STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
NORTHERN DISTRICT

Summary of Operations for Watermaster Service in Northern California 1985 Season

June 1986

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FOREWORD

Effective this reporting year, the watermaster report will be in two separate volumes. One volume will contain general information and maps of service areas, sources of water, diversions, and decreed water rights in an atlas format. This volume will be updated every five years. Information pertinent only to seasonal operations and water conditions in each of the service areas will be issued in an annual "Summary of Operations". Authority for preparation and publication of a watermaster report is stated in the California Water Code, Division 2, Part 4, Chapter 7.

Information about 1985 watermaster service is presented in the attached Summary of Operations in two sections. The first gives general introductory information about water rights, water supply, service areas, and watermaster duties; the second describes the fourteen active service areas, twelve in the Department's Northern District and two in the Central District. Each of these service area descriptions gives detailed information on the area, the basis of watermaster service, sources of water supply, methods of distribution, 1985 water distribution, and personnel used.

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TABLES (Continued)

TABLES (Continued)

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 owners 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 owners and the State receive benefits from watermaster service, the costs of performing the service are shared. Effective January 1, 1985, the State general tax fund pays one-half of the cost of operating each service area and the water right owners 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. This work is done as efficiently as possible, but still it takes considerable public funds to maintain skilled representatives in the field during the dry months of the growing season and at the same time maintain administrative support at Department headquarters. Nevertheless, most clients find the benefits of fair, reliable, and comparatively worry-free distribution of water to be far superior than doing without the 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 owner's rights in terms of rate of diversion, season of use, point of diversion, and place of use. They also establish priorities whereby each owner's rights are ranked according to the rights of all other decreed owners. 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 may be accomplished by "statutory adjudication", "court adjudication", or "court reference". There are also ways to establish rights that do not involve the courts except, usually, to grant their official "stamp of approval."

Non-Judicial Decisions

A permit or "license to appropriate" can be issued by the State Water Resources Control Board (SWRCB), or agreement can be reached by mutual consent of the water users involved.

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 owners 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. The Board'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.

Statutory Adjudications

The California Water Code (Sections 2500-2900) gives a procedure whereby water users of any stream may petition the SWRCB, Division of Water Rights, to make a legal determination of all water rights on that stream. If the Board 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 owners, and the amounts of water rights for each area. Table 1 lists the Superior Court decrees and their type.

Figure 1

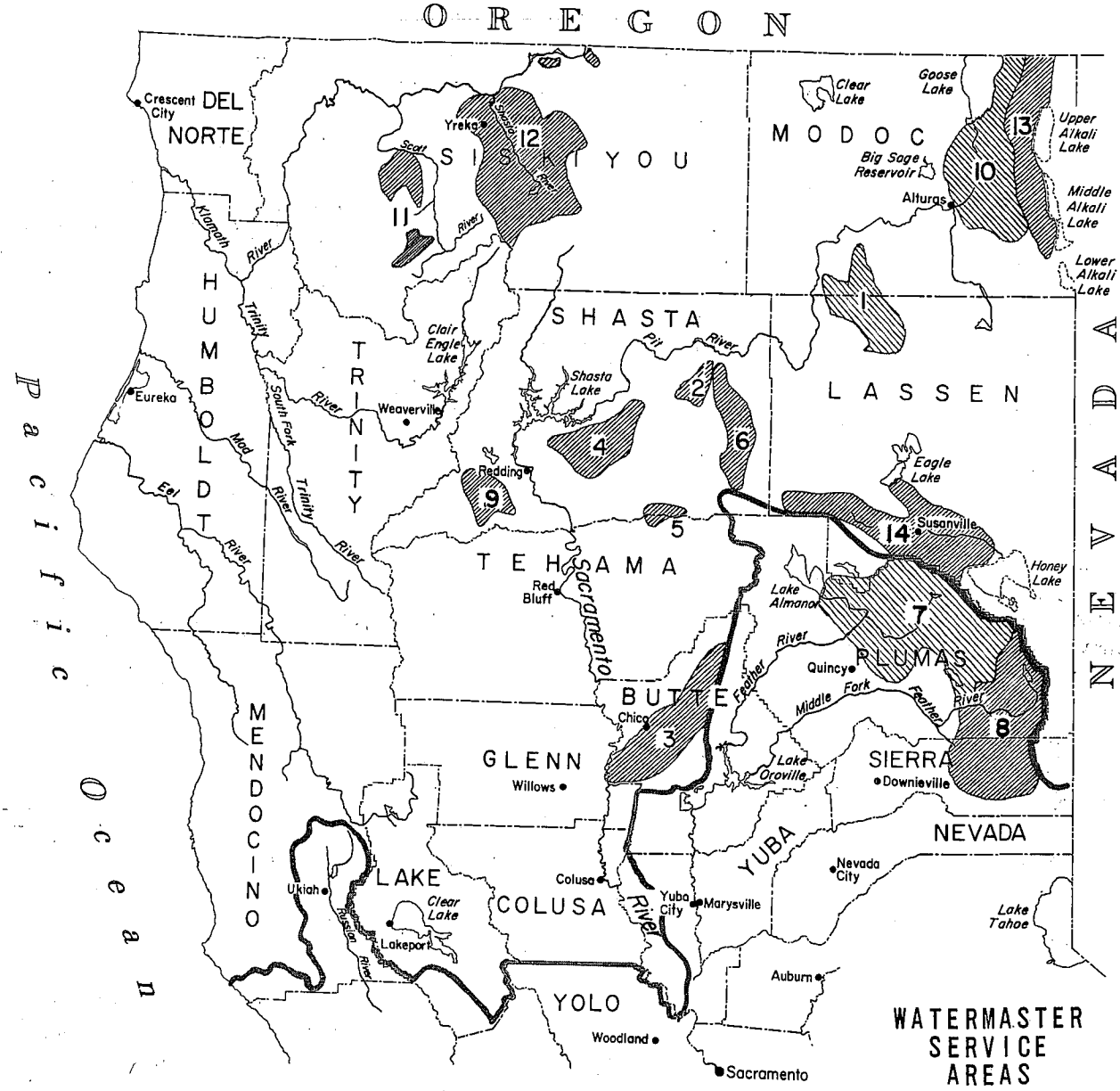

Table 6
1985 DECREED WATER RIGHTS

Service Area	Number of Decreed Water Users	Total Decreed Water Rights ft^3/s
1. Ash Creek	59	123.65
2. Burney Creek	11	33.09
3. Butte Creek	40	422.30
4. Cow Creek	86	56.367
5. Digger Creek	79	23.225
6. Hat Creek	57	135.545
7. Indian Creek	47	96.715
8. M.F. Feather River	105	372.079
9. N.F. Cottonwood Creek	13	30.30
10. M.F. Pit River	101	214.195
11. Scott River	83	102.04
12. Shasta River	164	620.422 1/
13. Surprise Valley	174	334.02
14. Susan River	204	352.182

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

TABLE 1

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

Watermaster Service Area	Name of Stream System[a]	County	Decree Number	Decree Date	Decree Type*	Date Watermaster Service Area Created	Remarks
Ash Creek	Ash Creek	Modoc ** and Lassen	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.
Burney Creek	Burney Creek	Shasta	5111	1-30-26	CR	9-11-29	Service provided in accordance with decree since 1926.
Butte Creek	Butte Creek	Butte	18917	11-06-42	S	1-07-43	
Cow Creek [b]	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	10-07-35	CR		
Indian Creek	Indian Creek	Plumas	4185	5-19-50	S	2-19-51	
Middle Fork Feather River	Middle Fork Feather River	Plumas ** and Sierra	3095	1-22-40	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 accordance with the decree since 1924.
North Fork Pit River	North Fork Pit River and all tributaries except Franklin Creek	Modoc	4074	12-14-39	S	12-18-39	All stream systems consolidated into North Fork Pit River service area 12-13-40.
	New Pine Creek	Modoc	2821	6-14-32	CR	6-22-32	
	Davis Creek	Modoc	2782	6-30-32	CR	7-13-32	
	Franklin Creek	Modoc	3118	9-08-33	CR	9-14-33	
	Cottonwood Creek	Modoc	2344	5-03-40	CR	12-13-40	
	Pine Creek	Modoc	Agreement	11-22-33		1-12-35	
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.
	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	
Seiad Creek	Seiad Creek	Siskiyou	13774	4-10-50	S	11-06-50	No service provided in 1985.
Shasta River	Shasta River	Siskiyou	7035	12-29-32	S	3-01-33	
	Willow Creek	Siskiyou	24482	6-22-72	C	7-01-72	
	Cold Creek	Siskiyou	29348	7-05-78	S	4-01-81	
Surprise Valley	Cedar Creek	Modoc	1206	5-22-01	C	9-11-29	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.
			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	4-02-03	
	Mill Creek	Modoc	3024	12-19-31	CR	12-30-31	
	Deer Creek	Modoc	3101	1-25-34	CR	12-29-34	
	Pine Creek	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		
	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.

a/ Major tributaries only; a complete listing is given in "Index to Water Sources", page vi.

b/ 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 the Department of Water Resources 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. There are now about 50 streams in Northern California that are under State watermaster service. The newest service areas were created in 1979.

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

Of these fourteen areas, twelve are in the Department's Northern District and two are in the Central District.

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. Most irrigation is 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. A map of this region showing the fourteen service areas is presented in Figure 1.

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 his authority both from Water Code and from provisions of pertinent court decrees or voluntary agreements to physically regulate the streams in the service area. He 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 diversions 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	
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 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	Pine, Cottonwood, Davis, and New Pine Creeks
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	Dwinnell Reservoir (Lake Shastina), Cold Creek, Willow Creek
Surprise Valley	Modoc	NONE (All creeks listed at right are unconnected)	Bidwell, Mill, Soldier, Pine, Cedar, Deep, Cottonwood, Owl, Rader, Eagle, Emerson Creeks
Susan River	Lassen	SUSAN RIVER Willow Creek	Lake Leavitt, Hog Flat, McCoy Flat Reservoirs; Baxter and Parker Creeks

[a] Major tributaries only; a complete listing is given in "Index to Water Sources", page vi.
[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 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, since 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. Since most of these documents were written more than 30 years ago, many situations have developed that were not initially considered. Therefore, the watermaster must use sound, careful, and practical judgment in attempting to reach workable solutions to water disputes. To accomplish this, he 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 ground water pumping are used in some areas to supplement natural streamflow, but State watermasters do not supervise the use of ground water 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 manpower needed. The Department'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 1984-85 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 3

PRECIPITATION AT SELECTED STATIONS - 1984-85 SEASON

Station	County	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Total	Percent of Mean
Fort Jones	Sisk.	1.91	9.56	.72	.17	2.40	1.89	.11	.75	.33	1.18	.39	1.17	20.58	92
R.S.		1.39	2.94	6.56	4.77	2.79	2.00	1.08	.76	.78	.34	.49	.65	22.48	
Happy Camp	Sisk.	4.37	24.05	2.11	.56	6.17	5.19	.36	.86	.98	.00	.01	.60	45.26	81
R.S.		3.67	7.91	10.90	12.18	7.78	6.51	2.78	1.45	.61	.25	.54	1.09	55.67	
Yreka	Sisk.	2.10	8.20	.90	.17	1.99	1.57	.07	.46	.33	1.07	.26	1.70	18.82	98
		1.25	2.34	3.83	3.68	2.17	1.80	.89	.77	.85	.40	.63	.59	19.20	
Redding Fire	Shasta	2.86	10.51	2.44	1.20	3.20	3.26	.34	.49	1.48	.03	.24	4.62	30.67	75
Station #4*		2.03	5.56	7.03	8.51	6.19	4.96	2.82	1.28	.83	.18	.51	1.05	40.95	
Hat Creek	Shasta	2.25	6.36	1.14	.51	.75	2.48	.05	.99	.19	.26	.09	2.35	17.42	89
P.H. #1		1.23	2.09	3.22	3.24	2.53	2.09	1.22	1.22	1.57	.21	.37	.56	19.55	
Lookout 3WSW	Lassen	2.27	7.88	.79	.28	1.64	1.56	.06	1.00	.03	2.60	.10	3.26	21.47	94
		1.50	3.60	3.86	3.54	2.54	2.27	1.46	1.11	1.12	.38	.52	.87	22.77	
Alturas	Modoc	1.46	2.80	.46	.52	.87	.78	.34	.96	.30	.05	.04	2.12	10.70	86
R.S.		.94	1.31	1.53	1.67	1.23	1.25	1.00	1.21	1.09	.31	.43	.48	12.45	
Jess Valley	Modoc	2.63	3.31	.77	.79	1.08	1.53	.69	.54	.00	.05E	.03	2.39	13.81	83
		1.38	1.89	1.96	1.99	1.67	1.82	1.80	2.04	.27	.48	.64	.73	16.67	
Cedarville	Modoc	1.63	3.40	.73	.28	.98	.87	.36	.62	.08	.05	.03	1.21	10.24	71
		1.18	1.61	2.70	2.02	1.36	1.33	1.02	1.11	.83	.37	.38	.48	14.39	
Susanville	Lassen	1.39	2.96	.58	.73	1.03	1.38	.01	.05	.00	.03	.00	.60	8.76	61
Airport		1.14	1.43	2.59	2.88	1.93	1.38	.64	.75	.67	.30	.22	.36	14.29	
Greenville	Plumas	.77	11.08	1.97	1.06	4.29	5.00	.14	.05	.03	.25	.01	2.37	27.02	68
R.S.		2.31	4.64	6.64	8.47	6.25	4.95	2.72	1.59	.85	.30	.46	.67	39.85	
Sierraville	Sierra	2.24	6.99	.72	.65	2.93	4.91	.16	.02	.20	.61	.08	.66	20.17	76
R.S.		1.97	2.99	4.73	5.46	3.75	2.90	1.56	1.35	.60	.32	.42	.52	26.57	
Vinton	Plumas	1.48	2.44	.39	.47	.99	1.77	T	T	.25	T	.06	.76	8.61	66
		.91	1.33	2.15	2.39	1.54	1.26	.78	.99	.64	.32	.38	.37	13.06	

* Long-term average at Redding F.S. #2
E Estimate

NOTE: Figures above line are current season; Below line are long-term averages.

Data collected at representative snow courses showing the snowpack as of April 1, 1985, on all courses and the snowpack on May 1 at selected courses, are presented in Table 4. This information comes from the Department's basic data files.

TABLE 4

SNOWPACK AS OF APRIL 1 AND MAY 1, 1985, AT REPRESENTATIVE SNOW COURSES

Watermaster Service Areas	Snow Course* Group Related to Each Service Area	Elevation (in feet)	WATER CONTENT OF SNOW April 1 Average (in inches)	April 1, 1985** In inches	April 1, 1985** In Percent of April 1 Average	May 1, 1985 In inches	May 1, 1985 In Percent of April 1 Average
Ash Creek	Blue Lake Ranch	6,800	12.6	12.4	98		
Big Valley	Eagle Peak	7,200	15.9				
Burney Creek	Thousand Lakes	6,500	38.1	27.7	73	19.4	51
Butte Creek	Humbug Summit	4,850	12.1	7.6	63	0.0	
	Silver Lake Meadows	6,450	30.5	29.3	96	13.5	44
Cow Creek	New Manzanita Lake	5,900	8.1	10.8	133	0.0	
Digger Creek	Burney Springs	4,700	2.8	2.9	104	0.0	
Hat Creek	New Manzanita Lake	5,900	8.1	10.8	133	0.0	
Indian Creek	Independence Lake	8,450	41.3	27.7	67	40.6	98
Middle Fork Feather River	Mount Dyer No. 1	7,100	25.5	21.5	84	7.7	30
	Rowland Creek	6,700	18.5	17.5	95	8.7	47
	Yuba Pass	6,700	31.9	26.7	84	7.5	24
North Fork Pit River	Cedar Pass	7,100	17.2	19.0	110		
Scott River	Middle Boulder No. 1	6,600	31.5	30.4	97	9.8	31
Shasta River	Little Shasta	6,200	20.6	22.0	107		
Shasta River	Parks Creek	6,700	36.6	33.1	90		
South Fork Pit River	Adin Mountain	6,350	13.6	17.4	128	0.8	6
Surprise Valley	Mount Bidwell	7,200	24.4	28.6	117		
Susan River	Fredonyer Pass No. 1	5,750	8.7				

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

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 the Department and the U. S. Geological Survey as part of a Federal-State program 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 the watermaster in selected diversion ditches to further assist him 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 5

RUNOFF, SELECTED STATIONS - 1984-85 (ACRE-FEET)

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual Total	Long Term Average	Percent of Average
Bidwell Creek near Fort Bidwell	590	730	650	490	510	1,010	4,240	4,620	2,470	800	470	550	17,120	17,630	97
Burney Creek at Burney	1,340	4,910	3,250	1,760	1,990	3,290E1/	6,400	3,070	1,280	730	610	840	28,710	52,500	55
Butte Creek near Chico	8,470	23,910	17,110	11,420	19,260	20,320	25,630	17,400	9,670	8,660	7,870	6,140	175,900	300,700	58
NF Cottonwood Creek near Ono	1,440	18,260	11,480	5,680	5,740	5,220	4,640	1,340E2/	700	180	200	710	55,300	97,560	57
Hat Creek near Hat Creek	10,600	10,680	10,320	10,200	9,020	9,900	10,370	11,830	10,050	9,210	8,970	9,490	120,600	103,200	117
Pit River near Canby	7,590	15,270	12,750	7,770	14,640	23,010	27,620	5,010	5,530	2,490	2,050	7,940	131,700	182,400	72
Scott River near Fort Jones	6,110	52,440	33,420	19,890	30,460	26,980	67,690	40,270	22,230	4,130	1,910	2,320	307,800	488,300	63
Shasta River near Yreka	11,610	21,470	17,170	14,220	16,230	13,840	7,250	4,460	4,140	1,120	1,530	6,860	119,900	138,400	87
Susan River at Susanville	1,090	2,220	1,560	1,200	1,830	3,890	8,200	4,960	2,770	270	220	390	28,390	70,420	40

1/ The flows for March 3 through 11 on Burney Creek are watermaster's estimate.
2/ The flows for May 9 through 13 on North Fork Cottonwood Creek are watermaster's estimate.

