California Cooperative
Snow Surveys
Bulletin 120-94-2

State of California
The Resources Agency

Department of
Water Resources

Water Conditions in California

Report 2 March 1, 1994

Douglas P. Wheeler
Secretary for Resources
The Resources Agency

Pete Wilson
Governor
State of California

David N. Kennedy
Director
Department of Water Resources

STATE OF CALIFORNIA
Pete Wilson, Governor

THE RESOURCES AGENCY
Douglas P. Wheeler, Secretary for Resources

Department of Water Resources
David N. Kennedy, Director

John J. Silveira
Deputy Director

Robert G. Potter
Chief Deputy Director

Carroll M. Hamon
Deputy Director

L. Lucinda Chipponeri
Assistant Director for Legislation

Susan N. Weber
Chief Counsel

Division of Flood Management

George T. Qualley ..... Chief
Maurice Roos ..... Chief Hydrologist

Prepared by

Gary Hester ..... Senior Engineer, W.R.
Frank Gehrke ..... Senior Engineer, W.R.
Robert R. Newton ..... Associate Engineer, W.R.
David M. Hart ..... Water Resources Engineering Associate
Matthew S. Colwell ..... Assistant Engineer, W.R.

COOPERATING AGENCIES

Public Agencies

Buena Vista Water Storage District
Central California Irrigation District
East Bay Municipal Utility District
Friant Water Users Association
Kaweah Delta Water Conservation District
Kern Delta Water District
Kings River Conservation District
Lower Tule River Irrigation District
Merced Irrigation District
Modesto Irrigation District
Nevada Irrigation District
North Kern Water Storage District
Northern California Power Agency
Oakdale Irrigation District
Omochumne-Hartnell Water District
Oroville-Wyandotte Irrigation District
Placer County Water Agency
Sacramento Municipal Utility District
San Bernardino County Flood Control District
South San Joaquin Irrigation District
Tri-Dam Project
Tulare Lake Basin Water Storage District
Turlock Irrigation District
Yuba County Water Agency
West Basin Municipal Water District

Private Organizations

J.G. Boswell Company
Kaweah River Association
Kings River Water Association
St. Johns River Association
Tule River Association
U.S. Tungsten Corporation
State Water Contractors

Public Utilities

Pacific Gas and Electric Company
Southern California Edison Company
Sierra Pacific Power Company

Municipalities

City of Bakersfield
Water Department
City of Los Angeles
Department of Water and Power
City and County of San Francisco
Hetch Hetchy Water and Power

State Agencies

California Department of Forestry
& Fire Protection
California Department of Water Resources

Federal Agencies

U.S. Department of Agriculture
Forest Service(14 National Forests)
Pacific Southwest Forest and Range
Experiment Station
Soil Conservation Service
U.S. Department of Commerce
National Weather Service
U.S. Department of Interior
Bureau of Reclamation
Geological Survey, Water Resources
Division
National Park Service(3 National Parks)
U.S. Department of Army
Corps of Engineers

Other Cooperative Programs

Nevada Cooperative Snow Surveys
Oregon Cooperative Snow Surveys

SUMMARY OF WATER CONDITIONS

MARCH 1, 1994

The mountain snowpack improved substantially during February which portends more spring runoff than forecast last month. But precipitation was not enough above average to raise the water year runoff outlook much and it still looks like a dry year. Reservoir storage levels overall are fairly good and the carryover will meet some of the water needs.

Forecasts of April through July runoff are now expected to be about 65 percent of average, up 10 percent from a month ago. Water year runoff forecasts have only been raised about 5 percent, however.

Snowpack water content for this date is about three-fourths of average for this date and about 70 percent of the April 1 average. The snowpack is relatively heavier in the lower snow zone elevations, generally less at higher elevations, and least on the Sierra eastside. Last year the snowpack was 180 percent of average.

Precipitation during February was 105 percent of average for the month statewide. The northern Sierra tended to be a little less than average while monthly amounts in the central and southern Sierra were above average. Statewide precipitation for the season since October 1 stands at 65 percent.

Runoff during February was only 45 percent of normal. Relatively cold conditions during the storms of the third week raised snowpack totals but did not generate much runoff. Seasonal runoff stands at 40 percent of average, compared to 95 percent last year.

Reservoir storage gained nearly 1 million acre-feet during February. The gain was less than the average for the month, causing the statewide percentage to slip slightly to 95 percent.

