles with natural flow of Sniktaw Creek. After leaving the Heide property and entering Sniktaw Creek, it is

alloted as set forth in Schedule B 38 (Sniktaw Creek) from Diversions 665 to 679. Heide may use tailwater from Shackleford Creek Ditch, Diversion 3, for irrigation of 27 acres under License 10875 issued on Application 22882 for use on former Indian lands. The right may be exercised only at times that Heide is receiving water from Shackleford Creek Ditch, Diversion 3, or at times that all Sniktaw Creek allotments are being filled.

Method of Distribution

Irrigation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

Sniktaw Creek 1995 Distribution

All priorities were filled until August 10; by August 20, the water supply had receded to 80 percent of second priority. The Heide Ditch from Shackleford Creek was turned off August 20.

Wildcat Creek

The Wildcat Creek service area is in western Siskiyou County near the town of Callahan. The major sources of water are Wildcat Creek, which flows through the service area, and foreign water imported from Sugar Creek, Jackson Creek, Grizzly Creek, and Camp Gulch.

Basis of Service. The Wildcat Creek watermaster area was started May 1, 1980. Water is distributed under a statutory adjudication that resulted in Decree No. 30662, Siskiyou County Superior Court, dated January 16, 1980. The allotments are defined in the Scott River Decree, Schedule B 10.

Method of Distribution. Irrigation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

Wildcat Creek 1995 Distribution

The water supply was above normal. Import water from Sugar Creek and Jackson Creek was not used in 1995 due to washed out ditch, and runoff from the Hall Ranch helped supply the Thamer Ranch. Recorders were installed on the Parshall flumes at points A and B, described in the decree. These two ranches both were leased and irrigated by one operator and required no regulation.

Oro Fino Creek

The Oro Fino Creek service area is in southwestern Siskiyou County near the town of Greenview. It encompasses an agricultural area about 5 miles long and 0.5 mile wide, running from south to north. Elevations along Oro Fino Creek range from 2,900 feet near the headwaters to 2,700 feet at the confluence of Oro Fino Creek and the Scott River.

Basis of Service. The Oro Fino Creek service area was added to the Scott River watermaster service area on July 1, 1984. Water is distributed under the provision of the statutory adjudication which resulted in Decree 30662, Siskiyou County Superior Court, dated
January 16, 1980.

Water Supply. The water supply for Oro Fino Creek above Diversion 606 is derived from Kidder Creek. Springs feed Oro Fino Creek below Diversion 607. Allotments are diverted from underflow by means of offset wells or sumps at Diversions 606, 606a, 611, and 612. The allotments at Diversions 607, 608, 609, 610, 613, 613a, 614, 615, and 616 may be diverted, at the option of the claimant, from surface flow or from underflow by means of offset wells or sumps or a combination of both with the provision that when surface flow in the creek (at the county road at the O. Lewis property) recedes to 3 cfs, the percentage or amount of the surface flow reaching the point of diversion of each of the following claimants shall be bypassed at the claimant's lower property line: Friden, 51 percent; O. Lewis, 96 percent; and J. Eppler, all flow in excess of 1.31 cfs.

The ground water table along Oro Fino Creek is recharged mainly by Kidder Creek Diversions 446 and 448 which supply surface water to the Foster and Friden lands. Kidder Creek streamflow for these diversions is mainly snowmelt runoff.

Method of Distribution

Irriation is done mainly by wild flooding of permanent pasture. Water is distributed by ditches and laterals to the place of use.

The water supply of Oro Fino Creek was above normal. Water supply was helped with imported water from Kidder Creek until July 15. Flows receded to stock water in late September.

SHASTA RIVER WATERMASTER SERVICE AREA

SHASTA RIVER WATERMASTER SERVICE AREA

The Shasta River service area is in the central part of Siskiyou County. Willow Creek and Cold Creek, formerly in the Klamath River watermaster service area, were incorporated into the Shasta River watermaster service area in 1983.

The water supply comes from North Fork Sacramento River, Shasta River, and its several tributaries. The upper reaches of the service area are served by two groups of tributaries. One group, comprising Boles, Beaughan, Carrick, and Jackson creeks, rises on the northwestern slopes of Mount Shasta. The other group, consisting of Dale and Eddy creeks, and Shasta River west of Interstate 5, rises on the eastern slopes of the Trinity Mountains. All these streams join the mainstem Shasta River above Lake Shastina (Dwinnell Reservoir) near the town of Weed. As the Shasta River flows northward from Lake Shastina to its confluence with the Klamath River, north of Yreka, it is joined by three major tributaries. Parks Creek, rising on the eastern slopes of the Trinity Mountains, enters from the west near the town of Gazelle. Big Springs Creek, from Big Springs Lake, enters from the east about a mile below Parks Creek. Little Shasta River, rising on the slopes of the mountainous area between Butte Valley and Shasta Valley, enters from the east near the town of Montague.

Shasta Valley is about 30 miles long and 30 miles wide. In the center of the valley are many small, cone-shaped, volcanic hillocks that divide the area into separate parts. Because of these volcanic formations, only about 141,000 acres of about 507,000 acres in the valley are irrigable. The valley floor elevation averages about 3,000 feet.

Willow Creek is in Siskiyou County, about 10 miles northeast of Montague. It is the major source of water to the service area and rises on the west slope of the 7,800-foot Willow Creek Mountain. It flows northwest through about 11 miles of rolling hills to its confluence with the Klamath River. The Willow Creek area is about 8 miles long by 1 mile wide and varies in elevation between about 2,600 and 4,000 feet.

Cold Creek is just south of Copco Lake, a hydroelectric power reservoir on the Klamath River in the extreme northern part of Siskiyou County. Yreka is 30 miles southwest of the Cold Creek stream system. Elevations within the Cold Creek watershed range from 2,900 feet to about 6,500 feet.

Basis of Service

The Shasta River watermaster service area was created on March 1, 1933. The appropriative water rights on this stream system were determined by a statutory adjudication that resulted in Decree No. 7035, Siskiyou County Superior Court, dated December 29, 1932.

The decree lists the water rights of the entire stream system by the names of the users. The rights supervised by the watermaster are broken down into eight separate schedules. These are: Shasta River above its confluence with Big Springs Creek - 43 priorities; Boles Creek - 20 priorities; Beaughan Creek - 5 priorities; Jackson Creek - 7 priorities; Carrick Creek - 13 priorities; Parks Creek - 25 priorities; Shasta River below its confluence with Big Springs Creek and Big Springs Creek and tributaries - 29 priorities; and Little Shasta River - 7 priorities. Additional schedules include Willow Creek, Yreka Creek, and miscellaneous independent springs, gulches, and sloughs, but these are not included in the service area.

Montague Water Conservation District has appropriative rights for storage of Shasta River and Parks Creek water in Lake Shastina. By agreement with the District, five nearby downstream users receive water from storage in lieu of their decreed continuous flow allotments. The watermaster handles the reservoir releases for these users. A peculiarity of the Shasta River decree is that it defines only appropriative rights and excludes a number of riparian users on the Lower Shasta River. Holders of these riparian rights are not regulated by the watermaster.

Water Supply

The water supply for Shasta Valley comes from snowmelt runoff, groundwater and related springs, and occasional summer thundershowers. In several parts of the stream system, the springs are enough to supply most allotments throughout the season. Much of the underground flow comes from the northern slopes of Mount Shasta, which rise to 14,162 feet at the south end of Shasta Valley. Although the snowpack on Mount Shasta is usually heavy, there is little surface runoff.

Parks Creek, Upper Shasta River, and Little Shasta River get much of their water from snowmelt runoff, usually enough to supply allotments until the middle of May.

Beaughan Creek, Carrick Creek, Shasta River from Boles Creek to Lake Shastina, Big Springs, and Lower Shasta River have enough runoff from springs to supply many of the allotments throughout the season.

Records of the daily mean discharge at several stream gaging stations in the Shasta River service area are in Tables 31 through 34. The daily mean storage in Lake Shastina is in Table 35.

Method of Distribution

Irrigation of permanent pasture and alfalfa lands is mainly by wild flooding. Much of the return water is recaptured and used on lower pasture lands. Sprinkling systems are used for irrigating some alfalfa and grain lands. Water is routed by diversion dams and then carried by ditch or canal to the place of use. The largest and longest canal in the area is the Edson-Foulke Yreka Ditch, which has a capacity of about 60 cfs and a length of about 14 miles. Water is also supplied to ditch systems by pumped diversions, the three largest belonging to two irrigation districts and a private water users' association. Some riparian lands are also served by pump diversions. Many privately owned storage reservoirs are in the area. Water from these reservoirs supplements continuous-flow allotments.

Because of the large rights of Grenada and Big Springs Irrigation districts and Shasta River Water Users Association, the watermaster's close surveillance is very important, particularly in dry years. Control of releases from Montague Water Conservation District's Dwinnell Reservoir (Lake Shastina) is another responsibility of the watermaster. This includes measurement of deliveries of stored water to users just below the dam. Control of releases from Hammond Lake is also a duty of the watermaster.

