STATE OF CALIFORNIA
Department of Public Works
SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

EDWARD HYATT, STATE ENGINEER
CHIEF OF DIVISION

CALIFORNIA COOPERATIVE SNOW SURVEYS.

SNOW SURVEYS AND PRECIPITATION DATA.

May 1, 1936.

This bulletin contains the results of all snow surveys made at the key snow courses throughout the State, during the closing days of April and the early part of May. Also tabulated herein are all available precipitation data to May 1st for the foothill and mountain stations, maintained by the U. S. Weather Bureau, State, Districts, and Public Utilities, in the various major stream basins of the Sierra Nevada.

The surveys of the snow pack indicate that under the influence of the warm days of April, melting has been general throughout the mountains. This melting, while very light at the highest elevations, increases with decreasing altitude. The low snow has entirely disappeared; the snow line at the first of May had in general receded to about elevation 5700. At elevation 7000 about one-half of the snow had melted but at elevation 8000 only 30 per cent had run off. This run-off decreased to 10 per cent at elevation 9000, while above elevation 9500 the decrease in the water content of the snow pack during the past month amounted to only 3 per cent. This change in the snow pack during April, at the various elevations is more or less uniform throughout the State and shows no change with decreasing geographical latitude.

Table I shows the detail of this melting at each station, the change in the snow pack (referred to inches of water content) since the April 1st surveys being given in terms of the percentage departure from the April 1st pack. In the same table is given the comparison of the snow water content of this year with last year's. This shows that the 1936 May 1st snow pack, except for the high ranges south of the Tuolumne, is consistently less than that of last year's. It should be remembered in this connection that last year heavy storms occurred during April and also that the prevailing April 1935 temperature was lower than usual, both factors tending to hold up the snow pack. In the light of the data gathered during the last seven years of snow surveying, the melting of the snow pack to date this year may be considered as being about normal.

The data from the precipitation stations listed in Table II indicate that the precipitation during the month was about normal. The figures for the seasonal precipitation to May 1st for the various watersheds are virtually the same as those for April 1st, a month ago, being between normal and 130 per cent of normal for all stream basins lying

north of the Kern, with the sole exception of that of the Feather where the precipitation is only 93 per cent of normal. In the southern basins the indicated precipitation to May 1st is somewhat lower, being 93 per cent of normal in the Santa Ana basin, 91 per cent in the San Gabriel, and 79 per cent in the Los Angeles.

Since normal conditions prevailed throughout the month, both as regards the rate of snow melting and amount of precipitation, no modification of the previously issued forecast is justified, and it is believed that these predicted amounts of run-off will be essentially realized.

Most of the snow surveys omitted from the last bulletin were completed after the early April storms had subsided, and there is included as an appendix to this bulletin, two pages tabulating the results of these early April snow surveys from the basins of the Upper San Joaquin and Kings Rivers, together with the forecast of April-July run-off from these areas.

PROGRESS REPORT OF SNOW SURVEY AND PRECIPITATION DATA
TO MAY 1, 1936

TABLE 1

SNOW SURVEY DATA FOR KEY COURSES – MAY 1, 1936

1 DRAINAGE BASINS AND SNOW COURSES	ELEVATION IN FEET	DATE OF SURVEY	DEPTH OF SNOW INCHES	DENSITY PER CENT	WATER CONTENT INCHES	CORRESPONDING WATER CONTENT LAST YEAR INCHES	MELTING AS SHOWN BY PER CENT DEPARTURE FROM APRIL FIRST WATER CONTENT	
							THIS YEAR	LAST YEAR
PIT RIVER								
MOUNT LASSEN	8400	5-2-36	159.3	54.2	86.4	—	-1	—
MANZANITA LAKE	6000	5-1-36	NO SNOW ON COURSE			NO SURVEY	-100	—
UPPER SACRAMENTO RIVER								
MOUNT SHASTA	8000	4-27-36	62.7	52.7	33.1	NO SURVEY	-16	—
MC CLOUD RIVER								
MOUNT SHASTA	8000	4-27-36	62.7	52.7	33.1	NO SURVEY	-16	—
FEATHER RIVER								
MOUNT LASSEN	8400	5-2-36	159.3	54.2	86.4	—	-1	—
THREE LAKES Brown Camp	6100	4-29-36	26.2	47.8	12.5	46.7	-22	-23
HASKINS FLAT	5300	4-30-36	14.5	46.8	6.8	27.5	-53	-50
YUBA RIVER								
SUMMIT	7020	4-28-36	70.8	48.5	34.4	44.1	-28	-18
SODA SPRINGS	6750	4-28-36	61.7	52.5	32.4	45.3	-26	-16
FURNACE FLAT	6600	5-1-36	100.0	56.9	56.9	63.5	+4	+1
LAKE FORDYCE	6500	5-1-36	86.5	52.7	45.6	53.3	-3	+2
TRUCKEE RIVER								
SUMMIT	7020	4-28-36	70.8	48.5	34.4	44.1	-28	-18
AMERICAN RIVER								
CARSON PASS	8600	4-25-36	79.6	56.6	45.0	48.1	-2	+37
SILVER LAKE	7300	4-26-36	40.4	48.6	19.6	24.5	-36	-3
SUMMIT	7020	4-28-36	70.8	48.5	34.4	44.1	-28	-18
SODA SPRINGS	6750	4-28-36	61.7	52.5	32.4	45.3	-26	-16
ICE HOUSE	5300	5-7-36	NO SNOW ON COURSE			NO SURVEY	-100	—
CARSON RIVER								
CARSON PASS	8600	4-25-36	79.6	56.6	45.0	48.1	-2	+37
BLUE LAKES	8000	4-27-36	79.8	49.6	39.6	38.6	-17	+28