SUMMARY OF WATER CONDITIONS

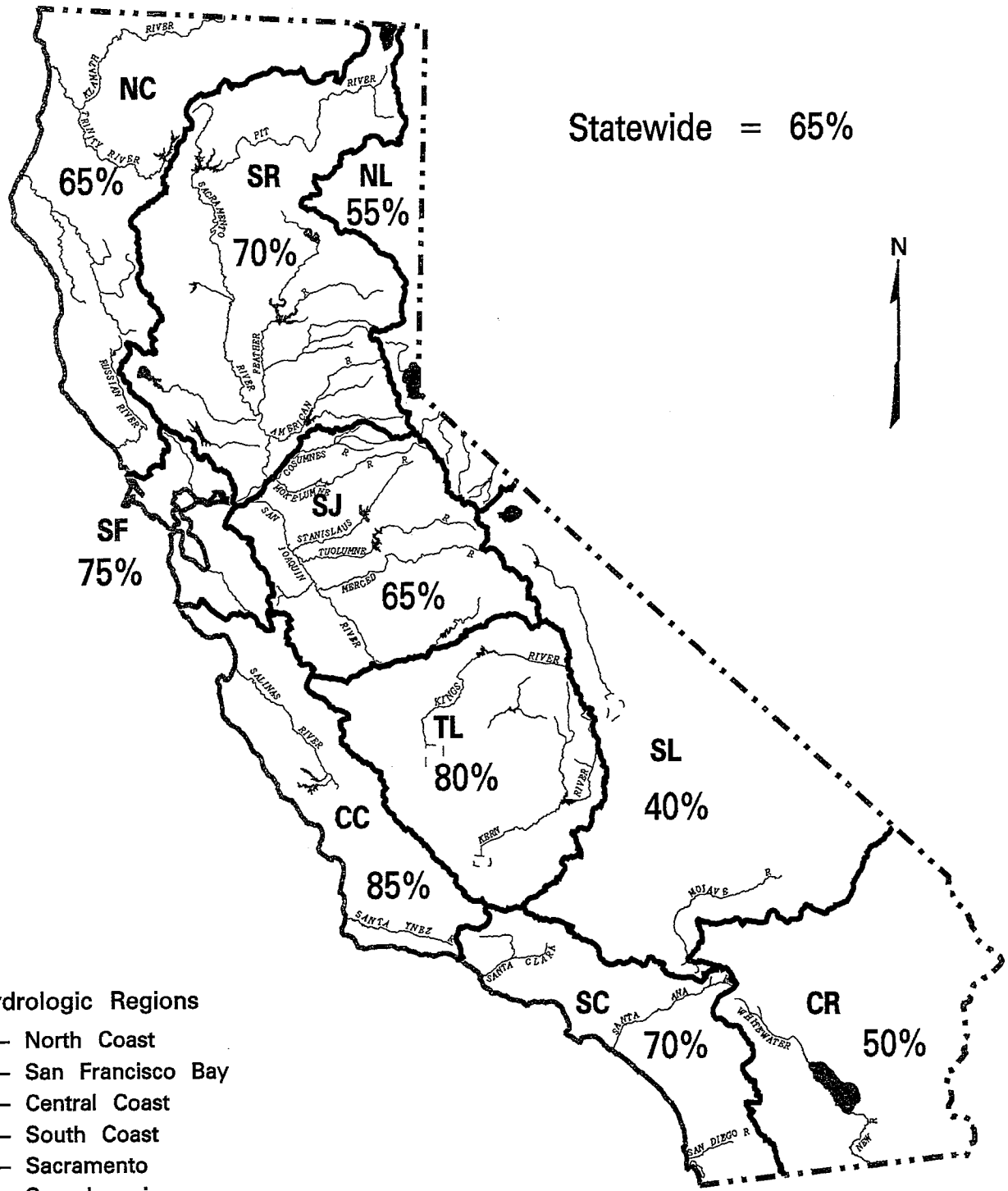
IN PERCENT OF AVERAGE

HYDROGRAPHIC AREA	PRECIPITATION OCTOBER 1 TO DATE	MARCH 1 SNOW WATER CONTENT	MARCH 1 RESERVOIR STORAGE	RUNOFF OCTOBER 1 TO DATE	APR-JULY RUNOFF FORECAST	WATER YEAR RUNOFF FORECAST
NORTH COAST	65	80	105	35	70	55
SAN FRANCISCO BAY	75	--	105	25	--	--
CENTRAL COAST	85	--	80	30	--	--
SOUTH COAST	70	--	120	70	--	--
SACRAMENTO BASIN	70	85	90	40	70	55
SAN JOAQUIN BASIN	65	75	105	25	60	55
TULARE LAKE BASIN	80	80	100	45	65	60
NORTH LAHONTAN	55	55	35	45	55	50
SOUTH LAHONTAN	40	55	85	70	55	55
COLORADO DESERT	50	--	--	--	--	--
STATEWIDE	65	80	95	40	65	55