This portion of the report consists of fourteen sections, one for each service area active in 1985, 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, and 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 water right ownerships are updated as of March 1 each year from County Assessors' records. Changes not on record by March 1 are therefore not reflected on the service area maps included in the various sections.

As in previous years, watermaster service is 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 decree. Service was continued in all areas through the growing season as long as needed.

The date service was started in each service area and the name of the watermaster in charge are listed on Table 6.

TABLE 6

START-UP DATES AND WATERMASTERS

Service Area	Date Service Began in 1985	Watermaster
Ash Creek	April 1	Don Hand
Burney Creek	May 15	Don Hand
Butte Creek	April 1	Kenneth E. Morgan
Cow Creek	May 1	Don Hand
Digger Creek	July 3	Kenneth E. Morgan
Hat Creek	May 1	Don Hand
Indian Creek*	June 1	Jon A. Haman
M. F. Feather River*	March 15	Conrad Lahr
N. F. Cottonwood Creek	July 18	Kenneth E. Morgan
N. F. Pit River	April 1 April 15	Charles G. Hodge Glyn Echols**
Scott River	April 1	Keith B. Dick
Shasta River	April 1	Lester L. Lighthall Keith B. Dick
Surprise Valley	March 19	John Clements
Susan River	March 1	Virgil D. Buechler

* Within Central District; all others in Northern District
** Glyn Echols assumed watermaster duties for the N. F. Pit River on April 15, 1985.

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 299. The major sources 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 the 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. It meets Willow 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 (no longer served). 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, since 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.

TABLE 7

1985 Daily Mean Discharge
(In cubic feet per second)

ASH CREEK AT ADIN

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	132	374	60	26	17	25	23
2	115	337	59	29	17	27	23
3	91	295	57	32	19	25	28
4	103	251	48	31	18	23	33
5	93	225	32	29	19	26	38
6	95	211	36	29	20	26	35
7	95	202	39	25	21	23	33
8	82	194	40	24	21	22	47
9	83	190	40	24	18	22	55
10	98	186	38	24	19	21	41
11	126	179	33	22	24	21	35
12	153	167	33	16	26	22	32
13	143	156	33	13	22	21	31
14	131	150	31	14	22	20	30
15	128	150	28	20	21	22	30
16	127	148	25	21	20	21	31
17	128	134	25	22	19	21	26
18	131	122	24	17	19	22	23
19	155	120	24	16	18	22	23
20	169	116	23	20	20	20	25
21	174	111	24	22	21	21	25
22	156	106	27	12	23	20	25
23	139	98	30	11	24	20	24
24	142	89	31	12	24	20	25
25	156	83	30	12	23	20	27
26	143	78	27	13	20	20	26
27	125	74	25	14	21	19	26
28	124	71	26	16	22	19	30
29	126	68	30	14	22	18	37
30	162	63	35	15	32	20	39
31	392		31		36	22	
MEAN	136	158	33.7	19.8	21.5	21.6	30.9
AC-FT	8370	9420	2070	1180	1320	1330	1840

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.

1985 Distribution

Watermaster service began April 1 and continued until September 30 with Don Hand, Water Resources Engineering Associate, as watermaster.

Ash Creek

Due to the exceptionally dry spring, the flow in Ash Creek was below normal and had dropped to 30 cfs by early May. The flow at Adin was down to 12 cfs by mid-June, which was equal to approximately 80 percent of the first priority rights below Adin. The flow rose slightly in July and was adequate to supply most of the first priority rights during the remainder of the season.

As anticipated, the lower end of Ash Creek presented many more problems than normal due to the split of the "Hunt Estate Ranch" and the subsequent change of operations by Akers Land and Cattle Company.

Willow Creek

By May 1, the flow in Willow Creek was at last season's lowest level, or about 50 percent of the first and second priority rights. The flow continued dropping into July, where it leveled off at approximately 35 percent of the first and second priorities.

Butte Creek

The flow in Butte Creek was below that needed for the first priority by May 1, and continued dropping through June and into July, where it leveled off at approximately 40 percent of the first priority right.

Rush Creek

The flow in Rush Creek was adequate to supply approximately 60 percent of the single priority and, like the other streams in this area, the flow was low very early in the season.

General Comments

All of the streams in the Ash Creek decree are facing the problems of sub-divisions with many smaller rights and more people to deal with.

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 northeast 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 8. 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 irrigating.

BURNEY CREEK WATERMASTER SERVICE AREA

TABLE 8

1985 Daily Mean Discharge
(In cubic feet per second)

BURNEY CREEK NEAR BURNEY

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		80	75	45	15	12	8.6
2		84	74	42	15	11	11
3		89	73	38	14	11	12
4		93	68	34	14	9.9	11
5		107	64	32	14	9.8	10
6		117	63	30	14	9.5	11
7		128	62	29	13	9.4	15
8		127	60	26	13	9.5	45
9		132	59	24	13	9.5	32
10		135	57	22	12	9.5	21
11		135	51	21	12	9.5	17
12		133	50	21	12	9.5	15
13		131	48	19	12	9.4	14
14		138	48	19	12	9.1	14
15		147	45	17	11	9.5	12
16		141	43	16	11	9.5	12
17		126	42	17	11	9.5	12
18		114	42	18	11	10	12
19		113	42	17	11	12	12
20		102	41	14	11	11	12
21		99	40	14	11	11	12
22		118	39	15	12	11	12
23		100	39	14	11	10	11
24		86	34	14	10	9.8	11
25		79	33	15	9.9	9.5	11
26		73	32	14	9.9	9.7	11
27		72	31	15	9.9	9.8	12
28		74	39	15	9.8	9.5	12
29		76	57	14	9.7	9.0	12
30		75	54	14	11	8.9	13
31			44		12	8.8	
MEAN		107	50.0	21.5	11.8	9.9	14.2
AC-FT		6400	3070	1280	728	609	844

1985 Distribution

Watermaster service began on May 15 and ended on September 30. Don Hand, Water Resources Engineering Associate, was the watermaster.

The flow in Burney Creek was adequate to supply 100 percent of the right through May, but continued dropping into August, where it leveled off at approximately 35 percent of the allotted rights.

The new owner of the Pierpont Ranch cleaned the lower end of the Greer-Cornaz Ditch and is using their water right for the first time in several years.

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 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 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 9, 10, and 11.

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 9

1985 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR CHICO

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	260	466	352	229	125	148	114
2	260	519	351	212	129	145	116
3	255	522	349	212	122	143	125
4	255	496	336	177	143	143	98
5	251	499	326	194	154	137	90
6	265	495	324	201	145	137	91
7	317	485	318	198	145	139	88
8	276	475	311	190	143	133	188
9	270	468	306	190	143	137	198
10	293	468	303	181	140	134	158
11	308	446	292	174	139	133	111
12	310	444	289	170	140	131	98
13	311	451	284	165	137	133	92
14	318	464	284	163	135	130	92
15	319	471	279	158	135	128	83
16	319	467	275	154	144	127	79
17	316	441	272	148	148	126	89
18	338	412	266	143	144	124	85
19	339	432	267	142	144	122	83
20	332	400	264	143	144	123	82
21	337	387	260	141	146	123	79
22	321	384	256	138	155	118	92
23	309	367	255	137	151	123	97
24	360	361	251	136	148	122	95
25	378	355	247	133	143	120	94
26	441	347	243	133	140	117	91
27	490	346	239	131	145	113	97
28	483	351	238	129	140	113	98
29	412	353	246	127	134	118	96
30	393	350	251	128	132	113	96
31	408		237		134	116	
MEAN	330	431	283	163	141	128	103
AC-FT	20320	25630	17400	9670	8660	7870	6140

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 10

1985 Daily Mean Discharge
(In cubic feet per second)

BUTTE CREEK NEAR DURHAM

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	233	415	116	61	15	9.8	13
2	235	458	117	49	13	13	13
3	226	466	117	45	13	9.8	13
4	232	440	111	40	16	8.4	11
5	229	431	105	40	22	8.2	9.9
6	242	415	101	45	18	7.9	13
7	292	406	96	41	22	7.9	22
8	256	396	93	39	22	7.9	99
9	247	388	91	34	18	7.9	143
10	274	380	89	31	16	7.9	112
11	290	357	87	26	13	8.0	71
12	284	346	89	27	9.0	8.3	54
13	284	317	85	25	10	8.3	45
14	283	282	80	23	10	8.6	47
15	288	304	78	20	10	8.3	40
16	288	306	68	20	10	8.3	37
17	284	293	66	25	14	8.3	38
18	303	271	60	26	17	8.5	43
19	306	281	56	29	19	8.7	59
20	299	258	60	24	23	8.7	54
21	301	248	64	21	24	8.7	52
22	282	243	61	21	24	8.7	54
23	272	229	54	20	14	8.7	53
24	314	221	60	22	9.6	8.7	26
25	339	211	69	22	10	11	25
26	419	204	67	20	9.1	12	25
27	482	168	66	17	10	9.5	26
28	454	142	63	18	9.1	9.9	30
29	383	132	68	17	9.1	9.5	24
30	358	121	74	17	8.8	11	24
31	367		66		8.8	12	
MEAN	301	304	79.9	28.8	14.4	9.1	42.5
AC-FT	18540	18110	4910	1720	886	560	2530

BUTTE CREEK WATERMASTER SERVICE AREA

TABLE 11

1985 Daily Mean Discharge
(In cubic feet per second)

TOADTOWN CANAL ABOVE BUTTE CANAL

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		117	117	110	42	67	45
2		115	116	86	42	67	46
3		115	116	86	40	67	47
4		91	116	0	66	66	22
5		114	116	89	71	65	19
6		114	116	89	74	65	12
7		114	116	87	75	63	0
8		116	116	85	72	63	0
9		115	116	81	71	63	0
10		115	116	77	63	63	0
11		115	116	71	61	63	0
12		115	115	69	61	62	0
13		115	116	65	60	62	0
14		115	116	62	59	63	0
15		115	116	62	59	60	0
16		115	116	58	72	60	0
17		115	116	55	71	58	0
18		115	116	52	71	53	0
19		115	115	51	71	51	0
20		115	117	55	70	51	22
21		115	115	52	70	51	23
22		115	115	51	72	50	23
23		115	115	49	70	49	22
24		91	115	50	69	50	21
25		115	115	48	67	49	21
26		115	115	46	67	49	21
27		116	115	44	68	48	21
28		115	115	44	67	47	21
29		116	115	43	65	46	21
30		116	115	42	67	46	21
31			115		66	46	
MEAN		113	115	62.0	65.1	56.9	14.3
AC-FT		6750	7110	3690	4000	3500	849

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.

1985 Distribution

Watermaster service began April 1 in the Butte Creek service area and continued until September 30 with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

The water supply for the 1985 irrigation season was below normal. The total rice acreage in 1985 was also below normal. Flooding of rice fields began in late April. The appropriative rights that are in addition to the Butte Creek decree were partially filled until May 1. The surplus class priority was filled until May 21, then the flow in Butte Creek declined until there was no surplus class priority after July 9.

Second priority class was only partially filled all season because the Durham Mutual Water Company Diversion Dam is leaking. Durham Mutual Water Company had about 80 percent of first priority class from July 9 through September 30, which satisfied their requirements.

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 in a westerly direction 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 sets forth a rotation schedule of distribution. The water users, however, 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 months 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 daily mean discharge of North Cow Creek near Ingot is presented in Table 12. 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.

COW CREEK WATERMASTER SERVICE AREA

TABLE 12

1985 Daily Mean Discharge
(In cubic feet per second)

NORTH COW CREEK NEAR INGOT

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1						6.7	4.3
2						6.8	5.0
3						6.2	4.9
4						5.6	4.3
5						5.5	4.1
6						5.0	4.6
7						5.0	5.5
8						5.1	7.2
9						4.8	13
10						4.7	17
11						4.5	14
12						4.7	13
13						4.5	12
14						4.5	13
15						4.5	14
16						4.5	14
17						4.5	14
18					5.4	5.0	14
19					4.9	5.9	14
20					4.9	5.6	14
21					5.5	5.6	14
22					6.7	5.0	13
23					5.9	4.6	13
24					5.4	4.4	13
25					4.8	4.1	13
26					5.0	4.1	12
27					5.1	4.1	12
28					5.2	4.3	13
29					5.5	4.3	14
30					6.3	4.3	14
31					6.7	4.3	
MEAN					5.5	4.9	11.2
AC-FT					154	303	668

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.

1985 Distribution

Watermaster service began on May 1 and continued through October 30. Don Hand, Water Resources Engineering Associate, was the watermaster between May 1 and July 10. Ken Morgan, Water Resources Engineering Associate, assumed the watermaster duties between July 10 and September 10. The remainder of the season was covered by Don Hand. Poor water conditions in this and other streams necessitated the use of two watermasters.

Cedar Creek

There was enough flow in Cedar Creek to supply all demands throughout the season.

North Cow Creek

There was adequate flow to supply all demands through June. In early July, the flow dropped down to approximately 70 percent of the rights, then continued nearly level for the remainder of the season.

Clover Creek

The flow in Clover Creek was similar to North Cow Creek, which was adequate to supply all demands through June, and then dropped down to approximately 70 percent of the water rights in early July. It remained at or near this figure for the remainder of the season.

Oak Run Creek

There was sufficient flow to satisfy all allotments until mid-June. From early July through remainder of the season, approximately 70 percent of first priority was available.

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 five court adjudications. The 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 13.

TABLE 13

DECREES DEFINING DIGGER CREEK WATER RIGHTS

Case	Decree No.	Date Entered
Gransbury V. Edwards	2213	August 12, 1899
Wells V. Pritchard	2114	May 27, 1913
Harrison et al V. Kaler et al	3327	October 16, 1917
Herrick V. Forward	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. Very little 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.

There was no measurement of daily mean discharge of Digger Creek below the mouth of the South Fork.

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.

1985 Distribution

Watermaster service began on July 3, 1985, and continued until September 30 with Kenneth E. Morgan, Water Resources Engineering Associate, as watermaster.

The available water supply on Digger Creek was below normal. There was a shortage of water in the Crooker-Harrison Ditch on July 3 and all diversions were regulated. At that time diversion numbers 1 through 7, which are superior in priority, were regulated to 100 percent priority or less. Diversion numbers 8 through 11 were reduced to 76 percent of priority allotment.

The grape vineyards are irrigated from diversion numbers 8, 9, and 11 and are under the same manager. Starting July 11, a rotation program was implemented due to a shortage of irrigation water. The rotation of water to the grape vineyards resulted in a benefit to the other diversions. As a result of the rotation program, the available water for diversion numbers 8 through 11 was 90 to 100 percent filled for the period beginning July 18 through the end of the season.

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, which flows north through the area, 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 outcroppings of volcanic rocks.

Basis of Service

Water from Hat Creek 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 for the period of May 1 to October 28 annually. Decree No. 7858 established three allotments for continuous irrigation, May 1 through October 28, allotments for the period 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 are of the same priority, with the surplus flows distributed according to the users that are on rotation. The upper users' water rights require 154.7 cfs and lower users require 166.5 cfs. The lower users require more because of additional channel loss. 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 toal allotments. Records of mean daily discharge of Hat Creek near Hat Creek are presented in Table 14.