1 DATA FOR COURSES COMMON TO MORE THAN ONE BASIN ARE LISTED UNDER EACH BASIN.

TABLE I – SNOW SURVEY DATA FOR KEY COURSES – MAY 1, 1936 (CONTINUED)

1 DRAINAGE BASINS AND SNOW COURSES	ELEVATION IN FEET	DATE OF SURVEY	DEPTH OF SNOW INCHES	DENSITY PER CENT	WATER CONTENT INCHES	CORRESPONDING WATER CONTENT LAST YEAR INCHES	MELTING AS SHOWN BY PER CENT DEPARTURE FROM APRIL FIRST WATER CONTENT	
							THIS YEAR	LAST YEAR
MOKELUMNE RIVER								
CARSON PASS	8600	4-25-36	79.6	56.6	45.0	48.1	-2	+37
BLUE LAKES	8000	4-27-36	79.8	49.6	39.6	38.6	-17	+28
LAKE ALPINE	7500	4-28-36	78.9	49.8	39.3	48.2	-17	+28
SILVER LAKE	7300	4-26-36	40.4	48.6	19.6	24.5	-36	-3
BEAR VALLEY RIDGE	6700	4-30-36	42.2	45.9	19.4	35.2	-34	+14
STANISLAUS RIVER								
SODA CREEK FLAT	7900	4-25-36	39.3	49.4	19.4	23.4	-24	+7
LAKE ALPINE	7500	4-28-36	78.9	49.8	39.3	48.2	-17	+28
RELIEF DAM	7300	4-26-36	26.2	48.4	12.7	26.0	-48	+8
NIAGARA FLAT	6500	4-28-36	18.5	47.4	8.8	22.9	-66	-18
STRAWBERRY LAKE	5700	5-1-36	NO SNOW ON COURSE			4.9	—	-71
TUOLUMNE RIVER								
FLETCHER LAKE	10300	5-5-36	71.9	56.4	40.6	38.4	+1	+26
UPPER LYELL FORK	8800	5-4-36	34.9	63.3	22.1	22.2	+6	+37
TUOLUMNE MEADOWS	8600	5-3-36	36.1	61.8	22.3	24.2	-26	+14
GIN FLAT	7100	4-26-36	66.8	48.6	32.5	33.0	-19	-24
BEEHIVE MEADOW	6500	4-26-36	48.8	48.8	23.8	32.5	-32	-13
STRAWBERRY LAKE	5700	5-1-36	NO SNOW ON COURSE			4.9	—	-71
MERCED RIVER								
FLETCHER LAKE	10300	5-5-36	71.9	56.4	40.6	38.4	+1	+26
MORAINE MEADOW	8800	5-2-36	61.0	58.0	35.3	42.2	—	+10
SNOW FLAT	8700	5-7-36	81.3	62.6	50.9	52.8	+24	+30
JOHNSON LAKE	8500	5-1-36	69.5	48.8	33.9	47.6	—	+22
LAKE TENAYA	8150	5-6-36	53.5	72.6	38.8	37.9	-11	+14
GIN FLAT	7100	4-26-36	66.8	48.6	32.5	33.0	-19	-24
UPPER SAN JOAQUIN RIVER*								
KAISER PASS	9200	5-5-36	59.8	72.7	43.4	44.8	-2	+1
FLORENCE LAKE	7200	SURVEYS DELAYED – RESULTS LATER						
HUNTINGTON LAKE	7000							

1 DATA FOR COURSES COMMON TO MORE THAN ONE BASIN ARE LISTED UNDER EACH BASIN.
* SEE LAST TWO PAGES OF THIS REPORT FOR DATA ON THIS BASIN OMITTED FROM APRIL BULLETIN.