SEASONAL PRECIPITATION

IN PERCENT OF AVERAGE TO DATE

OCTOBER 1, 1993 THROUGH FEBRUARY 28, 1994



Hydrologic Regions

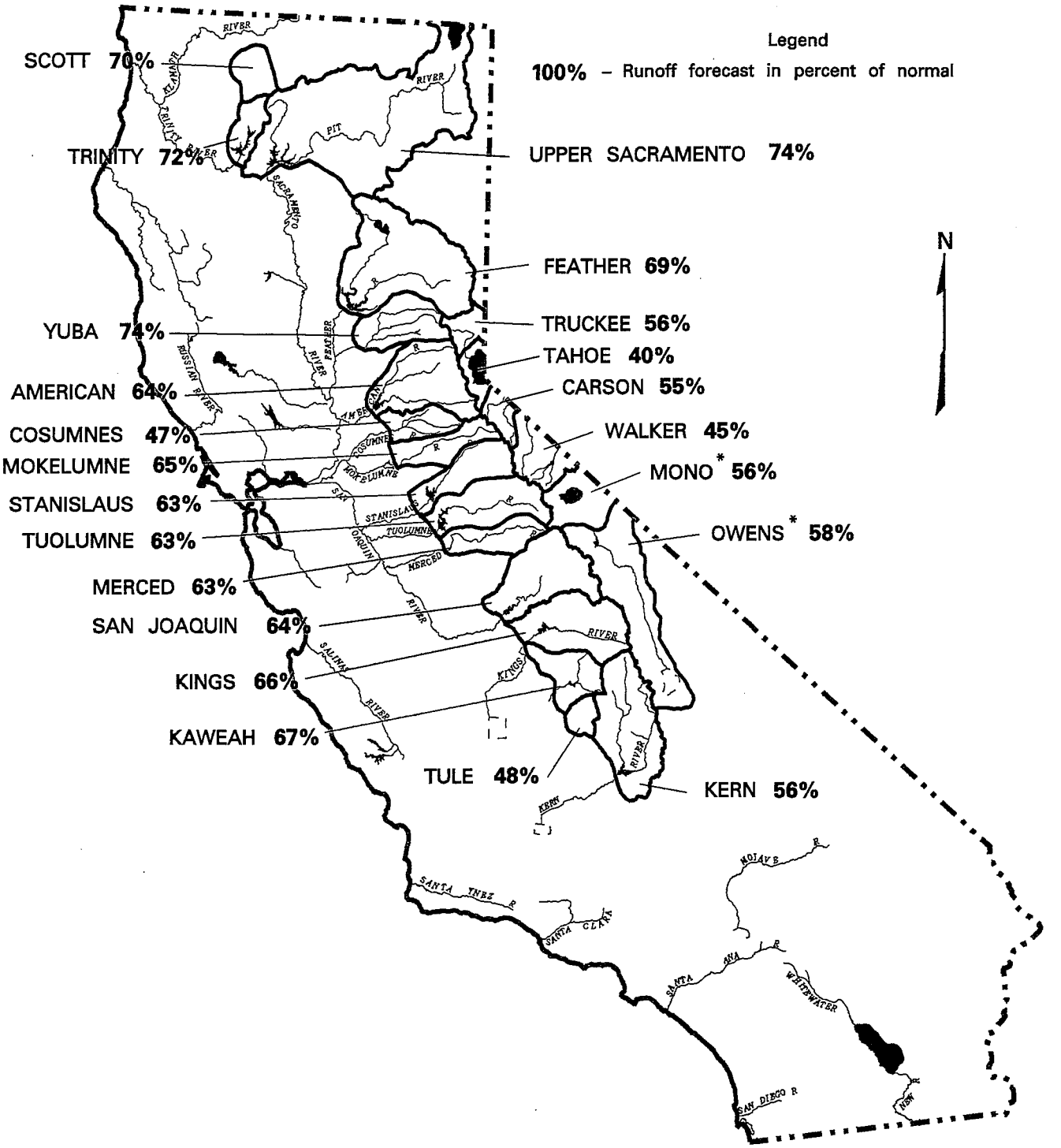
NC – North Coast
SF – San Francisco Bay
CC – Central Coast
SC – South Coast
SB – Sacramento
SJ – San Joaquin
TL – Tulare Lake
NL – North Lahontan
SL – South Lahontan
CD – Colorado Desert

