

STATE OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES

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EDMUND G. BROWN, Governor  
HARVEY O. BANKS, Director of Water Resources  
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REPORT ON  
WATERMASTER SERVICE IN  
HAT CREEK AND BURNEY CREEK WATERMASTER SERVICE AREAS  
SHASTA COUNTY, CALIFORNIA  
1958 SEASON

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Sacramento, California

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TABLE OF CONTENTS

	<u>Page</u>
SUBMISSION TO, AND ADOPTION BY DEPARTMENT OF WATER RESOURCES . . . . .	ii
ORGANIZATION. . . . .	iii
INTRODUCTION. . . . .	1
WATER SUPPLY. . . . .	2
Precipitation . . . . .	2
Stream Flow . . . . .	2
DISTRIBUTION OF WATER . . . . .	3
Hat Creek . . . . .	3
Burney Creek. . . . .	5
CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS. . . . .	5

APPENDIX

A. Records of Water Supply and Use of Water

Table No.

A-1	Precipitation at Hat Creek Powerhouse Number 1 . . . . .	A-1
A-2	Daily Mean Discharge of Hat Creek at United States Geological Survey Gaging Station. .	A-2
A-3	Demand on Water Supply of Hat Creek During Upper Users Periods. . . . .	A-3
A-4	Demand on Water Supply of Hat Creek During Lower Users Periods. . . . .	A-4
A-5	Daily Mean Discharge of Burney Creek Below Haynes Diversions. . . . .	A-5

PLATE

1. Hydrograph of Hat Creek at United States Geological Survey Station

SUBMISSION TO, AND ADOPTION BY  
DEPARTMENT OF WATER RESOURCES

I, Orville L. Abbott, Senior Hydraulic Engineer, Department of Water Resources of the State of California, approve this "Report on Watermaster Service in Hat Creek and Burney Creek Watermaster Service Areas, Shasta County, California, 1958 Season."

/s/ Orville L. Abbott

Orville L. Abbott  
Senior Hydraulic Engineer

I, W. R. Gianelli, Principal Hydraulic Engineer, Department of Water Resources of the State of California, approve this "Report on Watermaster Service in Hat Creek and Burney Creek Watermaster Service Areas, Shasta County, California, 1958 Season."

/s/ W. R. Gianelli

W. R. Gianelli  
Principal Hydraulic Engineer

I, Harvey O. Banks, Director of the Department of Water Resources of the State of California, approve and adopt this "Report on Watermaster Service in Hat Creek and Burney Creek Watermaster Service Areas, Shasta County, California, 1958 Season" as a report of the Department of Water Resources.

WITNESS my hand and the seal of the Department of Water Resources of the State of California, this 31st day of August, 1959.

State of California  
Department of Water Resources

(SEAL)

/s/ Harvey O. Banks

HARVEY O. BANKS  
Director

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STATE DEPARTMENT OF WATER RESOURCES

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## INTRODUCTION

This report presents the results accomplished during the twenty-ninth season of water distribution in both the Hat Creek Watermaster Service Area and Burney Creek Watermaster Service Areas. This report covers the period of water distribution during the 1958 season beginning May 1 and ending October 28.

The Hat Creek Watermaster Service Area was created by order of the Department of Public Works on September 11, 1929. A subsequent order entered March 26, 1942, extended the boundary of the service area to include certain newly determined water rights and to exclude others that are not subject to control by the watermaster.

As presently constituted, the Hat Creek Watermaster Service Area includes the water rights established by the decree entered May 14, 1924, in the case of Doyel v. 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 Doyel v. Wilcox, No. 7858, Superior Court, Shasta County; and by Licenses 1196 and 2083 issued on Applications 2878 and 4700, respectively.

The Burney Creek Watermaster Service Area was created by order of the Department of Public Works on September 11, 1929, to include all water rights determined in the decree entered January 30, 1926, in the case of Ednah M. Black v. Martha B. Grinnell, et al., No. 5111, Superior Court, Shasta County, California. A subsequent order dated March 28, 1942, excluded certain lands for which need for watermaster service had ceased. Watermaster service has been provided during each irrigation season

since the service areas were created and annual reports prepared to show the work accomplished during each season.