TABLE I – SNOW SURVEY DATA FOR KEY COURSES – MAY 1, 1936 (CONTINUED)

1 DRAINAGE BASINS AND SNOW COURSES	ELEVATION IN FEET	DATE OF SURVEY	DEPTH OF SNOW INCHES	DENSITY PER CENT	WATER CONTENT INCHES	CORRESPONDING WATER CONTENT LAST YEAR INCHES	MELTING AS SHOWN BY PER CENT DEPARTURE FROM APRIL FIRST WATER CONTENT: THIS YEAR	MELTING AS SHOWN BY PER CENT DEPARTURE FROM APRIL FIRST WATER CONTENT: LAST YEAR
OWENS RIVER								
UPPER OWENS								
MAMMOTH PASS	9500	4-7-36	131.1	37.5	49.1	40.7	*	*
MINARETTES	9000	4-6-36	106.8	36.6	39.1	27.7	*	*
MINARETTES	8300	4-6-36	74.0	37.6	27.8	18.3	*	*
MAMMOTH	8300	4-7-36	61.0	39.8	24.3	17.4	*	*
ROCK CREEK								
ROCK CREEK	10000	4-8-36	46.3	38.1	17.6	12.1	*	*
ROCK CREEK	9050	4-9-36	38.5	39.2	15.1	8.7	*	*
ROCK CREEK	8700	4-8-36	39.2	37.6	14.7	9.0	*	*
BIG PINE CREEK								
BIG PINE CREEK	10000	4-14-36	76.2	41.3	31.4	19.6	*	*
BIG PINE CREEK	9800	4-14-36	37.5	38.8	14.6	10.9	*	*
BIG PINE CREEK	9700	4-13-36	52.5	41.2	21.7	12.8	*	*
COTTONWOOD CREEK								
COTTONWOOD CREEK	11100	4-7-36	44.2	32.6	14.4	11.4	*	*
COTTONWOOD CREEK	10600	4-7-36	42.6	36.6	15.6	9.8	*	*
KINGS RIVER **								
SAND MEADOW	8050	SURVEYS DELAYED – RESULTS LATER						
GENERAL GRANT PARK	6660							
CLIFF CAMP	6300							
KAWEAH RIVER								
PANTHER MEADOW	8650	4-30-36	98.1	51.2	50.3	38.8	-1	+20
HOCKETT MEADOW	8600	4-11-36	101.6	47.6	***47.9	—	—	—
QUINN RANGER STATION	8000	4-11-36	67.6	52.1	***33.3	—	—	—
GIANT FOREST	6500	5-1-36	32.8	49.0	16.1	11.6	-44	-45
KERN RIVER								
ROUND MEADOW	9000	4-28-36	51.8	55.5	28.8	20.8	-14	+12

1 DATA FOR COURSES COMMON TO MORE THAN ONE BASIN ARE LISTED UNDER EACH BASIN.

* SURVEYS MADE IN EARLY APRIL. SPRING MELTING JUST BEGINNING.

