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

MONTHLY BULLETIN OF SNOW SURVEY AND PRECIPITATION DATA AND SEASONAL FORECAST

April 1, 1931

This issue of the Division of Water Resources' monthly bulletin presents the results of the main snow surveys for the season, covering some 160 snow courses throughout the Sierra; furnishes all available data to April 1st from the precipitation stations of the U. S. Weather Bureau, State, Districts, and Public Utilities in the mountainous portions of the various stream basins; and gives, based upon these data, the seasonal forecast for 1931 water supply.

Forecasts of stream flow are made at this time as the end of March is normally the period when the major storms have occurred and melting of the snow has barely commenced. Snow survey data at this time may therefore be taken as indicative of the April-July stream flow with later modification of estimates in accordance with subsequent storms, temperature and conditions.

The snow and precipitation data are summarized in Table I and presented in detail in Tables II and III; Table IV gives for general information the reported storage in a few of the principal reservoirs; and preceding the Tables will be found the detail of the seasonal forecasts of 1931 stream flow based upon both snow and precipitation data.

A general summarization of all data shows:

(1) The water content of the snow on April 1st of this year in per cent of the water content on April 1, 1930 varying from about 30 per cent for certain Owens Valley courses to about 70 per cent at courses in Merced basin with a general average throughout the Sierra of about 55 per cent.

(2) For those few areas where snow surveys have been made for a sufficient number of years to permit the development of "normals", a water content of the snow in per cent of normal to April 1st almost as low as 10 per cent for one or two Owens Valley courses, nearly up to 50 per cent for Yuba basin courses and a general average of about 40 per cent.

(3) The average precipitation to April 1st in per cent of normal to April 1st varying throughout the Sierra from 42 per cent for one station in Owens Valley to about 75 per cent for stations in Stanislaus basin with a general average of about 60 per cent, and an average for Los Angeles, San Gabriel and Santa Ana Basins of 60 to 65 per cent.

(4) The estimated 1931 seasonal stream flow in per cent of the 40 year mean (1889-1929) varying from 25 per cent for the Kings basin to 40 per cent for the Tuolumne basin with a combined figure of 33 per cent for the entire Sacramento and San Joaquin basins.

The data and estimates indicate for the Great Central Valley a water supply only better than the record low of 1924 by a small margin. It is to be anticipated, therefore, barring storms of most unusual magnitude and duration within the next few weeks, that conditions of minimum stream flow with resulting salinity encroachment in the case of the Sacramento San Joaquin Delta, may approach those of 1924.

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FORECAST OF STREAM FLOW

April 1, 1931

FROM SNOW SURVEYS

These forecasts are made for those few basins or partial basins where the snow surveys have been conducted, according to the standard methods adopted, for a sufficient number of years to make it possible. (State of California Surveys began in 1930).

YUBA BASIN

Area tributary to South Fork at Langs Crossing (Lake Spaulding)

Water content of snow in weighted per cent of normal for area (using Lake Spaulding, Cisco, Furnace Flat, Lake Fordyce, Soda Springs, Meadow Lake, Red Mountain, Sawmill Flat, Lake Sterling, Summit and Webber Peak snow courses) - 38%

Normal April-July run-off of South Fork at Langs Crossing 249,000A.F.

Estimated 1931 April-July run-off 249,000 x 0.38 - - - - 95,000A.F.

Area tributary to Bowman Lake

Water content of snow in weighted per cent of normal for area above Middle Yuba at Milton and mouth of Jackson and Canyon Creeks (using Bowman Lake, Findley Peak, English Mountain, Meadow Lake and Webber Peak snow courses) 37%

Normal April-July run-off for combined Jackson and Canyon Creeks and Middle Yuba at Milton (Above Milton-Bowman Tunnel diversion) - 104,000A.F.

Estimated 1931 April-July run-off 104,000 x 0.37 - - - - - 38,000A.F.

TRUCKEE, TAHOE, CARSON AND WALKER BASINS

The forecasts for these Eastern Slope basins are compiled by the Forecast Committee of the Nevada Cooperative Surveys and have not been completed with this issuance of the bulletin.

The surveys of the California snow courses in these basins, (made in cooperation with the Nevada Committee) have been completed, however, and the results are given in Tables I and II. The forecasts will be completed within the next few days and will be mailed upon request.

FROM PRECIPITATION AND SNOW DATA

All available precipitation and snow data for the various basins have been analyzed to derive an estimate of the seasonal (October to September) stream flow in per cent of the 40 year average, 1889-1929, and these estimates are compared to the similar percentages for the actual seasonal percentages for the actual seasonal stream flow of 1924 (a record dry year) as follows:

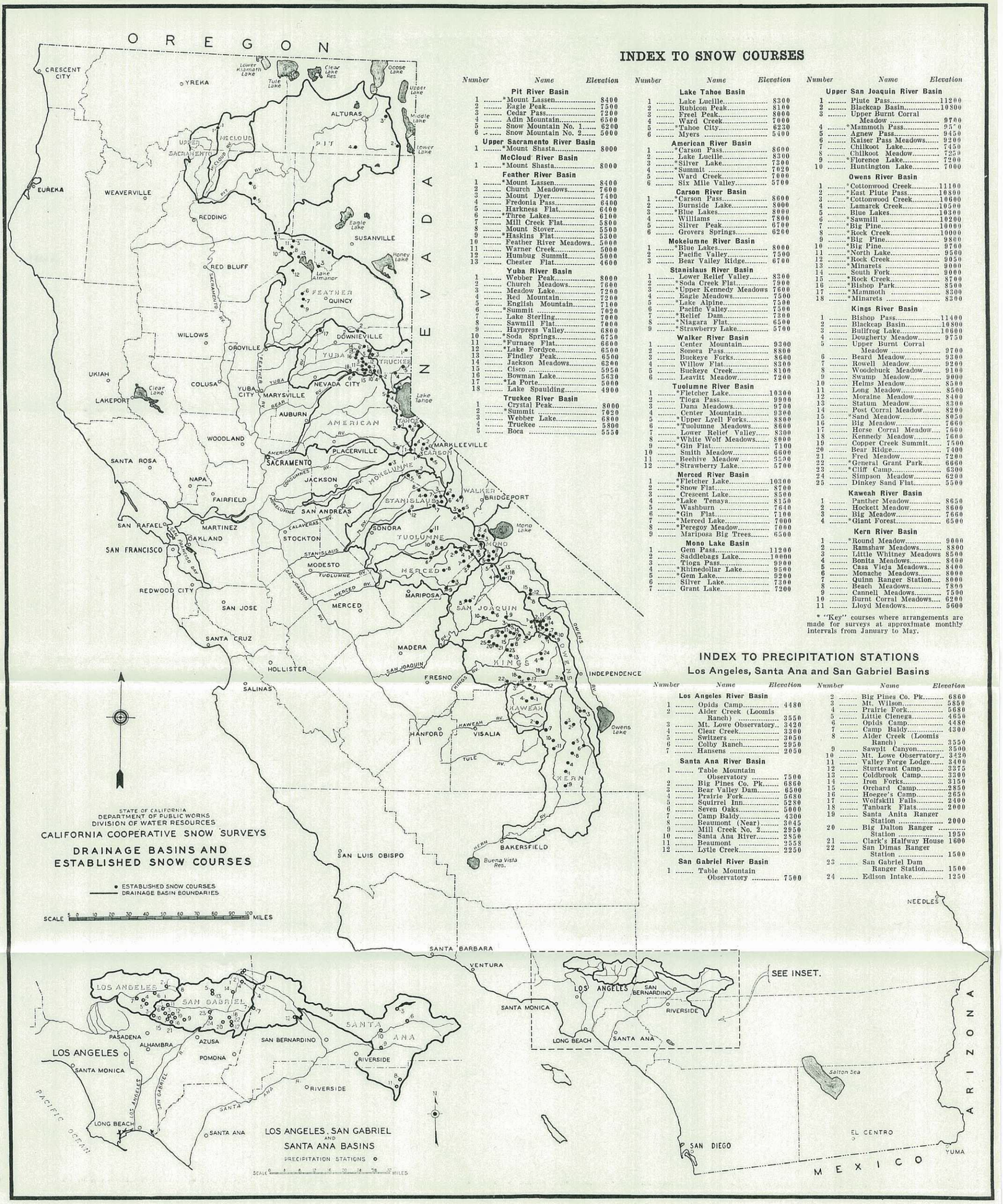
Stream	Seasonal Stream Flow in Per cent of 40 year mean (1889-1929)	
	Estimated 1931	Actual 1924
Sacramento River at Red Bluff	35	36
Feather River at Oroville	27	25
Yuba River at Smartsville	35	23
American River at Fairoaks	30	18
Sacramento River at Sacto. (Including tributaries)	33	30
Mokelumne River at Clements	32	22
Stanislaus River at Knights Ferry	35	19
Tuolumne River at Jacksonville	40	28
Merced River at Exchequer	38	23
San Joaquin River at Friant	30	22
San Joaquin River near Vernalis (Incl.tributaries)	36	24
Combined Sacramento and San Joaquin R.(Incl.Trib's.)	33	28
Kings River at Piedra	25	21
Kaweah River at Three Rivers	28	23
Kern River near Bakersfield	32	28
Combined Kings, Kaweah, and Kern Rivers	28	23