1995 Distribution

Watermaster service began April 1 in the Shasta River watermaster service area and ended September 30 with Keithal B. Dick, Water Resources Technician II, and Lester L. Lighthall, Water Resources Technician II, as watermasters.

The water supply for the 1995 irrigation season was above normal. All streams experienced one of the best seasons for several years. Regulation was not required until late in the season.

Parks Creek

Flows were above normal with all rights being filled until the middle of July. Flows decreased and third priorities were discontinued by the last week of July. Flows continued to decrease with less than 8.0 cfs by September.

Upper Shasta River

Upper Shasta River, Dale Creek, and Eddy Creek are on the same order of priorities. The flow was enough to fill all priorities until August 14. Flow decreased to 50 percent of third priorities in September and remained near that level until the end of September. Lower priorities below the Yreka Ditch received return flow and inflow from springs after August 14.

The Hammond Reservoir Irrigation Association, owners of the Hammond Reservoir, was added to the Shasta River watermaster service area in 1989. The 348-acre-foot reservoir has storage licenses 5261 and 6531 for water diverted from the North Fork Sacramento River. The stored water is released to the Shasta River and then diverted into diversions 3, 4, 4 west, 5, 6, 7, and 19. The releases are measured at a weir located downstream from the reservoir. The reservoir filled and remained full until June 15; releases started August 15. The reservoir was not drained this year. Diversions from North Fork Sacramento River were started on May 12 and ended June 20.

Boles Creek and Shasta River to Lake Shastina (Dwinnell Reservoir)

Boles Creek and this portion of Shasta River are operated as one stream under a long-standing oral agreement among the water right holders. The water is distributed on a correlative, equal-priority basis. Water was set to 100 percent of all rights on July 17. Flows remained at this level for the rest of the season.

Beaughan Creek

With close regulation of the upper users, all priorities were satisfied for the entire season. Roseburg Lumber Company used all of its rights to sprinkle its log decks.

Carrick Creek

Carrick Springs supplied enough water to satisfy all 13 priorities for the entire season with close regulation.

Little Shasta River

There was above-average snowmelt runoff this season on the Little Shasta River. The flows started at 100 percent of all priorities and decreased gradually to 80 percent of fifth priority on June 5. Flows decreased to 15 percent of fifth priority on August 1, and remained that way until the end of the season.

Dwinnell Reservoir

Storage in Dwinnell Reservoir on March 1 was 34,160 acre-feet and increased to 50,380 acre-feet by April 17. On September 30, storage was down to 22,060 acre-feet. By agreement with the Montague Water Conservation District, owner of Dwinnell Reservoir, water users on Shasta River below the reservoir received stored water on demand.

Deliveries to Natural Flow Water Right Owners
Below Dwinnell Reservoir - 1995

Name of Water Right Holder	Allotment (in acre-feet)	Amount Delivered from Dwinnell Reservoir (in acre-feet)
Wagner, Richard W.	1,200	1,200
Flying L Ranch	198	150
Hole-in-the-Ground Ranch	596	596
Seldom Seen Ranch	924	924
Hidden Valley Ranch	464	220
	3,382	3,090

Big Springs Lake

Big Springs Irrigation District used its own wells, and no water was received from Big Springs Lake. An agreement between E. J. Louie, A. H. Newton, Jr., and Montague Water Conservation District was established during the winter of 1986. They agreed when the flows of Big Springs receded from 17.5 cfs to 10.0 cfs, Montague Water Conservation District would do the following:

- Turn off the Basey pumps until the flow of Big Springs is 17.5 cfs or pay A. H. Newton, Jr. the additional power cost to use his own pumps.
- If flows of Big Springs fall below 10.0 cfs, Montague Water Conservation District will shut off the Basey pumps until flows return to above 10.0 cfs.

There was no pumping by the Montague District during the 1995 season. The total flow of Big Springs receded to 10 cfs for parts of August and September.

Lower Shasta River

The flows in the Lower Shasta River were enough to supply all priorities until September 30.

Willow Creek (North of Montague)

Basis of Service. Willow Creek has had a long history of litigation. The present basis of service was initiated in 1949 when the Department of Public Works, Division of Water Resources, was asked to referee a civil suit. The matter was not finalized by a decree until 1972. The issues involved were reopened in 1971, and by Decree No. 24482, dated April 28, 1972, the Siskiyou County Superior Court appointed DWR to supervise distribution of water in accordance with an earlier agreement between the users which defined their respective rights. Currently, Willow Creek is part of the Shasta River Watermaster Service Area.

There are three water users in the service area. Distribution is on a fractional basis until the flow drops to a specified amount below the upper two users. At that time, the total flow is rotated between the upper two users.

Water Supply. The main source of water for the Willow Creek stream system is from snowmelt. Runoff from the snowmelt begins late in March or early April and is usually depleted by June. Thereafter, the streamflow decreases rapidly until about July 25. From then until the rainy season begins, the flow remains at a low-flow stage sufficient to provide domestic and stock-watering purposes to the two upper users.

Method of Distribution. Both sprinkler and flood irrigation are used on Willow Creek. The upper water user has the option of using gravity diversions for either flood or sprinkler irrigation. The middle user relies entirely on runoff from the upper user's flood irrigation. The lower user in the area uses both flood and sprinkler irrigation during the early season when the supply is abundant. As the supply dwindles, the remaining water is pumped from a sump to the sprinkler system.

1995 Distribution. Snowmelt lasted until July 15. This was all the water that was available for the lower users.

Cold Creek

Basis of Service. A statutory adjudication of Cold Creek in 1978 ordered DWR to provide watermaster service at Diversions 2, 3, and 4, and at the division weir on the Silva-Lennox Ditch. Watermaster service began April 1, 1981.

Water Supply. Flow is from springs and remains fairly constant each season.

Method of Distribution. Both sprinkler and flood irrigation are used in Cold Creek service area.

1995 Distribution. The water supply of the Cold Creek stream system satisfied all requirements until August 1. Only a portion of full entitlements were satisfied thereafter. No regulation was required since the automatic split worked well.

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 31

1995 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR YREKA[1/]

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	155	308	355	114	178	79	61
2	225	297	369	119	155	73	56
3	353	264	369	118	145	69	55
4	320	251	371	118	134	62	48
5	248	245	373	118	126	52	47
6	220	274	397	124	122	45	54
7	208	313	445	145	106	35	56
8	205	422	403	157	112	38	65
9	218	405	339	142	145	48	64
10	467	349	333	125	181	48	59
11	1110	316	279	112	188	47	58
12	849	310	266	114	230	52	52
13	560	484	265	113	241	51	56
14	449	559	257	133	223	59	61
15	453	474	241	288	186	57	69
16	438	418	209	292	145	54	70
17	369	381	184	250	147	51	67
18	456	370	194	262	208	55	62
19	535	385	203	244	180	49	52
20	542	321	202	225	129	52	51
21	751	313	206	213	137	52	56
22	734	298	251	194	144	49	58
23	1020	277	230	167	148	53	62
24	1170	254	209	148	137	48	61
25	813	226	213	141	125	55	80
26	446	224	211	133	111	62	79
27	405	240	180	135	99	57	78
28	368	272	157	140	98	60	77
29	343	328	137	133	97	59	85
30	327	346	130	146	85	61	87
31	312	—	115	—	82	66	—
MEAN	486	331	261	162	147	54.8	62.9
AC-FT	29890	19680	16050	9650	9010	3370	3740

[1/] USGS Station

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 32

1995 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR EDGEWOOD

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		NR[1/]	481	429	140	30	12
2		NR	381	427E	136	29	11
3		NR	309	503	131	28	12
4		NR	318	449	121	26	13
5		NR	272	396	108	24	13
6		NR	231	258	104	23	13
7		NR	198	217	100	21	13
8		NR	188	145	98	20	14
9		NR	194	117	129	18	13
10		NR	181	121	117	17	13
11		NR	175	150	90	16	13
12		NR	166	159	85	16	13
13		NR	157	163	71	17	13
14		NR	148	350	61	16	13
15		NR	155	386	62	16	13
16		NR	172	176	64	15	13
17		NR	189	154	75	15	12
18		NR	168	157	90	15	13
19		NR	182	137	75	15	13
20		NR	217	127	69	14	14
21		NR	263	105	63	14	14
22		NR	284	103	58	14	13
23		NR	283	115	52	14	14
24		NR	271	142	49	14	14
25		NR	330	172	49	14	14
26		NR	353	189	50	14	14
27		214	360	189	39	13	15
28		185	378	185	33	13	15
29		229	395	166	34	14	16
30		185	425	154	33	13	16
31		—	443	—	32	13	—
MEAN		NR	267	218	78	17.5	13.4
AC-FT		NR	16400	12970	4796	1073	797

[1/] No record before April 27.