** SEE LAST TWO PAGES OF THIS REPORT FOR DATA ON THIS BASIN OMITTED FROM APRIL BULLETIN.

*** EARLY APRIL SURVEYS NOT INCLUDED IN APRIL BULLETIN. RECEIPT OF SURVEY NOTES DELAYED BY STORMY WEATHER.

PROGRESS REPORT OF SNOW SURVEY AND PRECIPITATION DATA
TO MAY 1, 1936

TABLE 2 – PRECIPITATION DATA

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1935 INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PER CENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	PRECIPITATION TO DATE IN PER CENT OF SEASONAL NORMAL (JULY TO JUNE)
UPPER SACRAMENTO PIT AND MC CLOUD RIVERS						
JESS VALLEY	5400	14.85	—	—	—	—
ALTURAS	4360	12.64	10.33	122	12.07	105
BIEBER	4200	15.80	—	—	—	—
MOUNT SHASTA	3555	25.23	31.87	79	34.37	73
HAT CREEK	3400	16.65	16.33	102	18.98	88
FALL RIVER MILLS	3340	17.47	16.28	107	18.76	93
MC CLOUD	3270	38.64	45.93	84	50.12	77
MONTGOMERY CREEK	2119	A 57.53	A 44.91	A 128	54.62	A 105
KENNETT	730	59.16	59.52	99	63.91	93
FEATHER RIVER						
BUCKS STORAGE DAM	5100	A 79.53	A 77.61	A 102	86.24	A 92
WESTWOOD	5000	A 18.37	A 23.95	A 77	28.00	A 66
SIERRAVILLE	5000	24.61	24.61	100	26.24	94
LA PORTE	5000	—	66.74	—	71.90	—
MINERAL	4935	41.97	55.33	76	59.30	71
PORTOLA	4832	A 14.40	A 15.41	A 93	17.59	A 82
INSKIP	4808	63.06	77.58	81	82.37	77
PRATTVILLE	4600	A 32.66	A 34.21	A 96	38.92	A 84
CANYON DAM	4570	35.71	36.00	99	38.42	93
CHESTER	4550	28.45	30.86	92	33.29	85
DOYLE	4300	8.84	11.42	77	12.72	69
VERAMONT	3500	A 28.48	A 32.44	A 88	36.88	A 77
QUINCY	3409	36.01	37.78	95	40.58	89
WEST BRANCH	3216	73.15	71.90	102	76.47	96
CARIBOU	3000	A 35.57	A 37.74	A 94	43.64	A 82
SMITHS POINT	2500	A 53.81	A 55.85	A 95	63.69	A 84
LAKE WILENOR	2000	57.94	—	—	—	—
STORRIE	1760	A 58.85	A 56.63	A 104	64.83	A 91
LAS PLUMAS	506	55.50	49.55	112	52.58	106

1 CERTAIN OF THE STATIONS ARE NOT ACTUALLY IN THE BASIN SHOWN BUT ARE CLOSELY ADJACENT. STATIONS COMMON TO MORE THAN ONE BASIN ARE LISTED UNDER EACH BASIN.

2 THESE ARE COMPUTED 46-YEAR NORMALS FOR THE PERIOD 1890-1935 INCLUSIVE. WHERE THE PERIODS OF RECORD ARE LESS THAN 46 YEARS, THE NORMALS HAVE BEEN COMPUTED BY COMPARISON WITH THE RECORDS OF STATIONS FOR WHICH THE ACTUAL 46-YEAR DATA ARE COMPLETE. THIS GIVES ALL NORMALS BASED UPON THE SAME PERIOD OF YEARS AND COMPARABLE.

A RECORD TO APRIL 1ST ONLY.

TABLE 2 -- PRECIPITATION DATA - MAY 1, 1936 (CONTINUED)

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1935 INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PER CENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	PRECIPITATION TO DATE IN PER CENT OF SEASONAL NORMAL (JULY TO JUNE)
YUBA RIVER						
SODA SPRINGS	6871	47.40	43.92	108	46.40	102
BOWMAN DAM	5347	79.18	64.36	123	69.53	114
LA PORTE	5000	—	66.74	—	71.90	—
DRUM FOREBAY	4653	A 56.08	A 48.79	A 105	57.86	A 97
LAKE SPAULDING	4600	68.93	62.45	111	67.12	103
SCALES	4300	69.31	—	—	—	—
DEER CREEK	3700	68.93	65.57	105	69.86	99
CAMPTONVILLE	3500	60.93	64.50	94	68.55	89
NORTH BLOOMFIELD	3214	52.36	48.37	108	51.77	101
DOWNIEVILLE	3150	60.74	60.77	100	64.84	94
NEVADA CITY	2570	58.49	46.47	126	49.27	119
DOBBINS	1650	40.68	40.22	101	42.94	95
CHUTE CAMP	1500	66.43	53.14	125	56.71	117
TRUCKEE AND TAHOE BASINS						
TWIN LAKES	7970	50.65	41.94	121	45.78	111
SODA SPRINGS	6871	47.40	43.92	108	46.40	102
TAHOE	6230	32.44	30.83	105	32.84	99
TRUCKEE	6200	32.55	24.09	135	25.26	128
AMERICAN RIVER						
TWIN LAKES	7970	50.65	41.94	121	45.78	111
SODA SPRINGS	6871	47.40	43.92	108	46.40	102
BLUE CANYON	4965	53.71	55.73	96	59.87	90
DRUM FOREBAY	4653	A 56.08	A 48.79	A 105	57.86	A 97
VOLCANOVILLE	3000	55.72	—	—	—	—
COLFAX	2420	54.69	44.53	123	47.39	115
PLACERVILLE	1925	47.28	37.86	125	40.15	118
CARSON RIVER						
TWIN LAKES	7970	50.65	41.94	121	45.78	111
MARKLEEVILLE	5250	—	—	—	—	—
MOKELUMNE RIVER						
TWIN LAKES	7970	50.65	41.94	121	45.78	111
LAKE ALPINE	7500	57.86	—	—	—	—
SALT SPRINGS RESERVOIR	3660	48.01	43.04	112	46.66	103
TIGER CREEK	2400	56.22	44.51	127	47.38	119
WEST POINT	2326	46.74	37.88	123	40.28	116
ELEOTRA	699	36.11	30.31	119	31.96	113

