

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF WATER RESOURCES

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REPORT ON  
WATERMASTER SERVICE

IN

COW CREEK WATERMASTER SERVICE AREA

Shasta County, California

1953 SEASON

Sacramento, California  
March, 1954

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SUBMISSION TO, AND ADOPTION BY  
DEPARTMENT OF PUBLIC WORKS

I, L. C. Jopson, Principal Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, submit this "Report on Watermaster Service in Cow Creek Watermaster Service Area, Shasta County, California, 1953 Season".

/s/ L. C. JOPSON  
Principal Hydraulic Engineer

I, Harvey O. Banks, Assistant State Engineer, Division of Water Resources, Department of Public Works of the State of California, approve this "Report on Watermaster Service in Cow Creek Watermaster Service Area, Shasta County, California, 1953 Season".

/s/ HARVEY O. BANKS  
Assistant State Engineer

I, A. D. Edmonston, State Engineer and Chief of the Division of Water Resources, Department of Public Works of the State of California, approve and adopt this "Report on Watermaster Service in Cow Creek Watermaster Service Area, Shasta County, California, 1953 Season", as a report of the Department of Public Works.

WITNESS my hand and the seal of the Department of Public Works of the State of California, this 30th day of March , 1954.

DEPARTMENT OF PUBLIC WORKS  
STATE OF CALIFORNIA

By /s/ A. D. EDMONSTON  
A. D. Edmonston  
State Engineer

(SEAL)

ORGANIZATION

STATE DEPARTMENT OF PUBLIC WORKS  
DIVISION OF WATER RESOURCES

Frank B. Durkee . . . . . Director of Public Works  
A. D. Edmonston . . . . . State Engineer  
Harvey O. Banks . . . . . Assistant State Engineer

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## INTRODUCTION

This is the twenty first annual report on watermaster service in the Cow Creek Watermaster Service Area, and covers the period of water distribution in 1953 beginning on July 1 and terminating on October 15.

The service area was created by order of the Division of Water Resources on October 17, 1932 and was supplemented and revised by order of January 21, 1938. The service area includes the water rights determined by decrees of the Superior Court, Shasta County, as follows:

<u>Stream</u>	<u>Case</u>	<u>Number</u>
North Cow Creek and tributaries	Lemm, et al., v. Rutherford, et al.	5804
Oak Run Creek	Colby, et al., v. Strayer, et al.	5701
Clover Creek and tributaries	Millville Ditch Co. v. Hufford, et al.	6904

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 during each season.

The report is presented herein under four headings as follows: Introduction, Water Supply, Distribution of Water, and Changes in Ownership of Lands and Water Rights. Following the text are tables presenting precipitation data at Shasta Dam and water supply records at various locations within the area and plates showing hydrographs of the four main streams in the service area.

## WATER SUPPLY

### Precipitation

Data on precipitation at Shasta Dam, a relatively new station, as compiled from records of the United States Weather Bureau are shown on Table 1. A comparison of the annual precipitation of 67.63 inches as shown on the table with the 60.50 inch normal at the abandoned nearby Kennett station indicates that the precipitation during the 1952-53 season was approximately 112 per cent of normal.

### Stream Flow

Records of the discharge of North Cow Creek, Cedar Creek, Oak Run Creek and Clover Creek as computed for each stream by summation of the amounts of water diverted therefrom, plus the flow in the stream below the lowermost diversion, are shown in Tables 2, 3, 4, and 5 respectively.

Hydrographs plotted from the data contained in the above tables together with a graph indicating the decreed allotments on the respective streams are presented in Plates 1, 2, 3, and 4.