This report is presented under four headings as follows: Introduction, Water Supply, Distribution of Water, and Changes in Ownership of Lands and Water Rights. Appendix A contains precipitation data collected at Hat Creek Power House No. 1, water supply records of Hat Creek at the United States Geological Survey gaging station, and demand on water supply during upper users and lower users periods. Plate one presents a hydrograph of Hat Creek at the United States Geological Survey station.

## WATER SUPPLY

Above normal winter rains and summer storms into August were sufficient to produce a water supply of above normal.

### Precipitation

Monthly precipitation at Hat Creek Power House No. 1, as compiled from the records of the United States Weather Bureau, is presented in Table A-1. The total precipitation for the 1957-1958 season was 24.58 inches, or about 143 per cent of the mean. The elevation of the station is 3,015 feet.

### Stream Flow

The United States Geological Survey maintains a stream flow gaging station on Hat Creek, downstream from the Harvey Wilcox, Stevenson, Gray, Hall, and Shearin Ditches. The amount of water passing this gaging station plus the total amount being diverted by the above-named ditches comprises the flow available for distribution on Hat Creek.

The records of flow of Hat Creek at the United States Geological Survey Station, (referred to as Hat Creek near Hat Creek by records of that agency) for 1958 is presented in Table A-2. Daily mean discharges shown were obtained from preliminary records. Flow at this station, irrigation allotments, and total water requirements on the stream are shown graphically on Plate 1.

The Surface Water Unit of the Department recently established a stream recorder station on Burney Creek below the Haynes Ranch diversions. Flow passing this station, added to the amount being diverted above the station, represents the flow available for distribution. The record of discharge for this new station is presented in Table A-5.

#### DISTRIBUTION OF WATER

The distribution of water in the Hat Creek and Burney Creek service areas was carried out as established by past practices in accordance with the respective decrees and licenses for these creeks.

#### Hat Creek

Water rights in the Hat Creek Watermaster Service Area are grouped into four divisions by the Doyel v. Massie decree as follows:

- |             |   |
|-------------|---|
| Schedule I  | which defines rights to use of water from Hat Creek by the upper users during their nine irrigation periods;        |
| Schedule II | which defines minimum flow allotments from Hat Creek to upper users ditches during their nine minimum flow periods; |

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

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

Additional allotments are allowed in this decree for reclaimed mud flow lands. At the time of the entry of the decree certain lands were out of irrigation because of mud flows caused by the volcanic eruption of Mt. Lassen in the spring of 1914. Use of water is also allowed under the Doyel v. Wilcox decree and under appropriative rights set forth in Licenses 1196 and 2083. Total demands on the water supply of Hat Creek during both upper users period and lower users period are shown in Tables A-4 and A-5.

Distribution during the 1958 season followed the methods and practices exercised in past seasons with little or no modification.

There was a problem during the summer on the spilling of flood water from Hat Creek through the Doyel spillway into Rising River. The Doyel spillway was cut in 1956 due to high water in the Hat Creek channel, which was damaging the Doyel, Giessner, and Kerns Ranches. It was agreed to close the spillway and only open it in the event of actual threat of damage due to high water. They are trying now to work out a solution to this flood water problem to the satisfaction of all concerned.

Rotation on Hat Creek commenced on May 1 at the beginning of the upper users period and was continued throughout the season with 100 per cent allotments delivered during each of the 18 irrigation periods.

Burney Creek

Distribution was carried out on a continuous flow basis throughout the season. All the diversions on Burney Creek were in operation throughout the season except the Cayton Ditch which has been abandoned. The water formerly carried in that ditch is now delivered to the Eling Ranch through the Eling Town Ditch.

The water supply was sufficient for 100 per cent allotments until about August 1. Thereafter the water supply was only sufficient to deliver 70 per cent allotments.

CHANGES IN OWNERSHIP OF LANDS AND WATER RIGHTS

Changes in ownership of lands and water rights which have been included in the "Statement for Burney Creek Watermaster Service Area, County of Shasta, State of California for 1959" are presented in the tabulation below.