1, 2, A, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

TABLE 2 – PRECIPITATION DATA – MAY 1, 1936 (CONTINUED)

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1935, INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PER CENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	PRECIPITATION TO DATE IN PER CENT OF SEASONAL NORMAL (JULY TO JUNE)
STANISLAUS RIVER						
LAKE ALPINE	7500	57.86	—	—	—	—
STRAWBERRY LAKE	5620	A 35.72	A 29.69	A 119	37.58	A 95
SPRING GAP	4875	A 47.29	A 36.56	A 130	43.45	A 109
CALAVERAS BIG TREES	4700	56.75	—	—	—	—
SAND BAR	2700	A 48.21	A 35.71	A 137	41.49	A 116
WALKER RIVER						
LUNDY LAKE	7760	17.08	13.46	127	15.00	114
BRIDGEPORT	6473	A 11.74	—	—	—	—
SHIELDS RANCH	5300	A 11.08	A 9.84	A 113	12.32	A 90
TUOLUMNE RIVER						
STRAWBERRY LAKE	5620	A 35.72	A 29.69	A 119	37.58	A 95
SPRING GAP	4875	A 47.29	A 36.56	A 130	43.45	A 109
LAKE ELEANOR	4650	A 42.85	A 36.27	A 118	43.04	A 99
HETCH HETCHY	3530	34.98	32.30	108	35.51	99
GROVELAND	2828	41.44	35.83	116	37.67	110
SONORA	1825	39.36	30.63	128	32.41	121
MERCED RIVER						
WAWONA	4096	A 38.95	A 43.10	A 90	49.81	A 78
YOSEMITE	3960	39.06	32.56	120	35.30	111
DUDLEY'S	3000	44.39	38.09	116	40.12	110
MARIPOSA	1932	37.45	27.31	137	28.85	130
MERCED FALLS	351	18.56	15.76	118	16.66	111
MONO BASIN						
ELLERY LAKE	9600	A 35.09	A 34.51	A 102	41.70	A 84
GEM LAKE	9120	A 21.90	A 28.02	A 78	31.85	A 69
LUNDY LAKE	7760	17.08	13.46	127	15.00	114
LEEVINING HEADQUARTERS	7500		DATA NOT COMPLETE			
UPPER SAN JOAQUIN RIVER						
HUNTINGTON LAKE	7000	33.05	27.63	120	30.17	110
BIG CREEK	4900	29.69	28.97	102	31.26	95
CRANE VALLEY	3500	43.27	37.30	116	39.70	109
NORTH FORK	3000	35.65	30.56	117	32.60	109
AUBERRY	2050	27.90	22.95	122	24.42	114

1, 2, A, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

TABLE 2 – PRECIPITATION DATA – MAY 1, 1936 (CONTINUED)

