

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF WATER RESOURCES

o

EARL WARREN, Governor

FRANK B. DURKEE, Director of Public Works

A. D. EDMONSTON, State Engineer

---

---

R E P O R T O N  
W A T E R M A S T E R S E R V I C E

IN

HAT CREEK WATERMASTER SERVICE AREA

Shasta County, California

1952 SEASON

Sacramento, California  
March, 1953

SUBMISSION TO, AND ADOPTION BY  
DEPARTMENT OF PUBLIC WORKS

I, L. C. Jopson, Supervising Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, submit this "Report on Watermaster Service in Hat Creek Watermaster Service Area, Shasta County, California, 1952 Season".

/s/ L. C. JOPSON

Supervising Hydraulic Engineer

I, Harrison Smitherum, Supervising Hydraulic Engineer, Division of Water Resources, Department of Public Works of the State of California, approve this "Report on Watermaster Service in Hat Creek Watermaster Service Area, Shasta County, California, 1952 Season".

/s/ HARRISON SMITHERUM

Supervising Hydraulic 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 Hat Creek Watermaster Service Area, Shasta County, California, 1952 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 27th day of March, 1953.

DEPARTMENT OF PUBLIC WORKS  
STATE OF CALIFORNIA

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

(SEAL)

ORGANIZATION

Frank B. Durkee . . . . . Director of Public Works  
A. D. Edmonston . . . . . State Engineer  
\* Gordon Zander . . . . . Assistant State Engineer

---

This report was prepared under the direction of

L. C. JOPSON  
Supervising Hydraulic Engineer

By

David W. Sabiston  
Assistant Hydraulic Engineer

and

G. M. Vickroy  
Assistant Hydraulic Engineer  
and Watermaster

T. R. Marryweather  
Administrative Officer

\* Retired December 31, 1952

TABLE OF CONTENTS

	Page
<u>INTRODUCTION</u> . . . . .	1
<u>WATER SUPPLY</u> . . . . .	2
Precipitation . . . . .	2
Stream Flow . . . . .	2
<u>DISTRIBUTION OF WATER.</u> . . . . .	2
<u>CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS</u> . . . . .	5

TABLES

1. PRECIPITATION AT HAT CREEK POWER HOUSE NO. 1, SHASTA COUNTY, CALIFORNIA, 1951-1952.
2. Daily Discharge in Cubic Feet Per Second, HAT CREEK AT UNITED STATES GEOLOGICAL SURVEY STATION.

PLATES

1. HYDROGRAPH OF HAT CREEK, 1952.

## INTRODUCTION

This is the twenty-third annual report on watermaster service in the Hat Creek Watermaster Service Area, and covers the period of water distribution in 1952 beginning on May 1 and terminating on October 28.

The service area was created by order of the Division of Water Resources on September 11, 1929. A subsequent order entered March 26, 1942, changed the boundary of the service area to include certain newly determined water rights and to exclude others not subject to control by the watermaster.

As presently constituted, the service area includes the water rights established by the decree entered May 14, 1924, in the case of Doyel vs. Massie, No. 5724, Superior Court, Shasta County, except those held in trust by the United States for certain Indians; by the decree entered May 7, 1935 in the case of Doyle vs. Wilcox, No. 7858, Superior Court, Shasta County; and by Licenses 1196 and 2083 issued on Applications 2878 and 4700, respectively. 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 Hat Creek Power House No. 1 and water supply records of Hat Creek at the United States Geological Survey Station, and a plate showing a hydrograph of Hat Creek at the same station.

## WATER SUPPLY

### Precipitation

Data on precipitation at Hat Creek Power House No. 1, as compiled from records of the United States Weather Bureau, for the period October 1, 1951 to September 30, 1952, are shown on Table 1. The precipitation for the period was 26.49 inches which is equivalent to about 153 per cent of the normal for this station.

### Stream Flow

The United States Geological Survey maintains a stream flow measuring station on Hat Creek. This station is located below Old Station and is downstream from the Harvey Wilcox, Stevenson, Gray, Hall and Shearin ditches.

The flow at the measuring station plus the total amount being diverted by the above named ditches gives the flow available to meet the distribution requirements on Hat Creek.

The record of flow of Hat Creek at the United States Geological Survey station for 1952 is submitted in Table 2 of this report. The daily discharges shown were taken from preliminary records furnished by this agency.

The flow at the United States Geological Survey station, irrigation allotments, and water requirements on the stream including minimum flows and channel losses, are shown graphically on Plate 1.

## DISTRIBUTION OF WATER

The water rights in the Hat Creek Watermaster Service area are grouped into four divisions in the Doyel vs. Massie decree as follows:

Schedule I which defines the rights to the use of water from Hat Creek by the upper users during their nine irrigation periods;

Schedule II which defines the minimum flow allotments from Hat Creek to the upper users ditches during their nine minimum flow periods;

Schedule III which defines the rights to the use of water from Hat Creek by the lower users during their nine irrigation periods;

Schedule IV which defines the minimum flow allotments from Hat Creek to the lower users ditches during their nine minimum flow periods.