No changes of ownership of lands and water rights occurred in the Hat Creek Watermaster Service Area subsequent to filing the 1958 statement for that area.

Tract Number:	Name of water right owner appearing in 1958 statement	Name of water right owner appearing in 1959 statement	Amount of Water in Second feet
1-4	Taylor, Charles F.	Hathaway, William E. and Hathaway, Edward	3.98
1-1-1	Beeler, Charles W.	Morgan-Peacock Properties Corporation	5.85

APPENDIX A

RECORDS OF WATER SUPPLY AND USE OF WATER

<u>Table No.</u>		<u>Page</u>
A-1	Precipitation at Hat Creek Powerhouse Number 1, Shasta County, California 1957-58. . . . .	A-1
A-2	Daily Mean Discharge of Hat Creek at United States Geological Survey Gaging Station . . . . .	A-2
A-3	Demand on Water Supply of Hat Creek During Upper Users Periods . . . . .	A-3
A-4	Demand on Water Supply of Hat Creek During Lower Users Periods . . . . .	A-4
A-5	Daily Mean Discharge of Burney Creek Below Haynes Diversions. . . . .	A-5

TABLE A-1

PRECIPITATION AT HAT CREEK POWERHOUSE NUMBER 1  
 SHASTA COUNTY, CALIFORNIA  
 1957-1958

In Inches

Month	Mean Precipitation	1957-1958 Precipitation
October	1.30	2.61
November	1.82	1.83
December	2.53	2.40
January	2.45	3.04
February	2.91	2.90
March	1.92	3.57
April	1.55	1.12
May	1.20	1.80
June	0.80	2.85
July	0.16	1.50
August	0.15	0.39
September	0.44	0.57
<b>TOTALS</b>	<b>17.23</b>	<b>24.58</b>

TABLE A-2

DAILY MEAN DISCHARGE OF HAT CREEK  
AT UNITED STATES GEOLOGICAL SURVEY GAGING STATION

May 1 to September 30, 1958

In Cubic Feet Per Second

Day	May	June	July	August	September
1	185	283	236	185	163
2	189	318	233	185	163
3	199	298	233	183	161
4	203	281	230	180	161
5	213	281	230	178	161
6	218	281	230	178	161
7	220	269	228	178	161
8	230	269	225	175	161
9	243	286	217	173	163
10	254	275	211	170	163
11	281	267	211	170	163
12	254	327	206	170	166
13	243	289	206	170	163
14	246	283	203	168	163
15	254	289	203	166	161
16	268	295	206	166	161
17	284	301	203	168	158
18	314	309	198	166	158
19	328	315	196	166	158
20	323	298	190	166	158
21	331	298	193	168	158
22	331	304	203	166	163
23	340	309	198	166	163
24	340	295	193	166	158
25	336	283	193	166	161
26	330	281	190	166	161
27	327	269	185	166	163
28	312	255	193	166	163
29	298	250	196	166	163
30	295	244	185	163	163
31	298	---	183	163	---
Mean	274	287	207	170	161
Runoff in acre-feet	16,830	17,060	12,710	10,470	9,610

Total for period - 66,680 acre-feet.