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 33

1995 Daily Mean Discharge
(In cubic feet per second)

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					67	14	9.8
2					63	13	9.4
3					58	13	9.4
4					55	13	9.4
5					51	13	9.4
6					47	14	9.4
7					43	14	9.4
8					39	13	9.0
9					41	13	9.0
10					39	13	9.0
11					36	13	8.7
12					34	12	8.7
13					34	12	8.3
14					34	12	8.3
15					32	12	8.3
16					32	12	8.3
17					34	11	8.3
18					34	11	8.3
19					25	11	8.0
20					24	10	8.0
21					24	10	7.7
22					22	10	7.7
23					21	10	7.7
24					18	10	7.7
25					18	10	7.7
26					17	10	7.4
27					16	10	7.4
28					15	10	7.7
29				75 [1]	14	9.8	7.7
30				71	14	9.8	7.7
31				—	14	9.8	—
MEAN					32.7	11.6	8.4
AC-FT					2010	711	501

[1] No record before June 29.

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 34

1995 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

DAY	APR	MAY	JUN	JUL	AUG	SEP
1	330	330	137	208	110	90
2	330	338	141	197	107	90
3	298	330	137	190	100	87
4	302	338	141	186	94	71
5	290	330	141	172	77	74
6	290	416	158	168	71	77
7	330	462	179	148	58	103
8	372	330	179	154	71	80
9	359	310	158	186	67	80
10	306	298	168	208	74	77
11	298	275	165	241	84	74
12	294	279	165	263	84	71
13	510	279	124	275	87	84
14	600	279	209	263	100	87
15	359	263	302	215	97	97
16	330	215	298	197	90	97
17	302	215	282	201	90	90
18	318	234	294	241	90	74
19	298	241	279	208	84	64
20	294	252	263	172	84	64
21	290	263	256	179	84	67
22	279	275	230	190	90	61
23	275	252	204	190	87	71
24	252	230	197	186	87	67
25	237	237	193	154	100	107
26	234	234	197	137	97	100
27	245	190	193	127	94	107
28	263	172	193	137	97	103
29	298	151	193	124	97	110
30	306	154	204	117	103	110
31	—	130	—	110	100	—
MEAN	316	268	199	185	88.9	84.6
AC-FT	18820	16470	11860	11390	5460	5032

SHASTA RIVER WATERMASTER SERVICE AREA
1995 Season

TABLE 35

LAKE SHASTINA (DWINNELL RESERVOIR)
DAILY MEAN STORAGE IN ACRE-FEET

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	940	1420	2560	3940	28250	34160	47860	50560	48220	46420	39440	28700
2	940	1420	2600	4000	29920	34160	47860	50740	48220	46240	39090	28400
3	960	1550	2650	4060	30720	34500	47860	50920	48400	46060	38920	28100
4	960	1480	2700	4060	31360	34500	47860	50920	48400	45880	38580	27800
5	980	1510	2750	4120	31840	34500	47860	50920	48400	45700	38240	27500
6	980	1510	2800	4180	32160	34670	48040	50740	48400	45520	37900	27200
7	1000	1540	2850	4360	32480	34670	48400	50560	48400	45160	37390	27050
8	1030	1600	2850	5390	32800	35010	48760	50560	48220	44980	36880	26750
9	1030	1630	2900	10100	32970	37560	48940	50380	48040	44800	36540	26450
10	1040	1690	2900	14900	33140	40450	48940	50200	47680	44800	36030	26150
11	1060	1750	2950	16700	33310	42660	49120	50200	47500	44620	35690	26000
12	1060	1810	3000	18000	33480	43720	49120	50020	47320	44440	35180	25850
13	1090	1840	3150	18840	33480	44260	49840	49840	47140	44440	34840	25550
14	1090	1900	3100	20240	33650	45340	50020	49840	47140	44080	34500	25400
15	1120	1930	3160	21360	33650	46600	50200	49660	47500	44080	33990	25100
16	1150	1960	3160	21920	33650	47320	50200	49480	47500	43900	33650	24800
17	1150	2020	3220	22340	33820	47500	50380	49300	47680	43720	33140	24650
18	1180	2050	3280	22620	33820	48400	50380	49300	47680	43360	32800	24500
19	1210	2080	3340	22760	33820	49120	50380	49120	47680	43180	32480	24200
20	1210	2140	3340	22900	33820	49840	50380	48930	47680	42830	32160	24050
21	1240	2170	3400	23040	33820	49660	50380	48760	47680	42680	31840	23900
22	1240	2200	3400	23180	33990	49480	50380	48760	47680	42320	31520	23600
23	1270	2240	3460	23600	33990	48580	50200	48580	47680	42150	31200	23320
24	1270	2280	3520	23900	33990	47320	50200	48400	47500	41980	30720	23180
25	1300	2320	3580	24500	33990	47500	50200	48400	47500	41810	30240	22900
26	1300	2360	3580	24650	33990	47500	50200	48400	47500	41300	30080	22760
27	1330	2400	3700	24800	33990	47680	50200	48220	47320	40960	29920	22620
28	1360	2440	3760	25250	34160	47680	50200	48220	47140	40790	29600	22340
29	1360	2480	3820	25400	—	47860	50380	48220	46960	40450	29300	22200
30	1360	2520	3880	25850	—	47860	50380	48220	46780	40110	29000	22060
31	1390	—	3940	26600	—	47860	—	48220	—	39770	28850	—

SURPRISE VALLEY WATERMASTER SERVICE AREA

SURPRISE VALLEY WATERMASTER SERVICE AREA

The Surprise Valley service area is in Modoc County, east of the Warner Mountains. Eleven individual stream systems rising on the eastern slope of the Warner Mountains supply water to the area. These are fed by snowmelt runoff and run in fast, steep courses down the eastern slope of the Warner Mountains to the valley floor where numerous scattered diversion ditches convey water to the irrigated lands.

Basis of Service

The Surprise Valley watermaster service area was created January 10, 1939 and includes Mill, Soldier, Pine, Cedar, Deep, Owl, Rader, and Emerson creeks, all of which once had individual watermaster service. Also, service was started on Eagle Creek at that time. Bidwell Creek was added to the service area March 16, 1960, and Cottonwood Creek was added in 1977. Each of the 11 stream systems in Surprise Valley is under separate decrees.

See Table 36, page 87 for specific data regarding the decrees and water rights on the individual creeks.

Water Supply

The water supply comes almost entirely from snowmelt, with only minor spring-fed flows occurring late in the season. Due to the steep eastern slope of the Warner Mountains, there are no likely storage sites on the service-area streams. Because of the lack of such regulatory storage, the available water supply at any specific diversion point may vary considerably within a few hours. Wide daily temperature changes cause great changes in the rate of snowmelt runoff. This situation is worsened by the relatively short, steep drainage area. Also, occasional summer thundershowers may cause a creek to discharge a flow of mammoth proportions for several hours. These flashes can cause considerable damage from washouts and debris deposition but are of such short duration that little or no beneficial use can be made of the water.

Records of the daily mean discharge at several stream gaging stations within the service area are presented in Tables 37 through 48, pages 88 through 99.

Method of Distribution

Continuous-flow distribution is used on most creeks, but water is rotated among some users in accordance with either decree schedule or by mutual agreement.

Alfalfa and meadow hay, the major crops in the valley, are irrigated by sprinklers and wild flooding, although some lands depend upon subsurface irrigation. A few of these systems work by gravity, but most use pumps with the surface water supplemented by deep wells. Many additional acres have been put into production during the past few years through the use of deep wells. Only surface water supplies are under State watermaster service.

To facilitate distribution of irrigation water, construction of permanent diversion dams, headgates, and measuring devices has been encouraged in recent years. Although these structures do not solve the problems of discharge variation and debris deposition, they do help to solve water measurement and distribution problems.

1995 Distribution

Watermaster service began in the Surprise Valley watermaster service area on March 19 and continued until September 30. George Fitzmorris, Engineer, Water Resources, was watermaster.

The 1995 season was very wet. The snowpack and resulting spring and early summer runoff were over 200% of normal. The streams flowing from the North Warner Mountains peaked in early May and then declined slowly. The streams flowing from the South Warners peaked in late June and in early July and declined slowly. Spring rains contributed to the flows in the creeks. Cooler weather in September resulted in some increase in stream flows.

The Alkali Lakes, which were dry by the end of the 1994 irrigation season, had filled by the beginning of the season. The water levels in the Lower and Middle Alkali Lakes had declined somewhat by the end of this season. The Upper Alkali Lake was still full at the end of September.

Bidwell Creek

The maximum flow in Bidwell Creek this season was 98 cfs, lowering to 5.9 cfs in mid-September and rising to 6.6 cfs at the end of September. Full first priority water was available through July 10, when the water right schedule changes. Full third priority

water of the July 10-September 30 schedule was available until mid-July, declining to second priority in mid-August, and to one-half of second priority in early September.

Mill Creek

The maximum flow in Mill Creek this year was 89 cfs, declining to 2.0 cfs in mid-September and rising to 2.4 cfs at the end of September. The stream flow was in the lower third priority level on April 1, increasing to full priority by the end of the month. Full priority water was then available until near the end of June. The flow decreased to third priority in early July, to second priority in mid-August, and to first priority in mid-September.