HAT CREEK WATERMASTER SERVICE AREA

TABLE 14

1985 Daily Mean Discharge
(In cubic feet per second)

HAT CREEK NEAR HAT CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	163	163	195	178	159	144	152
2	160	164	199	177	158	143	154
3	162	165	202	174	157	142	154
4	163	163	194	175	158	142	153
5	161	163	194	180	156	141	153
6	161	165	196	186	157	142	154
7	160	168	194	192	157	141	156
8	159	168	190	190	156	140	194
9	159	166	187	186	155	147	175
10	163	172	184	181	149	151	167
11	162	176	181	179	145	151	165
12	162	175	178	177	146	151	163
13	161	176	179	178	144	151	163
14	162	181	187	175	144	151	163
15	162	191	185	173	143	151	163
16	162	193	188	172	143	151	158
17	162	184	192	169	142	152	158
18	164	180	197	167	143	152	159
19	162	181	196	167	142	148	158
20	162	177	196	165	145	143	157
21	161	174	192	161	150	142	157
22	159	171	197	159	151	142	157
23	160	170	204	156	151	142	157
24	163	172	210	154	150	142	156
25	162	171	204	153	151	142	156
26	159	169	198	150	150	143	156
27	153	174	193	147	151	143	156
28	155	180	192	145	151	141	156
29	160	185	192	146	150	147	156
30	163	189	184	156	146	152	157
31	163		182		143	152	
MEAN	161	174	192	169	150	146	159
AC-FT	9900	10370	11830	10050	9210	8970	9490

Method of Distribution

Most irrigation in the area is done by wild flooding. Large heads of water are used 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.

1985 Distribution

Watermaster service began on May 1 and continued until October 28 with Don Hand, Water Resources Engineering Associate, as watermaster.

Due to the extremely dry spring, some users started irrigating in March and by mid-April, nearly all of the users were irrigating. Rotation was started on May 21 and both upper and lower users received 100 percent of their rights throughout June. In July, the lower users were cut down to 90 percent and this schedule was maintained for the rest of the season.

The extensive and continued subdivision practices in this area have created many more users, along with additional problems and workload for the watermaster.

The temporary program of switching approximately 24 cfs of upper users to the lower users' schedule, and lower users to the upper users' schedule continued. This program began on a trial basis in 1980 with Bidwell going on the upper rotation and Thompson and Smith going on the lower rotation. This change has been very beneficial, as the flows on lower Hat Creek generally do not drop below 15 cfs, whereas in the past they would drop to 2 cfs.

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 and its minor tributaries rise 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, to include, 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 owners in the service area, with total allotments amounting to 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 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 allotments is available. The mean daily discharge for Indian Creek near Crescent Mills is presented in Table 15.

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.

INDIAN CREEK WATERMASTER SERVICE AREA

TABLE 15

1985 Daily Mean Discharge
(In cubic feet per second)

INDIAN CREEK NEAR CRESCENT MILLS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	370	995	545	126	38	34	30
2	406	1510	566	129	35	33	31
3	340	1940	566	125	36	33	34
4	363	2080	559	122	38	31	33
5	352	2140	528	116	36	32	33
6	338	2260	490	104	35	35	35
7	334	2320	467	94	33	31	39
8	302	2180	445	85	32	32	68
9	309	2000	414	81	29	28	92
10	331	1920	386	77	37	27	65
11	372	1730	373	72	43	25	55
12	373	1500	350	68	37	25	50
13	378	1430	330	64	35	29	49
14	399	1450	289	63	36	26	52
15	428	1460	270	60	34	30	51
16	468	1380	255	47	34	29	51
17	526	1240	232	54	33	30	48
18	660	1130	246	48	31	33	45
19	758	1080	243	48	32	33	46
20	805	976	220	50	35	33	43
21	898	916	206	52	31	34	43
22	779	849	207	47	39	33	42
23	763	778	200	43	42	29	39
24	1030	739	230	38	39	30	32
25	896	688	181	39	39	33	28
26	752	636	157	40	34	28	27
27	636	580	154	36	39	24	24
28	606	571	145	36	38	22	26
29	686	553	145	38	34	24	32
30	728	533	151	37	33	32	41
31	776		118		35	32	
MEAN	554	1319	312	68.0	35.5	30.0	42.8
AC-FT	34040	78480	19180	4040	2190	1840	2550

1985 Distribution

Watermaster service began in the Indian Creek service area on June 1 with Jon A. Haman, Water Resources Engineering Associate, as watermaster. The available supply in the service area was about average during the season.

Wolf Creek

The available water supply of Wolf Creek was sufficient to satisfy all allotments (three priorities) during the irrigation season due to reduced pumping at Diversions No. 67 and No. 68.

Lights Creek and Tributaries

On Lights Creek, the water supply was enough to satisfy all allotments (three priorities) through mid-June on Cooks Creek. The flow decreased from mid-July through September 30, when only a small part of the allotment was available.

Indian Creek

The water supply of Indian Creek was enough for all allotments (three priorities) until mid-July. After mid-August, only a small portion of allotments was available.

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 the 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, Webber Creek and tributaries, West Side Canal, and 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; Webber 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 104 water right owners in the service area, with total allotments amounting to 375.639 cfs.

Water Supply

The major water supply in the Middle Fork Feather River service area comes from snowmelt runoff, with minor flow from springs and supplemental stored 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 and used as needed under the 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 June 1 when only first and second priority allotments are available for the rest of the season.

The natural flow of Webber 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 flow. This imported water is diverted through the Little Truckee Ditch into Onion Creek and then into Webber 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 season. The flow of Fletcher Creek and Spring Channels normally supplies all allotments until July 1. It then gradually declines for the rest of the season. Records of the daily mean discharge of Little Truckee Ditch and the Middle Fork Feather River near Portola are presented in Tables 16 and 17.

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.

1985 Distribution

Watermaster service began March 15 in the Middle Fork Feather River service area and continued until September 30, with Conrad Lahr, Water Resources Engineering Associate, as watermaster. The available supply in the service area was below average during the season.

Little Last Chance Creek

Frenchman Dam and Reservoir began its twenty-fourth season of operation. A five-year contract concerning storage, distribution, and sale of water was negotiated during 1984 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.

Smithneck Creek

Enough water was available in this system to meet demand until the first of May. The regular two-week rotation of water for first and second priorities below Highway 49 was implemented on May 14.

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 16

1985 Daily Mean Discharge
(In cubic feet per second)

LITTLE TRUCKEE DITCH AT HEAD

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			0.0	51	17	4.9	1.7
2			0.0	53	16	4.6	1.9
3			0.0	56	14	4.4	2.6
4			0.0	61	13	3.9	3.2
5			0.0	60	12	3.2	3.0
6			5.9	59	11	0.6	3.0
7			34	60	11	1.5	3.0
8			35	61	9.2	2.3	14
9			35	61	8.6	2.3	12
10			33	63	7.9	2.1	7.9
11			30	63	8.2	2.1	6.7
12			30	63	7.9	1.9	5.9
13			33	62	6.7	2.1	5.7
14			34	61	6.2	2.1	4.9
15			42	61	5.7	2.1	4.6
16			48	61	5.4	2.1	3.7
17			47	61	5.1	2.3	3.0
18			47	60	4.9	2.4	3.9
19			47	60	4.9	2.4	3.9
20			55	59	5.1	2.4	3.2
21			60	52	6.2	2.3	3.0
22			60	43	6.5	2.3	2.8
23			59	39	5.7	2.1	2.6
24			59	36	4.9	1.9	0.6
25			58	33	8.9	1.5	0.0
26			58	28	14	1.7	0.0
27			59	25	11	1.9	0.0
28			58	23	6.7	1.7	0.0
29			53	21	5.9	1.9	0.0
30			47	18	5.7	2.3	0.0
31			47		5.4	2.1	
MEAN			45.2	50.5	8.4	2.4	4.4
AC-FT			2330	3000	517	146	212

MIDDLE FORK FEATHER RIVER WATERMASTER SERVICE AREA

TABLE 17

1985 Daily Mean Discharge
(In cubic feet per second)

MIDDLE FORK FEATHER RIVER NEAR PORTOLA

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	507	419	106	39	24	11	14
2	415	696	102	39	23	7.0	14
3	312	951	94	38	20	5.8	15
4	344	1040	85	36	15	8.1	16
5	282	875	61	36	15	7.0	16
6	257	732	35	43	14	9.2	16
7	204	612	39	53	14	9.2	16
8	181	556	37	37	14	10	20
9	166	511	36	39	14	14	20
10	176	477	36	52	14	14	20
11	232	435	38	48	14	14	20
12	263	400	40	29	13	13	19
13	276	373	46	28	12	13	19
14	316	351	51	32	12	13	18
15	292	333	52	34	12	12	18
16	309	326	53	44	12	12	17
17	329	322	52	36	16	12	16
18	392	319	50	30	21	12	16
19	515	312	49	28	19	13	16
20	533	292	48	28	19	14	17
21	494	272	49	28	21	14	18
22	468	247	48	28	21	14	18
23	423	212	44	27	20	14	18
24	366	181	41	25	17	14	18
25	362	159	40	25	12	14	18
26	358	152	37	26	13	14	17
27	276	140	38	26	13	15	17
28	187	135	38	25	13	14	17
29	229	125	38	25	11	14	17
30	312	114	38	25	11	15	17
31	333		38		11	16	
MEAN	326	389	50.3	33.6	15.5	12.3	17.3
AC-FT	20050	23940	3090	2000	952	756	1030

Webber Creek

There was sufficient water to supply all allotments (six priorities) until the first of May. The flow decreased for the rest of the season with enough to supply the first and one-half of the second priorities. Importation of water from the Little Truckee River began May 6, supplementing the natural flow of Webber Creek to help satisfy all allotments of the Sierra Valley Water Company shareholders (one priority). A total of 6,206 acre-feet of water was diverted through the Little Truckee Ditch during the irrigation season.

West Side Canal Group

The flow in this system, consisting of Hamlin, Miller and Turner Creeks, was sufficient to satisfy all allotments (five priorities) until the first of July.

Fletcher Creek and Spring Channels

Ample water was available to satisfy all allotments until about May 15, after which the flow slowly decreased for the rest of the season.

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. The North Fork of 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 are of 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.

A record of the daily mean discharge of North Fork Cottonwood Creek near Igo is presented in Table 18. This gaging station is downstream from most diversion points on the creek, but gives a general indication of the water supply.

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 was necessary at this diversion point because the irrigated land was considerably higher than the creek channel.

NORTH FORK COTTONWOOD CREEK WATERMASTER SERVICE AREA

TABLE 18

1985 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK NORTH FORK NEAR IGO

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	75	112	35	23	8.3	8.7	1.6
2	74	113	32	28	7.7	7.6	1.5
3	73	107	32	21	6.0	6.6	3.2
4	73	99	32	18	4.7	5.5	4.0
5	76	98	31	18	3.6	13	3.4
6	84	95	28	17	2.6	6.0	3.5
7	102	93	28	15	2.0	3.5	29
8	85	91	28	14	1.9	2.5	35
9	79	89	NR	13	1.8	2.0	29
10	87	86	NR	12	1.8	1.8	53
11	86	85	NR	9.3	1.8	1.9	21
12	84	84	NR	8.2	1.7	1.9	16
13	81	81	NR	7.5	1.6	1.9	13
14	80	78	NR	8.1	1.6	1.8	13
15	79	77	18	7.9	1.5	1.9	10
16	77	76	17	7.5	1.4	1.9	9.6
17	77	75	16	7.4	1.3	1.9	8.5
18	76	73	18	13	1.3	2.1	8.4
19	78	72	16	9.4	1.2	2.2	8.1
20	75	72	15	11	1.2	2.2	7.9
21	72	83	14	9.3	1.2	2.2	8.5
22	72	76	14	8.4	1.1	2.4	8.5
23	70	68	12	14	2.4	2.4	8.1
24	74	66	14	9.8	2.6	2.3	7.3
25	70	63	14	6.6	1.3	2.2	7.5
26	85	61	13	7.2	1.2	2.1	7.3
27	104	48	20	7.7	1.1	1.9	7.3
28	141	41	23	7.5	1.0	1.9	8.3
29	124	40	22	7.0	0.9	1.8	8.3
30	111	39	17	6.6	9.9	1.8	8.3
31	110		18		12	1.6	
MEAN	85	78	NR	12	2.9	3.2	12
AC-FT	5220	4640	NR	699	178	197	710

1985 Distribution

Watermaster service for North Fork Cottonwood Creek began July 18, 1985, and continued through September 30. Kenneth E. Morgan, Water Resources Engineering Associate, was watermaster.

The available water supply in the service area was generally below normal. No distribution problems were encountered during the season.

The stream gage at North Fork Cottonwood Creek near Igo decreased from 112 cfs on April 1 to 1.2 cfs by mid-July. From mid-July through September 30, the flow was sufficient to satisfy most requirements. The rains in August and September significantly enhanced the water supply.

The Bee Ditch users' received only a portion of their water allotment because the diversion dam is leaking. The leaking, however, does benefit the lower users.

Rainbow Lake did not store water in 1985.

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, since the lake has not spilled into the river for nearly 100 years.

Nine 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. Pine Creek near Alturas is included in this service area and is a tributary to the South Fork Pit River.

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

The Pine Creek agreement established water rights for Pine Creek on November 22, 1933, and this stream was added to the South Fork Pit River area on January 22, 1935. Pine Creek Reservoir, a small reservoir above all diversions, was originally used for power generation. Now a recreation site, it has a small water right but is not in the service area and was added to North Fork Pit River area on July 1, 1982. The Pine Creek agreement establish two priorities.

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. Mean daily discharge of North Fork Pit River and various tributaries is presented in Tables 20 to 31, pages 55 to 66.

TABLE 19

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 Water Right Owners	Total cfs	Remarks
New Pine Creek	2821	6-14-32	CR	6-22-32	21	22.18	Two priorities.
Cottonwood Creek	2344	5-03-40	CR	12-13-40	5	15.35	When water for Diversion Creek No. 3 is insufficient to reach the area of use, it is diverted at Diversion No. 4.
Davis Creek	2782	6-30-32	CR	7-13-32	19	52.70	Four priorities, 4-1 to 9-15. 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.
					2[b]		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 Creek	3118	9-08-33	CR	9-14-33	4	11.66	Four priorities. The first priority and all second priority rights are year-round, except one which is equal to 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 Pit River	4074	12-14-34	S	12-18-39	10	51.73	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	7	18.07	Four priorities, 4-1 to 9-30. Diversion on Dorris Reservoir shown on North Fork Pit River schedule is made at No. 120, Parker Creek Ditch.
Shields	4074	12-14-39	S	12-18-39	5	7.50	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	4.45	Five priorities.
Pine		11-22-33		1-22-35	16	60.00	Surplus flow diverted into Doris Reservoir.

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 ground water being added as the surface flow diminishes. Subirrigation 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.

1985 Distribution

Watermaster service in the North Fork Pit River service area began April 1 and continued through September 30. Charles Hodge, Water Resources Technician II, was watermaster from April 1 until his death on April 12. Glyn Echols, Water Resources Assistant Engineer, was watermaster from April 15 through September 30.

The 1985 irrigation season was considered below normal; there was a poor snow pack and an early warm spring.

New Pine Creek

There was excess water to all the users from April 7 through June 22. On July 1, when the schedule changes from proration (or correlative rights) to the priority system, the flow was sufficient to supply only 39 percent of fourth priorities. On July 6, only third priorities could be filled. On August 11, only second priorities could be filled. At the end of the season, only 33 percent of second priorities was available.

Cottonwood Creek

The flow was adequate to fill all six priorities only from April 6 through April 17. On April 20, only fourth priorities could be filled; on June 19, only third priorities could be filled; and on June 25, only first priorities could be filled. From July 20 until the end of the season, only stockwater was available.

Davis Creek

There was no surplus flow during the 1985 watermaster season. From April 1 through June 9, approximately 25 percent of the third priorities could be filled; on June 10, only second priorities could be filled; and at the end of the season, September 30, only 21 percent of second priorities could be filled.

Linville Creek

The flow in Linville Creek is spring fed with very little fluctuation. Full second priorities could not be filled. Peak daily mean flow was 3.5 cfs and minimum daily mean flow was 2.6 cfs.

Franklin Creek

Only on April 15 was the flow sufficient to fill all priorities. On June 1, only 58 percent of third priorities could be filled. On September 15, when the winter schedule starts, the flow was 2.7 cfs.

Joseph Creek

Streamflow exceeded all allotments from April 1 through May 10. On June 11, only third priorities could be met. From July 13 to the end of the season, only part of first priorities could be met.

Thoms Creek

Streamflow exceeded all allotments from April 1 through June 7. From July 20 through September 1, only a part of the first priorities could be met. During September, some local rain and snow increased the streamflow.