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1935, INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PER CENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	PRECIPITATION TO DATE IN PER CENT OF SEASONAL NORMAL (JULY TO JUNE)
OWENS BASIN						
SOUTH LAKE	9620	23.46	17.68	133	19.20	122
LAKE SEBRINA	9100	19.76	17.03	116	18.68	106
BISHOP CREEK	8390	16.57	13.74	120	14.97	111
BIRCH CREEK	8000	A 13.29	A 12.06	A 110	13.93	A 95
INTAKE #2 BISHOP CREEK	8000	A 11.89	A 10.55	A 113	12.52	A 95
CROOKED CREEK	6700	12.68	9.46	134	10.26	124
BIG PINE POWER PLANT #3	5400	8.36	7.62	110	7.87	106
INDEPENDENCE	3957	A 6.15	A 3.92	A 157	4.35	A 141
L.A. AQUEDUCT AT INTAKE	3880	5.49	2.86	192	3.10	177
KINGS RIVER						
GENERAL GRANT PARK	6775	44.42	37.62	118	41.21	108
CLIFF CAMP	6150	A 38.95	A 35.09	A 111	39.50	A 99
BALCH CAMP	1300	30.27	23.74	128	25.85	117
PIEDRA	500	18.48	15.89	116	16.70	111
KAWEAH RIVER						
GENERAL GRANT PARK	6775	44.42	37.62	118	41.21	108
GIANT FOREST	6360	49.29	38.05	130	41.44	119
ASH MOUNTAIN	1600	32.06	23.72	135	25.47	126
THREE RIVERS	870	24.55	18.00	136	19.25	128
KERN RIVER						
SPRINGVILLE (NEAR)	4050	44.14	31.17	142	33.51	132
HOT SPRINGS	3300	A 24.00	A 19.80	A 121	23.56	A 102
GLENNVILLE	3300	22.42	18.74	119	20.12	112
KERNVILLE	2600	12.62	9.27	136	9.66	131
SANTA ANA BASIN						
KELLY'S KAMP	8300	32.63	—	—	—	—
TABLE MOUNTAIN	7500	11.04	13.67	81	14.24	78
BIG PINES CAMP	6860	20.31	22.15	92	23.39	87
BIG BEAR LAKE DAM	6800	A 25.78	A 32.54	A 79	36.18	A 71
BIG BEAR LAKE	6800	A 19.28	—	—	—	—
RUNNING SPRINGS	6230	A 34.86	—	—	—	—
SQUIRREL INN	5700	31.58	38.28	82	40.46	78
SEVEN OAKS	5000	A 22.21	A 24.33	A 91	27.04	A 82
CAMP BALDY	4300	28.35	29.56	96	30.89	92
BEAUMONT (NEAR)	3045	20.43	20.88	98	22.27	92
MILL CREEK #2	2950	23.49	20.89	113	22.43	105
SANTA ANA RIVER	2850	28.17	25.74	109	26.43	106
BEAUMONT	2558	15.52	17.16	91	18.28	85
LYTLE CREEK	2250	A 26.72	A 29.56	90	33.57	80

1, 2, A, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

TABLE 2 – PRECIPITATION DATA – MAY 1, 1936 (CONTINUED)

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1935, INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PER CENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	PRECIPITATION TO DATE IN PER CENT OF SEASONAL NORMAL (JULY TO JUNE)
SAN GABRIEL BASIN						
KELLEY'S KAMP	8300	32.63	—	—	—	—
TABLE MOUNTAIN	7500	11.04	13.67	81	14.24	78
BIG PINES CAMP	6860	20.31	22.15	92	23.39	87
MOUNT WILSON	5850	28.53	29.77	96	31.20	92
CRYSTAL LAKE – EAST	5740	26.64	—	—	—	—
LITTLE CIENEGA	4650	25.00	32.43	77	34.67	72
MT. LOWE FOX FARM	4500	A 29.45	—	—	—	—
OPID'S CAMP	4480	33.06	37.48	88	39.18	84
MT. LOWE	4420	27.74	28.55	97	30.35	92
CAMP BALDY	4300	28.35	29.56	96	30.89	92
STURTEVANT CAMP	3375	A 35.93	A 28.26	A 127	34.07	A 105
COLDBROOK CAMP	3300	21.43	26.69	80	28.55	75
TANBARK FLATS	2700	26.92	29.96	90	30.99	87
HENNINGER FLATS	2650	24.29	—	—	—	—
WINTER CREEK	2580	39.16	39.03	100	41.61	94
HONOR CAMP #4	2518	A 18.57	—	—	—	—
WOLFSKILL FALLS	2400	23.06	28.96	80	30.10	77
SAWPIT CANYON	2000	27.61	30.76	90	32.60	85
BIG SANTA ANITA RGR. STS.	1950	29.78	31.27	95	33.09	90
SAN GABRIEL FORKS RGR. STA.	1600	25.64	—	—	—	—
MONROVIA FALLS	1450	27.51	30.65	90	32.42	85
BIG SANTA ANITA DAM	1400	20.63	26.52	78	28.06	74
SAN DIMAS DAM	1350	19.98	25.43	79	26.40	76
EDISON INTAKE	1275	25.62	30.31	84	31.38	82
DALTON NO. 1	800	20.44	18.91	108	20.10	102
LOS ANGELES RIVER						
SISTER ELSIE PEAK	5040	A 20.82	—	—	—	—
MT. LOWE FOX FARM	4500	A 29.45	—	—	—	—
OPIDS CAMP	4480	33.06	37.48	88	39.18	84
MT. LOWE	4420	27.74	28.55	97	30.35	92
ALDER CREEK	4050	13.29	18.93	70	20.04	66
HAINES CANYON – UPPER	3450	21.56	20.74	75	30.66	70
CLEAR CREEK	3300	27.96	37.13	75	38.57	72
SWITZERS CAMP	3000	24.31	33.06	74	34.82	70
COLBY RANCH	2950	19.38	30.56	63	31.68	61
BRIGGS TERRACE	2310	21.56	—	—	—	—
LOWER HAINES– U.S.G.S.	2250	17.18	22.20	77	23.41	73
LA CRESCENTA	2069	21.98	24.17	91	25.47	86
BIG TUJUNGA DAM	2050	23.66	—	—	—	—
DILLONS RANCH	2050	22.61	—	—	—	—
LITTLE TUJUNGA	1700	A 17.51	—	—	—	—
ARROYO SECO RANGER STA.	1530	A 18.40	A 20.26	A 91	23.43	A 79