Based upon past experience these estimated seasonal stream flow percentages are used to predict the minimum stream flow to be expected at certain points and these estimated minimum flows are compared with the actual minimum flows of 1924, as follows: (The estimates assume a 1931 rice area approximately 10 per cent greater than that of 1930 - preliminary data)

Stream	Minimum Flow in Second-feet		
	Estimated: 1931	Actual 1924 Flow	Date
Sacramento River at Red Bluff	2800	2810	July 6
Sacramento River at Colusa	1100	1470	July 21
Sacramento River at Sacramento	1000	705	July 17
Feather River at Nicolaus	50	0	Aug. 2
American River at Sacramento	40	0	Aug. 1
San Joaquin River near Vernalis	500	391	July 22
Combined Sacto. & San Joaquin R.Flow to Delta: Minimum 10 day flow	1600	1280	Jul.10 to: 19, Incl.

Based upon the relation established by past records, the estimated seasonal stream flow percentages and minimum flows are applied to predict the maximum salinity to be expected in the late Summer at points in the Sacramento-San Joaquin Delta and comparison is made with the 1924 salinity records, as follows:

Delta Stations	Maximum Salinity - (High Tide) in Parts of Chlorine per 100,000 parts of water		
	Estimated 1931	Actual 1924	
		Salinity	Date
O and A Ferry	1250	1345	August 28
Collinsville	1050	1150	August 16
Antioch	930	1080	August 20
Emmaton	670	802	August 6
Jersey	580	708	August 30
Three Mile Slough	530	692	August 30
Rio Vista	400	608	August 12



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

CALIFORNIA COOPERATIVE SNOW SURVEYS

DRAINAGE BASINS AND ESTABLISHED SNOW COURSES

• ESTABLISHED SNOW COURSES
— DRAINAGE BASIN BOUNDARIES

SCALE 0 10 20 30 40 50 60 70 80 90 100 MILES

LOS ANGELES, SAN GABRIEL AND SANTA ANA BASINS
PRECIPITATION STATIONS
SCALE 0 3 6 9 12 15 18 21 24 27 30 MILES

INDEX TO SNOW COURSES

Number	Name	Elevation
	Pit River Basin	
1	*Mount Lassen	8400
2	Eagle Peak	7500
3	Cedar Pass	7200
4	Adin Mountain	6500
5	Snow Mountain No. 1	6200
6	Snow Mountain No. 2	5000
	Upper Sacramento River Basin	
1	*Mount Shasta	8000
	McCloud River Basin	
1	*Mount Shasta	8000
	Feather River Basin	
1	*Mount Lassen	8400
2	Church Meadows	7600
3	Mount Dyer	7400
4	Fredonia Pass	6400
5	Harkness Flat	6400
6	*Three Lakes	6100
7	Mill Creek Flat	5800
8	Mount Stover	5500
9	*Haskins Flat	5300
10	Feather River Meadows	5000
11	Warner Creek	5000
12	Humbug Summit	5000
13	Chester Flat	4600
	Yuba River Basin	
1	Webber Peak	8000
2	Church Meadows	7600
3	Meadow Lake	7200
4	Red Mountain	7200
5	English Mountain	7100
6	*Summit	7020
7	Lake Sterling	7000
8	Sawmill Flat	7000
9	Haypress Valley	6800
10	*Soda Springs	6750
11	*Furnace Flat	6600
12	*Lake Fordyce	6500
13	Findley Peak	6500
14	Jackson Meadows	6200
15	Cisco	5950
16	Bowman Lake	5630
17	*La Porte	5000
18	Lake Spaulding	4900
	Truckee River Basin	
1	Crystal Peak	8000
2	*Summit	7020
3	Webber Lake	6800
4	Truckee	5800
5	Boca	5550

Number	Name	Elevation
	Lake Tahoe Basin	
1	Lake Lucille	8300
2	Rubicon Peak	8100
3	Freel Peak	8000
4	Ward Creek	7000
5	*Tahoe City	6230
6	Myers	5400
	American River Basin	
1	*Carson Pass	8600
2	Lake Lucille	8300
3	*Silver Lake	7200
4	*Summit	7020
5	Ward Creek	7000
6	Six Mile Valley	5700
	Carson River Basin	
1	*Carson Pass	8600
2	Burnside Lake	8000
3	*Blue Lakes	8000
4	*Williams	7800
5	Silver Peak	6700
6	Grovers Springs	6200
	Mokelumne River Basin	
1	*Blue Lakes	8000
2	Pacific Valley	7500
3	Bear Valley Ridge	6700
	Stanislaus River Basin	
1	Lower Relief Valley	8300
2	*Soda Creek Flat	7900
3	*Upper Kennedy Meadows	7600
4	Eagle Meadows	7500
5	*Lake Alpine	7500
6	Pacific Valley	7500
7	*Relief Dam	7300
8	*Niagara Flat	6500
9	*Strawberry Lake	5700
	Walker River Basin	
1	Center Mountain	9300
2	Sonora Pass	8800
3	Buckeye Forks	8600
4	Willow Flat	8300
5	Buckeye Creek	8100
6	Leavitt Meadow	7200
	Tuolumne River Basin	
1	*Fletcher Lake	10300
2	Tioga Pass	9900
3	Dana Meadows	9700
4	Center Mountain	9300
5	*Upper Lyell Forks	8800
6	*Tuolumne Meadows	8600
7	Lower Relief Valley	8300
8	*White Wolf Meadows	8000
9	*Gin Flat	7100
10	Smith Meadow	6600
11	Beehive Meadow	5550
12	*Strawberry Lake	5700
	Merced River Basin	
1	*Fletcher Lake	10300
2	*Snow Flat	8700
3	Crescent Lake	8500
4	*Lake Tenaya	8150
5	Washburn	7640
6	*Gin Flat	7100
7	*Merced Lake	7000
8	*Peregoy Meadow	7000
9	Mariposa Big Trees	6500
	Mono Lake Basin	
1	Gem Pass	11200
2	Saddlebags Lake	10000
3	Tioga Pass	9900
4	*Rhinedollar Lake	9500
5	*Gem Lake	9200
6	Silver Lake	7300
7	Grant Lake	7200