WATER YEAR IS OCTOBER 1 THROUGH SEPTEMBER 30

FORECAST OF APRIL – JULY

UNIMPAIRED SNOWMELT RUNOFF

MARCH 1, 1994



* FORECAST BY DEPARTMENT OF WATER AND POWER, CITY OF LOS ANGELES

FORECASTS OF APRIL-JULY UNIMPAIRED RUNOFF FOR CENTRAL VALLEY STREAMS MARCH 1, 1994

DRAINAGE BASIN AND WATERSHED	April through July Unimpaired Runoff in 1,000 Acre-Feet					
	HISTORICAL			FORECASTS		
	50 Year Average	Maximum of Record	Minimum of Record	April-July Forecast	Percent of Average	80% Prob. Range
SACRAMENTO RIVER BASIN						
Upper Sacramento River						
Sacramento River at Shasta Lake	297	702	39	220	74	
McCloud River at Shasta Lake	411	850	185	320	78	
Pit River at Shasta Lake	1,062	1,796	480	790	74	
Total inflow to Shasta Lake	1,824	3,189	726	1,350	74	1,050-2,150
Sacramento River above Bend Bridge, near Red Bluff	2,491	4,674	943	1,800	72	1,250-2,850
Feather River						
Feather River at Lake Almanor near Prattville	333	675	120	240	72	
North Fork at Pulga	1,028	2,416	243	700	68	
Middle Fork near Clio (1)	86	518	4	30	35	
South Fork at Ponderosa Dam	110	267	13	70	64	
Total inflow to Oroville Reservoir	1,857	4,676	392	1,280	69	810-2,130
Yuba River						
North Yuba below Goodyears Bar	286	647	51	210	73	
Inflow to Jackson Mdws and Bowman Reservoirs	112	236	25	90	80	
South Yuba at Langs Crossing	233	481	57	180	77	
Yuba River at Smartville	1,047	2,424	200	770	74	460-1,270
American River						
North Fork at North Fork Dam	262	716	43	170	65	
Middle Fork near Auburn	522	1,406	100	340	65	
Silver Creek below Camino Diversion Dam	173	386	37	115	66	
Total inflow to Folsom Reservoir	1,284	3,074	229	820	64	540-1,480
Sacramento River at Sacramento						
SAN JOAQUIN RIVER BASIN						
Cosumnes River at Michigan Bar	129	363	8	60	47	35-140
Mokelumne River						
North Fork near West Point (2)	437	829	104	280	64	
Total inflow to Pardee Reservoir	465	1,065	102	300	65	200-510
Stanislaus River						
Middle Fork below Beardsley Dam	334	702	64	220	66	
North Fork inflow to McKay's Point Dam	224	503	34	140	63	
Total inflow to Melones Reservoir	713	1,710	116	450	63	280-740
Tuolumne River						
Cherry Creek and Eleanor Creek near Hetch Hetchy	322	727	97	200	62	
Tuolumne River near Hetch Hetchy	606	1,392	153	400	66	
Total inflow to Don Pedro Reservoir	1,200	2,682	301	750	63	480-1,200
Merced River						
Merced River at Pohono Bridge	362	888	80	240	66	
Total inflow to Exchequer Reservoir	617	1,587	123	390	63	260-620
San Joaquin River						
San Joaquin River at Mammoth Pool (3)	1,014	2,279	235	650	64	
Big Creek below Huntington Lake (3)	95	264	11	60	63	
South Fork near Florence Lake (3)	202	511	58	130	64	
Total inflow to Millerton Lake	1,228	3,355	262	780	64	450-1,230
San Joaquin River near Vernalis						
TULARE LAKE BASIN						
Kings River						
North Fork Kings River near Cliff Camp	239	565	50	160	67	
Total inflow to Pine Flat Reservoir	1,203	3,114	273	790	66	500-1,200
Kaweah River at Terminus Reservoir	284	814	61	190	67	120-290
Tule River at Success Reservoir	63	256	2	30	48	15-60
Kern River						
Kern River near Kernville	373	1,203	83	230	62	
Total inflow to Isabella Reservoir	461	1,657	84	260	56	180-480

All 50-year averages are based on data for water years 1941-1990 except:
(1) 44-year average based on years 1936-79.
(2) 36-year average based on years 1936-71.
(3) 45-year average based on years 1936-80.
See inside back cover for definition of unimpaired runoff and 80 percent probability ranges.

FORECASTS OF WATER YEAR UNIMPAIRED RUNOFF FOR CENTRAL VALLEY STREAMS MARCH 1, 1994

Water Year October through September Unimpaired Runoff in 1,000's Acre-Feet												
HISTORICAL			*	*	DISTRIBUTION						FORECASTS	
50 Year Average	Maximum of Record	Minimum of Record	October through January	February	March	April	May	June	July	August and September	Water Year Forecast	Percent of Average
856	1,964	165										
1,244	2,353	577										
3,145	5,150	1,484										
5,987	10,796	2,479	1,070	390	620	530	380	250	190	350	3,780 (3,300-5,140)	63
8,664	17,180	3,294	1,470	650	880	700	510	340	250	420	5,220 (4,300-7,270)	60
780	1,269	366										
2,417	4,400	666										
219	637	24										
291	562	32										
4,617	9,492	994	470	230	420	550	430	190	110	140	2,540 (1,900-3,700)	55
564	1,056	102										
181	292	30										
379	565	98										
2,390	4,926	369	170	100	210	320	300	120	30	20	1,270 (900-1,920)	53
616	1,234	66										
1,070	2,575	144										
318	705	59										
2,736	6,381	349	120	95	230	360	320	120	20	15	1,280 (930-2,150)	47
												56
385	1,253	20	10	15	35	34	20	5	1	0	120 (80-260)	31
626	1,009	197										
748	1,800	129	19	15	55	120	140	45	5	1	400 (270-640)	53
471	929	88										
1,150	2,952	155	50	30	85	170	185	80	15	5	620 (410-970)	54
461	1,147	123										
770	1,661	258										
1,882	4,430	383	70	50	130	250	335	140	25	10	1,010 (670-1,520)	54
461	1,020	92										
966	2,859	150	30	30	65	125	170	80	15	5	520 (360-800)	54
1,337	2,964	308										
112	298	14										
248	653	71										
1,776	4,642	362	80	40	100	200	320	200	60	30	1,030 (640-1,560)	58
												55
284	607	58										
1,669	4,294	383	75	40	80	180	330	220	60	25	1,010 (680-1,470)	61
444	1,402	92	20	15	30	60	80	40	10	5	260 (170-380)	59
145	615	16	8	7	13	15	10	4	1	2	60 (37-105)	41
558	1,577	163										
716	2,309	175	65	25	40	70	90	70	30	20	410 (310-680)	57