1, 2, A SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

THE FOLLOWING TWO PAGES CONTAIN THE RESULTS
OF ALL APRIL FIRST SNOW SURVEYS IN THE BASINS
OF THE UPPER SAN JOAQUIN AND KINGS RIVERS,
TOGETHER WITH THE FORECASTS OF THE 1936 APRIL-JULY
RUN-OFF OF THESE TWO STREAMS

CALIFORNIA COOPERATIVE SNOW SURVEYS

STREAM FLOW FORECASTS - APRIL 1, 1936

UPPER SAN JOAQUIN AND KINGS RIVER BASINS

Stream Basin and Drainage Area or Stream Gaging Station	Precipitation To April 1st in per cent of Normal	Snow Pack 1 In per cent of 1935 Pack 2	Snow Pack 1 In per cent of Normal 3	April-July Stream Flow -Acre-feet 4 46-Year Normal (1890-1935)	April-July Stream Flow -Acre-feet 4 Estimated 1936 Flow
San Joaquin River Basin	118	120	101	-----	-----
San Joaquin River above Big Creek	---	120	101	1,183,000	1,195,000
San Joaquin River near Friant	---	120	101	1,379,000	1,393,000
Kings River Basin	121	136	100	-----	-----
North Fork above Mouth	---	136	99	459,000	454,000
Kings River near Hume	---	140	101	818,000	826,000
Kings River at Piedra	---	136	100	1,352,000	1,352,000

1 Referred to inches of water content.

2 The April-July run-off in 1935 was greater than indicated by the April 1st snow pack due to the abnormal storms and heavy precipitation during April.

3 Few snow courses have a period of record of sufficient length to develop true normals but where the period warrants it, tentative normals have been set up by comparison with long-time stream flow records. Due to the large percentage of short record courses and to the present limited number and distribution of all courses the figures in this column may not be necessarily representative of the entire stream basin.