Number	Name	Elevation
	Upper San Joaquin River Basin	
1	Piute Pass	11200
2	Blackcap Basin	10800
3	Upper Burnt Corral Meadow	9700
4	*Mammoth Pass	9570
5	Agnew Pass	9450
6	Kaiser Pass Meadows	9200
7	Chilkoot Lake	7450
8	Chilkoot Meadow	7250
9	*Florence Lake	7200
10	Huntington Lake	7000
	Owens River Basin	
1	*Cottonwood Creek	11100
2	*East Piute Pass	10800
3	*Cottonwood Creek	10600
4	Lamarck Creek	10500
5	Blue Lakes	10300
6	*Sawmill	10200
7	*Big Pine	10000
8	*Rock Creek	10000
9	*Big Pine	9800
10	*Big Pine	9700
11	*North Lake	9500
12	*Rock Creek	9050
13	*Minarets	9000
14	South Fork	9000
15	*Rock Creek	8700
16	*Bishop Park	8500
17	*Mammoth	8300
18	*Minarets	8300
	Kings River Basin	
1	Bishop Pass	11400
2	Blackcap Basin	10800
3	Bullfrog Lake	10600
4	Dougherty Meadow	9750
5	Upper Burnt Corral Meadow	9700
6	Beard Meadow	9300
7	Rowell Meadow	9200
8	Woodchuck Meadow	9100
9	Swamp Meadow	9000
10	Helms Meadow	8500
11	Long Meadow	8500
12	Moraine Meadow	8400
13	Statum Meadow	8300
14	Post Corral Meadow	8200
15	*Sand Meadow	8050
16	Big Meadow	7660
17	Horse Corral Meadow	7600
18	Kennedy Meadow	7600
19	Copper Creek Summit	7500
20	Bear Ridge	7400
21	Fred Meadow	7200
22	*General Grant Park	6660
23	*Cliff Camp	6300
24	Simpson Meadow	6200
25	Dinkey Sand Flat	5500
	Kaweah River Basin	
1	Panther Meadow	8650
2	Hockett Meadow	8600
3	Big Meadow	7660
4	*Giant Forest	6500
	Kern River Basin	
1	*Round Meadow	9000
2	Ramshaw Meadows	8800
3	Little Whitney Meadows	8500
4	Bonita Meadows	8400
5	Casa Vieja Meadows	8000
6	Monache Meadows	8000
7	Quinn Ranger Station	8000
8	Beach Meadows	7800
9	Cannell Meadows	7500
10	Burnt Corral Meadows	6200
11	Lloyd Meadows	5600

* "Key" courses where arrangements are made for surveys at approximate monthly intervals from January to May.

INDEX TO PRECIPITATION STATIONS
Los Angeles, Santa Ana and San Gabriel Basins

Number	Name	Elevation
	Los Angeles River Basin	
1	Opids Camp	4480
2	Alder Creek (Loomis Ranch)	3550
3	Mt. Lowe Observatory	3420
4	Clear Creek	3300
5	Switzers	3050
6	Colby Ranch	2950
7	Hansens	2050
	Santa Ana River Basin	
1	Table Mountain Observatory	7500
2	Big Pines Co. Pk	6860
3	Bear Valley Dam	6500
4	Prairie Fork	5680
5	Squirrel Inn	5280
6	Seven Oaks	5000
7	Camp Baldy	4300
8	Beaumont (Near)	3045
9	Mill Creek No. 2	2950
10	Santa Ana River	2850
11	Beaumont	2558
12	Lytle Creek	2250
	San Gabriel River Basin	
1	Table Mountain Observatory	7500
2	Big Pines Co. Pk	6860
3	Mt. Wilson	5850
4	Prairie Fork	5680
5	Little Clenega	4650
6	Opids Camp	4480
7	Camp Baldy	4300
8	Alder Creek (Loomis Ranch)	3550
9	Sawpit Canyon	3500
10	Mt. Lowe Observatory	3420
11	Valley Forge Lodge	3400
12	Sturtevant Camp	3375
13	Coldbrook Camp	3200
14	Iron Forks	3150
15	Orchard Camp	2850
16	Hoegee's Camp	2650
17	Wolfskill Falls	2400
18	Tanbark Flats	2000
19	Santa Anita Ranger Station	2000
20	Big Dalton Ranger Station	1950
21	Clark's Halfway House	1600
22	San Dimas Ranger Station	1500
23	San Gabriel Dam Ranger Station	1500
24	Edison Intake	1250

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REPORT OF SNOW SURVEY AND PRECIPITATION DATA
April 1, 1931
TABLE I - SUMMARY OF PRECIPITATION AND SNOW PACK

Stream Basin	PRECIPITATION: Average to April 1st in per cent of Normal: Per cent	PRECIPITATION: Remarks	SNOW PACK: Average Water Content in per cent of Normal *: Per cent	SNOW PACK: Remarks	Average Water Content in per cent of 1930 Content
Pit, McCloud and Upper Sacramento	62				57
Feather	54				34
Yuba	59		48		64
Truckee			37	8 courses varying from 18 to46	56
Tahoe			37	8 courses varying from 18 to49	62
American	58		36	5 courses varying from 22 to45	63
Carson			38		64
Mokelumne	61		48	Crest course at Blue Lks.only	62
Stanislaus	77				60
Walker			30	3 courses varying from 17 to40	60
Tuolumne	61		42	3 high elevation courses	62
Merced	57				73
Mono	55		36	4 high elevation courses	56
Upper San Joaquin	52		44	Mammoth Pass only	53
Owens	55				
Upper	69	Crooked Creek only	33		57
Rock Creek	69	Crooked Creek only	23	Crest course only	38
Bishop Creek	54		27	2 courses - 18 and 36	59
Big Pine Creek	65	Big Pine Power Plant No. 3 and L.A.Aqueduct at Intake)	14	3 courses	31
Cottonwood Creek	42	Cottonwood gates only	12	2 courses - 4 and 21	38
Kings	59				50
Kaweah	56				48
Kern	61				60
Los Angeles and San Gabriel	65				
Santa Ana	60				

* Average of snow courses for which normals have been developed - not necessarily representative of entire basin.

PROGRESS REPORT OF SNOW SURVEY AND PRECIPITATION DATA
To April 1, 1931

TABLE II - SNOW SURVEY DATA FOR ALL COURSES

1 Drainage Basins and Snow Courses	Elevation in feet	Date of Survey	Depth of Snow Inches	Density per Cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date	Percentage of Normal Seasonal Water Content This Date Last Year
PIT RIVER									
Mount Lassen	8400	4/1/31	96.7	44.4	43.0	64.0	*	*	*
Eagle Peak	7500	4/1/31	13.3	39.1	5.2	11.0	*	*	*
Cedar Pass	7200	3/31/31	22.1	37.6	8.3	13.0	*	*	*
Adin Mountain	6500	3/27/31	6.1	47.3	2.9	6.1	*	*	*
Snow Mountain No. 1	6200		Data not in				*	*	*
Snow Mountain No. 2	5000		Data not in			9.7	*	*	*
UPPER SACRAMENTO RIVER:									
Mount Shasta	8000	3/27/31	53.1	41.4	22.0	37.9	*	*	*
McCLOUD RIVER									
Mount Shasta	8000	3/27/31	53.1	41.4	22.0	37.9	*	*	*
FEATHER RIVER									
Mount Lassen	8400	4/1/31	96.7	44.4	43.0	64.0	*	*	*
Church Meadows	7600	3/29/31	44.0	42.1	18.5		*	*	*
Mount Dyer	7400		Data not in			18.4	*	*	*

* Record is of insufficient length to report a normal.