North Fork Pit River

Streamflow exceeded all allotments from April 1 through April 23. Full third priorities were generally met through June 2. On June 13, only part of the first priorities could be filled. By June 23 the flow was only 0.4 cfs.

Parker Creek

There was surplus water from April 1 through May 14. On June 10, only third priorities could be met, and on July 25 only first priorities could be filled. Local rain and snow increased the flow slightly during September.

Shields Creek

Surplus water was available through May 12. On July 1, only 48 percent of second priorities could be filled. Streamflow remained relatively steady for the remainder of the season.

Pine Creek Near Alturas

Total stream runoff available April 1 through September 30 was 9,070 acre-feet. Excess water was available only during May.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 20

1985 Daily Mean Discharge
(In cubic feet per second)

NEW PINE CREEK BELOW SCHROEDER'S

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		6.0E	37	36	16 E	8.2E	5.5E
2		11 E	42	34	15 E	8.0E	5.5E
3		14	42	33	14 E	7.9E	5.5E
4		15	40	33	13 E	7.7E	5.4E
5		16	39	36	13 E	7.6E	5.4E
6		19	39	39	12 E	7.4E	5.3E
7		25	39	42	11 E	7.2E	5.2E
8		30	37	41	10 E	7.0E	5.2E
9		33	36	40	10 E	6.9E	5.1E
10		36	35	37	10 E	6.7E	5.1E
11		36	33	36	10 E	6.5E	5.0E
12		37	30	35	9.9E	6.3E	5.0E
13		39	30	34	9.9E	6.3E	4.9E
14		42	34	33	9.8E	6.3E	4.9E
15		48	34	32	9.8E	6.2E	4.8E
16		46	34	29	9.8E	6.2E	4.8E
17		41	35	28	9.7E	6.2E	4.7E
18		35	39	27	9.7E	6.2E	4.7E
19		33	41	26	9.6E	6.2E	4.6E
20		29	42	24	9.6E	6.1E	4.5E
21		26	41	23	9.5E	6.1E	4.5E
22		23	42	22	9.5E	6.0E	4.4E
23		22	46	21	9.5E	6.0E	4.3E
24		21	48	21	9.3E	5.9E	4.3E
25		20	49	20	9.2E	5.9E	4.2E
26		19	47	20	9.0E	5.8E	4.2E
27		20	43	19	8.9E	5.8E	4.1E
28		22	45	18	8.7E	5.7E	4.0E
29		25	42	17	8.6E	5.7E	4.0E
30		30	39	17E	8.4E	5.6E	4.0E
31			37		8.3E	5.6E	
MEAN		27.3E	39.3	29.1E	10.0E	6.5E	4.8E
AC-FT		1620E	2410	1730E	618E	399E	284E

E - Estimated

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 21

1985 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK BELOW LARKIN GARDEN DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		5.2	13	12	2.2	0.6	0.2
2		11	14	11	2.1	0.5	0.3
3		13	14	11	2.0	0.4	0.3
4		13	13	11	2.0	0.4	0.3
5		13	12	10	1.8	0.3	0.3
6		15	12	10	1.7	0.2	0.4
7		18	12	9.7	1.5	0.2	0.5
8		19	12	9.1	1.4	0.2	0.8
9		18	12	8.5	1.2	0.2	0.9
10		18	12	8.2	1.1	0.2	1.0
11		17	12	7.6	1.0	0.2	1.0
12		16	12	7.3	0.9	0.2	1.1
13		15	12	7.0	0.9	0.2	1.2
14		17	12	6.7	0.8	0.2	1.1
15		19	12	6.4	0.8	0.2	1.0
16		17	12	6.1	0.8	0.2	1.0
17		15	12	5.8	0.8	0.2	0.9
18		13	12	5.5	0.8	0.2	0.9
19		13	12	5.2	0.7	0.2	0.7
20		11	13	4.9	0.5	0.3	0.7
21		10	13	4.6	0.5	0.3	0.5
22		9.4	13	4.3	0.4	0.3	0.5
23		8.8	13	4.0	0.4	0.3	0.5
24		8.5	14	4.0	0.4	0.2	0.4
25		8.2	14	3.6	0.4	0.2	0.4
26		7.9	14	3.6	0.5	0.2	0.4
27		7.9	14	3.2	0.5	0.2	0.4
28		8.5	13	2.9	0.5	0.2	0.3
29		10	13	2.7	0.5	0.2	0.3
30		12	13	2.5	0.5	0.2	0.3
31			12		0.7	0.2	
MEAN		12.9	12.7	6.6	1.0	0.3	0.6
AC-FT		768	780	394	60	16	37

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 22

1985 Daily Mean Discharge
(In cubic feet per second)

DAVIS CREEK ABOVE DIVERSION NO. 4

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		20E	26	28	9.8	6.5	5.9
2		21E	30	26	9.4	6.2	9.4
3		21E	33	25	9.0	5.9	7.6
4		22E	31	24	9.4	5.6	6.9
5		22E	31	25	9.8	5.6	6.5
6		23E	35	25	9.8	5.2	6.9
7		23E	35	25	9.8	5.2	9.0
8		23E	35	25	9.4	5.9	13
9		24E	34	23	9.4	5.9	8.3
10		26	31	22	9.4	5.9	7.9
11		27	29	21	9.0	5.9	7.9
12		27	28	20	9.0	5.9	7.6
13		28	29	19	9.0	5.6	7.2
14		29	30	18	8.3	5.6	6.5
15		28	29	18	7.6	5.6	6.2
16		28	29	17	7.6	5.6	6.2
17		27	31	15	7.6	5.6	6.5
18		27	33	15	6.9	5.9	6.5
19		26	34	15	6.9	5.9	6.2
20		26	35	15	6.5	6.2	6.2
21		25	33	15	6.9	6.2	6.2
22		25	32	14	7.2	6.2	6.2
23		24	33	14	6.9	5.9	6.2
24		24	34	13	6.2	5.9	5.9
25		23	33	13	6.2	5.9	5.9
26		23	31	13	5.9	5.9	5.9
27		18	30	13	6.2	5.9	5.6
28		20	37	11	5.9	5.9	5.6
29		22	34	13	6.2	5.9	5.9
30		23	31	10	6.5	5.9	5.9
31			29		6.2	5.9	
MEAN		24.2E	31.8	18.3	7.9	5.8	6.9
AC-FT		1440E	1950	1090	484	359	412

E - Estimated

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 23

1985 Daily Mean Discharge
(In cubic feet per second)

LINVILLE CREEK AT OLD POWERHOUSE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			3.5	3.0	2.9	2.6	2.6
2			3.5	3.0	2.9	2.6	2.6
3			3.4	3.0	2.9	2.6	2.6
4			3.5	3.0	2.9	2.6	2.6
5			3.5	3.0	2.9	2.6	2.6
6			3.5	3.0	2.7	2.6	2.7
7			3.5	3.0	2.7	2.6	2.9
8			3.5	3.0	2.7	2.6	3.2
9			3.5	3.0	2.7	2.6	2.9
10			3.5	3.0	2.7	2.6	2.7
11			3.4	3.0	2.7	2.6	2.9
12			3.2	3.0	2.7	2.6	2.7
13			3.2	3.0	2.7	2.6	2.7
14			3.2	3.0	2.7	2.6	2.7
15			3.2	3.0	2.7	2.6	2.7
16			3.2	3.0	2.7	2.6	2.7
17			3.2	3.0	2.7	2.6	2.7
18			3.2	3.0	2.7	2.6	2.7
19			3.2	3.0	2.7	2.6	2.7
20			3.2	3.0	2.7	2.6	2.6
21			3.2	3.0	2.7	2.6	2.6
22			3.2	3.0	2.7	2.6	2.6
23			3.1	3.0	2.7	2.6	2.6
24		3.2	3.1	2.9	2.7	2.6	2.6
25		3.2	3.1	2.9	2.7	2.6	2.6
26		3.2	3.1	2.9	2.7	2.6	2.6
27		3.2	3.1	2.9	2.7	2.6	2.6
28		3.2	3.1	2.9	2.7	2.6	2.6
29		3.2	3.1	2.9	2.7	2.6	2.6
30		3.4	3.1	2.9	2.7	2.6	2.6
31			3.1		2.6	2.6	
MEAN		3.2	3.3	3.0	2.7	2.6	2.7
AC-FT		45	201	177	168	160	160

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 24

1985 Daily Mean Discharge
(In cubic feet per second)

FRANKLIN CREEK ABOVE DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		6.3	9.0	6.6	2.9	2.2	2.2
2		7.1	9.3	6.6	2.9	2.2	3.1
3		7.6	9.6	5.8	2.9	2.2	2.3
4		8.2	9.3	5.1	2.7	2.2	2.2
5		8.7	9.0	5.3	2.7	2.2	2.2
6		9.3	9.0	5.1	2.7	2.2	2.2
7		10	8.7	4.9	2.3	2.2	2.9
8		10	8.5	4.9	2.3	2.2	3.7
9		10	8.2	4.9	2.3	2.2	3.3
10		10	7.6	4.4	2.3	2.2	3.1
11		10	7.4	4.0	2.3	2.2	3.1
12		10	6.8	4.0	2.7	2.2	2.9
13		10	6.6	3.7	2.9	2.2	2.9
14		11	6.6	3.7	2.9	2.2	2.7
15		12	6.6	3.7	2.9	2.2	2.7
16		11	6.3	3.3	2.9	2.2	2.7
17		11	6.3	3.3	2.9	2.2	2.7
18		10	5.8	3.3	2.9	2.2	2.7
19		10	5.8	3.3	2.7	2.2	2.7
20		9.0	6.3	3.3	2.7	2.2	2.7
21		8.5	5.8	3.3	2.9	2.2	2.7
22		8.5	5.3	3.1	3.1	2.2	2.7
23		8.5	5.1	3.1	3.1	2.2	2.7
24		7.4	5.1	3.1	2.9	2.2	2.7
25		7.1	5.1	3.1	2.9	2.2	2.7
26		6.8	4.9	3.1	2.7	2.2	2.7
27		6.8	4.9	3.1	2.9	2.2	2.7
28		7.1	5.8	3.1	2.9	2.2	2.7
29		7.6	5.8	2.9	2.9	2.2	2.7
30		8.5	6.3	2.9	2.9	2.2	2.7
31			6.3		2.3	2.2	
MEAN		8.9	6.9	4.0	2.8	2.2	2.7
AC-FT		532	423	238	169	135	163

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 25

1985 Daily Mean Discharge
(In cubic feet per second)

JOSEPH CREEK BELOW COUCH CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		19	12	9.2	2.4	2.1	2.0
2		26	12	11	2.4	1.9	2.2
3		35	12	8.7	2.3	1.8	2.3
4		38	12	7.7	2.3	1.8	2.0
5		46	10	7.7	2.3	1.7	2.0
6		57	10	9.2	2.3	1.6	2.0
7		58	9.8	9.6	2.3	1.7	2.0
8		48	9.4	9.2	2.3	1.7	2.0
9		43	9.2	8.3	2.3	2.1	2.0
10		36	9.2	7.9	2.4	2.2	2.0
11		31	8.7	7.3	2.4	2.2	2.0
12		28	7.5	6.9	2.4	2.2	2.0
13		27	7.3	6.4	2.3	2.2	2.0
14		25	7.3	4.3	2.2	2.0	2.0
15		24	7.3	3.9	2.0	2.0	2.0
16		23	7.3	3.7	2.0	2.0	2.0
17		21	7.3	3.4	2.2	2.0	2.0
18		18	7.1	3.2	2.2	2.0	2.0
19		20	7.5	3.2	2.2	2.0	2.0
20		17	8.9	3.2	2.1	2.0	2.0
21		17	8.5	3.0	2.2	2.0	2.0
22		21	8.3	2.8	2.3	2.0	2.0
23		22	8.3	2.8	2.3	2.0	2.0
24		16	8.9	2.7	2.2	2.0	2.0
25		11	9.2	2.7	2.0	2.0	2.0
26		10	8.9	2.7	1.9	2.0	2.0
27		9.8	8.3	2.7	1.9	2.0	2.0
28		9.8	9.4	2.6	1.9	2.0	2.0
29		10	9.6	2.6	2.0	2.0	2.0
30		10	11	2.5	2.1	2.0	2.0
31			9.8		2.0	2.0	2.0
MEAN		25.9	9.1	5.4	2.2	2.0	2.0
AC-FT		1540	559	320	135	121	116

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 26

1985 Daily Mean Discharge
(In cubic feet per second)

NORTH FORK PIT RIVER ABOVE PARKER CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		147	41	49	0.4E	0.2E	1.5E
2		147	42	51	0.4E	0.2E	1.5E
3		150	42	12	0.4E	0.3E	1.5E
4		145	39	10	0.4E	0.3E	1.5E
5		150	33	16	0.4E	0.4E	1.5E
6		164	29	33	0.4E	0.5E	2.0E
7		171	22	22	0.4E	0.6E	3.0E
8		154	27	22	0.4E	0.7E	4.0E
9		138	41	18	0.4E	0.8E	4.5E
10		129	48	16	0.4E	0.9E	5.0E
11		113	55	14	0.4E	1.0E	6.0E
12		103	46	10	0.4E	1.1E	6.0E
13		102	44	6.0	0.4E	1.2E	6.0E
14		96	37	4.0	0.4E	1.3E	7.0E
15		92	31	4.0	0.4E	1.3E	7.0E
16		92	27	2.5	0.4E	1.4E	8.0E
17		85	39	1.0	0.4E	1.4E	8.0E
18		80	46	0.7	0.4E	1.5E	9.0E
19		84	42	0.7	0.4E	1.5E	9.0E
20		76	45	0.7	0.4E	1.5E	9.0E
21		78	49	0.7	0.4E	1.5E	8.0E
22		81	53	0.7	0.4E	1.5E	7.0E
23		67	52	0.4	0.4E	1.5E	6.0E
24		52	44	0.4	0.3E	1.5E	5.0E
25		49	16	0.4	0.3E	1.5E	4.0E
26		41	12	0.4	0.3E	1.5E	4.0E
27		33	8.0	0.4	0.3E	1.5E	4.0E
28		31	56	0.4	0.3E	1.5E	4.0E
29		33	110	0.4	0.2E	1.5E	4.0E
30		39	77	0.4	0.2E	1.5E	4.0E
31			44		0.2E	1.5E	
MEAN		97.4	41.8	9.9	0.4E	1.1E	5.0E
AC-FT		5800	2570	590	23E	69E	300E

E - Estimated

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 27

1985 Daily Mean Discharge
(In cubic feet per second)

THOMS CREEK AT CEDARVILLE-ALTURAS HIGHWAY

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		38	29	11	2.5	0.5	0.5
2		38	29	11	2.5	0.5	1.4
3		38	27	9.7	2.5	0.5	2.3
4		38	25	8.4	2.5	0.5	5.0
5		42	24	7.6	2.5	0.5	11
6		45	23	7.6	2.5	0.5	11
7		47	21	6.9	2.5	0.5	7.6
8		47	20	6.1	2.5	0.5	7.6
9		45	18	5.7	2.5	0.5	6.9
10		43	18	5.0	2.5	0.5	6.9
11		42	16	4.4	2.3	0.5	6.9
12		40	14	4.0	2.3	0.5	6.1
13		40	15	3.6	2.1	0.5	6.1
14		42	15	3.8	1.8	0.5	6.1
15		43	15	3.6	1.6	0.5	5.7
16		40	15	3.4	1.4	0.5	5.7
17		36	14	2.9	1.4	0.5	5.7
18		34	12	2.9	1.2	0.5	5.7
19		33	9.7	2.9	1.2	0.5	5.0
20		30	9.7	2.9	1.0	0.5	5.0
21		29	8.4	2.9	1.0	0.5	4.4
22		29	6.9	2.9	1.0	0.5	4.0
23		26	7.6	2.7	0.7	0.5	3.8
24		23	8.6	2.7	0.7	0.5	3.6
25		23	11	2.5	0.7	0.5	3.6
26		18	12	2.5	0.5	0.5	3.4
27		20	13	2.5	0.5	0.5	3.2
28		23	15	2.5	0.5	0.5	2.9
29		24	14	2.5	0.5	0.5	2.7
30		27	13	2.5	0.5	0.5	2.5
31			12		0.5	0.5	
MEAN		34.8	15.6	4.7	1.6	0.5	2.8
AC-FT		2070	960	277	96	31	169

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 28

1985 Daily Mean Discharge
(In cubic feet per second)

PARKER CREEK AT FOGARTY RANCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		140	67	26	5.1	0.6	0.6
2		140	72	25	4.6	0.9	2.0
3		140	72	19	4.6	0.6	1.8
4		144	66	16	4.2	0.6	1.3
5		154	62	18	4.3	0.8	1.2
6		168	60	17	4.3	0.9	1.3
7		178	55	16	3.8	0.9	1.5
8		180	49	15	3.6	0.9	6.9
9		174	44	11	3.2	0.9	5.1
10		158	41	9.5	2.2	0.9	4.2
11		142	41	8.5	1.8	0.9	3.8
12		132	37	6.9	1.9	0.9	3.2
13		129	36	5.6	1.8	0.9	2.8
14		131	28	5.1	1.8	0.8	2.8
15		132	24	5.5	1.9	0.6	2.6
16		118	23	5.5	1.8	0.6	2.5
17		105	22	5.1	1.8	0.6	2.8
18		94	22	5.1	1.6	0.6	3.6
19		93	22	5.1	1.6	0.6	3.2
20		82	27	4.6	1.6	0.6	2.8
21		77	28	4.2	1.8	0.7	2.8
22		77	28	4.0	2.4	0.7	2.8
23		80	28	4.0	2.8	0.7	2.8
24		70	27	5.8	2.2	0.7	2.8
25		65	25	6.9	1.4	0.7	2.8
26		57	24	6.9	0.9	0.7	2.8
27		55	23	6.4	0.3	0.6	2.8
28		62	24	5.6	0.3	0.6	2.8
29		64	32	5.6	0.4	0.4	2.8
30		66	29	5.6	0.7	0.6	2.8
31			28		0.6	0.6	
MEAN		114	37.6	9.5	2.3	0.7	2.8
AC-FT		6760	2310	564	141	44	167

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 29

1985 Daily Mean Discharge
(In cubic feet per second)

PARKER CREEK NEAR MOUTH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		160					
2		160					
3		160					
4		162					
5		167					
6		185					
7		214					
8		215					
9		187					
10		178					
11		176					
12		144					
13		137					
14		137					
15		206					
16		137					
17		112					
18		90					
19		83					
20		67					
21		59					
22		60					
23		60					
24		49					
25		40					
26		36					
27		35					
28		32					
29		29					
30		29					
31							
MEAN		117					
AC-FT		6950					

NOTE: No record after April 30.