4 Natural flow (measured flow corrected for regulation).

CALIFORNIA COOPERATIVE SNOW SURVEYS

SNOW SURVEY DATA FOR UPPER SAN JOAQUIN RIVER AND KINGS RIVER – APRIL 1936

1 DRAINAGE BASINS AND SNOW COURSES	ELEVATION IN FEET	DATE OF SURVEY	DEPTH OF SNOW INCHES	DENSITY PER CENT	WATER CONTENT INCHES	CORRESPONDING WATER CONTENT LAST YEAR INCHES	2 NORMAL SEASONAL WATER CONTENT (ENTIRE SEASON) INCHES	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT TO SURVEY DATE	CORRESPONDING PERCENTAGE OF NORMAL SEASONAL WATER CONTENT LAST YEAR
UPPER SAN JOAQUIN RIVER							3		
BLACKCAP BASIN	10800	4-12-36	99.0	44.8	44.3	36.4	42.2	105	86
UPPER BURNT CORRAL MDW.	9700	4-13-36	97.0	45.7	44.3	30.2	38.8	114	78
MAMMOTH PASS	9500	4-7-36	131.1	37.5	49.1	40.7	48.1	102	85
AGNEW PASS	9450	3-29-36	78.7	43.9	34.6	30.2	38.3	90	79
KAISER PASS MEADOWS	9200	3-22-36	96.1	39.5	38.0	34.1	—	—	—
CHILKOOT LAKE	7450	4-8-36	112.7	44.9	50.6	41.7	43.0	118	97
CHILKOOT MEADOWS	7250	4-8-36	106.4	47.7	50.8	43.0	44.4	114	97
FLORENCE LAKE	7200	3-31-36	41.0	29.4	12.0	7.6	—	—	—
HUNTINGTON LAKE QUARRY	7000	3-31-36	79.4	34.9	17.8	23.6	—	—	—
KINGS RIVER							4		
BLACKCAP BASIN	10800	4-12-36	99.0	44.8	44.3	36.4	42.7	104	85
COPPER CREEK SUMMIT	10200	4-2-36	110.9	39.3	43.6	NOT MEASURED	—	—	—
UPPER BURNT CORRAL MDW.	9700	4-13-36	97.0	45.7	44.3	30.2	38.9	114	78
BEARD MEADOW	9300	4-11-36	95.8	45.4	43.5	26.8	38.8	112	69
ROWELL MEADOW	9200	3-18-36	75.2	43.1	32.4	26.4	38.4	84	69
WOOD CHUCK MEADOW	9100	4-10-36	97.6	44.9	43.8	25.3	39.3	112	64
SWAMP MEADOW	9000	4-14-36	101.6	47.6	48.4	37.0	49.9	97	74
HELMS MEADOW	8500	4-14-36	51.8	48.8	25.3	22.4	33.2	76	67
JUNCTION MEADOW	8500	4-6-36	74.4	36.7	27.2	NOT MEASURED	—	—	—
LONG MEADOW	8500	4-13-36	80.6	47.5	38.3	23.5	35.1	109	67
MORAINE MEADOW	8400	3-16-36	45.6	48.3	22.0	12.5	20.1	109	62
STATUM MEADOW	8300	4-9-36	97.3	45.0	43.8	29.1	43.0	102	68
POST CORRAL MEADOW	8200	4-13-36	71.0	53.5	38.0	23.7	34.8	109	68
SAND MEADOW	8050	4-13-36	80.0	49.5	39.6	25.7	35.5	112	72
BIG MEADOW	7660	4-9-36	83.5	46.5	38.8	24.0	33.8	115	71
HORSE CORRAL MEADOW	7600	3-19-36	45.9	52.2	24.0	15.6	24.2	99	64
KENNEDY MEADOW	7600	3-13-36	57.3	41.6	23.9	18.5	24.7	97	75
BEAR RIDGE	7400	4-15-36	85.0	39.9	33.9	30.8	36.8	92	84
FRED MEADOW	7200	4-15-36	81.0	42.0	34.0	26.1	29.4	116	89
GENERAL GRANT PARK	6660	4-10-36	53.5	41.5	22.2	16.7	22.1	100	76
CLIFF CAMP	6300	4-9-36	45.8	42.0	19.3	14.5	22.9	84	63
DINKEY SAND FLAT	5500	4-14-36	25.0	50.0	12.5	20.4	23.1	54	88

27.8

1 DATA FOR COURSES COMMON TO MORE THAN ONE BASIN ARE LISTED UNDER EACH BASIN.

2 THE NORMALS IN THIS COLUMN HAVE BEEN DETERMINED BY COMPARING RECORDED SNOW SURVEY DATA WITH LONG-TIME STREAM FLOW RECORDS. SPECIFIC NOTES FOR EACH BASIN INDICATE STREAM FLOW STATION AND PERIOD USED. WHERE A "CREST" SNOW COURSE IS COMMON TO TWO BASINS THE NORMAL COMPUTED BY COMPARISON WITH STREAM FLOW IN ONE BASIN MAY DIFFER FROM THAT SIMILARLY COMPUTED FOR THE OTHER. UNTIL SUCH TIME AS THE TRUE NORMAL CAN BE DETERMINED FROM AN ACTUAL LONG-TIME RECORD OF SNOW SURVEYS, IT IS REQUIRED THAT DIFFERENT NORMALS BE USED FOR SUCH A COURSE ACCORDING TO THE BASIN IN WHICH IT IS GROUPED.

3 NORMALS BY COMPARISON WITH NATURAL FLOW OF SAN JOAQUIN RIVER ABOVE MOUTH OF BIG CREEK 1890-1935.

4 NORMALS FOR BEAR RIDGE, FRED MEADOW AND DINKEY SAND FLAT BY COMPARISON WITH NATURAL FLOW OF DINKEY CREEK AT MOUTH; NORMALS FOR ROWELL MEADOW, MORAINE MEADOW, BIG MEADOW, HORSE CORRAL MEADOW, KENNEDY MEADOW AND GENERAL GRANT PARK, BY COMPARISON WITH NATURAL FLOW OF KINGS RIVER ABOVE HUME, ALL OTHER NORMALS BY COMPARISON WITH NATURAL FLOW OF NORTH FORK OF KINGS RIVER ABOVE DINKEY CREEK, 1890-1935.