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.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per Cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date	Percentage of Normal Seasonal Water Content This Date: Last Year
FEATHER RIVER CONTINUED									
Fredonia Pass	6400		Data	not in		8.3	*	*	*
Harkness Flat	6400		Data	not in		18.7	*	*	*
Three Lakes	6100	3/30/31	12.8	32.0	4.1	30.9	*	*	*
Mill Creek Flat	5800	4/3/31	38.0	42.9	16.3	31.1	*	*	*
Mount Stover	5500		Data	not in			*	*	*
Haskins Flat	5300	3/31/31	4.3	46.5	2.0	14.4	*	*	*
Feather River Meadows	5000		Data	not in		16.8	*	*	*
Warner Creek	5000		Data	not in		10.3	*	*	*
Humbug Summit	5000		Data	not in		10.4	*	*	*
La Porte	5000	3/30/31	9.2	46.7	4.3	16.7	*	*	*
Chester Flat	4600		Data	not in		7.7	*	*	*
YUBA RIVER							3		
Webber Peak	8000	3/30/31	57.0	38.7	22.0	33.0	43.2	50.9	76.3
Church Meadow	7600	3/29/31	44.0	42.1	18.5		*	*	*
Meadow Lake	7200	3/27/31	69.1	45.5	31.4	40.5	54.6	57.6	74.1
Red Mountain	7200	3/26/31	54.5	45.7	24.9	34.9	49.5	50.3	70.5
English Mountain	7100	4/1/31	49.9	42.7	21.3	32.1	39.3	54.2	81.6
Summit	7020	3/23/31	44.2	40.3	17.8	24.4	41.0	43.4	59.5

*, 1, 2, See footnotes first page of this table.

3 Normals by comparison with natural flow at Langs Crossing on South Yuba, 1890-1930.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per Cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content To Date	Percentage of Normal Seasonal water Content This Date Last Year
YUBA RIVER - CONTINUED							3		
Lake Sterling	7000	3/26/31	67.4	44.9	30.3	42.4	55.6	54.5	76.4
Sawmill Flat	7000	3/26/31	59.6	48.0	28.6	37.6	53.2	53.7	70.6
Haypress Valley	6800	4/3/31	37.2	47.8	17.8	23.4	*	*	*
Soda Springs	6750	3/23/31	44.5	34.1	15.2	24.6	33.1	45.8	74.2
Furnace Flat	6600	3/25/31	55.3	45.9	25.4	34.6	49.4	51.4	70.0
Lake Fordyce	6500	3/26/31	47.4	41.8	19.8	30.6	43.6	45.4	70.2
Findley Peak	6500	4/2/31	21.4	44.4	9.5	16.8	24.5	38.8	68.5
Jackson Meadows	6300	4/2/31	27.8	40.3	11.2		*	*	*
Cisco	5950	3/29/31	Practically no snow on course			12.9	26.5		48.6
Bowman Lake	5630	4/4/31	Practically no snow on course			11.1	18.8		59.0
La Porte	5000	3/30/31	9.2	46.7	4.3	16.7	*	*	*
Lake Spaulding	4900	3/29/31	16.6	42.2	7.0	16.5	24.5	28.6	67.3
							4		
TRUCKEE RIVER									
Mt. Rose (In Nevada)	10800	3/29/31	27.1	34.8	9.3	25.2	29.2	31.8	86.3
Big Meadow (In Nevada)	8700	3/30/31	31.8	38.0	12.1	22.1	28.1	43.0	78.6
Crystal Peak	8000	3/31/31	32.6	32.0	10.4	21.1	24.7	42.1	85.5
Webber Peak	8000	3/30/31	57.0	38.7	22.0	33.0	54.0	40.7	61.1
Summit	7020	3/23/31	44.2	40.5	17.9	24.4	47.8	37.4	51.0
Ward Creek	7000	4/4/31	46.6	32.7	16.8	29.5	51.2	32.8	57.6
Webber Lake	6800	3/29/31	41.3	37.3	15.4	22.0	33.2	46.4	66.3
Truckee No. 2	6400	3/29/31	14.8	37.1	5.5	13.6	*	*	*
Tahoe City	6250	3/24/31	6.2	46.8	2.9	8.2	15.9	18.4	51.6

*, 1, 2, See footnotes first page of this table.

3, Normals by comparison with natural flow at LangsCrossing on South Yuba, 1890-1930.

4, Normals by comparison with flow of Truckee River at Iceland, 1904-1927. Computed by Nevada Forecast Committee.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per Cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date	Percentage of Normal Seasonal Water Content This Date Last Year
LAKE TAHOE BASIN							4		
Mt. Rose (In Nevada)	10800	3/29/31	27.1	34.8	9.3	25.2	29.2	31.8	86.3
Lake Lucille	8300	3/30/31	73.9	40.4	29.8	42.0	61.2	48.6	68.6
Rubicon Peak No. 1	8100	4/2/31	61.6	35.3	21.8	35.5	48.9	44.6	72.6
Hagan's Meadows (Freel Pk)	8000	3/28/31	22.6	38.3	8.6	11.2	21.2	40.6	52.8
Marlette Lake (Nevada)	8000	4/1/31	40.7	31.0	12.5	19.0	27.8	45.0	68.4
Daggetts Pass (Nevada)	7350	3/29/31	12.9	42.7	5.5	8.6	16.3	33.8	52.8
Freel Bench	7300	3/28/31	9.6	34.4	3.3	5.4			
Ward Creek	7000	4/4/31	46.6	32.7	16.8	29.5	51.2	32.8	57.6
Upper Truckee	6400	3/29/31	Practically no snow on course			0			
Tahoe City	6250	3/24/31	6.2	46.8	2.9	8.2	15.9	18.4	51.6
AMERICAN RIVER							5		
Carson Pass	8600	3/27/31	53.2	35.0	18.6	33.4	*	*	*
Lake Lucille	8300	3/30/31	73.9	40.4	29.8	42.0	66.6	44.7	63.1
Rubicon Peak No. 1	8100	4/2/31	61.6	35.3	21.8	35.5	50.0	43.6	71.0
Silver Lake	7300	3/29/31	30.8	38.3	11.8	11.9	*	*	*
Summit	7020	3/23/31	44.2	40.5	17.9	24.4	49.3	36.3	49.4
Ward Creek	7000	4/4/31	46.6	32.7	16.8	29.5	50.2	33.5	58.7
Soda Springs	6750	3/23/31	44.5	34.1	15.2	34.9	*	*	*
Cisco	5950	3/29/31	Practically no snow on course			12.9	32.8		39.3
Six Mile Valley	5700	3/29/31	Practically no snow on course			11.0	*	*	*
Lake Spaulding	4900	3/29/31	16.6	42.2	7.0	16.5	32.0	21.8	51.6

*, 1, 2, See footnotes first page of this table.

4, Normals by comparison with flow of Truckee River at Iceland, 1904-1927. Computed by Nevada Forecast Committee.