Soldier Creek

The maximum flow in Soldier Creek this season was 67 cfs, lowering to 1.1 cfs at the end of September. With the exception of lower flows in the first part of April, full priority water was available until late June, after the end of the rotation period on June 19. The creek flow declined to fifth priority at the beginning of July, second priority in mid-July, and to first priority near the end of August.

Pine Creek

The maximum flow in Pine Creek this year was 46 cfs. The creek went dry at the end of August. Three and one-half rotations of water use were completed before the creek flow declined to 4 cfs on June 4 and flow directed to Tracts 68 and 70 on the North Channel. On June 22 the flow had decreased to 1.6 cfs and was diverted to the Cressler Ditch.

Cedar Creek

The maximum flow in Cedar Creek this season was 82 cfs, lowering to 0.5 cfs in mid-September. The diversion from Thoms Creek to Cedar Creek was activated in May, at a maximum of 2 cfs and gradually decreasing. The diversion continued until early July when the flow in Thoms Creek became too low for it to continue. Full priority water was available until mid-May, lowering to second priority at the end of May, and to first priority on July 11. The water users below Cedarville diverted water until the end of June.

Deep Creek

The maximum flow in North Deep Creek this year was 36 cfs, decreasing to 0.6 cfs in mid-September. Full priority water was available until the end of June, declining to one-half of full priority in mid-July and to 10% of full priority in mid-August.

The maximum flow in South Deep Creek this season was 39 cfs, lowering to 0.5 cfs in mid-September and rising to 0.7 cfs on September 30. Full priority water was available until early June, full second priority until mid-June, and full first priority until the first of July. The creek flow declined to 20% of first priority in mid-August.

Cottonwood Creek

The maximum flow in Cottonwood Creek this year was 83 cfs, lowering to 2.5 cfs in mid-September and then remaining fairly level through the remainder of September. Water rotation between tracts 243, 245, 246, and 109 started on May 23 and was completed with a double rotation period of six days on July 4.

Owl Creek

The maximum flow in Owl Creek this season was 75 cfs, lowering to 2.2 cfs in mid-September and remaining fairly level through the end of the season. The Allen-Arreche (Snake) Ditch diversion was in service intermittently during June and July when creek flows permitted; a number of wash-outs of the ditch banks limited its use. Full priority water was available until mid-July. The creek flow declined to tenth priority the first of August, to seventh priority at the end of August, and to fourth priority in mid-September.

Rader Creek

The maximum flow in Rader Creek this year was 44 cfs, dropping to 2.4 cfs at the end of August and remaining fairly level for the rest of the season, being 1.8 cfs at the end of September. Water was diverted into the Cockrell Ditch from May 20 until August 16, when the water no longer reached the place of use. Full priority water was available during June and early July, lowering to third priority at the end of July and to second priority in mid-September.

Eagle Creek

The maximum flow in Eagle Creek this year was 68 cfs, lowering to 5 cfs at the end of September. Full priority water was available from mid-May through the end of July, declining to third priority in early August. The flow lowered to second priority in mid-September and remained steady for the remainder of the season.

Emerson Creek

The maximum flow in Emerson Creek this year was 48 cfs, declining to 3.7 cfs in mid-September and remaining fairly steady for the rest of the month. Full priority water was available during May, June and early July. The creek flow lowered to second priority in mid-July and to one-third of second priority at the beginning of August.

TABLE 36

DECREES AND RELATED DATA - SURPRISE VALLEY STREAMS

Stream	Modoc County Superior Court Decree No.	Date	Type[a]	Service Area Created	No. of Water Right Owners	Total Cfs	Remarks
Bidwell	6420	01-13-60	S	03-16-60[b]	46	63.74	(Schedule 3) 3 priorities March 15-July 9. (Schedule 4) 5 priorities July 10-September 30. If no water passing diversion No. 23 September 30-March 14, 1st priority provisions of Schedule 4 apply.
Mill	3024	12-19-31	CR	12-30-31	38	37.13	One priority on Brown Creek, tributary to Rutherford Creek, 7 priorities on Rutherford Creek, tributary to Mill Creek, 1st and 2nd for year-round use, 3rd and 4th April through September.
Soldier	2045	11-28-28	CR	09-11-29	13 4[c]	33.50 4.37	Starting March 19 each year, lower users receive water for 4 13-day periods alternating with upper users who receive water for 4 10-day periods, ending June 19. 7 priorities during lower users periods, 8 during upper users periods and 12 for rest of the year. Appropriative License 1566,1613, 1648, and 1850.
Pine near	3391	12-07-36	CR	01-13-37	5 1[c]	[d] 0.08	One full rotation totaling 693 AF. Rotation continues until flow decreases to toCedarville 4 cfs, then all water goes to Cal-Vada Ranch until flow decreases to 1.60 cfs then all water goes to the R. Bordwell Ranch.
Cedar	1206 2343[d]	05-22-01 02-15-23	CA CA	06-19-26	12	28.90[d]	Water rights established by these two decrees and an agreement signed by all users. No. 1206 set 1st and 2nd priorities; No. 2443 3rd priority and agreement the 4th. 28.90 cfs includes 5.00 cfs imported fromThoms Creek on west slope of Warner Mountains.
Deep	3101	01-25-34	CR	12-29-34	11	29.37	Schedule 2 establishes 5 priorities, year-round.
Cottonwood	6903	12-01-64	CA	07-01-77[b]	8	[d]	Water rights based on a percentage of flow in an equal priority.
Owl	2410	04-29-29	CA	09-11-29	8	41.70	21 priorities; all year round but 8th priority, under which each of 3 owners receives his allotment for an 8-day period. Appropriative License No. 2842, 3.54 cfs.
Rader	3626	06-04-37	CR	06-12-37	6	21.00	7 priorities. 7th is for surplus water. Diversions No. 1, 3, 6, and 7 have seasonal limitations.
Eagle	2304 3284	04-05-26 11-05-37	CA CR	01-10-39	36	30.57	Decree No. 3284 added rights in all priority classes, and established 4 classes. 4.50 cfs right of White Pine Lumber Co. is for use March 1 to July 1. Eagleville 'town users', Schedule 2 may divert through Gee & Grider ditches March 15 to October 15 each year. Set 1st priority rights of Gee & Grider ditches, Par. XVII & XVIII, for use April 15 to October 1.
Emerson	2840	03-25-30	CR	4-11-30	10	24.65	4 priorities, 1st is for year-round use, others April 1 to September 30.

a/ S-Statutory, CR-Court Reference, CA-Court Adjudication, A-Agreement
b/ Added to existing Surprise Valley service area.
c/ Appropriative rights junior to the decreed rights.
d/ See remarks.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 37

1995 Daily Mean Discharge
(In cubic feet per second)

BIDWELL CREEK NEAR FORT BIDWELL

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	32	28	96	181	69	14	7.7
2	31	28	106	166	66	13	7.7
3	29	30	81	178	64	13	7.7
4	26	35	76	139	61	12	7.4
5	24	46	75	NR	54	12	7.4
6	23	76	71	NR	51	12	7.4
7	21	67	65	98	49	12	7.2
8	20	58	62	86	48	11	7.2
9	36	52	62	80	46	11	7.2
10	45	51	64	81	44	10	6.9
11	47	51	71	85	41	11	6.9
12	46	51	67	90	38	10	6.9
13	41	52	64	94	36	10	6.7
14	40	49	61	94	33	9.9	6.7
15	43	47	63	91	31	9.7	6.4
16	40	44	69	90	30	9.8	6.4
17	37	42	99	86	29	9.8	6.1
18	39	40	112	98	28	9.6	6.1
19	37	38	123	99	28	9.3	6.1E
20	37	38	133	90	27	9.1	6.0E
21	37	37	151	85	26	8.8	6.0E
22	35	37	124	79	25	8.8	6.0E
23	32	39	112	79	25	8.7	6.0E
24	30	41	109	83	25	8.6	5.9E
25	27	42	114	89	25	8.4	5.9E
26	26	43	108	94	24	8.2	5.9E
27	25	47	102	98	21	8.2	5.9E
28	25	53	107	95	19	8.2	5.8E
29	25	55	132	84	19	7.9	5.8E
30	25	52	147	76	17	7.9	5.8E
31	26	—	180	—	14	7.9	—
MEAN	32.5	45.6	97.0	NR	35.9	10.0	6.6E
AC-FT	1997	2715	5962	NR	2208	614	391E