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 30

1985 Daily Mean Discharge
(In cubic feet per second)

SHIELDS CREEK ABOVE DIVERSION NO. 95

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			9.4	5.8	3.6	3.2	2.9
2			9.4	5.8	3.6	3.2	3.1
3			9.4	5.2	3.4	3.2	3.0
4			9.4	4.7	3.4	3.2	3.0
5			9.2	4.7	3.4	3.1	3.0
6			8.8	4.5	3.4	3.1	3.0
7			8.5	4.5	3.4	3.1	3.0
8			8.5	4.5	3.4	3.1	3.6
9			8.5	4.3	3.4	3.1	3.1
10			8.3	4.3	3.4	3.1	3.1
11			8.3	4.0	3.4	3.1	3.1
12			8.1	4.0	3.4	3.1	3.1
13			7.0	4.0	3.4	3.1	3.0
14			6.7	4.0	3.4	3.1	3.0
15			6.5	4.0	3.4	3.1	3.0
16			6.5	3.8	3.3	3.1	3.0
17			6.3	3.8	3.3	3.1	3.0
18			6.1	3.8	3.3	3.1	3.0
19			6.1	3.8	3.3	3.0	3.0
20			6.1	3.8	3.3	3.0	3.0
21			5.8	3.6	3.3	3.0	3.0
22			5.4	3.6	3.3	3.0	3.0
23		11	5.2	3.6	3.3	3.0	3.0
24		11	4.9	3.6	3.3	3.0	3.0
25		11	4.9	3.6	3.3	3.0	3.0
26		9.7	4.7	3.6	3.3	3.0	3.0
27		9.2	4.7	3.6	3.3	3.0	3.0
28		9.2	5.2	3.6	3.3	3.0	3.0
29		9.2	5.8	3.6	3.2	2.9	3.0
30		9.2	6.1	3.6	3.2	2.9	3.0
31			6.1		3.2	2.9	
MEAN		9.9	7.0	4.1	3.4	3.1	3.0
AC-FT		158	428	245	206	188	181

NORTH FORK PIT RIVER WATERMASTER SERVICE AREA

TABLE 31

1985 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK NEAR ALTURAS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	17	32	35	41	25	17	13
2	16	22	37	38	26	17	15
3	16	20	37	37	25	17	13
4	15	20	36	36	24	16	13
5	15	21	38	35	23	16	13
6	15	22	40	34	23	16	13
7	15	24	42	33	22	16	13
8	15	25	42	33	23	16	16
9	15	26	42	33	22	16	14
10	16	28	41	35	21	16	13
11	16	27	41	36	21	15	13
12	16	27	41	36	20	15	13
13	16	28	40	36	20	15	13
14	16	30	39	36	19	15	13
15	16	32	38	36	19	15	12
16	16	33	37	36	19	15	12
17	16	32	37	35	19	15	13
18	16	33	37	35	18	15	12
19	17	35	37	35	18	15	12
20	17	35	37	34	18	14	12
21	16	36	37	33	18	14	12
22	16	35	37	32	19	14	12
23	16	34	38	32	18	14	12
24	17	33	39	31	18	14	12
25	17	33	39	30	18	14	12
26	16	31	41	30	18	13	12
27	17	31	42	29	18	13	12
28	17	32	44	28	17	13	11
29	17	33	46	27	17	13	11
30	22	34	44	26	18	13	11
31	40		42		17	13	
MEAN	17.0	29.5	39.5	33.6	20.0	14.8	12.6
AC-FT	1050	1750	2430	2000	1230	912	750

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, and the four tributaries to the Scott River were combined to form the Scott River watermaster service area.

1985 Distribution

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

The available water supply for Scott River tributaries was near normal.

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 one 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.

Water is distributed according to three schedules: North Fork French Creek, with three priorities; Miners Creek with three; and the 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 but are subject to the exclusive control of the other owners of the ditch.

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

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 32.

French Creek 1985 Distribution

The season started on French Creek with all seven priorities being filled and continued until the last week of July. After August 15 the upstream priority allotments were regulated in decreasing quantities to satisfy fourth priority rights. Rotation was initiated on August 25 on Diversions 43 and 44 and, at that time, 50 percent of fourth priority was being filled. From August 27 through September, the streamflow was sufficient to fill a portion of fourth priority allotments.

All three priority allotments were filled all season on Miners Creek. No water was diverted from Duck Lake Creek or French Creek into Miners Creek this season.

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.

SCOTT RIVER WATERMASTER SERVICE AREA

TABLE 32

1985 Daily Mean Discharge
(In cubic feet per second)

FRENCH CREEK ABOVE NORTH FORK FRENCH CREEK

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			69	34	13	7.9	4.9
2			62	33	13	7.1	4.9
3			48	35	12	6.9	4.9
4			45	34	12	6.1	4.8
5			44	33	12	5.8	4.8
6			44	51	12	5.6	4.8
7			44	56	10	5.1	4.8
8			43	52	10	6.3	4.7
9			40	43	9.4	7.4	4.7
10			37	39	9.1	4.9	4.8
11			35	37	8.8	5.1	4.7
12			34	36	8.5	5.8	4.6
13			35	35	8.2	5.8	4.7
14			39	33	8.2	6.1	4.7
15			38	32	7.6	6.1	5.2
16			42	31	6.3	5.8	5.4
17			48	31	6.6	5.8	5.3
18			45	30	6.6	6.1	5.3
19			51	28	6.6	6.6	5.3
20			48	26	6.9	6.6	5.4
21			48	25	7.1	6.1	5.3
22			54	22	7.1	5.6	5.3
23			64	20	6.9	5.0	5.3
24			69	18	6.3	5.1	5.3
25			62	17	6.1	4.7	5.3
26			59	15	6.1	4.6	5.2
27			62	15	6.1	4.9	5.2
28			52	14	7.4	5.0	5.2
29			44	14	6.3	5.1	5.2
30			38	13	7.4	5.0	5.2
31			37		7.5	5.0	
MEAN			47.7	30.1	8.4	5.8	5.0
AC-FT			2940	1790	518	355	300

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 Shackleford Creek group and lower Shackleford Creek group each have seven priority classes, and the upper Mill Creek group and lower Mill Creek group each have three priority classes.

Along with these schedules of allotments during the irrigation season, the decree defines two storage rights upstream of all other diversions. This stored water is released late in the irrigation season and commingled with the natural flow of Shackleford Creek for use by owners.

Water Supply

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

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 1985 Distribution

There was sufficient water available to fill all priorities until August 10.

Campbell Lake water was released about August 15. Water was available to second priority users from August 15 through September 30.

Lower Shackleford Creek Diversion No. 17 had ample water until August 20 and then the available flow decreased to about 3 cfs at Diversion 17.

There was surplus flow past Diversion 19 all season.

Sniktaw Creek

The Sniktaw Creek service area is in western Siskiyou County, seven miles west of the town of Fort Jones in Scott Valley. It encompasses an agricultural area about three miles long and one 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 suppply 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 allotted as set forth in Schedule B38 (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.

Sniktaw Creek 1985 Distribution

All of Sniktaw Creek priorities were filled until the last week of July, after which a portion of second priority was filled until September 30. Shackleford Creek, Diversion No. 3, diverted water into Sniktaw Creek until August 10. This season was a normal water year.

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, foreign water imported from 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 1985 Distribution

The water supply was normal.

Import water from Sugar Creek and Jackson Creek assured an excellent water supply for the Kerrigan ranch. Wildcat Creek and Kerrigan ranch runoff provided the Struckman ranch an ample water supply.

Recorders were installed on parshall flumes at diversion points A and B.

Oro Fino Creek

The Oro Fino Creek watermaster 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 6, 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. At Diversions 607, 608, 609, 610, 613, 613a, 614, 615, and 616 allotments 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 Luckensmeyer 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.

Oro Fino Creek 1985 Distribution

The water supply was near normal. A recorder was installed at the county road at the O. Lewis property line and the flow was 5.1 cfs on May 1, 1985. The flow remained above 3.0 cfs until July 30. The Kidder Creek diversion into Oro Fino Creek stopped about mid-July and then the Oro Fino surface flow started to decline. The flow remained fairly steady at the county road recorder. The Friden pumps were off from September 20 for the remainder of the year. The flow at the recorder was 0.50 cfs on September 30. Diversion boxes were built at Friden's turnout around the first of August. This allowed 49 percent to Friden and 51 percent to flow to lower users.

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 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.

Shasta River

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. Owners of these riparian rights are not subject to watermaster supervision, causing considerable distribution problems during seasons of short water supply.

Water Supply

The water supply for Shasta Valley comes from snowmelt runoff, springs and underground flow, and occasional summer thundershowers. In several parts of the stream system, the springs from underground flow are enough to supply most allotments throughout the season. Much of the underground flow comes from the northern slopes of Mount Shasta, which rises 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 33 through 36, pages 81 through 84. The daily mean storage in Lake Shastina is in Table 37, page 85.

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.

There are many privately owned storage reservoirs in the area. Water from these reservoirs supplements continuous-flow allotments.

Because of their large rights, the watermasters close surveillance of the two public agencies--Grenada and Big Springs Irrigation Districts and the privately operated Shasta River Water Users Association--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.

1985 Distribution

Watermaster service began April 1 in the Shasta River service area and continued through September 30 with Lester L. Lighthall, Water Resources Technician II, as watermaster.

The water supply in the service area was above average during the season.

Parks Creek. The flow in Parks Creek was enough to supply all priorities, including water to Montague Water Conservation District Bypass Canal to the Shasta River, until May 15. The flow diminished until the second priority allotments of 6 cfs were at 80 percent by the middle of June and remained at that for the rest of the season.

Water users downstream from the third and fourth priorities got part of their allotments during the latter part of the season from return flow and from water rising in the streambed.

Upper Shasta River. The flow in the Shasta River was enough to fill all priorities until the first week of June. By June 20, the river was down to fourth priorities and all of the water was turned into the Yreka Ditch. The flow declined until Yreka Ditch users were only getting 30 percent of their rights. It stayed that way for the rest of the season.

Lower priority users got only part of their rights below the Yreka Ditch, from irrigation return flows and spring inflows.

Boles Creek and Shasta River to Lake Shastina (Dwinnell Reservoir). Boles Creek and this part of the Shasta River were operated as one stream under a long standing oral agreement among the water right owners. The water is distributed on a correlative, equal-priority basis. By the middle of July, all water rights were set at 100 percent of their allotments and stayed that way the rest of the season. The Roseburg Lumber Company did not use their full allotment this season, so more water was available for the other users.

Beaughan Creek. The flow at Beaughan Creek was enough for all demands (five priorities) for the entire season.

Carrick Creek. The water supply in Carrick Creek was enough to satisfy all allotments (13 priorities) during the entire season.

Little Shasta River. There was enough water in the Little Shasta River to satisfy five priority allotments of the seven until May 25, when full regulation became necessary. The flow continued to decrease to 30 percent of fifth priority allotments by July 23, then stayed constant for the rest of the season.

Dwinnell Reservoir. Releases from Lake Shastina (Dwinnell Reservoir) to the Montague Water Conservation District began on April 7 and continued into October. By agreement with the Montague Water Conservation District, water users on the Shasta River below Dwinnell Reservoir received stored water from the reservoir on demand instead of their natural flow rights.

Big Springs Lake. Big Springs Irrigation District did not pump from Big Springs Lake this year, as they have gone to pumping ground water. There was a surplus in Big Springs Lake until June 15. On July 1, the flow of the springs was 10 cfs, filling only the first priority out of the lake. On September 5, the spring flow had increased to 15 cfs.

Lower Shasta River. The water supply in the lower Shasta River was enough to satisfy all allotments (29 priorities) until June 17. By the middle of July, Grenada Irrigation District pumps were turned off. The rest of the season, Grenada Irrigation District pumps were operated only when the flow in the river increased due to the weather or when other priorities were not diverting.

Willow Creek (North of Montague)

Basis of Service

Willow Creek has had a long history of litigation. The present basis of service might be said to have been initiated in 1949 when a civil suit was referred to the Department of Public Works, Division of Water Resources, as referee. The matter was never finalized by a decree. The issues involved were reopened in 1971, and by Decree No. 24482, dated April 28, 1972, the Siskiyou County Superior Court appointed the Department of Water Resources to supervise distribution of water in accordance with an earlier agreement between the users defining their respective rights. Accordingly, Klamath River Watermaster Service Area (formerly Willow Creek Watermaster Service Area) was created on June 22, 1972, and service began on July 1, 1972.

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 snow that accumulates at high elevations on the drainage area during the winter months. The spring flow from the melting snow begins late in March or early April and is almost entirely gone by June. Thereafter, the streamflow decreases rapidly until about July 5. From then until the rainy season begins, the flow remains at a more or less sustained low-flow stage sufficient for domestic and stock-watering purposes on the two upper ranches only.

Method of Distribution

Both sprinkler and flood irrigation are used in the Klamath River service area. 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. Water is diverted into ditches by temporary rock or gravel dams. 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.

1985 Distribution

Watermaster service in the Willow Creek service area began on April 1 and continued until September 30 with Keithal B. Dick, Water Resources Techician II, as watermaster during this period.

No watermaster problems were encountered this season, as there was little demand for water. There was no rotation of water supply in 1985.

Cold Creek

Basis of Service

A statutory adjudication of Cold Creek in 1978 ordered the Department of Water Resources 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

The water supply of the Cold Creek stream system usually satisfies requirements until July.

Method of Distribution

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

1985 Distribution

Watermaster service on Cold Creek began April 1, and continued through September 30, with Keithal B. Dick, Water Resources Technician II, as watermaster.

The flow in Deer Creek above Diversion 21 receded to less than 1.02 cfs in early July. When the flow in Deer Creek above Diversion 21 recedes to 1.02 cfs or less, diversion into the Silva-Lennox ditch is increased to a maximum of 3.93 cfs, as measured at the diversion weir. At no time during the 1985 irrigation season was the flow sufficient at Diversion 2 for any diversion into the East Fork of Cold Creek.