5, Normals by comparison with natural flow of north fork at Colfax, 1890-1930, for Summit, Cisco and Lake Spaulding and with Middle Fork near East Auburn, 1890-1930 for remaining courses.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per Cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date	Percentage of Normal Seasonal Water Content This Date Last Year
CARSON RIVER							6		
Carson Pass	8600	3/27/31	53.2	35.0	18.6	33.4	*	*	*
Burnside Lake No. 2	8000	3/30/31	42.8	34.4	14.7	24.1	36.0	40.8	67.0
Blue Lakes	8000	3/22/31	51.4	34.8	17.9	30.4	48.1	37.2	63.2
Williams	7800	3/29/31	38.4	34.1	13.1	19.4	31.8	41.2	61.0
Silver Peak	6700	3/27/31	10.8	32.4	3.5	4.6	*	*	*
Grovers Springs	6200	3/30/31	No snow on Course			0	*	*	*
MOKELUMNE RIVER									
Blue Lakes	8000	3/22/31	51.4	34.8	17.9	30.4	7 37.0	48.4	82.1
Pacific Valley	7500	3/25/31	48.7	34.4	16.7	29.2	*	*	*
Bear Valley Ridge	6700	3/26/31	31.8	40.8	13.0	17.9	*	*	*
STANISLAUS RIVER									
Sonora Pass	8800	3/30/31	28.5	30.9	8.7	18.7	*	*	*
Lower Relief Valley	8300	3/25/31	50.7	36.7	18.6	30.0	*	*	*
Soda Creek Flat	7900	3/24/31	24.7	33.6	8.3		*	*	*
Upper Kennedy Meadow	7600	3/24/31	20.2	35.1	7.1	11.8	*	*	*
Eagle Meadows	7500	3/26/31	27.7	36.1	10.0		*	*	*
Lake Alpine	7500	3/27/31	47.4	36.7	17.4	32.7	*	*	*
Pacific Valley	7500	3/25/31	48.7	34.4	16.7	29.2	*	*	*
Relief Dam	7300	3/25/31	26.8	37.3	10.0	15.0	*	*	*
Niagara Flat	6500	3/26/31	13.6	44.8	6.1	8.2	*	*	*
Strawberry Lake	5700	3/27/31	Practically no snow on course			2.7	*	*	*

*, 1, 2, See footnotes first page of this table.

6 Normals by comparison with flow of Carson River, 1904-1927. Computed by Nevada Forecast Committee.

7 Normal by comparison with natural flow of North Fork above Lower Standard Canal, 1907-1930.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per Cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date	Percentage of Normal Seasonal Water Content This Date Last Year
WALKER RIVER							8		
Center Mountain	9300	3/27/31	56.2	32.2	18.1	28.6	45.7	39.6	62.6
Sonora Pass	8800	3/30/31	28.5	30.9	8.7	18.7	*	*	*
Buckeye Forks	8600	3/27/31	29.4	33.8	9.9	14.8	*	*	*
Willow Flat	8300	3/31/31	9.0	32.9	3.0		17.5	17.1	
Buckeye Creek	8100	3/28/31	29.6	29.0	8.6	14.0	25.9	33.2	54.0
Leavitt Meadow	7200	4/1/31	Practically no snow on course						
TUOLUMNE RIVER							9		
1 Fletcher Lake	10300	3/24/31	37.2	33.3	12.4	24.6	*	*	*
2 Tioga Pass	9900	3/27/31	31.6	31.3	9.9	22.1	26.0	38.1	85.0
3 Dana Meadows	9700	3/27/31	43.6	29.8	13.0	19.5	29.1	44.6	67.0
4 Center Mountain	9300	3/27/31	56.2	32.2	18.1	28.6	41.4	43.7	69.0
5 Upper Lyell Forks	8800	3/25/31	22.5	30.7	6.9	12.2	*	*	*
6 Tuolumne Meadows	8600	3/26/31	29.2	25.4	7.4	14.3	*	*	*
7 Lower Relief Valley	8300	3/25/31	50.7	36.7	18.6	30.0	*	*	*
White Wolf Meadows	8000	3/28/31	46.6	37.0	17.2	23.4	*	*	*
8 Gin Flat	7100	3/21/31	47.3	48.4	22.9	25.6	*	*	*
9 Strawberry Lake	5700	3/27/31	Practically no snow on course			2.7	*	*	*
MERCED RIVER									
Fletcher Lake	10300	3/24/31	37.2	33.3	12.4	24.6	*	*	*
Snow Flat	8700	3/27/31	59.0	35.8	21.1	35.2	*	*	*
Lake Tenaya	8150	3/26/31	42.2	41.3	17.4	27.4	*	*	*

*, 1, 2, See footnotes first page of this table.

8 Normals by comparison with flow of Walker River, 1904-1927. Computed by Nevada Forecast Committee.

9 Normals by comparison with natural flow of Tuolumne River near Hetch-Hetchy 1890-1930.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date	Percentage of Normal Seasonal Water Content This Date Last Year
MERCED RIVER- CONTINUED									
White Wolf Meadows	8000	3/28/31	46.6	37.0	17.2	23.4	*	*	*
Gin Flat	7100	3/21/31	47.3	48.4	22.9	25.6	*	*	*
Merced Lake	7000	3/23/31	16.2	29.6	4.8	7.8	*	*	*
Peregoy Meadow	7000	3/22/31	41.0	43.8	18.0	16.3	*	*	*
MONO LAKE							10		
Gem Pass	11200	3/29/31	37.9	23.0	8.7		*	*	*
Saddlebags Lake	10000	3/26/31	44.3	28.6	12.7	21.3	39.2	32.4	54.4
Tioga Pass	9900	3/27/31	31.6	31.3	9.9	22.1	28.9	34.2	76.5
Dana Meadows	9700	3/27/31	43.6	29.8	13.0	19.5	33.6	38.7	58.0
Rhinedollar Lake	9500	3/26/31	43.6	28.9	12.6	17.1	33.1	38.1	51.7
Agnew Pass	9450	3/30/31	31.4	33.8	10.6	21.5	*	*	*
Gem Lake	9200	3/28/31	28.1	29.9	8.4	19.2	*	*	*
Silver Lake	7300	3/29/31	30.8	38.3	11.8		*	*	*
UPPER SAN JOAQUIN RIVER									
Piute Pass	11200	3/26/31	36.2	34.2	12.4	21.4	*	*	*
Blackcap Basin	10800	3/23/31	35.6	30.9	11.0	24.9	*	*	*
Upper Burnt Corral Mdw.	9700	Course not surveyed				22.9	*	*	*

*, 1, 2, See footnotes first page of this table.
10 Normals by comparison with natural flow of Leevining Creek, 1905-1929.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date	Percentage of Normal Seasonal Water Content This Date Last Year
UPPER SAN JOAQUIN RIVER-CONTINUED									
Mammoth Pass	9500	3/25/31	51.3	30.2	15.5	26.5	11 44.0	35.2	60.2
Agnew Pass	9450	3/30/31	31.4	33.8	10.6	21.5	*	*	*
Kaiser Pass Meadows	9200	3/23/31	51.1	31.3	16.0	25.6	*	*	*
Chilkoot Lake	7450	4/3/31	15.8	50.0	7.9	21.8	*	*	*
Chilkoot Meadows	7250	4/3/31	26.1	50.9	13.3	22.9	*	*	*
Florence Lake	7200	3/25/31	Practically no snow on course			3.8	*	*	*
Huntington Lake	7000	3/25/31	19.9	47.3	9.4	19.3	*	*	*
OWENS RIVER BASIN							12		
Bishop Pass	11400	3/28/31	32.9	26.8	8.8	15.3	*	*	*
Piute Pass	11200	3/26/31	36.2	34.2	12.4	21.4	*	*	*
Cottonwood Creek #2	11100	3/24/31	13.6	27.9	3.8	5.7	18.2	20.8	31.3
East Piute Pass	10800	3/25/31	17.2	32.0	5.5	9.1	*	*	*
Cottonwood Creek #1	10600	3/24/31	1.8	33.3	0.6	6.5	15.5	3.9	41.9
Sawmill	10200	4/1/31	9.1	40.6	3.7		21.0	17.7	
Big Pine	10000	3/27/31	16.8	28.0	4.7	10.8	24.3	19.3	44.4
Rock Creek	10000	3/23/31	13.2	22.7	3.0	8.0	12.9	23.2	62.0
Big Pine	9800	3/27/31	6.3	28.6	1.8	6.9	15.4	11.7	44.8

*, 1, 2, See footnotes first page of this table.