* Unimpaired runoff to date

FORECASTS OF APRIL-JULY UNIMPAIRED RUNOFF FOR SELECTED CALIFORNIA STREAMS

MARCH 1, 1994

DRAINAGE BASIN AND WATERSHED	April through July Unimpaired Runoff in 1,000 Acre-Feet				
	HISTORICAL			FORECASTS	
	50 Year Average	Maximum of Record	Minimum of Record	April-July Forecast	Percent of Average
NORTH COAST AREA					
Trinity River at Lewiston	653	1,593	80	470	72
Scott River at Ft. Jones	200	*	*	140	70
Upper Klamath Lake(1)(2)(5)	521	1,151	177	340	65
LAHONTAN AREA					
Truckee River, Lake Tahoe to Farad accretion	268	713	58	150	56
Lake Tahoe Rise in feet (assuming gates closed)	1.5	3.75	0.23	0.6	40
East Carson River near Gardnerville	186	407	43	105	56
West Carson River at Woodfords	54	131	12	35	65
East Walker River near Bridgeport	63	209	7	20	32
West Walker River near Coleville	148	330	35	85	57
Owens River(1)(3)	233	579	96	136	58

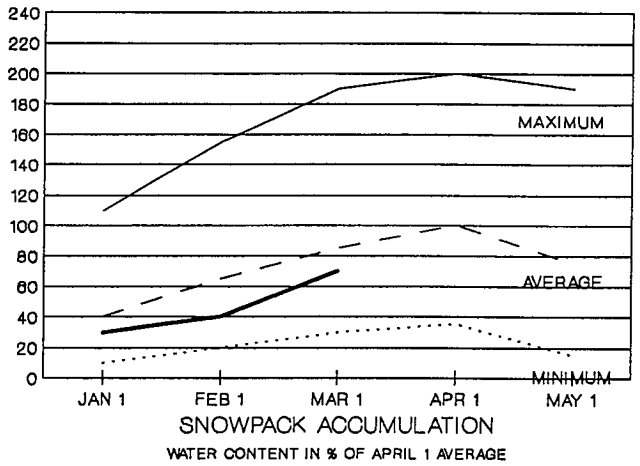
(1)Forecast period of April-September

(2)Forecast by U.S. Soil Conservation Service, Portland, Or.

(3)Forecast by Dept. of Water and Power, City of Los Angeles

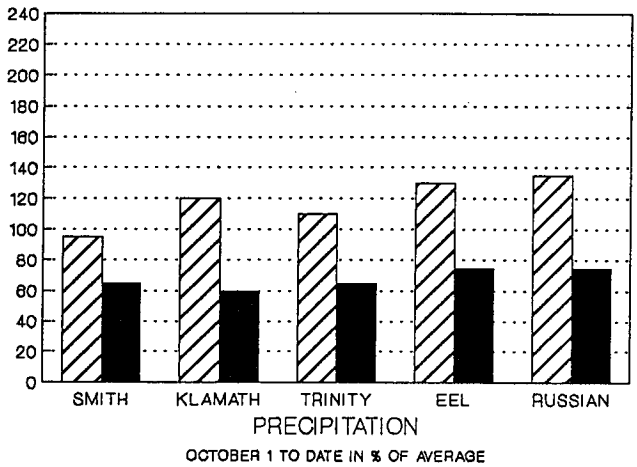
(4)Inside back cover for definition of unimpaired runoff.

