

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

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REPORTS OF THE
DIVISION OF WATER RESOURCES
Edward Hyatt, State Engineer

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REPORT ON
WATER MASTER SERVICE
ON
HAT CREEK
SHASTA COUNTY, CALIFORNIA
1932 SEASON

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By: T. Russell Simpson, Senior Hydraulic Engineer

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Sacramento, California
March 1933

TABLE OF CONTENTS

	Page
<u>LETTER OF TRANSMITTAL</u>	
<u>ORGANIZATION</u>	
<u>GENERAL DESCRIPTION OF WORK</u> - - - - -	1
<u>DISCUSSION OF RESULTS FOR SEASON</u> - - - - -	2
<u>CONTROVERSIES</u> - - - - -	3
<u>RECOMMENDATIONS</u> - - - - -	3

TABLES

1. PRECIPITATION DATA
2. HAT CREEK - Daily Discharge in Cubic Feet per Second above all diversions - 1932.
3. WATER DELIVERIES on Hat Creek - 1932 Season.

PLATES

1. HYDROGRAPH of Hat Creek Showing Water Supply Above All Diversions in 1932.

March 15, 1933.

Mr. Harold Conkling,
Deputy State Engineer,
Sacramento, California.

Attention: Mr. Gordon Zander, Supervising
Hydraulic Engineer

Dear Sir:

Herewith is submitted a report covering water master service on Hat Creek, Shasta County, California, for the 1932 season.

The report includes a description of the regulation and distribution of the waters of Hat Creek in accordance with the decree entered in the case of Doyel vs. Massie and a discussion of the results that were obtained.

Run-off records and other pertinent hydraulic data are included.

Respectfully submitted,

T. R. Simpson
Senior Hydraulic Engineer.

ORGANIZATION

EARL LEE KELLY -----Director Department of
Public Works.

EDWARD HYATT -----State Engineer

HAROLD CONKLING-----Deputy State Engineer

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GORDON ZANDER, Supervising Hydraulic Engineer

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T. RUSSELL SIMPSON, Senior Hydraulic Engineer

G. M. VICKROY, Deputy Water Master

REPORT ON
WATER MASTER SERVICE
ON
HAT CREEK
SHASTA COUNTY, CALIFORNIA
DURING SEASON OF 1932

- - - -

GENERAL DESCRIPTION OF WORK

Water master service was continued on Hat Creek during the 1932 season in accordance with the water master district procedure contained in the Water Commission Act. A request for such service by more than fifteen per cent of the water users was regularly made on the usual form of petition prior to the 1930 season, which petition is on file in the office of the Division of Water Resources.

Water master service was commenced by the supervising water master on May 1, 1932, and terminated on September 30, 1932, with G. M. Vickroy acting in the capacity of deputy water master.

All diversions from Hat Creek were opened during the 1932 season except that for the Gray Ranch. The Bone, Williams, Wilson and Stevenson ditches were not opened until in June and the ditches owned by the Indians were not opened until June 20.

The water supply during the 1932 season was such that an average of about 65 per cent of allotments was delivered and the supply was fairly constant during the last two and one-half months of the season.

DISCUSSION OF RESULTS FOR SEASON

The precipitation at Hat Creek for the seasonal year, October 1, 1931, to September 30, 1932, has been compared with the precipitation for the preceding ten seasonal years in Table 1 of this report. The precipitation for the years 1923 and 1927 was considered nearly normal and as compared with these years the precipitation for 1932 was therefore about 80 per cent of normal.

Table 2 is a tabulation of the daily discharge of Hat Creek above all diversions during the 1932 season. The record was obtained by combining the flow at the United States Geological Survey gaging station with that of all diversions above the station. Plate 1 of this report graphically shows the water supply of Table 2. The irrigation allotments and the gross demand on water supply, including irrigation allotments, minimum flow requirements and channel losses, is also shown on Plate 1.

Table 3 shows the water deliveries on Hat Creek during the 1932 season expressed in cubic feet per second and in per cent of full allotments. The table also shows the average channel losses during each rotation period.

During the 1932 season no new measuring devices were installed in any of the ditches.

Owing to the failure on the part of the water users to submit crop reports for 1932 no data relative thereto was secured.

On July 30 it was necessary to arrest L. H. Sullivan for violation of Section 37b of the Water Commission Act. His trial was held in the Justice Court on August 4 at which time he was found guilty and fined \$80.00 or 40 days in jail. He then appealed to the Superior Court of Shasta County, which court on December 8, 1932, referred the case back to the Justice Court for re-trial. The re-trial has not as yet taken place.

CONTROVERSIES

The only controversy which occurred was prior to the commencement of water master service for 1932 and involved chiefly the winter water rights on Hat Creek.

The decree entered in the case of Doyel vs. Massie determined all the water rights on Hat Creek during the period from May 1 to October 28 of each year except those of Mrs. W. E. Shearin, Clara and Oscar Grant and W. E. Dunwoody.

In the case of Doyel vs. Wilcox, which action was commenced as the result of the above mentioned controversy, a determination of the water rights on Hat Creek for the period from October 28 to May 1 of the succeeding year is sought with the summer rights of the above named parties also involved. The case has been referred to the Division of Water Resources for investigation as referee.