Additional allotments are allowed in the decree for reclaimed mud flow lands. Use of water is also allowed under appropriative rights set forth in licenses 1196 and 2083.

A discussion of the water supply and use for the 1952 season follows:

Distribution followed the methods and practices initiated in past seasons with little or no modification. All the diversions were operated during the season, except the ditches on the Stevenson upper ranch which were washed out in the winter of 1937 and have not been replaced.

Rotation was commenced on May 1 at the beginning of the first upper users period and was continued throughout the season. Percentages of full allotments delivered during each of the 18 irrigation periods were based on the amount of water remaining after deducting minimum flow requirements, fixed demand requirements, and measured channel losses from the available water supply. The water available for distribution is the summation of the flow passing the gaging station and measured diversions above that station. A summary of the distribution during the season, determined as outlined above, is shown in the following tabulation:

Irrigation Period	Dates	Percentage of Full Allotments	
		Upper Users	Lower Users
1. Upper	5/1-5/11	Surplus	
2. Lower	5/11-5/21		Surplus
3. Upper	5/21-5/31	Surplus	
4. Lower	5/31-6/10		Surplus
5. Upper	6/10-6/20	Surplus	
6. Lower	6/20-6/30		Surplus
7. Upper	6/30-7/10	Surplus	
8. Lower	7/10-7/20		Surplus
9. Upper	7/20-7/30	Surplus	
10. Lower	7/30-8/9		Surplus
11. Upper	8/9-8/19	Surplus	
12. Lower	8/19-8/29		95
13. Upper	8/29-9/8	Surplus	
14. Lower	9/8-9/18		93
15. Upper	9/18-9/28	Surplus	
16. Lower	9/28-10/8		93
17. Upper	10/8-10/18	Surplus	
18. Lower	10/18-10/28		93

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 Hat Creek Watermaster Service Area, County of Shasta, State of California, for 1952" and which have been included in the 1953 statement for said service area, are listed in the following tabulation:

Tract No.	Name of Water Right Owner Appearing in 1952 Statement	Name of Water Right Owner To Appear in 1953 Statement	Amount of Water c.f.s.
2-29	Stevenson, Thad I., et al.	Consterdine, Charles H. and Consterdine, Dorothy Z.	0.10
2-8	Fulton, Hector H. and Fulton, Helen L.	Westlund, Martin K. and Westlund, Thelma C.	0.15
2-20	Krause, W. A. and Krause, Grace O.	Nichols, Cheever E.	0.50
2-26	Stevenson, Thad I., et al.	Stevenson, Thad I.	4.687

TABLE 1

PRECIPITATION AT HAT CREEK POWER HOUSE NO. 1,  
SHASTA COUNTY, CALIFORNIA  
1951 - 1952  
Elevation 3,015 feet

Month	Normal Precipitation Inches	Precipitation 1951- 1952 Inches
October	1.24	1.90
November	1.86	2.00
December	2.62	6.58
January	2.56	5.07
February	3.08	3.01
March	1.83	2.87
April	1.55	0.33
May	1.22	1.35
June	0.77	1.24
July	0.13	1.24
August	6.12	0.00
September	0.40	0.90
Total	17.38	26.49

Compiled from records of United States Weather Bureau.

TABLE 2

Daily Discharge in Cubic Feet Per Second  
HAT CREEK AT U.S.G.S. STATION  
May 1 to September 30, 1952

Day	May	June	July	August	September
1	185	291	222	174	151
2	181	282	222	172	149
3	174	282	232	170	145
4	170	280	239	170	145
5	165	291	237	170	149
6	165	294	234	167	151
7	181	294	234	163	149
8	192	313	234	163	151
9	183	316	234	159	157
10	185	294	234	157	161
11	199	277	234	157	163
12	207	247	226	155	159
13	207	234	224	155	157
14	209	232	222	153	157
15	212	226	214	153	155
16	214	232	212	153	155
17	229	239	209	155	155
18	234	247	209	153	155
19	242	250	202	155	153
20	255	252	197	159	155
21	257	263	197	161	155
22	250	252	195	159	155
23	263	260	195	159	155
24	277	263	190	159	157
25	288	255	187	161	155
26	294	239	183	163	157
27	302	242	178	161	159
28	308	271	178	159	157
29	302	247	178	157	155
30	294	226	174	155	153
31	299		176	153	
Total Sec.					
Ft. Days	7,123	7,891	6,502	4,960	4,630
Mean					
Sec. Ft.	230	263	210	160	154
Total					
Ac. Ft.	14,130	15,650	12,900	9,840	9,180

Total for period - 61,700 acre-feet.