(5)Average period of 25 years

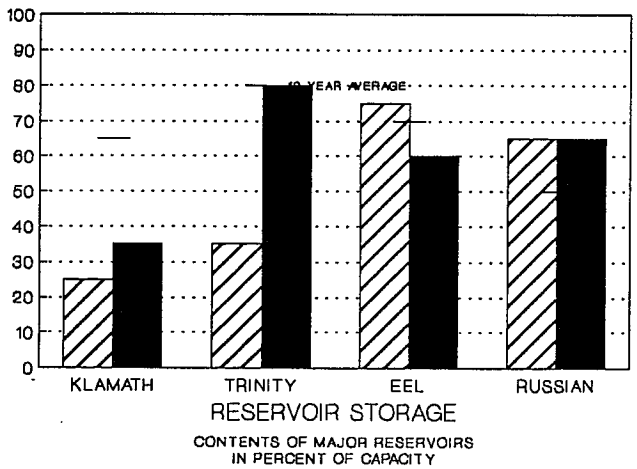


NORTH COAST AREA

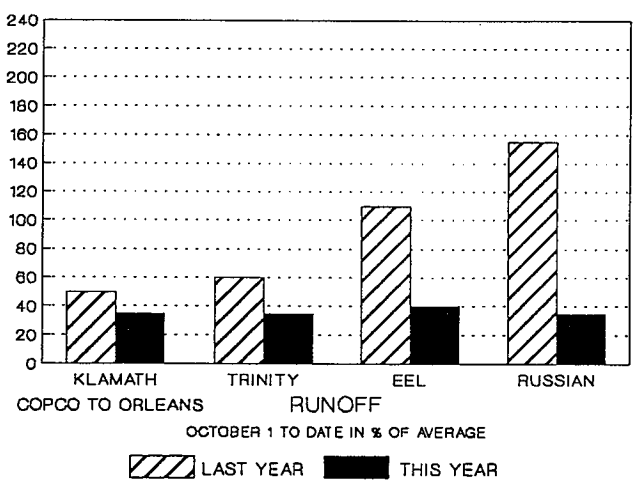
SNOWPACK - First of the month measurements made at 12 snow courses indicate an area wide snow water equivalent of 20.2 inches. This is 80 percent of the March 1 average and 70 percent of the seasonal (April 1) average. Last year at this time the pack was holding 38.3 inches of water.



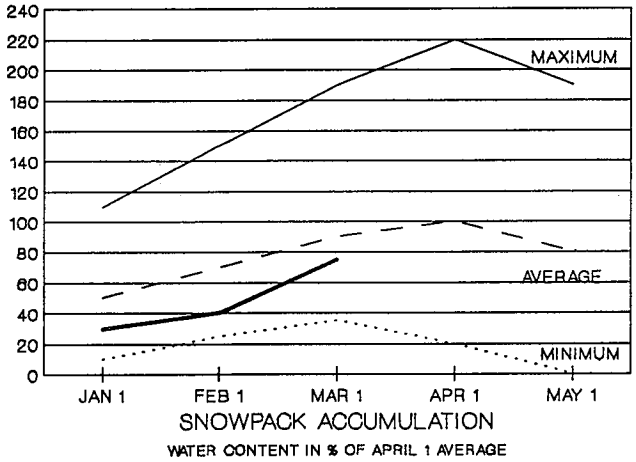
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on this area was 65 percent of normal. Precipitation last month was about 90 percent of the monthly average. Seasonal precipitation at this time last year stood at 115 percent of normal.



RESERVOIR STORAGE - First of the month storage in 7 reservoirs was 2.4 million acre-feet which is 105 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 60 percent of average.



RUNOFF - Seasonal runoff of streams draining the area totaled 2.8 million acre-feet which is 35 percent of average for this period. Last year, runoff for the same period was 90 percent of average.

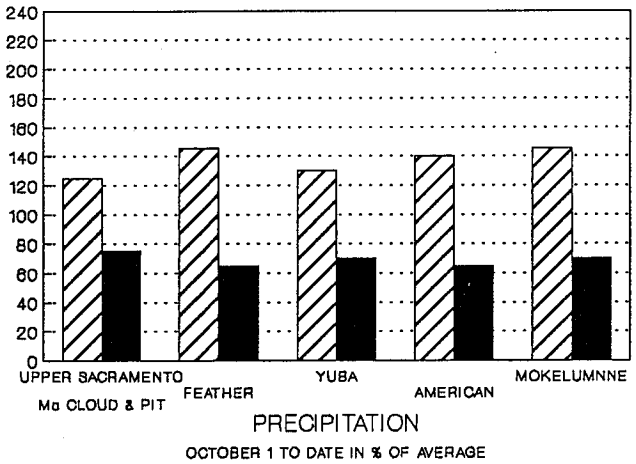


SNOWPACK ACCUMULATION

WATER CONTENT IN % OF APRIL 1 AVERAGE

SACRAMENTO BASIN

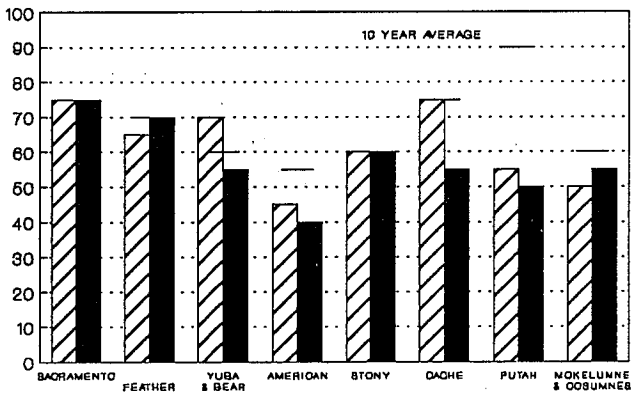
SNOWPACK - First of the month measurements made at 71 snow course indicate a basin-wide snow water equivalent of 22.5 inches. This is 85 percent of the average for this date and 75 percent for April 1. Last year at this time, the pack was holding 48.7 inches of water.