## DISTRIBUTION OF WATER

The water rights in the Cow Creek Watermaster Service Area are set forth in the three decrees previously described as follows:

Schedule II of the North Cow Creek decree which defines the rights to the use of water from Cedar Creek:

Schedule III and Schedule IV of the North Cow Creek decree which define the maximum irrigation allotments from North Cow Creek for Class A and Class B users respectively;

Schedule V of the North Cow Creek decree which defines the irrigation periods for Class A and Class B users from North Cow Creek;

Schedule VI of the North Cow Creek decree which defines the minimum flow allotments from North Cow Creek for Class A and Class B users;

Schedule II of the Oak Run Creek decree which defines the rights to the use of water from Oak Run Creek;

Schedule II of the Clover Creek decree which sets forth the rights to the use of water from Clover Creek and its tributaries.

A discussion of the water supply and use of water for the 1953 season on the four streams follows:

#### North Cow Creek

The amounts of water available for distribution are set forth in Table 2 submitted at the end of this report.

Distribution during the 1953 irrigation season was made on a continuous flow basis with 100 per cent of allotments available at all times. The minimum flow for the season was reached about August 11 at which time 125 per cent of all allotments was available.

#### Cedar Creek

The amounts of water available for distribution are shown in Table 3. The available water supply was in excess of decreed allotments up to about July 26 but gradually decreased to about 50 per cent of full allotments by September 1. Subsequent thereto and until the end of the season the flow remained constant.

A summary of the distribution in 1953 is given in the following tabulation.

Month	Per Cent of Allotments Delivered 1st Priority
July	100
August	72
September	49

Oak Run Creek

The amounts of water available for distribution during the 1953 season are shown in Table 4. Sufficient flow was available to supply 100 per cent allotments throughout the season. The minimum flow for the season was reached about September 1 at which time 101 per cent of all allotments was available.

Clover Creek

The amounts of water available for distribution during the 1953 season are shown in Table 5. Sufficient flow was available to supply 100 per cent allotments throughout the season. By August 1 the available flow became stabilized at about 100 per cent of all allotments.

CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS

The changes in ownership of lands and water rights which have occurred subsequent to filing "Statement for Cow Creek Watermaster Service Area, County of Shasta, State of California, for 1953", and which will be included in the statement for said service area for 1954, are listed in the following tabulation:

Tract No.:	Name of Water Right Appearing in 1953 Statement:	Name of Water Right Owner to: Appear in 1954 Statement	Amount of Water c.f.s.
4-27	Duffy, Charles A. and Duffy, Lela E.	Rogers, Floyd S. Bella Vista, Calif.	0.47
4-18 and 4-19	Herman, Fred V. and Herman, Ruth Lisbeth	Morine, Mrs. R. H.	2.74
4-36	Maxwell, John W.	Newill, James	0.35
4-40	Wheelock, Frederick	Junge, Walter A. and Junge, Peggy M.	1.50

TABLE 1

PRECIPITATION AT SHASTA DAM,  
SHASTA COUNTY, CALIFORNIA  
1952-53

Month	Precipitation Inches
October	0.42
November	4.54
December	24.52
January	18.11
February	0.84
March	7.94
April	4.55
May	3.94
June	1.85
July	.0
August	0.65
September	0.27
Total	67.63

TABLE 2

Daily Discharge  
NORTH COW CREEK  
July 10 to September 30, 1953

In Cubic Feet Per Second

Day	July	August	September
1	N	30	27
2	O	30	27
3		30	27
4	R	29	27
5	E	29	27
6	C	29	27
7	O	29	27
8	R	28	27
9	D	28	27
10	L1	28	27
11	40	27	27
12	39	27	27
13	38	27	27
14	37	27	27
15	36	27	27
16	35	27	27
17	34	27	27
18	33	27	28
19	33	27	28
20	32	27	28
21	32	27	29
22	31	27	29
23	31	27	29
24	30	27	29
25	30	27	29
26	30	27	30
27	30	27	30
28	30	27	30
29	30	27	30
30	30	27	30
31	30	27	--
Total Sec. Ft. Days	732	857	838
Mean Sec. Ft.	33	28	28
Total Ac. Ft.	1,452	1,699	1,662

Total for period - 4,813 acre-feet.