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 38

1995 Daily Mean Discharge
(In cubic feet per second)

MILL CREEK ABOVE ALL DIVERSIONS

DAY	APR	MAY	JUN	JUL	AUG	SEP
1	7.7 [1]	89	67	25	5.0	2.2
2	7.2	40	68	23	5.4	2.2
3	7.2	36	63	22	5.0	2.1
4	8.3	34	56	21	5.0	2.1
5	11	32	48	20	5.4	2.2
6	29	31	42	19	5.0	2.1
7	26	30	40	18	5.4	2.2
8	25	29	37	17	5.0	2.4
9	22	28	34	16	4.7	2.2
10	18	30	36	16	4.7	2.4
11	18	32	38	15	4.4	2.2
12	20	34	39	15	4.7	2.1
13	18	33	38	14	4.2	2.2
14	18	32	37	13	4.0	2.1
15	16	30	38	13	3.7	2.1
16	17	33	38	12	4.0	2.1
17	16	38	37	12	3.7	2.1
18	16	40	36	11	3.2	2.0
19	15	41	36	11	3.1	2.0
20	14	43	35	10	2.8	2.1
21	13	45	34	9.5	2.6	2.1
22	14	43	33	9.5	2.8	2.1
23	16	42	31	9.0	2.5	2.1
24	17	41	34	8.3	2.4	2.2
25	19	43	36	7.7	2.5	2.4
26	18	45	34	7.2	2.5	2.2
27	18	46	32	7.2	2.5	2.1
28	20	52	30	6.8	2.4	2.2
29	26	56	26	6.8	2.4	2.2
30	60	60	25	6.3	2.4	2.4
31	—	66	—	5.8	2.2	—
MEAN	18.3	41.1	39.3	13.1	3.7	2.2
AC-FT	1090	2530	2340	807	229	129

[1] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 39

1995 Daily Mean Discharge
(In cubic feet per second)

SOLDIER CREEK ABOVE ALL DIVERSIONS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		8.0	67	34	10	3.3	1.5
2		8.4	62	32	10	3.1	1.5
3		9.0	59	33	9.1	2.8	1.4
4		17	52	31	8.6	2.6	1.5
5		19	54	26	8.2	2.6	1.6
6		37	48	23	8.0	2.4	1.8
7		30	51	20	7.5	2.6	1.6
8		23	48	17	6.9	2.7	1.5
9		17	46	19	6.2	2.6	1.4
10		15	44	20	5.4	2.4	1.5
11		20	43	22	5.2	2.3	1.4
12		21	41	24	5.0	2.2	1.3
13		22	38	24	4.8	2.3	1.4
14		18	35	23	4.7	2.2	1.3
15		15	36	24	4.3	2.1	1.2
16		13	38	32	4.1	2.1	1.3
17		11	53	24	4.0	2.2	1.2
18		10	43	27	4.1	2.1	1.3
19	12[1/]	11	40	26	4.1	2.2	1.4
20	12	10	37	24	4.0	2.1	1.5
21	11	11	38	20	4.1	2.1	1.5
22	10	12	37	20	4.0	2.2	1.4
23	9.0	15	40	18	3.9	2.1	1.3
24	8.4	24	37	16	3.8	2.0	1.4
25	7.5	26	36	17	3.7	1.9	1.3
26	8.0	27	35	15	3.8	2.0	1.2
27	7.3	24	35	14	3.7	1.9	1.3
28	7.1	21	33	13	3.7	1.8	1.2
29	6.5	24	35	12	3.5	1.6	1.1
30	7.1	26	37	11	3.3	1.5	1.1
31	7.5	—	38	—	3.5	1.6	—
MEAN	8.7	18.1	43.1	22.0	5.3	2.2	1.4
AC-FT	225	1080	2650	1310	328	138	82

[1/] No record before March 19.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 40

1995 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK NEAR CEDARVILLE
AT THE DIVISION OF THE NORTH AND SOUTH CHANNELS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		7.2	46	6.2	1.4	0.1	0 [1/]
2		6.6	33	5.5	1.3	0.1	
3		8.3	30	5.2	1.3	0.1	
4		11	24	4.7	1.3		
5		13	23	4.4	1.2	0.1	
6		20	20	3.8	1.2	0.1	
7		37	19	3.3	1.1	0.1	
8		22	20	3.1	1.1	0.1	
9		13	19	3.2	1.0	0.1	
10		11	21	2.9	1.0	0.1	
11		15	19	2.5	0.9	0.1	
12		15	17	2.3	0.9	0.1	
13		15	15	2.0	0.8	0.1	
14		12	14	3.1	0.8	0.1	
15		11	13	4.7	0.7	0.1	
16		10	14	6.3	0.7	0.1	
17		9.5	17	4.3	0.6	0.1	
18		9.1	17	3.8	0.5	0.1	
19	9.1[1/]	9.3	15	3.3	0.4	0.1	
20	11	10	14	2.9	0.4	0.1	
21	13	9.7	13	2.0	0.4	0.1	
22	14	11	14	1.8	0.4	0.1	
23	12	13	13	1.6	0.4	0.1	
24	11	15	11	1.5	0.3	0.1	
25	10	16	10	1.4	0.3	0.1	
26	8.7	15	9.3	1.4	0.3	0.1	
27	8.5	14	8.3	1.4	0.2	0.1	
28	7.9	15	8.1	1.4	0.2	0.1	
29	7.2	18	7.7	1.4	0.2	0.1	
30	6.4	28	7.3	1.4	0.1	0.1	
31	7.0	—	6.8	—	0.1	0.1	
MEAN	9.7	14.0	16.7	3.1	0.7	0.1	0
AC-FT	250	832	1030	184	43	6	0

[1/] No record before March 19 and no flow after August 31.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 41

1995 Daily Mean Discharge
(In cubic feet per second)

CEDAR CREEK AT CEDARVILLE

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		8.2[1/]	69	14	7.9	1.8	0.8
2		9	82	13	6.7	1.8	0.8
3		10	67	12	7.0	1.6	0.7
4		11	46	15	6.0	1.6	0.6
5		13	50	19	7.6	1.5	0.7
6		25	45	15	6.3	1.5	0.6
7		23	40	14	7.6	1.5	0.6
8		22	36	12	7.0	1.5	0.7
9		20	35	12	6.5	1.5	0.6
10		18	31	12	5.5	1.4	0.5
11		19	32	11	5.0	1.5	0.6
12		21	29	12	4.6	1.4	0.4
13		23	26	11	4.2	1.4	0.5
14		20	23	12	5.5	1.4	0.4
15		19	24	14	4.4	1.4	0.4
16		16	21	20	4.2	1.4	0.5
17		15	20	14	4.8	1.4	0.4
18		16	21	16	4.4	1.4	0.6
19		15	22	15	3.7	1.3	0.7
20		15	23	14	3.5	1.3	0.5
21		15	23	12	3.5	1.2	0.6
22		16	24	12	3.3	1.1	0.5
23		17	25	11	3.3	1.0	0.4
24		17	24	11	3.1	1.0	0.5
25		18	23	10	2.8	0.9	0.4
26		19	22	8.7	2.6	0.9	0.5
27		21	19	8.2	2.2	0.9	0.4
28		22	17	7.6	2.0	0.9	0.5
29		25	16	7.0	1.9	0.8	0.6
30		32	15	8.7	2.0	0.8	0.6
31		—	14	—	1.9	0.8	—
MEAN		18.0	31.1	12.4	4.5	1.3	0.6
AC-FT		1070	1910	740	280	79	33

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 42

1995 Daily Mean Discharge
(In cubic feet per second)

NORTH DEEP CREEK ABOVE ALL DIVERSIONS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		12[1/]	36	18	7.5	1.5	0.7
2		11	34	20	6.9	1.3	0.7
3		13	30	24	6.2	1.2	0.8
4		12	28	26	5.7	1.3	0.8
5		11	26	24	5.2	1.3	0.7
6		10	23	20	6.0	1.2	0.7
7		9.3	21	16	5.5	1.1	0.6
8		8.5	22	13	5.7	1.1	0.6
9		16	23	9.0	5.5	1.0	0.5
10		26	24	8.8	5.2	0.9	0.6
11		18	25	8.5	5.0	1.0	0.7
12		14	23	8.2	4.7	1.1	0.6
13		8.6	21	8.0	4.2	1.1	0.6
14		8.1	20	10	3.5	1.0	0.6
15		7.9	19	12	2.9	0.8	0.6
16		7.6	18	13	2.6	0.9	0.7
17		7.3	16	12	2.3	1.0	0.7
18		6.6	15	15	2.2	0.9	0.7
19		6.2	14	13	2.0	0.8	0.7
20		7.0	13	11	1.9	0.7	0.8
21		8.5	14	9.0	1.9	0.7	0.7
22		9.0	13	8.1	2.2	0.9	0.8
23		10	12	6.7	1.9	1.0	0.7
24		11	11	5.5	1.7	0.9	0.8
25		12	10	9.0	1.6	1.0	0.7
26		13	8.6	8.5	1.7	0.9	0.7
27		12	10	7.5	1.5	0.8	0.7
28		11	12	8.5	1.4	0.7	0.8
29		14	14	8.0	1.5	0.7	0.7
30		25	15	7.7	1.5	0.7	0.8
31		—	16	—	1.7	0.7	—
MEAN		11.5	18.9	12.3	3.5	1.0	0.7
AC-FT		685	1160	730	217	6.0	41