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 33

1985 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR YREKA

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	256	194	69	179	21	60	18
2	257	199	76	196	28	40	45
3	245	194	83	198	29	30	56
4	252	188	75	181	21	36	46
5	243	165	82	169	28	33	35
6	243	146	77	146	21	25	30
7	242	152	80	129	19	19	45
8	239	159	88	88	18	14	103
9	237	132	88	67	23	11	189
10	230	125	90	67	20	14	208
11	235	117	91	68	17	23	164
12	231	118	92	63	16	21	146
13	226	113	87	52	10	24	146
14	215	103	72	46	6.1	33	166
15	215	104	67	50	4.8	25	164
16	220	100	72	35	3.8	27	162
17	225	103	66	38	1.5	24	160
18	223	96	58	31	4.8	22	162
19	210	131	45	18	15	35	157
20	204	94	52	15	18	44	156
21	201	105	41	17	16	36	131
22	199	106	33	20	22	25	135
23	189	98	58	25	22	22	129
24	199	101	46	25	15	20	123
25	207	93	45	24	14	16	128
26	209	89	46	30	9.6	16	125
27	231	91	64	29	10	17	119
28	241	82	71	30	25	17	83
29	238	82	101	27	24	15	68
30	218	76	108	25	19	16	58
31	198		125		65	13	
MEAN	225	122	72.5	69.6	18.3	24.9	115
AC-FT	13840	7250	4460	4140	1120	1530	6860

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 34

1985 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER NEAR EDGEWOOD

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	65	54	56	42	11	24	10
2	66	59	63	59	12	16	18
3	61	59	66	41	10	14	19
4	63	68	54	35	9.7	13	17
5	57	79	47	33	9.6	13	16
6	54	122	43	32	10	13	16
7	55	160	51	33	10	12	19
8	44	162	46	37	9.9	10	29
9	41	154	38	36	10	11	37
10	40	151	35	34	9.8	10	28
11	42	138	34	30	10	11	25
12	41	118	29	26	9.6	11	24
13	39	117	25	24	9.0	10	23
14	37	142	24	23	8.9	10	24
15	37	170	23	22	9.7	10	24
16	38	163	24	20	11	9.9	25
17	40	143	26	19	11	9.1	24
18	42	121	26	18	9.6	9.4	23
19	42	107	26	15	8.4	13	22
20	42	92	27	14	7.8	14	22
21	43	73	28	13	8.5	13	22
22	40	63	29	13	9.7	11	21
23	39	56	34	14	9.4	9.8	19
24	46	49	37	14	9.5	9.0	19
25	45	44	43	13	9.2	8.3	19
26	42	39	44	13	8.9	7.8	19
27	47	38	41	12	8.4	7.4	19
28	50	41	43	11	8.1	7.1	18
29	51	43	51	10	7.0	7.2	19
30	53	48	38	10	8.1	7.9	19
31	54		38		26	9.0	
MEAN	47.0	95.8	38.4	23.9	10.0	11.0	21.3
AC-FT	2890	5700	2360	1420	614	676	1270

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 35

1985 Daily Mean Discharge
(In cubic feet per second)

PARKS CREEK ABOVE EDSON-FOULKE YREKA DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1			48	21	1.9	2.1	1.4
2			48	21	1.9	1.4	2.8
3			46	18	2.0	1.4	2.3
4			38	18	2.0	1.3	1.5
5		63	34	19	2.0	1.3	1.2
6		95	34	20	2.0	1.3	1.2
7		135	35	19	2.0	1.3	2.3
8		130	33	18	2.0	1.3	6.2
9		125	30	17	2.0	1.3	4.4
10		117	28	16	1.9	1.3	3.1
11		96	26	15	1.9	1.3	2.0
12		77	24	11	1.9	1.3	1.8
13		88	24	7.5	1.9	1.3	1.8
14		125	25	6.3	1.9	1.3	1.8
15		150	24	5.2	1.8	1.3	1.6
16		130	26	5.2	1.8	1.3	1.6
17		86	26	4.8	1.8	1.3	1.5
18		70	27	4.0	1.8	1.3	1.5
19		53	27	3.3	1.6	1.3	1.4
20		45	27	3.3	1.6	1.3	1.4
21		38	25	3.3	1.6	1.3	1.2
22		34	25	3.1	1.6	1.3	1.2
23		33	26	3.1	1.6	1.3	1.2
24		32	27	3.1	1.6	1.3	1.2
25		30	26	2.9	1.5	1.3	1.2
26		30	25	2.6	1.4	1.3	1.2
27		32	24	2.3	1.4	1.3	1.2
28		34	25	2.1	1.4	1.3	1.2
29		40	22	2.0	1.4	1.3	1.2
30		43	20	2.0	1.4	1.3	1.2
31			22		2.9	1.4	
MEAN		74.3	29.0	9.3	1.8	1.3	1.8
AC-FT		3820	1780	553	110	79	109

SHASTA RIVER WATERMASTER SERVICE AREA

TABLE 36

1985 Daily Mean Discharge
(In cubic feet per second)

SHASTA RIVER AT MONTAGUE-GRENADA HIGHWAY BRIDGE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		168	61	134	22	40	36
2		168	71	172	24	23	40
3		161	64	186	16	27	38
4		151	64	179	24	33	34
5		140	64	168	23	27	29
6		130	61	144	20	24	29
7		120	67	110	22	14	55
8		120	67	61	27	12	103
9		94	67	58	24	22	168
10		90	64	61	20	20	172
11		90	64	71	19	17	154
12		94	71	51	19	22	148
13		94	67	40	16	23	151
14		87	55	34	17	27	162
15		77	55	38	12	23	165
16		80	45	29	7.0	22	165
17		80	40	24	13	20	165
18		94	40	12	24	24	165
19		97	40	12	24	34	162
20		87	38	19	22	33	158
21		84	27	22	24	24	144
22		87	38	27	24	23	141
23		87	38	27	19	17	137
24		80	33	24	17	14	137
25		71	33	24	12	14	137
26		71	31	26	19	17	137
27		67	40	22	33	17	137
28		64	48	31	24	16	87
29		64	80	22	20	13	77
30		61	71	20	34	10	71
31			71		58	13	
MEAN		98.6	54.0	61.6	21.9	21.5	117
AC-FT		5870	3320	3360	1350	1320	6950

SHASTA RIVER WATERMASTER SERVICE AREA
Water Year 1984-85

TABLE 37

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

DAY	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	19,260	19,302	27,650	30,992	32,784	34,551	35,139	33,990	28,400	22,480	14,780	9,600
2	19,162	19,540	27,800	31,040	32,868	34,602	35,153	33,820	28,550	22,200	14,660	9,500
3	19,050	19,890	27,950	31,140	32,936	34,670	35,214	33,650	28,400	21,920	14,540	9,300
4	18,938	19,988	28,100	31,168	32,970	34,721	35,248	33,480	28,400	21,780	14,420	9,200
5	18,882	20,100	28,250	31,216	32,987	34,806	35,299	33,140	28,400	21,500	14,300	9,100
6	18,812	20,142	28,295	31,280	33,004	34,806	35,435	32,970	28,250	21,220	13,970	9,010
7	18,742	20,282	28,475	31,360	33,089	34,857	35,588	32,970	28,100	20,940	13,860	8,920
8	18,672	20,450	28,595	31,440	33,191	34,857	35,690	32,640	28,100	20,660	13,860	8,920
9	18,602	20,590	28,700	31,520	33,276	34,874	35,792	32,480	27,950	20,380	13,530	8,920
10	18,616	20,800	28,895	31,568	33,344	34,874	35,860	32,320	27,800	20,100	13,420	8,920
11	18,560	21,150	29,090	31,648	33,429	34,891	35,877	32,160	27,800	19,820	13,200	8,920
12	18,588	22,200	29,255	31,712	33,480	34,908	35,877	32,160	27,500	19,540	12,980	8,920
13	18,560	23,460	29,390	31,728	33,565	34,925	35,826	31,840	27,350	19,260	12,870	8,920
14	18,560	23,900	29,510	31,776	33,633	34,942	35,826	31,680	27,050	19,120	12,650	8,920
15	18,560	24,200	29,648	31,840	33,701	34,942	35,860	31,520	26,900	18,840	12,430	8,920
16	18,585	24,425	29,760	31,904	33,769	34,942	35,911	31,360	26,600	18,560	12,210	8,920
17	18,630	24,575	29,872	31,984	33,854	34,942	35,928	31,200	26,450	18,280	12,000	8,920
18	18,658	24,845	29,952	32,032	33,922	34,959	35,911	31,040	26,150	17,740	11,900	8,920
19	18,714	25,025	30,032	32,112	33,970	34,959	35,826	30,880	25,850	17,480	11,700	8,920
20	18,756	25,295	30,112	32,176	34,041	34,959	35,724	30,560	25,700	17,220	11,500	8,920
21	18,798	25,580	30,192	32,240	34,092	34,959	35,605	30,400	25,400	16,960	11,400	8,920
22	18,826	25,795	30,272	32,288	34,160	34,959	35,435	30,080	25,100	16,700	11,300	8,920
23	18,868	25,895	30,352	32,368	34,211	34,959	35,282	29,920	24,800	16,460	11,100	8,920
24	18,911	26,120	30,432	32,400	34,262	34,976	35,146	29,600	24,500	16,220	11,000	8,830
25	18,954	26,300	30,512	32,432	34,330	34,976	34,976	29,450	24,200	16,100	10,900	8,830
26	19,022	26,450	30,560	32,480	34,381	35,010	34,806	29,300	23,900	15,860	10,700	8,740
27	19,050	26,750	30,640	32,538	34,432	35,010	34,670	29,000	23,600	15,620	10,500	8,650
28	19,120	26,930	30,720	32,576	34,500	35,027	34,534	28,850	23,320	15,380	10,400	8,560
29	19,148	27,245	30,800	32,608		35,044	34,415	28,700	23,040	15,140	10,200	8,470
30	19,190	27,455	30,880	32,656		35,078	34,160	28,550	22,760	15,140	10,000	8,380
31	19,218		30,928	32,720		35,095		28,550		14,900	9,800	

SURPRISE VALLEY WATERMASTER SERVICE AREA

The Surprise Valley service area is in Modoc County, east of the Warner Mountains. Ten 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 ten stream systems is under separate decrees. See Table 38, page 90, 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 39 through 50, pages 91 through 102.

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 a lot to solve water measurement and distribution problems.

Although the Owl Creek Flood Control and Water Conservation District did not become official until August 7, 1961, the District's diversion and distribution project was completed in February 1961. The project reduced the number of diversions from 17 to 2 and the number of ditches from 17 to 8. This makes distribution easier and fairer. The users say that they received twice as much water as they did before the project. It is possible to divert and distribute 80 cfs in the lower seven ditches.

1985 Distribution

Watermaster service began in the Surprise Valley area on March 19 and continued until September 30, with John Clements, Associate Engineer Water Resources, as watermaster.

Bidwell Creek

Total stream runoff available from April 1 through September 30 was 13,141 acre-feet. Most diversion structures remained damaged from previous years high flows. Although total valley runoff was the lowest since 1977, this stream had surplus water through most of June. Flow on September 30 was about 5 cfs.

Mill Creek

Total stream runoff available from April 1 through September 30 was 4,238 acre-feet. Diversion and measuring structures were in fair to good condition. First priority water was always available. Flow on September 30 was about 3 cfs.

Soldier Creek

Total stream runoff available from March 19 through September 30 was 2,741 acre-feet. Full priority water was seldom available. Flow on September 30 was about 1.5 cfs.

Pine Creek

Total stream runoff available from March 20 through September 30 was 1,145 acre-feet. Three rotations were completed. Flow reduced to 4 cfs on May 8, 1.5 cfs on May 22, and zero flow on June 22.

Cedar Creek

Total stream runoff available from April 1 through September 30 was 3,321 acre-feet. Some users did not divert this year, giving additional water to other users. Flow on September 30 was about 1.5 cfs.

Deep Creek

Total stream runoff available from April 1 through September 30 was 3,450 acre-feet. Flow on September 30 was about 2 cfs.

Owl Creek

Total stream runoff available from April 1 through September 30 was 4,334 acre-feet. Diversion and measuring structures were in very good condition. September 30 flow was about 2 cfs.

Cottonwood Creek

Total stream runoff available from April 1 through September 30 was 3,619 acre-feet. Minto Ditch rotation began May 3 and ended July 8. Flow on September 30 was about 1.5 cfs.

Rader Creek

Flows were not recorded this season due to damage to the structure and recorder site. Most diversion structures were damaged from previous years high flows.

Eagle Creek

Total runoff available from April 1 through September 30 was 4,272 acre-feet. Diversion and measuring structures were in good condition, although measuring devices for the Prior collection ditch have been absent for some years. Flow on September 30 was about 2 cfs.

Emerson Creek

Total stream runoff available from April 1 through September 30 was 3,116 acre-feet. Diversion and measuring structures were in good condition. Flow on September 30 was about 3.5 cfs.

TABLE 38

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	Remarks
Bidwell	6420	1-13-60	S	3-16-60[b]	46	63.74	(Schedule 3) 3 priorities March 15-July 19. (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	9-11-29	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	3391	12-07-36	CR	1-13-37	5 1[c]	[d] 0.08	One full rotation totalling 693 AF. Rotation continues until flow decreases to 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]	5-22-01 2-15-23	CA CA	9-11-29	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 from Thoms Creek on west slope of Warner Mountains.
Deep	3101	1-25-34	CR	12-29-34	11	29.37	Schedule 2 establishes 5 priorities, year-round.
Cottonwood	6903	12-01-64	CA	7-01-77[b]	8	[d]	Water rights based on a percentage of flow in an equal priority.
Owl	2410	5-29-29	CA	9-11-29	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	6-04-37	CR	6-12-37	6	21.00	7 priorities. 7th is for surplus water. Diversions No. 1, 3, 6, and 7 have seasonal limitations.
Eagle	2304 3284	4-05-26 11-05-37	CA CR	1-10-39	36	30.57	Decree No. 3284 added rights in all priority classes, and established 4 classes. 4.50 cfs right of Betford Corp. is for use March 1 to July 1. Eagleville 'town users', Schedule 2 may divert through Gee & Grider ditches March 16 to October 14 each year. Set 1st priority rights of Gee & Grider ditches, Par. XVIII & XVIII, for use April 15 to October 1.
Emerson	2840	3-25-30	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.
[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 39

1985 Daily Mean Discharge
(In cubic feet per second)

BIDWELL CREEK NEAR FORT BIDWELL

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	12	29	87	56	20	10	6.9
2	12	38	96	52	19	10	8.1
3	12	46	99	50	19	10	8.7
4	11	48	90	51	18	10	8.7
5	11	52	86	53	17	9.6	8.4
6	10	65	85	57	16	8.9	8.3
7	9.9	82	83	62	16	8.2	8.9
8	9.7	92	80	62	15	8.1	10
9	9.4	95	77	56	15	8.6	11
10	9.6	96	73	51	14	8.4	11
11	9.7	92	67	49	13	8.3	11
12	10	87	62	48	13	8.0	11
13	10	90	61	47	12	7.3	10
14	11	104	65	46	12	7.7	10
15	13	114	64	44	12	7.7	10
16	16	103	62	41	12	7.3	10
17	19	93	61	39	12	7.1	10
18	21	86	65	38	11	7.2	10
19	23	78	73	36	11	7.6	10
20	25	68	78	35	11	7.8	10
21	27	64	74	33	11	7.7	10
22	25	58	73	32	11	7.4	9.9
23	24	55	77	30	11	6.9	9.7
24	25	51	81	29	11	6.5	9.4
25	23	50	82	27	10	6.0	8.8
26	22	49	77	26	10	5.4	8.3
27	21	51	71	25	9.9	4.9	8.0
28	20	58	81	24	9.9	4.6	7.8
29	19	66	73	23	10	5.3	7.4
30	19	76	66	22	10	5.9	7.4
31	22		61		10	6.5	
MEAN	16.5	71.2	75.2	41.5	13.0	7.6	9.3
AC-FT	1010	4240	4620	2470	797	466	553

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 40

1985 Daily Mean Discharge
(In cubic feet per second)

MILL CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		9.4	28	20	6.3	3.3	5.8
2		13	30	22	6.1	3.3	5.4
3		15	27	18	5.8	2.8	4.8
4		16	26	18	5.8	2.8	4.8
5		18	26	17	5.4	2.8	4.8
6		22	26	18	5.4	2.8	5.2
7		30	25	19	5.2	2.8	5.2
8		26	24	20	5.2	2.8	7.0
9		30	23	18	4.8	2.8	7.5
10		30	21	19	4.2	2.8	6.5
11		26	20	17	3.7	2.8	5.8
12		27	20	17	3.7	2.8	4.8
13		31	20	15	3.3	2.4	4.2
14		34	20	15	3.3	2.4	3.7
15		32	22	15	3.3	2.4	3.7
16		31	24	15	3.3	2.4	3.3
17		29	24	14	3.3	2.4	3.3
18		27	26	13	3.3	2.4	3.3
19		22	27	13	3.3	2.8	3.3
20		20	26	12	3.3	2.8	3.3
21		19	22	12	3.7	2.4	3.3
22		18	20	12	3.7	2.4	3.3
23		17	21	11	3.3	2.4	2.8
24		16	22	11	3.3	2.4	2.8
25		15	22	9.9	2.8	2.1	2.8
26		13	22	9.4	2.8	2.1	2.8
27		14	21	9.4	2.8	2.1	2.8
28		14	22	8.2	2.8	2.1	2.8
29		17	22	7.0	2.8	2.1	2.8
30		26	21	6.5	2.8	2.1	2.8
31			21		2.8	3.7	
MEAN		21.9	23.3	14.4	3.9	2.6	4.2
AC-FT		1300	1430	856	241	160	247