PRECIPITATION

OCTOBER 1 TO DATE IN % OF AVERAGE

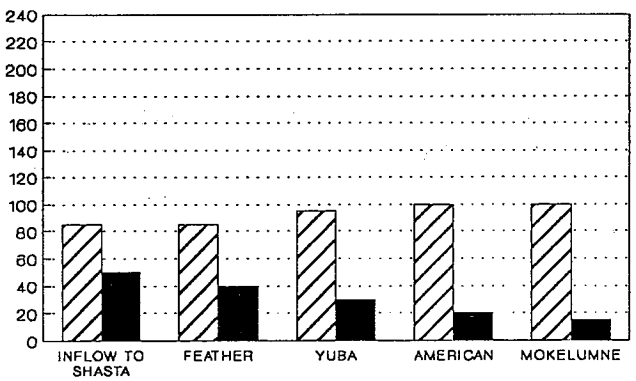
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the Sacramento Basin was 70 percent of normal. Precipitation last month was about 100 percent of the monthly average. Seasonal precipitation at this time last year stood at 140 percent of average.



RESERVOIR STORAGE

CONTENTS OF MAJOR RESERVOIRS IN PERCENT OF CAPACITY

RESERVOIR STORAGE - First of the month storage in 43 reservoirs was 10.1 million acre-feet which is 90 percent of average. About 65 percent of available capacity was being used. Storage in these reservoirs was about 90 percent of average at this time last year.



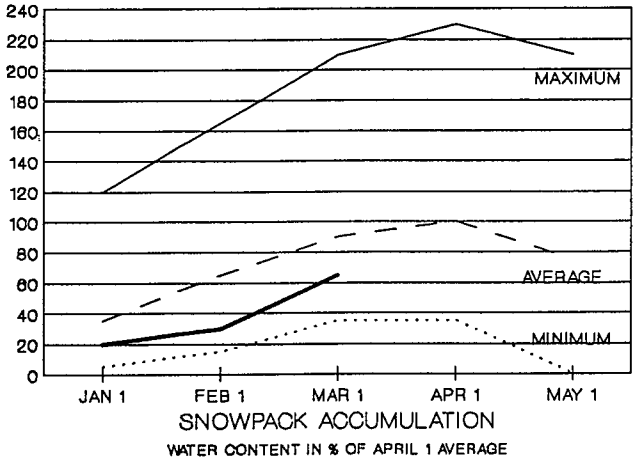
RUNOFF

OCTOBER 1 TO DATE IN % OF AVERAGE

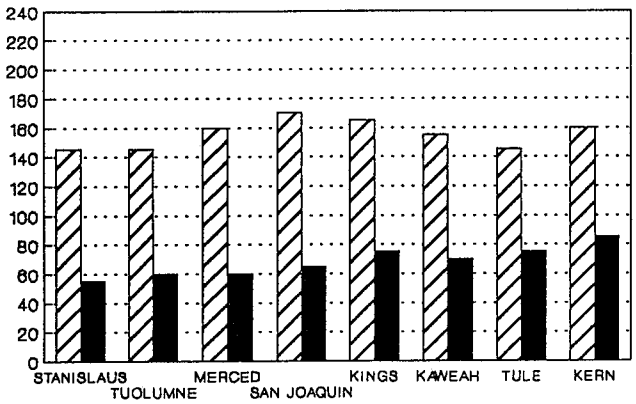
LAST YEAR THIS YEAR

RUNOFF - Seasonal runoff from streams draining into the basin totaled 3.3 million acre-feet which is 40 percent of average for this period. Last year runoff for the same period was 95 percent of average.