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 43

1995 Daily Mean Discharge
(In cubic feet per second)

SOUTH DEEP CREEK BELOW DIVERSION NO. 2

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		12[1/]	39	21	5.2	1.4	0.6
2		12	32	28	4.4	1.3	0.6
3		13	28	26	5.2	1.2	0.7
4		15	25	22	4.8	1.2	0.7
5		18	24	20	4.4	1.3	0.6
6		22	21	17	5.2	1.2	0.6
7		27	19	16	4.1	1.0	0.5
8		19	19	13	4.4	1.0	0.5
9		17	19	12	4.1	0.9	0.4
10		14	18	11	3.8	0.8	0.5
11		13	23	10	3.5	0.9	0.6
12		12	21	11	3.5	1.0	0.5
13		12	19	11	3.1	1.0	0.4
14		11	19	10	3.1	0.9	0.5
15		9.3	18	13	2.8	0.7	0.5
16		8.1	17	12	2.5	0.8	0.6
17		6.6	18	12	2.5	0.9	0.6
18		5.6	20	14	2.2	0.8	0.6
19		4.8	18	13	1.9	0.7	0.6
20		6.1	19	9.3	2.2	0.6	0.7
21		7.6	19	8.1	1.9	0.6	0.6
22		8.1	20	7.6	2.2	0.8	0.7
23		8.7	19	7.1	1.8	0.9	0.6
24		10	19	6.6	1.6	0.8	0.7
25		11	20	8.1	1.4	0.9	0.6
26		12	18	7.6	1.6	0.8	0.6
27		11	17	6.6	1.4	0.7	0.6
28		11	17	7.6	1.3	0.6	0.7
29		19	16	6.1	1.4	0.6	0.6
30		28	17	5.6	1.4	0.6	0.7
31		—	18	—	1.6	0.6	—
MEAN		12.8	20.5	12.4	2.9	0.9	0.6
AC-FT		761	1260	738	180	55	35

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 44

1995 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK FLUME BELOW PAGE DITCH

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		5.8[1/]	24	58	70	18	3.9
2		5.2	31	57	63	17	4.2
3		6.0	83	54	57	16	3.9
4		6.8	20	53	53	15	3.6
5		12	22	48	50	15	3.9
6		22	21	46	52	13	4.2
7		17	21	43	48	12	3.9
8		13	20	37	47	10	3.6
9		11	19	34	44	8.9	3.4
10		10	21	37	42	7.8	3.0
11		11	20	48	40	7.0	2.8
12		12	19	46	37	6.8	2.5
13		14	17	43	32	6.5	2.2
14		10	16	41	31	5.9	2.5
15		8.6	15	43	32	6.2	2.8
16		8.3	16	44	31	5.9	2.5
17		7.8	21	40	33	5.9	2.8
18		8.3	27	41	35	5.7	2.5
19		10	29	40	37	5.5	2.8
20		10	43	33	35	5.0	3.2
21		11	48	32	32	4.7	2.8
22		11	39	33	30	4.4	2.8
23		12	37	38	30	4.2	3.0
24		13	39	43	28	3.9	3.2
25		22	46	45	27	3.6	3.0
26		21	49	48	25	3.9	3.2
27		19	53	50	22	4.2	3.0
28		17	59	60	20	4.2	2.8
29		22	63	81	21	3.9	2.8
30		21	66	78	20	4.2	2.5
31		—	67	—	19	4.4	—
MEAN		12.6	34.5	46.5	36.9	7.7	3.1
AC-FT		749	2120	2760	2270	473	185

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 45

1995 Daily Mean Discharge
(In cubic feet per second)

OWL CREEK BELOW ALLEN-ARRECHE DITCH

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		5.9[1/]	37	55	60	12	3.1
2		6.2	32	51	63	9.6	2.9
3		7.4	35	50	58	8.4	2.8
4		9.0	40	46	61	7.6	2.8
5		8.4	36	41	57	8.0	2.6
6		7.6	32	37	55	7.4	2.6
7		8.0	27	34	56	7.6	2.8
8		7.6	22	36	53	7.6	2.8
9		7.4	20	40	51	7.2	2.6
10		7.2	18	47	48	7.6	2.6
11		7.4	15	62	47	7.4	2.4
12		7.2	13	45	42	7.2	2.4
13		6.9	16	40	36	7.2	2.3
14		7.2	17	41	31	6.4	2.3
15		7.4	18	56	27	6.2	2.2
16		7.6	21	61	25	6.4	2.1
17		8.0	30	52	23	6.1	2.2
18		9.6	36	58	22	5.9	2.3
19		14	38	53	25	5.7	2.4
20		13	40	50	22	4.9	2.3
21		11	42	51	23	4.4	2.4
22		11	52	52	21	4.4	2.3
23		12	45	50	19	4.2	2.2
24		10	55	57	21	3.8	2.2
25		6.9	52	60	20	4.0	2.1
26		7.4	57	63	20	4.0	2.2
27		8.0	44	67	19	3.8	2.3
28		11	53	75	18	3.7	2.2
29		12	45	70	19	3.5	2.2
30		15	40	65	17	3.3	2.1
31		—	43	—	15	2.9	—
MEAN		8.9	34.5	52.2	34.6	6.1	2.4
AC-FT		530	2120	3100	2130	374	144

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 46

1995 Daily Mean Discharge
(In cubic feet per second)

RADER CREEK BELOW COCKRELL DIVERSION

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		4.9[1/]	35	33	29	8.9	2.4
2		4.9	31	39	35	8.1	2.4
3		5.0	23	43	42	7.0	2.6
4		5.2	20	44	41	7.4	2.6
5		5.6	19	43	39	7.7	2.8
6		6.0	18	39	39	7.0	2.6
7		6.7	16	36	38	6.7	2.6
8		8.1	15	35	36	6.3	2.4
9		10	14	34	34	6.0	2.4
10		12	13	35	33	5.6	2.2
11		9.5	13	34	31	5.4	2.2
12		6.7	13	33	29	5.2	2.4
13		5.6	13	33	27	5.8	2.2
14		5.2	14	33	25	6.3	2.2
15		4.9	15	34	24	6.5	2.4
16		5.0	16	35	25	6.3	2.4
17		5.2	18	33	25	6.7	2.2
18		5.4	19	32	23	6.5	2.0
19		5.2	21	31	23	6.3	1.9
20		5.0	23	29	23	5.8	1.9
21		4.9	26	28	21	5.2	1.8
22		4.8	25	27	21	4.8	1.9
23		5.0	26	28	20	4.1	1.8
24		5.4	27	28	19	3.7	1.8
25		6.0	26	32	17	3.2	1.9
26		6.3	27	35	16	3.0	1.9
27		6.7	28	37	14	2.6	1.8
28		6.1	29	34	12	2.4	1.6
29		6.9	29	31	11	2.4	1.6
30		9.1	30	30	10	2.2	1.8
31		—	32	—	9.5	2.2	—
MEAN		6.2	21.7	33.9	25.5	5.4	2.2
AC-FT		372	1340	2020	1570	332	128

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 47

1995 Daily Mean Discharge
(In cubic feet per second)

EAGLE CREEK NEAR EAGLEVILLE

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		12[1/]	20	60	52	24	9.8
2		12	20	52	54	23	9.1
3		12	21	50	63	22	8.8
4		13	21	68	61	22	9.1
5		13	21	55	57	21	8.2
6		13	20	43	54	21	8.2
7		13	19	40	52	19	7.7
8		13	18	37	63	18	8.2
9		12	19	42	60	17	8.2
10		12	20	47	59	17	7.7
11		12	20	52	56	17	7.7
12		11	21	48	54	16	7.2
13		11	21	43	50	15	6.9
14		10	21	38	47	15	7.2
15		9.8	22	41	48	14	6.9
16		9.8	24	43	47	15	6.3
17		9.1	25	45	45	15	6.0
18		8.8	25	42	47	13	5.5
19		7.7	26	39	46	12	6.0
20		7.2	24	35	43	12	6.3
21		6.9	28	34	41	11	6.0
22		7.2	33	36	39	11	6.3
23		7.2	37	39	37	10	6.0
24		8.8	42	47	37	10	5.5
25		10	45	49	36	11	5.0
26		13	47	53	34	10	5.0
27		14	49	50	33	11	5.0
28		16	50	52	34	11	5.5
29		17	51	55	35	11	6.0
30		19	50	53	30	11	5.5
31		—	54	—	26	10	—
MEAN		11.4	29.5	46.3	46.4	15.0	6.9
AC-FT		676	1810	2750	2860	922	410

[1/] No record before April 1.