11, Normal by comparison with natural flow of San Joaquin River at Friant, 1890-1930.

12, Normals by comparison with flow of Cottonwood Creek near Olancha 1904-1929, for Cottonwood courses; with flow of Big Pine Creek near Big Pine 1904-1929, for Big Pine courses; with flow of Rock Creek above Little Round Valley 1904-1929, for Rock Creek courses; with flow of Hot Creek at County Road 1904-1929, for Mammoth and Minarets courses; and with natural flow of Bishop Creek at Plant #5, 1904-1929, for Bishop Creek courses.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per Cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date 12	Percentage of Normal Seasonal Water Content This Date: Last Year
OWENS RIVER BASIN-CONTINUED									
Big Pine	9700	3/27/31	6.1	31.2	1.9	8.5	15.5	12.2	54.8
Mammoth Pass	9500	3/25/31	51.3	30.2	15.5	26.5	43.3	35.8	61.1
North Lake	9500	3/25/31	Practically no snow on course			4.9	*	*	*
Rock Creek	9050	3/23/31	Practically no snow on course			6.1	8.4		72.6
Minarets	9000	3/24/31	34.6	31.8	11.0	20.3	35.8	30.7	56.7
Rock Creek	8700	3/25/31	No snow on course			4.3	8.6		50.0
Mammoth	8300	3/25/31	20.8	33.6	7.0	10.7	20.1	34.8	53.2
Minarets	8300	3/24/31	20.4	30.9	6.3	12.3	19.8	31.8	62.1
KINGS RIVER BASIN									
Bishop Pass	11400	3/28/31	32.9	26.8	8.8	15.3	*	*	*
Blackcap Basin	10800	3/23/31	35.6	30.9	11.0	24.9	*	*	*
Dougherty No. 1	9750	3/28/31	26.8	27.2	7.3	15.0	*	*	*
Upper Burnt Corral Mdw.	9700	Course not surveyed				22.9	*	*	*
Beard Meadow	9300	3/22/31	42.2	27.7	11.7	23.1	*	*	*
Rowell Meadow	9200	3/11/31	35.7	31.4	11.2	21.6	*	*	*
Woodchuck Meadow	9100	3/21/31	33.0	31.2	10.3	22.6	*	*	*
Swamp Meadow	9000	3/26/31	39.3	42.5	16.7	26.3	*	*	*
Helms Meadow	8500	3/26/31	21.2	33.5	7.1	19.6	*	*	*

*, 1, 2, See footnotes first page of this table.

12, Normals by comparison with flow of Cottonwood Creek near Olancha 1904-1929, for Cottonwood courses; with flow of Big Pine Creek near Big Pine 1904-1929, for Big Pine courses; with flow of Rock Creek above Little Round Valley 1904-1929, for Rock Creek courses; with flow of Hot Creek at County Road 1904-1929; for Mammoth and Minarets courses; and with natural flow of Bishop Creek at Plant #5, 1904-1929, for Bishop Creek courses.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per Cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date	Percentage of Normal Seasonal Water Content This Date Last Year
KINGS RIVER BASIN-CONTINUED									
Long Meadow	8500	3/24/31	28.2	31.9	9.0	17.5	*	*	*
Moraine Meadow	8400	3/13/31	22.6	31.4	7.1	13.4	*	*	*
Dougherty No. 2	8350	3/28/31	8.3	30.1	2.5	10.7	*	*	*
Statum Meadow	8300	3/21/31	32.0	41.9	13.4	26.0	*	*	*
Post Corral Meadow	8200	3/24/31	24.5	29.4	7.2	19.0	*	*	*
Sand Meadow	8050	3/25/31	25.1	33.5	8.4	18.8	*	*	*
Big Meadows	7660	3/7/31	34.5	38.8	13.4	22.0	*	*	*
Horse Corral Meadow	7600	3/9/31	26.8	40.0	10.7	16.3	*	*	*
Kennedy Meadow	7600	3/5/31	29.1	37.1	10.8	14.8	*	*	*
Copper Creek Summit	7500	3/16/31	28.9	30.5	8.0		*	*	*
Bear Ridge	7400	3/27/31	34.6	41.1	14.2	19.4	*	*	*
Fred Meadow	7200	3/27/31	10.4	33.6	3.5	12.8	*	*	*
General Grant Park	6660	3/30/31	Practically no snow on course			0	*	*	*
Cliff Camp	6300	3/20/31	No snow on course			9.9	*	*	*
Simpson Meadow	6200	3/28/31	No snow on course			0	*	*	*
Dinkey Sand Flat	5500	3/26/31	Practically no snow on course			7.3	*	*	*
KAWEAH RIVER									
Panther Meadow	8650	3/30/31	44.6	35.9	16.0	28.3	*	*	*
Hockett Meadow	8600	3/27/31	39.0	38.7	15.1	29.3	*	*	*
Big Meadow	7660	3/27/31	34.5	38.8	13.4	22.0	*	*	*
Giant Forest	6500	3/31/31	6.3	44.4	2.8	12.6	*	*	*

*, 1, 2, See footnotes first page of this table.

TABLE II - SNOW SURVEY DATA FOR ALL COURSES - CONTINUED

1 Drainage Basins and Snow Courses	Elevation in Feet	Date of Survey	Depth of Snow Inches	Density per Cent	Water Content Inches	Water Content This Date Last Year Inches	2 Normal Seasonal Water Content (Entire Season) Inches	Percentage of Normal Seasonal Water Content to Date	Percentage of Normal Seasonal Water Content This Date Last Year
KERN RIVER									
Round Meadow	9000	3/23/31	35.6	40.7	14.5	22.6	*	*	*
Ramshaw Meadows	8800	3/19/31	9.5	40.0	3.8	9.9	*	*	*
Little Whitney Mdws.	8500	3/18/31	12.6	38.9	4.9	12.0	*	*	*
Bonita Meadows	8400	3/22/31	21.9	38.3	8.4	9.2	*	*	*
Casa Vieja Meadows	8400	3/20/31	26.3	33.5	8.8	15.9	*	*	*
Monache Meadows	8000	3/21/31	Practically no snow on course				*	*	*
Quinn Ranger Station	8000	3/26/31	15.8	42.4	6.7		*	*	*
Beach Meadows	7800	3/21/31	12.7	43.3	5.3	8.1	*	*	*
Cannell Meadows	7500	3/25/31	No snow on course			4.4	*	*	*
Burnt Corral Meadow	6200	3/16/31	No snow on course			5.6	*	*	*
Lloyd Meadows	5600	3/16/31	No snow on course			0	*	*	*

*, 1, 2, See footnotes first page of this table.