TABLE A-3

DEMAND ON WATER SUPPLY OF HAT CREEK  
DURING UPPER USERS PERIODS

In Cubic Feet Per Second

Item and authority	: First : Priority	: Second : Priority	: Total
<b>DEMAND SUBJECT TO PRORATION</b>			
Irrigation allotments - Schedule 1, Doyel v. Massie decree			103.500
Irrigation allotment to Sullivan- Par. 30 Doyel v. Massie decree			4.600
Irrigation allotment to U. S. Forest Service as allowed by watermaster in agreement with Forest Ranger			2.500
Irrigation allotment for reclaimed mud flow lands Par. 22, Doyel v. Massie decree			
Harvey W. Wilcox (Herman) 40.0 ac.			4.000
Vint Stevenson 80.0 acres			8.000
Carrie K. Hall 5.0 acres			0.500
R. A. Wilcox (Ward Smith) 27.0 acres			2.700
Irrigation allotment for reclaimed mud flow lands allowed by water- master to			
Harry M. Wilcox 8.0 acres			0.800
Irrigation allotment to Mrs. M. H. Sherin (Olmsted) Par. 5, Doyel v. Wilcox decree (rotation head)			1.920
Irrigation allotment to Carrie K. Hall (Day) Application 4700, License 2083			2.50
Subtotals			<u>128.520</u> <u>2.50</u>
<b>FIXED DEMANDS</b>			
Sawmill use for Carrie K. Hall (Day) - Par. 11, Doyel v. Massie decree			0.500
Minimum flow allotments to lower users - Schedule IV, Doyel v. Massie decree			9.125
Minimum flow allotment to Vernon March - Allowed by watermaster			1.000
Minimum flow allotments to Dunwoody & Grant - Par. 6, Doyel v. Wilcox decree			
Dunwoody			0.250
Grant			0.250
Conveyance loss in Reiger Ditch - Par. 13, Doyel v. Massie decree. Amount determined by measurements			1.750
Channel loss in Hat Creek. Amount determined by measurements			<u>14.000</u>
Subtotal			<u>26.875</u>
<b>TOTALS</b>			<b>155.395</b> <b>2.50</b> <b>157.895</b>

TABLE A-4

DEMAND ON WATER SUPPLY OF HAT CREEK  
DURING LOWER USERS PERIODS

In Cubic Feet Per Second

Item and authority	: First : Priority	: Second : Priority	: Total
<b>DEMANDS SUBJECT TO PRORATION</b>			
Irrigation allotments - Schedule III, Doyel v. Massie decree			129.000
Irrigation allotments to Grant and Dunwoody - Par. 6, Doyel v. Wilcox decree - Grant			1.000
Dunwoody			1.000
Irrigation allotment for reclaimed mud flow lands Par. 22, Doyel v. Massie - R. E. Bidwell			1.200
Irrigation allotment to W. W. Brown (Startt) Application 2878, License 1196			1.700
Subtotals			<u>132.200</u> 1.700
<b>FIXED DEMANDS</b>			
Sawmill use for Carrie K. Hall (Day) Par. 11, Doyel v. Massie decree			0.500
Minimum flow allotments to upper users- Schedule II			10.125
Minimum flow allotments to Mrs. M. H. Sherin Olmsted - Par. 6, Doyel v. Wilcox decree			0.250
Minimum flow allotments to Sullivan (Scott Kerns) allowed by watermaster			0.500
Minimum flow allotment to U. S. Forest Service by agreement with watermaster			1.750
Allowance for conveyance loss in Reiger Ditch decree, Par. 13 and measurements			1.750
Channel loss in Hat Creek. Amount determined by measurements			<u>20.000</u>
Subtotal			<u>34.875</u>
<b>TOTALS</b>			<u>167.975</u> 1.700    158.775

TABLE A-5

DAILY MEAN DISCHARGE OF BURNEY CREEK  
BELOW HAYNES DIVERSIONS

May 1 to September 30, 1958

In Cubic Feet Per Second

Day :	May	June	July	August	September
1	173	94	45	22	16
2	180	92	54	21	15
3	199	98	57	21	15
4	195	88	49	20	15
5	199	86	45	20	15
6	199	80	42	21	14
7	190	86	38	18	14
8	190	146	35	17	14
9	186	226	31	17	13
10	188	140	30	17	13
11	276	113	28	17	14
12	295	213	28	18	14
13	220	146	27	19	15
14	195	109	26	19	15
15	192	97	25	19	18
16	187	88	25	20	18
17	183	84	28	20	17
18	180	76	30	21	17
19	184	80	29	21	14
20	174	82	28	21	13
21	166	72	26	20	15
22	164	77	29	19	21
23	177	71	40	18	21
24	161	72	31	17	22
25	150	68	27	17	18
26	140	59	25	16	18
27	128	54	25	16	18
28	119	50	24	16	17
29	111	48	25	15	16
30	107	44	26	15	15
31	102		23	16	
Mean	178	95	32	18.5	16.0
Runoff, in acre-feet	10,930	5,631	1,985	1,139	952

Total for period - 20,637 acre-feet.