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 41

1985 Daily Mean Discharge
(In cubic feet per second)

SOLDIER CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		12	18	9.9	2.4	1.8	3.0
2		17	18	9.7	2.4	1.8	2.8
3		18	18	9.6	2.2	1.7	2.4
4		17	17	9.6	2.2	1.7	2.4
5		17	16	9.2	2.2	1.7	2.2
6		18	16	8.8	2.2	1.7	2.2
7		22	16	8.3	2.0	1.7	1.9
8		20	15	7.6	2.0	1.6	3.7
9		20	14	7.1	2.0	1.6	3.4
10		18	13	6.8	2.2	1.6	3.0
11		18	13	6.5	2.0	1.6	2.4
12		18	13	6.0	2.0	1.6	2.2
13		18	13	5.8	1.9	1.6	1.8
14		17	13	5.2	1.9	1.6	1.8
15		17	12	4.3	1.9	1.6	1.8
16		18	12	3.7	1.9	1.5	1.8
17		18	13	3.6	1.9	1.5	1.8
18		18	14	3.3	1.9	1.4	1.8
19	11	18	14	3.0	1.9	1.4	1.8
20	11	17	13	3.0	1.9	1.5	1.7
21	11	14	13	3.0	1.8	1.5	1.7
22	9.9	14	13	3.0	1.8	1.5	1.6
23	10	13	13	3.0	1.8	1.5	1.6
24	10	12	13	2.8	1.8	1.5	1.5
25	9.9	12	12	2.8	1.8	1.5	1.5
26	9.4	13	11	2.6	1.8	1.5	1.5
27	8.8	15	11	2.6	1.8	1.5	1.4
28	8.3	18	12	2.6	1.8	1.5	1.4
29	8.8	18	12	2.4	1.8	1.5	1.4
30	9.0	18	12	2.4	1.8	1.5	1.4
31	10		10		1.8	1.5	
MEAN		16.8	13.6	5.3	2.0	1.6	2.0
AC-FT		998	839	314	121	97	121

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 42

1985 Daily Mean Discharge
(In cubic feet per second)

PINE CREEK AT DIVERSION OF NORTH AND SOUTH CHANNELS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		9.5	7.8	2.0			
2		12	7.5	1.7			
3		16	6.3	1.7			
4		15	5.6	1.6			
5		18	5.3	1.6			
6		20	4.9	1.4			
7		24	4.3	1.4			
8		22	4.1	1.2			
9		20	4.3	1.2			
10		19	4.3	1.0			
11		19	3.9	1.0			
12		18	3.8	0.7			
13		18	3.6	0.7			
14		19	3.6	0.5			
15		19	3.3	0.5			
16		14	3.1	0.4			
17		9.2	3.1	0.4			
18		8.7	2.7	0.3			
19		7.5	2.5	0.2			
20	8.3	6.0	2.5	0.1			
21	6.8	5.3	2.3	0.0			
22	5.4	7.1	2.3				
23	7.1	6.8	2.3				
24	6.0	6.3	2.2				
25	5.3	5.3	2.2				
26	4.6	5.6	2.2				
27	4.2	7.1	2.1				
28	3.9	7.8	2.1				
29	3.9	7.8	2.0				
30	4.2	7.8	2.0				
31	6.8		2.0				
MEAN		12.7	3.6				
AC-FT		755	219				

SUPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 43

1985 Daily Mean Discharge
(In cubic feet per second)

CEDAR CREEK AT CEDARVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	6.2	14	18E	5.9	1.4	0.6	0.2E
2	6.0	18	17E	5.5	1.3	0.9	0.8
3	5.6	22	15E	5.1	1.2	0.6	0.6
4	5.6	23	14E	4.9	1.1	0.5	0.4
5	5.1	25	14E	4.9	1.1	0.4	0.3
6	5.0	29	13E	4.7	1.0	0.4	0.4
7	4.8	33	12E	4.5	1.0	0.3	0.4
8	4.7	33	12E	4.4	0.9	0.4	1.7
9	4.8	32	11	4.0	0.8	0.4	1.2
10	5.0	30	11	3.7	0.8	0.4	1.0
11	5.0	29	10	3.5	0.8	0.4	0.8
12	5.1	27	9.1	3.3	0.7	0.4	0.6
13	5.5	27	8.5	3.1	0.6	0.3	0.6
14	6.2	28	8.4	3.1	0.6	0.3	0.5
15	6.9	28	8.2	2.9	0.6	0.2	0.5
16	7.8	25	8.0	2.6	0.5	0.2E	0.5
17	8.2	23	7.7	2.5	0.5	0.2E	0.6
18	9.1	21	7.4	2.3	0.5	0.2E	0.7
19	10	18E	7.3	2.3	0.4	0.2E	0.6
20	11	18E	7.2	2.2	0.4	0.2E	0.5
21	11	17E	7.0	2.2	0.4	0.2E	0.4
22	9.9	17E	6.8	2.0	0.7	0.2E	0.4
23	11	16E	6.7	1.8	0.5	0.2E	0.3
24	11	16E	6.5	1.9	0.4	0.2E	0.3
25	11	14E	6.4	1.9	0.3	0.2E	0.3
26	9.9	15E	6.1	1.8	0.3	0.2	0.3
27	9.5	15E	5.8	1.7	0.3	0.2E	0.3
28	9.1	15E	6.3	1.6	0.3	0.2E	0.3
29	8.7	16E	6.7	1.4	0.5	0.2E	0.3
30	9.3	17E	6.2	1.4	0.6	0.2E	0.3
31	11	18E	6.0		0.6	0.2E	
MEAN	7.7	22.6E	9.3E	3.1	0.7	0.3E	0.5E
AC-FT	474	1340E	573E	185	42	21E	32E

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 44

1985 Daily Mean Discharge
(In cubic feet per second)

NORTH DEEP CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		10	12	2.7	2.1	1.7	2.3
2		12	11	2.7	2.0	1.7	2.1
3		12	10	2.7	2.0	1.7	1.8
4		11	9.8	2.7	2.0	1.6	1.8
5		12	9.8	2.6	2.0	1.6	1.8
6		13	9.8	2.6	1.9	1.6	1.8
7		17	9.2	2.6	1.9	1.6	2.4
8		17	8.6	2.6	1.9	1.6	2.2
9		15	7.6	2.4	1.8	1.6	2.1
10		15	7.6	2.4	1.8	1.6	1.8
11		13	6.6	2.4	1.8	1.6	1.8
12		13	6.6	2.4	1.8	1.6	1.7
13		13	5.8	2.4	1.8	1.6	1.7
14		15	5.0	2.4	1.8	1.6	1.7
15		14	4.3	2.4	1.8	1.6	1.6
16		13	4.3	2.4	1.8	1.6	1.6
17		13	4.3	2.4	1.8	1.6	1.6
18		11	4.3	2.4	1.8	1.6	1.6
19		10	4.3	2.4	1.8	1.6	1.6
20		9.8	4.3	2.3	1.8	1.6	1.6
21		8.6	4.3	2.3	1.8	1.6	1.6
22		10	3.8	2.3	1.8	1.6	1.6
23		9.2	3.8	2.2	1.8	1.6	1.6
24		7.6	3.8	2.2	1.7	1.6	1.6
25		7.1	3.8	2.2	1.7	1.6	1.6
26		6.6	2.8	2.2	1.7	1.6	1.6
27		6.6	2.8	2.1	1.7	1.6	1.6
28		8.6	2.8	2.1	1.7	1.6	1.6
29		9.8	2.8	2.1	1.7	1.6	1.6
30		11	2.8	2.1	1.7	1.6	1.6
31			2.8		1.7	2.4	
MEAN		11.5	5.9	2.4	1.8	1.6	1.8
AC-FT		682	360	142	112	101	104

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 45

1985 Daily Mean Discharge
(In cubic feet per second)

SOUTH DEEP CREEK BELOW NO. 2 DIVERSION

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		11	15	6.5	1.8	0.9	1.1
2		16	17	6.0	1.8	0.9	1.6
3		19	14	5.4	1.7	0.9	1.2
4		17	14	5.4	1.7	0.8	1.0
5		21	13	5.4	1.7	0.8	0.9
6		23	12	4.9	1.6	0.8	0.9
7		23	12	4.1	1.6	0.8	1.0
8		22	11	3.8	1.6	0.8	2.5
9		22	11	3.5	1.4	0.8	2.3
10		21	11	3.3	1.4	0.8	2.0
11		21	11	3.0	1.4	0.8	1.6
12		21	9.3	3.0	1.4	0.8	1.1
13		21	8.9	3.0	1.4	0.7	1.0
14		21	8.9	2.8	1.4	0.7	1.0
15		20	8.5	2.8	1.3	0.7	1.0
16		19	8.5	2.7	1.3	0.7	1.0
17		17	8.5	2.7	1.3	0.7	1.0
18		16	8.1	2.5	1.3	0.7	0.9
19		15	7.8	2.5	1.2	0.7	0.9
20		14	7.4	2.5	1.2	0.7	0.9
21		13	7.1	2.5	1.2	0.7	0.9
22		12	7.1	2.5	1.2	0.7	0.9
23		11	6.8	2.5	1.2	0.7	0.9
24		10	6.8	2.5	1.1	0.7	0.8
25		9.3	6.8	2.5	1.1	0.7	0.8
26		8.5	6.8	2.5	1.1	0.7	0.8
27		9.3	6.8	2.4	1.0	0.7	0.8
28		12	6.8	2.4	1.0	0.7	0.8
29		13	7.4	2.1	1.0	0.7	0.8
30		14	7.8	2.1	1.0	0.7	0.8
31			6.5		0.9	0.7	
MEAN		16.4	9.5	3.3	1.3	0.7	1.1
AC-FT		976	582	198	81	46	65

SURPRISE VALLEY WATERMASTER AREA

TABLE 46

1985 Daily Mean Discharge
(In cubic feet per second)

COTTONWOOD CREEK FLUME BELOW PAGE DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		6.9	22	17	5.2	1.9	3.3
2		7.7	22	15	5.2	2.1	2.3
3		13	21	14	5.2	2.1	1.3
4		12	20	14	4.7	2.1	1.3
5		14	21	15	4.7	2.1	1.3
6		17	21	15	4.7	2.1	1.3
7		22	20	21	4.7	2.1	1.3
8		23	20	22	4.2	2.1	9.0
9		22	18	21	4.4	1.8	4.0
10		18	15	22	4.4	1.8	2.6
11		18	14	22	4.2	1.8	2.1
12		20	16	22	4.2	1.8	1.8
13		22	17	22	4.4	1.7	1.6
14		23	17	22	4.4	1.7	1.3
15		27	15	22	4.4	1.7	1.3
16		22	15	21	4.0	1.6	1.3
17		21	17	20	4.0	1.6	1.3
18		20	21	19	3.9	1.6	1.3
19		16	22	17	3.9	1.6	1.3
20		14	21	15	3.7	1.6	1.3
21		13	21	15	3.7	1.4	1.3
22		13	21	14	3.3	1.3	1.3
23		12	23	14	3.0	1.3	1.3
24		9.5	25	14	3.0	1.3	1.3
25		8.1	27	9.0	2.7	1.3	1.3
26		7.7	28	4.7	2.7	1.3	1.3
27		12	27	5.5	2.5	1.3	1.3
28		14	27	5.9	2.5	1.3	1.3
29		17	25	5.9	2.3	1.3	1.3
30		20	23	6.9	2.1	1.3	1.3
31			20		2.1	1.3	
MEAN		16.2	20.7	15.8	3.8	1.7	1.8
AC-FT		962	1270	938	235	102	110

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 47

1985 Daily Mean Discharge
(In cubic feet per second)

OWL CREEK BELOW ALLEN-ARRECHE DITCH

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		15	18	20	7.5	3.0	2.4
2		19	18	19	6.7	3.0	2.3
3		19	19	17	6.7	2.8	2.2
4		20	19	19	6.3	2.8	2.2
5		22	19	22	6.3	2.8	2.2
6		23	19	23	6.3	2.8	2.2
7		23	18	25	5.9	2.8	2.2
8		24	18	30	5.9	2.8	4.9
9		32	20	26	5.9	2.8	3.2
10		27	19	25	5.6	2.4	3.0
11		27	17	25	5.6	2.4	2.8
12		26	16	25	5.6	2.2	2.4
13		30	16	24	4.9	2.2	2.2
14		33	17	24	4.2	2.2	2.2
15		30	19	22	3.7	2.2	2.2
16		23	18	20	3.4	2.1	2.2
17		20	19	19	3.4	2.1	2.2
18		19	20	20	3.7	2.1	2.2
19		19	22	24	3.2	2.1	2.2
20		17	24	25	3.4	2.1	2.2
21		17	25	28	3.4	2.0	2.1
22		17	26	23	3.2	2.0	2.1
23		15	27	19	3.2	2.0	2.1
24		14	34	18	3.4	2.0	2.1
25		12	34	14	3.4	2.0	2.1
26		9.9	32	12	3.7	2.0	2.1
27		9.9	31	9.9	3.2	2.0	2.1
28		13	30	9.3	2.8	2.0	2.1
29		15	29	8.3	2.8	2.0	2.1
30		19	23	7.9	2.8	2.0	2.1
31			23		3.0	3.4	
MEAN		20.3	22.2	20.1	4.5	2.4	2.4
AC-FT		1210	1370	1200	276	145	140

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 48

1985 Daily Mean Discharge
(In cubic feet per second)

RADAR CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15				NO RECORD FOR 1985			
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
MEAN							
AC-FT							

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 49

1985 Daily Mean Discharge
(In cubic feet per second)

EAGLE CREEK NEAR EAGLEVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	4.1	6.4	19	19E	13 E	5.0E	4.0E
2	4.1	9.1	21	18E	12 E	5.0E	4.0E
3	4.1	11	18	17E	12 E	5.0E	4.0E
4	4.1	11	17	16E	10 E	5.0E	4.0E
5	4.1	12	19	24E	9.0E	5.0E	4.0E
6	4.1	15	19	25E	8.0E	5.0E	4.0E
7	4.1	18	19	28E	8.0E	5.0E	4.0E
8	4.1	18	17	26E	8.0E	5.0E	4.0E
9	4.1	19	14	28E	7.0E	5.0E	4.0E
10	4.1	17	13E	27E	7.0E	5.0E	4.0E
11	4.1	16	13E	28E	5.0E	5.0E	4.0E
12	4.1	16	13E	24E	6.0E	5.0E	4.0E
13	4.1	18	13E	23E	5.0E	5.0E	4.0E
14	4.1	23	13E	26E	6.0E	5.0E	4.0E
15	4.1	24	13E	24E	6.0E	5.0E	3.0E
16	4.3	20	13E	23E	6.0E	5.0E	3.0E
17	4.4	17	14E	25E	7.0E	4.0E	3.0E
18	4.4	16	16E	24E	6.0E	4.0E	3.0E
19	4.6	14	22E	22E	6.0E	4.0E	3.0E
20	4.9	13	25E	20E	6.0E	4.0E	3.0E
21	5.3	12	25E	21E	5.0E	4.0E	3.0E
22	5.3	10	26E	19E	6.0E	4.0E	3.0E
23	5.2	9.2	35E	18E	6.0E	4.0E	3.0E
24	5.5	8.2	38E	20E	5.0E	4.0E	3.0E
25	5.3	5.7	34E	18E	5.0E	4.0E	3.0E
26	5.8	6.0E	33E	17E	5.0E	4.0E	3.0E
27	5.6	9.0E	31E	15E	5.0E	4.0E	3.0E
28	5.4	10 E	30E	18E	5.0E	4.0E	3.0E
29	5.3	12 E	28E	14E	5.0E	4.0E	3.0E
30	5.1	10	24E	13E	5.0E	4.0E	3.0E
31	5.0		20E		5.0E	4.0E	
MEAN	4.6	13.5E	21.1E	21.3E	6.8E	4.5E	3.5E
AC-FT	283	803E	1300E	1270E	416E	277E	206E

E - Estimated

SURPRISE VALLEY WATERMASTER SERVICE AREA

TABLE 50

1985 Daily Mean Discharge
(In cubic feet per second)

EMERSON CREEK ABOVE ALL DIVERSIONS

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	6.0	8.4	19	14	4.4	3.1	2.8
2	6.0	9.9	20	14	4.2	3.0	3.5
3	7.8	12	21	11	3.9	3.0	3.2
4	5.9	13	20	11	3.8	2.8	3.0
5	6.2	15	19	12	3.8	2.8	2.9
6	6.1	17	20	12	3.7	2.8	3.0
7	5.9	21	20	12	3.7	2.8	3.1
8	6.4	22	19	12	3.6	2.8	3.9
9	5.9	22	17	12	3.4	2.8	3.4
10	6.0	21	15	11	3.3	2.7	3.3
11	6.1	21	14	10	3.3	2.9	3.3
12	6.0	21	13	9.7	3.3	2.9	3.3
13	6.1	20	14	9.2	3.3	2.8	3.3
14	6.3	19	14	9.0	3.2	2.8	3.3
15	6.7	18	13	8.6	3.1	2.7	3.3
16	6.7	17	13	7.9	3.1	2.7	3.3
17	6.9	22	13	7.4	3.0	2.7	3.3
18	7.1	22	16	7.0	3.0	2.8	3.4
19	7.3	20	17	6.9	3.0	2.8	3.3
20	7.5	15	19	6.7	3.0	2.8	3.3
21	7.1	14	18	6.2	3.2	2.8	3.3
22	6.9	13	19	6.0	3.5	2.7	3.4
23	7.4	13	20	6.2	3.4	2.7	3.4
24	7.4	12	20	6.0	3.1	2.6	3.3
25	7.0	11	20	5.7	3.1	2.6	3.3
26	6.8	11	20	5.4	3.0	2.6	3.3
27	6.7	11	19	4.8	3.0	2.6	3.3
28	6.3	12	19	4.7	3.0	2.6	3.3
29	6.2	15	19	4.6	3.1	2.6	3.3
30	6.3	17	16	4.5	3.2	2.5	3.3
31	7.1		14		3.0	2.7	
MEAN	6.6	16.2	17.4	8.6	3.3	2.8	3.3
AC-FT	405	963	1070	511	206	170	195

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 on the east slope of the Sierra Nevada 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 Elesian, 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 waters of Susan River and its tributaries are 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 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 51 through 57, pages 107 through 113.