REPORT OF SNOW SURVEY AND PRECIPITATION DATA
To April 1, 1931
TABLE III - PRECIPITATION DATA

1 Basin and Precipitation Station	Elevation in Feet	Precipitation since July 1, 1930 Inches (Including Snow as Water	2 Normal Seasonal Precipitation Inches (July to June)	Percentage of Normal Seasonal Precipitation to Date	Normal Percentage of Seasonal Precipitation for this date	Total Seasonal Snowfall to Date Inches (Unmelted)	Snow on Ground Inches: This Date	3 Maximum this date and Year	3 Minimum this date and Year
PIT RIVER									
Jess Valley	5400	7.55				16	0		
Triangle Ranch	5000	6.20				25	0		
Alturas	4460	5.35	(19)11.83	45.	77		0		
Bieber	4200	7.86				10	0		
Hat Creek	3400	8.04	(9) 16.00	50	76	2			
Fall River Mills	3340	9.53	(6) 17.33	55	79	T			
UPPER SACRAMENTO RIVER									
Mount Shasta City	3555	14.15	(41)34.86	41	85	42	0	14-1925(18)	0
Kennett	730	33.84	(23)58.77	58	86				
McCLOUD RIVER									
McCloud	3270	23.91	(20)44.65	53	85	41	0	12-1925(18)	0

1 A few of the precipitation stations are not actually in the basin shown but are closely adjacent thereto.
2 The normals in this column are based upon the number of years record to date as shown by the numeral prefix.
3 The periods covered by published records of snow on the ground differ considerably for the various stations, and long time records are available for only a few stations. In these columns the numeral in parentheses indicates the number of years record upon which the data is based. The year of zero minimum is only shown when zero did not occur in more than one year in the period of record.

TABLE III - PRECIPITATION DATA - CONTINUED

1 Basin and Precipitation Station	Elevation in feet	Precipitation Since July 1, 1930 Inches (Including Snow as Water)	2 Normal Seasonal Precipitation Inches (July to June)	Percentage of Normal Seasonal Precipitation to Date	Normal Percentage of Seasonal Precipitation for this Date	Total Seasonal Snowfall to date Inches (Unmelted)	Snow on Ground Inches: This Date	3 Maximum this date and Year	3 Minimum this date and Year
YUBA RIVER - CONTINUED									
Bowman Dam	5347	32.19	(43)72.70	44	84	122	0	35-1927(6)	
La Porte	5000	33.27	(35)68.64	48	85	80	0		
Drum Forebay	4653	29.96	(14)50.54	59	85	45	0		
Lake Spaulding	4600	32.41	(36)64.63	50	85	64	0	113-1922(18)	
Alleghany	4500	28.39				20	0		
Deer Creek	3700	30.94	(23)64.97	48	87	14	0	40-1922(17)	
Camptonville	3500	29.48	(23)63.34	47	87	12	0	2-1925(18)	
North Bloomfield	3214	22.49	(50)51.49	44	85	7	0	4-1927(13)	
Downieville	3150	27.81	(22)60.72	46	86	8	0	1-1927(18)	0
Nevada City	2580	25.90	(67)51.96	50	86		0		0
Dobbins	1650	21.38	(26)41.45	52	87				
Chute Camp	1500	28.02	(23)52.03	54	87				
TRUCKEE AND TAHOE									
Tahoe	6230	(M)11.62	(21)29.62	(M)39	87			72-1922(16)	7-1929
AMERICAN RIVER									
Twin Lakes	7970	25.28	(8) 37.80	67	80	209	38	120-1920(10)	36-1924
Phillips Station	7050	23.70				135	21		
Blue Canyon	4695	23.97	(30)61.64	39	86			60-1922(18)	0
Rasor Lodge	3400	29.35				5	0		
Colfax	2420	20.47	(60)46.67	44	85				
Placerville	1925	18.03	(52)41.42	44	86				

1, 2, 3, See footnotes first page of this table. (M) Record only available to March 1st.

TABLE III - PRECIPITATION DATA - CONTINUED

1 Basin and Precipitation Station	Elevation in Feet	Precipitation Since July 1, 1930 Inches (Including Snow as Water)	2 Normal Seasonal Precipitation Inches (July to June)	Percentage of Normal Seasonal Precipitation to date	Normal Percentage of Seasonal Precipitation for this date	Total Seasonal Snowfall to date Inches (Unmelted)	Snow on Ground Inches: This Date	3 Maximum this Date and Year	3 Minimum this Date and Year
MOKELUMNE									
Salt Springs	3660	21.68				7	0		
Mill Creek No. 1	2400	23.05	(23)38.29	60	85				
West Point	2326	19.05	(35)39.66	48	86				
Electra	700	15.07	(26)30.57	49	87				
STANISLAUS									
Strawberry lake	5620	18.66	(8) 30.68	61	76	69	0		
Spring Gap	4875	22.06	(8) 35.54	62	80	28	0	27-1922(9)	0
Calaveras Big Trees	4700	28.83				38	0		
Sand Bar	2700	20.01	(8) 34.01	59	81			6-1925(8)	0
WALKER RIVER									
Shields Ranch	5300	(M) 4.33	(19)10.42	(M)42	80				
TUOLUMNE									
Lake Eleanor	4650	23.75	(20)38.15	62	84	30	0	15-1925(15)	0
Mather	4500	18.77				22	0		
Confidence	4000	21.50				11	0		
Hetch Hetchy	3530	17.08	(17)30.99	55	80	14	0	4-1925(15)	0
Groveland	2828	17.67	(9) 41.92	42	89	2			
Sonora	1825	16.04	(39)32.61	49	86				

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TABLE III - PRECIPITATION DATA - CONTINUED

1 Basin and Precipitation Station	Elevation in feet	Precipitation since July 1, 1930, Inches (Including Snow as Water)	2 Normal Seasonal Precipitation Inches (July to June)	Percentage of Normal Seasonal Precipitation to date	Normal Percentage of Seasonal Precipitation for this date	Total Seasonal Snowfall to Date Inches (Unmelted)	Snow on Ground Inches: This Date	3 Maximum this date and year	3 Minimum this date and year
MERCED									
Fish Camp	5500	21.55	(15)53.77	40	89				
Yosemite	3960	14.81	(25)32.86	45	85	17	0	8-1925(18)	0
Dudleys,	3000	19.47	(21)36.03	54	87			2-1925(11)	0
Mariposa	1932	14.73	(22)28.21	52	88				
Merced Falls	351	8.39	(23)14.86	56	86				
MONO LAKE									
Ellery Lake	9600	(M)13.97	(5) 35.81	(M)39	75			60-1929(7)	13-1926
Gem Lake	9120	12.56	(5) 27.02	46	81	138	35	65-1930(7)	9-1928
Lundy Lake	7760	5.26	(5) 12.54	42	78	63	0	8-1927(7)	0
UPPER SAN JOAQUIN RIVER									
Huntington Lake	7000	12.46	* 29.71	42	84	102	0	62-1916(15)	0-1931
Big Creek	4900	13.04	(15)29.08	45	84	21	0	14-1925(15)	0
Crane Valley	3500	18.06	* 39.56	46	84				
North Fork	3000	12.87	(23)32.37	40	87	T	0		
Auberry	2050	10.88	* 22.57	48	88		0		
OWENS RIVER									
South Lake	9620	6.29	(5) 16.83	37	75	77	0	60-1927(7)	0-1931
Lake Sebrina	9100	6.57	(5) 16.35	40	76	60	0	51-1927(7)	0-1928

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TABLE III - PRECIPITATION DATA - CONTINUED