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 48

1995 Daily Mean Discharge
(In cubic feet per second)

EMERSON CREEK ABOVE ALL DIVERSIONS

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1		7.2[1/]	48	42	27	6.0	4.2
2		6.8	40	44	26	5.9	4.1
3		7.0	37	45	26	5.9	4.1
4		7.5	36	44	25	5.7	4.1
5		9.0	35	42	24	5.7	4.0
6		13	33	38	23	5.6	4.0
7		14	30	34	22	5.6	3.9
8		13	29	33	20	5.6	4.0
9		12	29	31	20	5.6	4.0
10		11	30	32	19	5.5	3.9
11		10	31	32	18	5.5	3.9
12		11	29	33	17	5.3	3.8
13		12	28	32	16	5.3	3.8
14		11	27	32	15	5.3	3.8
15		11	27	34	12	5.2	3.7
16		9.6	27	40	11	5.2	3.7
17		8.5	29	35	11	5.2	3.7
18		9.0	30	35	10	5.0	3.7
19		8.5	32	35	12	5.0	3.6
20		8.1	34	32	9.6	4.9	3.6
21		8.1	38	30	8.1	4.7	3.6
22		7.8	38	29	7.5	4.5	3.5
23		8.5	37	29	7.2	4.5	3.6
24		10	36	29	7.2	4.4	3.7
25		13	36	30	6.8	4.3	3.6
26		14	38	32	6.8	4.4	3.7
27		15	38	32	6.5	4.3	3.6
28		14	39	31	6.3	4.2	3.6
29		17	40	30	6.2	4.3	3.7
30		17	42	28	6.2	4.3	3.7
31		—	43	—	6.0	4.2	—
MEAN		10.8	34.4	34.2	14.1	5.1	3.8
AC-FT		642	2110	2030	870	312	226

[1/] No record before April 1.

SUSAN RIVER WATERMASTER SERVICE AREA

SUSAN RIVER WATERMASTER SERVICE AREA

The Susan River service area is in southern Lassen County near Susanville. The main area of water use is in Honey Lake Valley between Susanville and the northwest shore of Honey Lake, a stretch of about 25 miles. The valley floor is at an elevation of about 4,000 feet. Water comes from three stream systems: Susan River, Baxter Creek, Parker Creek, and their respective tributaries.

The Susan River originates in the Cascade Range just east of Lassen National Park at an elevation of about 7,900 feet. It runs east from Silver Lake through McCoy Flat Reservoir, the town of Susanville, and then to Honey Lake.

The river has four major tributaries: Piute Creek, entering from the north at Susanville; Gold Run and Lassen creeks, entering from the south between Susanville and Johnstonville; and Willow Creek, entering from the north above Standish. Gold Run and Lassen creeks rise on the north slope of Diamond Mountain at an elevation of about 7,600 feet. The watersheds of Piute and Willow creeks are on the south slopes of Round Valley Mountain at lower elevations.

The Susan River divides into three channels a short distance below its confluence with Willow Creek. The channels are Tanner Slough Channel on the north, Old Channel in the middle, and Dill Slough Channel on the south. Hartson Slough and Whitehead Slough divert from Dill Slough on its south bank further downstream.

The Baxter Creek stream system is in Honey Lake Valley on the east side of the Sierra Nevada, about 10 miles southeast of Susanville. The main creeks in the system are Baxter Creek, which rises on the west side of the basin and flows east, and Elysian, Sloss, and Bankhead creeks, tributaries of Baxter Creek from the south.

Parker Creek is also in Honey Lake Valley on the east slope of the Sierra Nevada, about 15 miles southeast of Susanville. It rises on the east side of Diamond Mountain and flows east for about 5 miles into Honey Lake.

Basis of Service

The water of Susan River and its tributaries is distributed according to the water rights defined in Decree No. 4573, Lassen County Superior Court, entered on April 18, 1940. Schedule 3 of the decree defines the rights to the use of water from Willow Creek in Willow Creek Valley, Lower Willow Creek, and the Susan River delta below the Colony Dam. Schedule 4 of the decree defines the rights to the use of water from Gold Run, Piute, Hills, Holtzclaw, and Lassen creeks above their confluence with the Susan River.

Schedules 5 and 6 of the decree define the rights to the use of water from the Susan River, exclusive of its tributaries. The decree establishes three priority classes each on Susan River and Gold Run Creek, two on Willow Creek, and one each on Piute and Hills creeks. The water of Baxter Creek and its tributaries is distributed according to the water rights defined in the statutory adjudication as set forth in Decree No. 8174, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Sloss and Bankhead creeks, and Schedule 4 defines the rights to the use of water from Baxter and Elesian creeks. The Baxter Creek rights are divided into five priority classes.

The water of Parker Creek and its tributaries is distributed according to the water rights defined by a statutory adjudication as set forth in Decree No. 8175, Lassen County Superior Court, dated December 15, 1955. Schedule 3 of the decree defines the rights to the use of water from Parker Creek, with four priority classes.

The Susan River watermaster service area was created by order of the Division of Water Resources on November 10, 1941. The Baxter and Parker creek stream systems were added to the Susan River service area on February 16, 1956.

Water Supply

Water in the Susan River service area comes from two major sources: snowmelt runoff and springs. Snowpack in the Willow Creek Valley and Piute Creek watersheds, which contain more than half the Susan River stream system, melts early in the spring and is usually depleted by May 1. Irrigation requirements from this part of the stream system are then almost entirely dependent on the flow of springs that are relatively constant throughout the year.

Under average flow conditions, Lassen, Gold Run, Baxter, and Parker creeks and the Susan River above Susanville are sustained by snowmelt runoff until early June. The flow from perennial springs in this portion of the system is comparatively small.

The Lassen Irrigation Company stores supplemental water in Hog Flat and McCoy Flat reservoirs, on the headwaters of the Susan River. This stored water is released into the Susan River channel and joins the natural flow, usually during June and July. It is then rediverted into Lake Leavitt for further distribution by the irrigation company.

Records of daily mean discharge of the several stream gaging stations in the service area are presented in Tables 49 through 57.

Method of Distribution

A major portion of the irrigation in the Susan River service area is done by flooding. Water is supplied to the area from the Susan River, tributaries to the river, and other minor streams. The distribution of water is provided by a system of diversion dams, canals and ditches. Included in the operation of the service area are three reservoirs owned and operated by the Lassen Irrigation Company which are McCoy Flat Reservoir, Hog Flat Reservoir, and Lake Leavitt.

1995 Distribution

This is the 54th annual report on watermaster service in the Susan River watermaster service area and covers the period of distribution beginning March 1 and continuing until November 1. Virgil D. Buechler, Water Resources Engineering Associate, was the watermaster.

Streamflow conditions for 1995 were some of the wettest in history.

Parker Creek

First priority water rights were served through the summer.

Baxter Creek

Upper Baxter Creek had a surplus of 22 cfs past Highway 395 on June 5 and maintained 1 cfs or more past the Long Ditch through July.

Hills Creek

The water supply in Hills Creek filled Emerson Lake and spilled through July.

Gold Run Creek

On May 10 the flow was in excess of 50 cfs and decreased to the low for the summer of 5.25 cfs on September 5, 1995.

Piute Creek

Piute Creek flooded in March causing house damage and closing Susanville's Main Street for a period. The spring-fed water supply was sufficient to satisfy all allotments for the summer.

Susan River

USGS quit maintaining their gaging station in 1995. DWR put in a new station September 26 through the watermaster season.

Lassen Irrigation Company Reservoirs

Inflow to McCoy Flat Reservoir started slowly on March 12. The flow rapidly increased with spilling on March 29. Hog Flat reservoir spilled through the same period. The outlet spillway at Lake Leavett Dam was damaged on March 14 and the embankment compromised. Uncontrolled releases rom the reservoir nearly emptied Lake Leavett. Susan River above McCoy was flooded until June 1 and decreased to zero flow July 28. Measured release from McCoy totalled 5,050 AF from June 26 through August 31. A total of 2,351AF was released from Hog Flat. Both mountain reservoirs had about 50% of storage carryover. A temporary outlet and coffer dam were installed in Lake Leavett with repairs scheduled to start on the dam in August 1996.

Lower Susan River Below the Confluence of Willow Creek

The lower Susan River experienced flooding until July 1. The flows dropped to 4.6 cfs July 24 and decreased to a minimum of 1.5 cfs September 19. However, Willow Creek at the confluence never got below 15 cfs through September 9 and then started to increase. There was no problem with stock water.

Lassen and Holtzslaw Creek

Lassen Creek had an excess of 0.50 cfs passed Highway 395 at the end of season on November 1.