Owing to the fact that the Division of Water Resources is in possession of all the physical facts, which data were obtained under the earlier action, no additional field investigation is necessary and accordingly the Division has prepared a stipulation for judgment for approval of the attorneys in the case.

RECOMMENDATIONS

Due to the fact that a substantial number of the wooden measuring devices installed in ditches from Hat Creek are now from eight to ten years old, their condition is rapidly becoming unsatisfactory and they should be replaced with new Parshall Measuring Flumes as soon as it is evident that these old measuring devices are no longer accurate.

TABLES

TABLE 1.

Precipitation Data
 Hat Creek, Shasta County - Elevation 3010 Feet
 Monthly, Seasonal and Average Amounts of Precipitation in Inches

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Seasonal
1921-22	0.30	0.47	3.82	0.85	6.41	2.13	0.38	1.91	1.40	0	0.60	0	18.27
1922-23	1.58	2.26	4.85	2.36	0.32	0.03	2.04	1.18	3.29	0.17	0.30	1.70	20.08
1923-24	1.16	0.37	1.46	1.30	1.31	1.04	0.73	T	T	0	0.34	0.10	7.81
1924-25	2.28	1.40	1.99	1.01	4.12	1.12	1.37	1.93	1.49	0.09	0.18	1.86	18.89
1925-26	0.58	2.26	0.48	2.57	2.45	0.75	2.39	1.03	0	0.04	0.10	0.01	12.69
1926-27	1.18	4.41	0.88	1.63	4.70	1.77	2.89	2.01	0.63	T	T	0.29	20.39
1927-28	0.87	4.84	0.36	1.33	1.36	4.87	1.05	1.73	0.08	0.14	0.14	0.16	16.96
1928-29	0.50	2.69	2.64	0.92	1.65	1.17	1.85	0.05	1.52	0	0	0.10	13.09
1929-30	0.40	0	3.02	4.36	3.64	1.12	1.61	1.40	0.13	0	0	1.78	17.46
1930-31	0.26	0.73	0.31	2.24	1.59	1.13	0.26	0.93	0.44	0	0	0.09	8.03
1931-32	2.56	1.94	5.76	1.69	0.62	1.08	1.51	0.97	0.08	0.19	0	0	16.40
Mean	1.06	1.94	2.33	1.84	2.57	1.47	1.46	1.21	0.82	0.06	0.15	0.55	15.46

TABLE 2

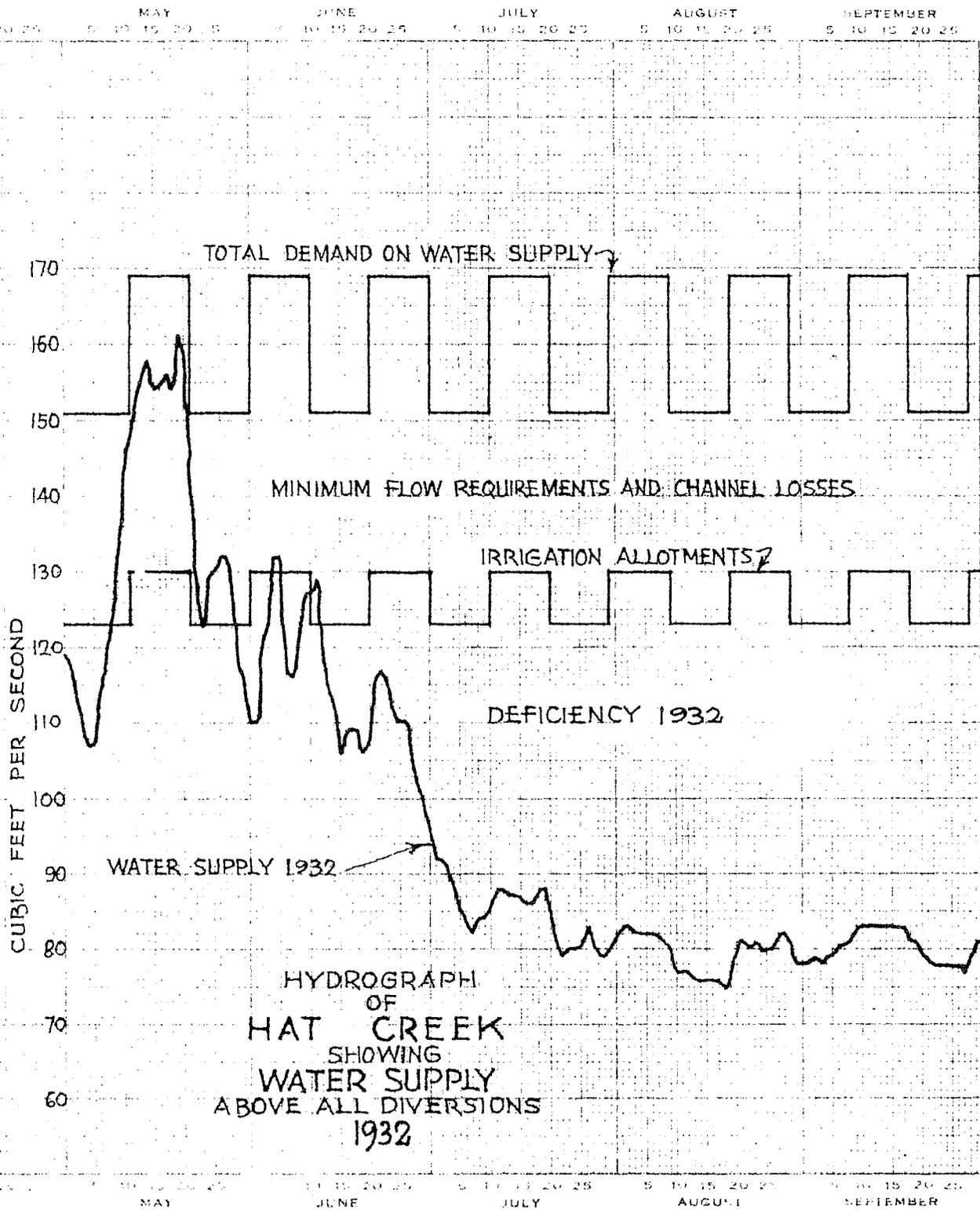
DAILY DISCHARGE IN CUBIC FEET PER SECOND OF
HAT CREEK
 ABOVE ALL DIVERSIONS - 1932 SEASON