1 Basin and Precipitation Station	Elevation in Feet	Precipitation since July 1, 1930, Inches (Including Snow as Water)	2 Normal Seasonal Precipitation Inches (July to June)	Percnetage of Normal Seasonal Precipitation to date	Normal Percentage of Seasonal Precipitation for this date	Total Seasonal Snowfall to date Inches (Unmelted)	Snow on Ground Inches: This Date	3 Maximum this date and year	3 Minimum this date and year
OWENS RIVER - CONTINUED									
Mammoth Lakes(Lk.Mary)	9000	15.99				180	25		
Bishop Creek	6390	4.69	(26) 9.79	46	82	35	0	24-1918(17)	0
Birch Creek	8000	(M) 3.13	(5) 12.32	(M)25	79				
Intake No.2 Bishop Cr.	8000	(M) 3.79	(5)10.97	(M)34	77				
Crooked Creek	6700	3.26	(10) 8.47	38	81				
Big Pine Power Plant #3	5400	0.61	(4) 7.86	78	88				
L.A.Aqueduct at Intake	3880	0.93	(12) 2.46	38	89				
Independence	3957	(M) 0.95	(39) 4.50	(M)21	91				
Cottonwood Gates	3600	0.99	(10) 2.77	36	86				
KINGS RIVER									
General Grant Park	6660	17.73	* 41.69	42			4	50-1925(7)	0
Cliff Camp	6150	14.27	* 42.92	40			0	80-1922(10)	0
Dinkey Meadow	5440	16.64	* 44.45	37			0	76-1922(10)	0
Balch Camp	1300	11.69	* 26.74	51	82				
Piedra	500	7.09	(12)14.74	48	85				
KAWEAH RIVER									
Giant Forest	6360	16.65	* 44.18	38	78	66	0	72-1925(10)	0-1928
Three Rivers	870	9.51	(21)18.27	52	84				

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TABLE III - PRECIPITATION DATA - CONTINUED

1 Basin and Precipitation Station	Elevation in Feet	Precipitation Since July 1, 1930, Inches (Including Snow as Water)	2 Normal Seasonal Precipitation Inches (July to June)	Percentage of Normal Seasonal Precipitation to date	Normal Percentage of Seasonal Precipitation for this date	Total Seasonal Snowfall to Date Inches (Unmelted)	Snow on Ground-Inches: This Date	3 Maximum this date and year	3 Minimum this date and year
KERN RIVER									
Windy Springs	6200	4.94							
Springville (Near)	4050	18.47	(23)33.45	55	85	19	0	10-1925(18)	0
Hot Springs	3300	11.99	(23)23.62	51	84	3	0	5-1925(18)	0
Glennville	3300	11.43	(21)19.26	59	82	5	0	4-1925(14)	0
Kernville	2600	4.33	(36) 9.81	44	90				
SANTA ANA RIVER									
Table Mt. Observatory	7500	7.93	(4) 12.87	62	92	44	T		
Big PinesCo. Park	6850	11.25				28	0		
Bear Valley Dam	6500	13.85	(35)33.57	41	89	42	0		
Prairie Fork	5630	10.66							
Squirrel Inn	5280	19.37	(25)40.15	48	85	26	0		
Seven Oaks	5000	14.22	(20)28.05	51	86	19	0		
Camp Baldy	4300	15.43	(9) 31.42	49	80				
Beaumont (Near)	3045	12.41	(19)22.89	54	81				
Mill Creek No. 2	2950	(M)14.16	(27)23.80	(M)60	82				
Santa Ana River	2850	(M)15.89	(26)28.54	(M)56	85				
Beaumont	2558	10.26	(25)19.44	53	84				
Lytle Creek	2250	19.40	(25)35.91	54	87				

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TABLE III - PRECIPITATION DATA-CONTINUED

1 Basin and Precipitation Stations	Elevation in Feet	Precipitation since July 1, 1930, Inches (Including Snow as Water)	2 Normal Seasonal Precipitation Inches (July to June)	Percentage of Normal Seasonal Precipitation to date	Normal Percentage of Seasonal Precipitation for this date	Total Seasonal Snowfall to Date Inches (Unmelted)	Snow on Ground Inches: This date	3 Maximum this date and year	3 Minimum this date and year
SAN GABRIEL RIVER									
Table Mountain Observ.	7500	7.93	(4) 12.87	62	92	44	T		
Big Pines Co. Park	6860	11.25				28	0		
Mount Wilson	5850	18.04	(26)31.65	56	88	57			
Prairie Fork	5680	10.66							
Little Cienega	4650	14.55				6	0		
Opids Camp	4480	20.92	(8) 31.91	66	76				
Camp Baldy	4300	15.43	(9) 31.42	49	80				
Alder Creek(Loomis Rch.)	3550	(M)10.90	(6) 18.20	(M)60	74				
Saw Pit Canyon	3500	18.40							
Mount Lowe (Observatory)	3420	(M)17.00	(25)30.11	(M)55	88				
Valley Forge Lodge	3400	19.37	(8) 28.87	67	76	7	0		
Coldbrook Camp	3300	13.70	(7) 24.10	57	75				
ClearCreek	3300	16.66							
Colby Ranch	2950	11.12	(32)31.74	35	87				
Hoegee'sCamp	2650	21.35	(5) 40.63	53	72				
Wolfskill Falls	2400	(M)14.71							
Santa Anita Ranger Sta.	2000	(M)15.95	(9) 29.00	(M)55	76				
San Gabriel Dam R.S.	1500	14.71							
Edison Intake	1250	13.59	(9) 27.98	49	86				
Big Santa Anita Dam	1250	13.40							

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TABLE III - PRECIPITATION DATA - CONTINUED

1 Basin and Precipitation Station	Elevation in Feet	Precipitation since July 1, 1930, Inches (Including Snow as Water)	2 Normal Seasonal Precipitation Inches (July to June)	Percentage of Normal Seasonal Precipitation to date	Normal Percentage of Seasonal Precipitation for this date	Total Seasonal Snowfall to Date Inches (Unmelted)	Snow on Ground Inches: This Date	3 Maximum this date and year	3 Minimum this date and year
LOS ANGELES RIVER									
Alder Creek (Loomis Rch)	3550	(M)10.90	(6)18.20	(M) 60	74				
Mt. Lowe Observatory	3420	(M)17.00	(25)30.11	(M) 55	88				
Clear Creek	3300	16.66							
Switzers Camp	3050	14.75							
Colby Ranch	2950	11.12	(32)31.74	35	87				

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(M) Record only available to March 1st.

REPORT OF SNOW SURVEY AND PRECIPITATION DATA
April 1, 1931

TABLE IV - REPORTED STORAGE IN RESERVOIRS*

Drainage Basin and Reservoir	Owner	Storage			Remarks
		Date	Acre-feet	Percent of full Reservoir	
FEATHER					
Lake Almanor	P.G.& E.Co.	4/5/31	148049	11.3	
Bucks Creek	P.G.& E.Co.	4/7/31	27130	25.2	Including Diversion Dam
Butt Valley	P.G.& E.Co.	3/30/31	45837	92.1	
YUBA					
Bowman Lake	Nevada I.D.	3/31/31	550	0.8	
Lake Fordyce	P.G.& E.Co.	3/27/31	2571	5.5	
Lake Spaulding	P.G.& E.Co.	3/30/31	11029	14.8	
MOKELUMNE					
Salt Springs	P.G.& E.Co.	3/30/31	3000	2.3	Approx, Available Stor.
Pardee	E.Bay M.U.D.	3/31/31	45688	20.5	Net storage.
STANISLAUS					
Melones	Oakdale & So. S.J.J.I.Ds.	3/30/31	34900	31.0	
TUOLUMNE					
Don Pedro	Turlock I.D. Modesto I. D.	3/31/31	16400	5.7	Available above dead storage.
MERCED					
Exchequer	Merced I.D.	3/31/31	51000	17.7	

* In general, these reservoirs are drawn low in accordance with usual operation at this time of year, with the expectation of filling in the Spring run-off period. Unless, therefore, a full knowledge of the factors affecting the operation of the reservoirs is available, undue weight should not be given to the present storage data as indices of seasonal water supply.