Willow Creek

Willow Creek was flooded until early summer. Sufficient stock water was available through the end of the watermaster season. USGS discontinued their gaging station and "Willow Creek above Mapes Big Springs near Susanville" is presented in table 52.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 49

1995 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT SUSANVILLE[1/]

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	NR		2860				
2			2060				
3							
4			1212				
5							
6					40		
7							
8				154			
9	7000+		633				
10							
11					25		
12							
13		592					
14							
15							
16				650		84	
17							
18							
19					42		
20				55			
21			620	620		80	
22							
23							
24					89		
25					87		
26		308		157	88		
27		336			84		
28		410					
29		1186				84	
30			448				
31			102				

[1/] Only record is instantaneous readings.
USGS discontinued their gaging station.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 50

1995 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER ABOVE CONFLUENCE OF WILLOW CREEK

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1					72	2.4	2.0	0.1
2					72	2.4	2.0	0.1
3	F	F	F	F	68	2.4	2.0	0.1
4					68	2.4	2.0	0.1
5	L	L	L	L	68	2.4	2.0	0.1
6	O	O	O	O	49	2.4	2.2	0.1
7					49	2.4	2.2	0.1
8	O	O	O	O	50	2.4	2.2	0.1
9					55	2.4	6.2	0.1
10	D	D	D	D	63	2.4	6.2	0.1
11	E	E	E	E	64	4.6	6.2	0.1
12					68	2.4	6.2	0.1
13	D	D	D	D	68	2.4	6.2	0.1
14					6.2	2.4	6.2	0.1
15					6.5	2.4	4.6	0.1
16					7.3	2.4	4.6	0.1
17					7.3	2.4	4.6	1.7
18					7.3	2.4	4.6	1.4
19					12	2.4	4.6	0.8
20					16	2.4	1.5	1.1
21					17	2.4	1.5	1.1
22					16	2.4	1.5	1.2
23					10	2.2	1.5	2.4
24					4.6	2.2	1.5	0.8
25					4.4	2.2	1.5	0.8
26					4.1	2.4	1.5	1.5
27					3.7	2.4	1.5	1.1
28					3.4	2.2	2.4	0.8
29					3.2	2.2	2.4	0.8
30					3.0	2.2	2.4	0.8
31					2.8	2.2		0.8
MEAN					30.6	2.4	3.2	0.6
AC-FT					1882	149	190	37

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 52

1995 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK (ABOVE MAPES BIG SPRINGS) NEAR SUSANVILLE

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1						5.6	4.7	0.0
2						5.6	7.7	0.0
3						6.4	5.6	0.0
4	N	N	N	N	N	6.9	8.9	0.0
5						7.1	7.7	0.0
	O	O	O	O	O			
6						6.6	6.2	0.0
7						5.6	5.0	0.0
8	R	R	R	R	R	4.8	5.0	0.0
9						4.3	5.0	0.0
10	E	E	E	E	E	3.9	5.6	0.5
11	C	C	C	C	C	3.4	7.1	0.5
12						2.9	7.3	0.5
13	O	O	O	O	O	2.9	7.3	0.5
14						2.6	7.5	0.7
15	R	R	R	R	R	2.6	7.5	1.1
16	D	D	D	D	D	2.3	7.5	1.1
17					[1]	2.6	8.0	1.1
18					5.0	3.4	8.6	1.1
19					5.0	4.5	8.9	1.1
20					5.0	5.2	8.9	1.1
21					5.0	6.6	8.9	NR
22					5.0	7.7	10	NR
23					5.2	6.6	10	NR
24					5.2	5.8	9.4	NR
25					5.4	6.6	10	NR
26					5.4	7.1	10	NR
27					5.8	7.1	10	NR
28					6.6	6.0	10	NR
29					6.4	5.6	10	NR
30					6.4	6.2	10	NR
31					6.0	6.6		NR
MEAN					NR	5.2	7.9	NR
AC-FT					NR	320	473	NR

[1] No record before July 18.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 53

1995 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK AT THE CONFLUENCE OF THE SUSAN RIVER

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	60	N	N	N				4.9
2	55							4.9
3	197	O	O	O		32		4.9
4	1/							5.1
5					65		21	5.6
		R	R	R				
6	N							5.9
7		E	E	E				5.9
8	O							6.2
9		C	C	C			15	6.2
10					49	22		6.2
	R	O	O	O				
11								6.2
12	E	R	R	R				6.2
13								6.5
14	C	D	D	D	46	20		7.0
15								7.0
	O							
16								7.6
17	R				46			7.6
18								7.3
19	D							6.7
20					32		18	7.9
21				140				8.5
22								8.5
23								8.8
24					30			9.2
25								9.8
26		140						10
27							21	10
28						28		10
29								9.8
30								9.2
31								8.8

1/ Intake broke off. Only instantaneous record until September 30 when it was repaired.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 55

1995 Daily Mean Discharge
(In cubic feet per second)

OPERATION OF MCCOY AND HOG FLAT RESERVOIRS

	McCoy Flat Reservoir [1] Inflow from Susan River			McCoy Flat Reservoir [2] Release to Susan River			Hog Flat Reservoir [3] Releases to Susan River		
DAY	MAY	JUN	JUL	JUN	JUL	AUG	JUL	AUG	SEP
1	N	94	66	NR	64	51	NR	4.6	59
2		94	65	NR	54	45	NR	4.6	61
3	O	95	60	NR	61	58	NR	4.6	61
4		102	59	NR	33	54	NR	4.6	61
5		118	55	NR	19	54	NR	4.6	60
	R								
6		127	54	NR	12	56	NR	4.6	61
7	E	106	35	NR	7.6	54	NR	4.6	60
8		90	32	NR	6.1	54	NR	4.6	58
9	C	82	27	NR	2.2	54	NR	4.6	22
10		82	22	NR	1.2	54	NR	4.6	0.1
	O								
11		84	20	NR	1.2	54	NR	4.6	0.1
12	R	91	18	NR	1.2	54	NR	4.6	0.1
13		94	16	NR	1.2	53	NR	4.6	0.0
14	D	90	12	NR	1.2	54	NR	4.9	0.0
15		125	10	NR	1.2	53	NR	4.9	0.0
16		133	8.8	NR	1.2	56	NR	4.9	0.0
17		120	7.3	NR	1.2	54	NR	4.9	0.0
18		102	10	NR	1.2	53	NR	5.1	0.0
19		96	10	NR	1.2	54	NR	5.1	0.0
20		93	10	NR	2.2	54	20	5.1	0.0
21		86	10	NR	3.0	54	60	5.1	0.0
22		79	8.8	NR	3.6	52	60	5.1	0.0
23		77	5.9	NR	3.6	51	59	5.1	0.0
24		77	3.4	NR	3.6	52	59	5.1	0.0
25		77	2.4	NR	5.1	57	61	5.1	0.0
26		77	1.1	111	54	55	5.4	5.1	0.0
27		77	0.5	109	54	21	5.1	5.1	0.0
28		75	0.1	107	51	0.5	4.9	22	0.0
29		71	0.0	106	51	0.4	4.9	61	0.0
30		68	0.0	89	50	0.4	4.9	61	0.0
31	101		0.0		55	0.4	4.6	59	
MEAN	NR	92.7	66.0	NR	19.6	45.7	NR	10.8	16.8
AC-FT	NR	5518	1248	NR	1204	2810	NR	661	998

[1] No record before May 31 and no flow after July 28.
[2] No releases before June 26 or after August 31.
[3] No releases before July 20.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 56

1995 Daily Mean Discharge
(In cubic feet per second)

A AND B CANAL ABOVE LAKE LEAVITT

DAY	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	0.0	61	90	68	58	58
2	7.3	0.3	49	110	67	54	40
3	3.4	0.3	49	75	68	49	46
4	0.8	0.3	32	65	68	55	46
5	0.8	0.3	16	52	65	38	46
6	3.4	0.3	8.8	29	60	41	46
7	7.3	0.3	8.8	31	55	40	46
8	7.3	0.3	8.8	43	52	49	32
9	187	0.3	8.8	56	43	48	10
10	298	0.3	27	58	34	58	2.4
11	62	0.3	79	72	32	55	0.1
12	3.7	3.4	86	90	12	55	0.1
13	0.8	0.3	98	114	25	50	0.1
14	0.8	0.3	94	114	37	49	0.1
15	0.8	0.3	75	86	35	58	0.1
16	0.8	0.3	49	90	36	55	0.1
17	0.8	0.3	37	40	35	50	0.1
18	0.8	0.3	42	32	46	48	0.1
19	0.8	0.3	43	17	27	49	0.1
20	37	9.9	72	22	23	51	0.3
21	4.8	98	77	37	37	51	0.3
22	2.4	122	74	75	61	56	0.3
23	2.4	131	68	82	67	56	0.0
24	2.4	149	40	88	66	54	0.3
25	2.4	178	37	88	57	50	0.1
26	4.6	183	37	86	51	51	0.1
27	4.6	186	54	91	56	52	0.1
28	2.4	198	61	88	56	54	0.1
29	0.8	198	52	82	55	54	0.1
30	0.8	30	54	74	54	54	0.1
31	0.8		65		56	58	
MEAN	21.4	49.7	50.4	69.2	48.5	51.6	12.5
AC-FT	1313	2958	3101	4120	2983	3174	744

CONVERSION FACTORS

Quantity	To Convert from Metric Unit	To Customary Unit	Multiply Metric Unit By	To Convert to Metric Unit Multiply Customary Unit By
Flow	cubic metres per second (m^3/s)	cubic feet per second (ft^3/s)	35.315	0.028317
	litres per minute (L/mn)	gallons per minute (gal/mn)	0.26417	3.7854
	litres per day (L/day)	gallons per day (gal/day)	0.26417	3.7854
	megalitres per day (ML/day)	million gallons per day (mgd)	0.26417	3.7854
	cubic dekametres per day (dam^3/day)	acre-feet per day (ac-ft/day)	0.8107	1.2335