DAY	MAY	JUNE	JULY	AUGUST	SEPTEMBER	
1	118	110	92	83	78	
2	113	119	92	83	79	
3	110	123	91	82	78	
4	107	132	87	82	79	
5	107	132	85	82	79	
6	114	117	84	82	80	
7	117	116	82	82	80	
8	124	122	84	81	81	
9	131	127	84	80	83	
10	144	127	86	77	83	
11	147	129	88	77	83	
12	151	121	88	77	83	
13	156	115	87	76	83	
14	158	113	87	76	83	
15	154	106	87	76	83	
16	154	109	86	76	83	
17	156	109	86	76	83	
18	154	109	88	75	81	
19	161	106	88	78	81	
20	159	108	85	81	80	
21	143	116	80	81	79	
22	127	117	79	80	78	
23	123	116	80	81	78	
24	129	113	80	80	78	
25	130	110	80	80	78	
26	132	110	83	80	78	
27	132	105	81	82	77	
28	130	102	80	82	79	
29	119	100	79	81	81	
30	116	96	80	78	81	
31	110	-	82	78	-	
Total Sec. Ft. Days	4126	3435	2621	2465	2244	:5 Month :Period
Mean						
Sec. Ft.	133.1	114.5	84.5	79.5	74.8	97.3
Maximum						
Sec. Ft.	161.	132.	92.	83.	83.	161.
Minimum						
Sec. Ft.	110.	96.	79.	75.	77.	75.
Total						
Ac. Ft.	8182.	6812.	5197.	4888.	4450.	29529.

TABLE 3

WATER DELIVERIES ON HAT CREEK - 1932 SEASON

Irrigation: Period	Dates	:Average Flow: Average		:Channel Loss:		Average Irrigation Delivery			
		:of Hat Creek:	:Combined :	: c.f.s. :		Cubic Feet Per		Per cent of	
		: Above All	:Diversions:	Upper:	Lower:	Upper	Lower	Upper	Lower
		:Diversions	: c.f.s.	:Users:	:Users:	Second	:	Full Allotments	:
		: c.f.s.	:	:	:	Users	Users	Users	Users
1	:May 1-May 11	: 119	: 106	: 13	:	92	:	75	:
2	:May 11-May 21	: 155	: 129	: 26	:	117	:	90	:
3	:May 21-May 31	: 128	: 115	: 13	:	101	:	82	:
4	:May 31-June 10	: 121	: 93	:	: 28	81	:	62	:
5	:June 10-June 20:	115	: 100	: 15	:	86	:	70	:
6	:June 20-June 30:	110	: 82	:	: 28	70	:	54	:
7	:June 30-July 10:	88	: 74	: 14	:	60	:	49	:
8	:July 10-July 20:	87	: 60	:	: 27	48	:	37	:
9	:July 20-July 30:	81	: 66	: 15	:	52	:	42	:
10	:July 30-Aug. 9 :	82	: 56	:	: 26	44	:	34	:
11	:Aug. 9-Aug. 19 :	77	: 63	: 14	:	49	:	40	:
12	:Aug.19-Aug. 29 :	81	: 55	:	: 26	43	:	33	:
13	:Aug.29-Sept. 8 :	79	: 65	: 14	:	51	:	42	:
14	:Sept.8-Sept.18 :	83	: 56	:	: 27	44	:	34	:
15	:Sept.18-Sept.28:	79	: 65	: 14	:	51	:	42	:
16	:Sept.28-Oct.8 :	80	: 54	:	: 26	42	:	32	:
Mean		: 98	: 77	: 14	: 27	68	:	55	: 47



HYDROGRAPH
 OF
HAT CREEK
 SHOWING
 WATER SUPPLY
 ABOVE ALL DIVERSIONS
 1932