TABLE 3

Daily Discharge  
CEDAR CREEK  
July 1 to September 30, 1953

In Cubic Feet Per Second

Day	July	August	September
1	6.5	3.2	1.7
2	6.3	3.1	1.7
3	6.2	3.1	1.7
4	6.0	3.0	1.7
5	5.9	3.0	1.7
6	5.8	2.9	1.7
7	5.6	2.9	1.7
8	5.5	2.8	1.7
9	5.4	2.8	1.7
10	5.3	2.8	1.7
11	5.1	2.8	1.7
12	5.0	2.7	1.7
13	4.8	2.7	1.7
14	4.7	2.7	1.7
15	4.5	2.6	1.7
16	4.4	2.5	1.7
17	4.3	2.5	1.7
18	4.2	2.4	1.7
19	4.1	2.4	1.7
20	4.0	2.3	1.7
21	3.9	2.3	1.7
22	3.8	2.2	1.7
23	3.7	2.2	1.7
24	3.6	2.1	1.7
25	3.5	2.1	1.7
26	3.5	2.0	1.8
27	3.4	2.0	1.8
28	3.3	1.9	1.8
29	3.3	1.9	1.8
30	3.2	1.8	1.8
31	3.2	1.8	--
Total Sec.			
Ft. Days	142.0	77.5	51.5
Mean			
Sec. Ft.	4.6	2.5	1.7
Total			
Ac. Ft.	282	154	102

Total for period - 538 acre-feet.

TABLE 4

Daily Discharge  
OAK RUN CREEK  
July 1 to September 30, 1953

In Cubic Feet Per Second

Day	July	August	September:
1	7.5	6.7	5.6
2	7.5	6.7	5.6
3	7.5	6.6	5.6
4	7.5	6.5	5.6
5	7.4	6.4	5.6
6	7.4	6.4	5.6
7	7.4	6.3	5.6
8	7.3	6.3	5.6
9	7.3	6.3	5.6
10	7.3	6.2	5.6
11	7.2	6.2	5.6
12	7.2	6.1	5.6
13	7.2	6.1	5.6
14	7.1	6.1	5.6
15	7.1	6.0	5.6
16	7.1	6.0	5.6
17	7.1	6.0	5.6
18	7.1	6.0	5.6
19	7.0	5.9	5.6
20	7.0	5.9	5.6
21	7.0	5.9	5.6
22	7.0	5.8	5.6
23	7.0	5.8	5.6
24	6.9	5.8	5.6
25	6.9	5.8	5.7
26	6.9	5.8	5.7
27	6.9	5.7	5.7
28	6.8	5.7	5.7
29	6.8	5.7	5.7
30	6.8	5.7	5.7
31	6.8	5.7	--
Total Sec. Ft. Days	221.0	188.1	168.6
Mean Sec. Ft.	7.1	6.1	5.6
Total Ac. Ft.	438	373	334

Total for period - 1,145 acre-feet.

TABLE 5

Daily Discharge  
CLOVER CREEK  
July 10 to September 30, 1953

In Cubic Feet Per Second

Day	July	August	September
1	NO	25	25
2		25	25
3	RECORD	25	25
4		25	25
5		25	25
6		25	25
7		25	25
8		25	25
9		25	25
10	30	25	25
11	30	25	25
12	29	25	25
13	29	26	25
14	28	26	25
15	28	26	25
16	28	26	24
17	28	26	24
18	28	26	24
19	28	26	24
20	28	26	24
21	28	25	24
22	27	25	24
23	27	25	24
24	27	25	24
25	27	25	24
26	27	25	24
27	27	25	24
28	26	25	24
29	26	25	24
30	26	25	24
31	26	25	--
Total Sec.			
Ft. Days	608	783	735
Mean			
Sec. Ft.	28	25	24
Total			
Ac. Ft.	1,206	1,553	1,457

Total for period - 4,216 acre-feet.