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.

1985 Distribution

This is the 45th annual report on watermaster service in the Susan River watermaster service area, and covers the period of distribution beginning March 1 and continued until November 1. Virgil Buechler, Water Resources Engineering Associate, was the watermaster.

In general, the water supply conditions for the area was at the drought level except for some users that are supplemented by springs. Conditions for the specific diversion areas are discussed below.

Parker Creek

First priority water rights were served through May and then dried up to a spring-fed trickle for the upper users.

Baxter Creek

Runoff was very low and dried up at Highway 395 by June 18, and had 0.3 cfs in Long Ditch on June 18 and dried up by July 1.

Lassen-Holtzclaw Creeks

The water supply was only sufficient to provide 50 percent of second priority at the beginning of the season and then decreased to zero flow May 20. A confrontation was experienced between the second priority usersbecause the Mallery Ranch had not used their second priority for several years. In 1985, they used their right to irrigate a new crop of strawberry plants. At the end of the season, a new diversion dam that provides automatic division of flow was built by Mallery to alleviate any future problems between second priority users.

Hills Creek

The water supply in Hills Creek was insufficient to fill Emerson Lake. Emerson Lake was empty by July 1. Water for irrigation a second cutting of alfalfa was not available.

Gold Run Creek

The water supply in Gold Run Creek was only sufficient to fill second priority from April 1 to April 15. By July 1, the flow had declined to 0.5 cfs. By September 7, the supply could provide 100 percent of first priority water and about 10 percent of second priority water.

Piute Creek

The water supply, which is spring fed, was sufficient to satisfy all allotments.

Willow Creek

The Neuhaus-Jacob Ditch recorder was operated from April 1 to September 30.

No regulation was required for second priority in upper Willow Creek Valley until July 17. In the latter part of July, the Schedule 3 lower Susan River and Willow Creek second priority water users demanded that regulation of all Schedule 3 water rights be made as they are equal in priority and correlative in right. Until recent years, there was sufficient flow from springs below the Hagata Ranch to provide the Schedule 3 second priority allotment to lower Willow Creek and lower Susan River users on an equal and correlative basis to upper Willow Creek. This is not the case now because the springs have been drying up during the irrigation season and therefore are not affording the supplemented water for the lower users.

Prior to the springs becoming deficient, an alternate method other than that specified by the decree was used to regulate the Barron water right entitlement; namely 38 percent of the available second priority class water that flowed in Willow Creek at Diversion No. 120 was passed off onto the Hansen Ranch. In the fall of 1985, the watermaster, in response to the lower water user's complaint, reviewed the decree and decided to regulate diversions on a correlative basis to comply with the decree. In response to this action, the Barron Ranch (an upper user) hired an attorney to protest the change in method for computing the available water supply from the traditional 38 percent of the total flow in Willow Creek at Diversion No. 120 to distribution on a correlative basis to all upper and lower users.

Upper Willow Creek second priority available water at Diversion No. 120 (Murrer/Barron property line) was measured as follows: July 10 - 19.6 cfs; July 17 - 17.4 cfs; July 26 - 9.6 cfs; July 30 - 15.9 cfs; August 6 - 13.0 cfs; August 26 - 15.9 cfs; September 11 - 21.4 cfs; September 24 - 18.5 cfs; and September 25 - 21.4 cfs.

Susan River

There was enough water in the Susan River to fill all of the allotments of Schedule 6 until April 28. The A & B Canal users got their Schedule 5 second priority until June 5. At that time the available water decreased to first priority, Schedule 5, and then decreased to 10 percent of second priority for the remainder of the season.

Lassen Irrigation Company Reservoirs

The McCoy Flat Reservoir total inflow was 3,800 acre-feet and was released from May 9 through June 10 to Lake Leavitt. Hog Flat total inflow was 820 acre-feet and was released from April 27 through May 13. Lake Leavett reached full capacity April 12. All three District reservoirs were emptied by the end of the season.

Lower Susan River

The flow of Susan River above Willow Creek at Chappius Lane decreased to 7 cfs on June 5 and continued to decrease until it was dry on July 22.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 51

1985 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	36	146	111	122	5.8	4.0	2.9
2	34	164	111	119	5.4	4.1	3.4
3	31	176	104	122	5.7	4.0	3.8
4	30	173	96	119	4.7	3.6	3.6
5	29	178	90	115	4.6	3.4	3.5
6	28	191	85	112	3.8	3.7	3.8
7	28	194	84	107	3.9	3.3	4.1
8	29	187	91	102	4.8	3.3	12
9	31	186	98	98	4.8	3.6	11
10	38	188	96	91	4.2	3.7	7.6
11	51	175	92	78	3.6	4.1	6.9
12	52	160	89	35	3.7	3.7	7.3
13	49	158	84	20	3.7	3.4	8.1
14	48	170	76	18	3.7	3.6	7.0
15	50	174	65	17	3.8	3.7	4.9
16	53	156	55	16	3.8	4.4	5.0
17	59	134	52	14	4.1	4.4	6.2
18	88	121	50	13	4.3	4.4	5.7
19	86	135	49	8.9	3.9	3.4	6.4
20	87	110	49	8.1	4.6	3.3	5.7
21	85	100	48	7.3	4.5	3.2	5.6
22	69	92	47	6.8	5.3	3.3	5.5
23	68	83	46	6.1	5.7	3.5	5.5
24	109	77	45	6.1	5.2	3.4	8.2
25	94	72	44	6.1	4.6	2.8	8.2
26	71	68	43	6.1	4.4	2.8	8.2
27	66	66	92	5.6	4.6	3.0	8.8
28	65	71	125	5.6	4.0	3.0	8.9
29	61	115	132	5.4	3.7	3.5	9.1
30	78	112	128	5.5	4.1	3.3	9.5
31	120		124		3.9	3.5	
MEAN	60.0	138	80.7	46.5	4.4	3.6	6.6
AC-FT	3690	8200	4960	2770	272	219	390

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 52

1985 Daily Mean Discharge
(In cubic feet per second)

GOLD RUN CREEK NEAR SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		18	12	6.5	0.8	0.5	0.5
2		18	12	6.5	0.5	0.5	0.5
3		18	12	6.5	0.5	0.5	0.5
4		15	12	6.5	0.5	0.5	0.5
5	1.5	15	15	6.0	0.5	0.5	0.5
6	2.0	16	15	6.0	0.2	0.5	0.5
7	2.8	18	15	6.0	0.2	0.5	0.8
8	3.0	18	17	6.0	0.2	0.5	10
9	2.8	17	17	6.0	0.2	0.5	2.5
10	2.8	17	17	6.0	0.2	0.5	2.5
11	2.7	17	17	5.5	0.2	0.5	2.4
12	5.0	15	17	5.5	0.2	0.5	2.4
13	5.0	15	17	5.0	0.2	0.5	2.0
14	5.0	15	17	4.0	0.2	0.5	1.5
15	5.0	17	17	3.5	0.2	0.5	1.0
16	4.8	15	16	3.5	0.2	0.5	0.8
17	4.8	15	15	3.4	0.2	0.5	0.8
18	5.0	15	14	3.3	0.2	0.5	2.5
19	6.0	15	13	2.8	0.2	0.5	1.8
20	6.0	12	12	2.8	0.2	0.5	1.8
21	6.0	12	11	2.0	0.4	0.5	1.7
22	5.0	12	10	2.0	0.5	0.5	1.7
23	4.8	12	9.0	1.6	0.8	0.5	1.6
24	8.0	12	8.0	1.5	0.8	0.5	1.5
25	10	12	8.0	1.4	0.8	0.5	1.5
26	7.8	11	8.0	1.4	0.5	0.5	1.6
27	7.6	12	7.5	1.4	0.5	0.5	1.8
28	6.0	11	7.5	1.4	0.5	0.5	1.9
29	6.0	12	7.5	1.3	0.5	0.5	2.0
30	8.0	12	7.0	0.8	0.5	0.5	2.1
31	12		7.0		0.5	0.5	
MEAN	5.4	14.6	12.6	3.9	0.4	0.5	1.8
AC-FT	288	871	773	230	24	31	106

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 53

1985 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER JOHNSTONVILLE BRIDGE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		78	45	29	1.5	0.8	
2		37	54	27	1.5	0.8	
3		87	57	22	1.5	0.8	
4		81	57	18	1.5	0.8	
5	42	63	56	18	1.5	0.8	
6	41	69	53	18	1.5	0.8	
7	39	*	53	18	1.5	0.8	
8	38	*	57	18	2.0	0.8	
9	38	*	61	18	20	0.8	
10	41	*	61	18	1.8	0.8	
11	49	*	60	17	1.5	0.8	
12	57	*	63	17	1.5	0.8	
13	54	*	63	17	1.5	0.8	
14	52	*	56	15	1.5	0.8	
15	53	*	56	12	1.5	0.8	
16	53	*	49	10	1.7	0.8	
17	54	81	45	7	1.9	0.8	
18	62	72	43	5	2.0	0.8	
19	43	83	42	5	1.5	0.8	
20	53	71	40	5	1.0	0.8	
21	32	61	41	5	1.0	0.8	
22	29	65	41	5	1.0	0.8	
23	29	62	40	4	1.0	0.8	
24	33	54	39	4	1.0	0.8	
25	32	50	38	4	1.0	0.8	
26	28	47	32	3	0.8	0.8	
27	24	45	30	3	0.8	0.8	
28	24	45	30	3	0.8	0.8	
29	24	44	30	2	0.8	0.8	
30	31	43	30	2	0.8	0.8	
31	29		30		0.8	0.8	
MEAN	40.1	61.7P	46.8	11.6	1.9	0.8	
AC-FT	2150	2440P	2880	692	118	49	

* - Above rating curve.
P - Partial record.

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 54

1985 Daily Mean Discharge
(In cubic feet per second)

WILLOW CREEK NEAR SUSANVILLE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1	56	110	12	10	7.8	9.7	8.6
2	53	79	11	10	8.3	9.3	9.0
3	47	59	11	11	9.7	8.5	9.0
4	48	51	12	11	11	8.2	9.0
5	46	47	14	11	12	8.3	8.9
6	45	45	14	11	12	8.6	8.7
7	46	43	14	10	13	8.7	8.7
8	46	42	13	9.8	12	8.9	9.6
9	47	41	11	10	11	8.9	9.8
10	57	41	11	11	9.6	9.3	10
11	80	35	11	10	8.7	9.3	11
12	75	16	12	9.6	8.1	9.0	11
13	60	15	11	8.9	8.2	9.0	12
14	55	14	12	8.5	8.1	9.2	14
15	53	14	13	8.3	7.9	9.0	14
16	50	18	14	8.2	7.7	8.9	13
17	49	21	12	8.1	7.6	9.0	14
18	56	22	10	8.2	7.5	8.9	15
19	57	21	9.6	8.1	7.4	8.9	15
20	50	18	9.6	8.0	7.3	8.3	16
21	46	19	9.3	7.9	7.4	8.2	16
22	44	20	9.2	7.8	7.6	8.8	16
23	41	21	9.0	7.8	7.5	8.6	16
24	33	21	8.5	7.7	7.5	8.1	17
25	35	19	8.4	7.8	7.5	7.8	22
26	49	20	8.3	7.7	7.7	7.9	24
27	44	21	8.2	7.7	7.6	8.3	23
28	52	21	8.3	7.6	7.7	8.6	24
29	58	21	8.3	7.6	7.9	8.8	24
30	78	20	8.7	7.6	8.1	8.6	25
31	104		9.8		8.1	8.6	
MEAN	53.5	31.8	10.7	8.9	8.7	8.7	14.4
AC-FT	3290	1890	661	531	535	536	857

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 55

1985 Daily Mean Discharge
(In cubic feet per second)

OPERATION OF McCOY AND HOG FLAT RESERVOIRS

	McCoy Flat Reservoir Inflow from Susan River		McCoy Flat Reservoir Release to Susan River		Hog Flat Reservoir Releases to Susan River	
Day	April	May	May	June	April	May
1		36		98		39
2		38		99		35
3	0	43		102		30
4	0	42		98		28
5	150	39		94		28
6	175	33		107		22
7	100	32		109		22
8	77	16		104		16
9	50	22	10	102		14
10	50	19	30	94		12
11	53	18	30	80		13
12	52	14	30	58		14
13	55	17	30	6.0		7.3
14	58	15	25	0		3.0
15	64	13	11			4.0
16	58	11	11			0
17	44	10	11			
18	38	9.0	11			
19	43	9.0	11			
20	33	12	11			
21	17	12	11			
22	22	8.0	11			
23	24	8.0	11			
24	24	6.0	11			
25	19	4.0	11			
26	15	3.0	11			
27	20	2.0	81			
28	25	1.0	104		54	
29	30		104		48	
30	31		102		44	
31	35		102			
MEAN	52.4	17.6	33.9	88.5	48.7	19.2
AC-FT	2700	975	1550	2280	290	570

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 56

1985 Daily Mean Discharge
(In cubic feet per second)

A AND B CANAL ABOVE LAKE LEAVITT

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		17	50	82			
2	30	9.5	37	77			
3	22	8.9	24	82			
4	27	9.8	18	83			
5	22	9.8	0	72			
6	13	11	0	76			
7	14	13	0.8	74			
8	12	13	4.6	72			
9	12	12	20	68			
10	12	7.9	12	67			
11	15	9.2	8.9	65			
12	16	7.9	7.6	41			
13	13	20	6.2	1.0			
14	11	27	5.9				
15	11	125	5.9				
16	11	23	5.7				
17	13	16	5.7				
18	15	16	5.1				
19	16	20	4.6				
20	9.8	20	4.6				
21	11	19	4.6				
22	11	17	4.6				
23	9.5	13	4.6				
24	9.8	8.5	4.6				
25	19	0	4.6				
26	14	0	4.6				
27	9.2	0	4.6				
28	12	0	233				
29	10	37	68				
30	13	47	79				
31	19		75				
MEAN	14.4	17.9	16.6	66.2			
AC-FT	857	1070	1020	1710			

SUSAN RIVER WATERMASTER SERVICE AREA

TABLE 57

1985 Daily Mean Discharge
(In cubic feet per second)

SUSAN RIVER AT CHAPPIUS LANE

DAY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		60	25				
2							
3							
4							
5				5.0			
6							
7			29				
8							
9							
10							
11							
12							
13			32				
14	57			4.5			
15							
16			25				
17							
18			24				
19		38					
20			12				
21							
22						1.0	
23	60						
24		38					
25		23					
26							
27				2.5			
28			3.0				
29		20			1.0		
30		22					
31							
MEAN	-	-	-	-	-	-	
AC-FT	-	-	-	-	-	-	