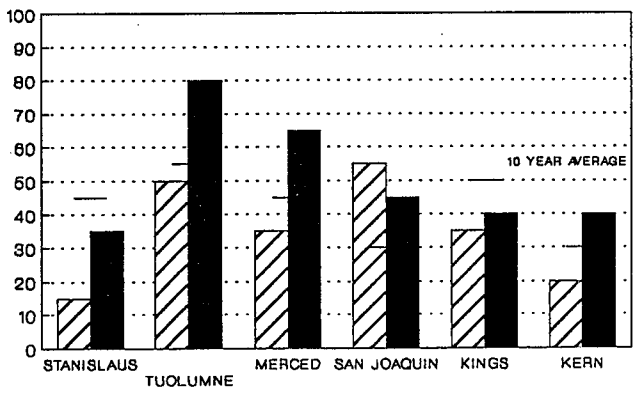
The Sacramento River Index for the year is forecast at 10.3 million acre-feet assuming median meteorological conditions for the remainder of the year. This classifies the year as "dry" in the Sacramento-San Joaquin Delta according to the State Water Resources Control Board's Decision 1485. The SRI at this time last year was forecasted to be 20.5 million acre-feet.



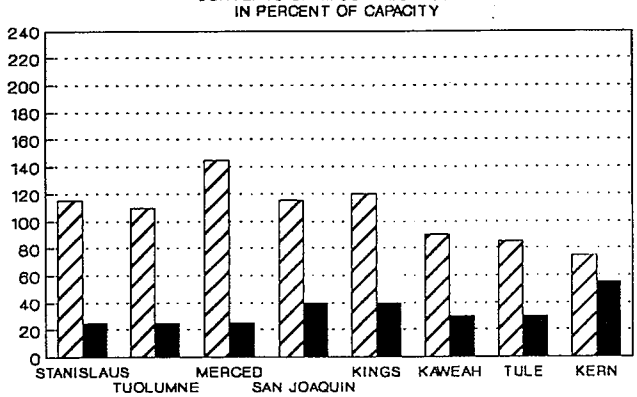
SNOWPACK ACCUMULATION
WATER CONTENT IN % OF APRIL 1 AVERAGE



PRECIPITATION
OCTOBER 1 TO DATE IN % OF AVERAGE



RESERVOIR STORAGE
CONTENTS OF MAJOR RESERVOIRS
IN PERCENT OF CAPACITY



RUNOFF
OCTOBER 1 TO DATE IN % OF AVERAGE

LAST YEAR THIS YEAR

SAN JOAQUIN AND TULARE LAKE BASINS

SNOWPACK - First of the month measurements made at 65 San Joaquin Basin snow courses indicate a basin wide snow water equivalent of 18.8 inches which is 65 percent of the seasonal (April 1) average and 75 percent of average for this date. Last year at this time, the pack was holding 51.7 inches of water.

At the same time, 39 Tulare Lake Basin snow courses indicated a basin-wide snow water equivalent of 16.1 inches which is 80 percent of the average for this date and 70 percent of the seasonal average. Last year at this time, the Basin was holding 37.1 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Joaquin Basin was 65 percent of normal. Precipitation last month was 110 percent of the monthly average. Seasonal precipitation at this time last year stood at 155 percent of normal.

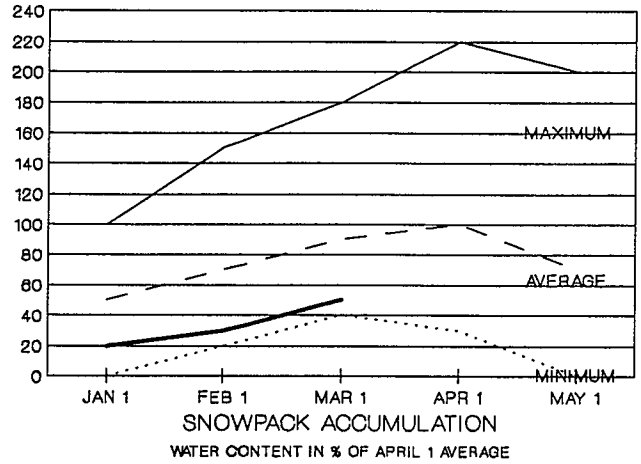
Seasonal precipitation on the Tulare Lake Basin was 80 percent of normal. Precipitation last month was 130 percent of the monthly average. Seasonal precipitation at this time last year stood at 160 percent of normal.

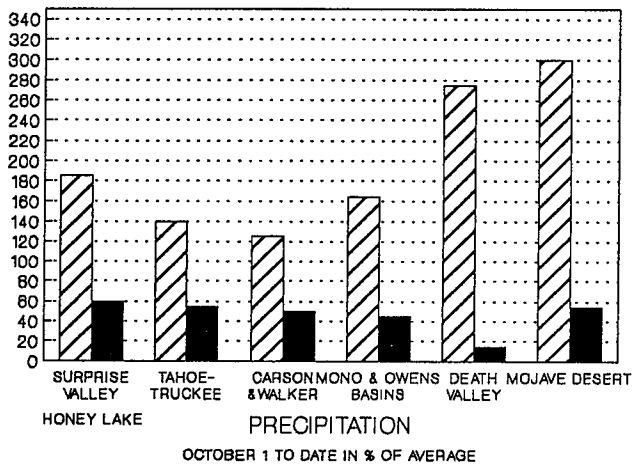
RESERVOIR STORAGE - First of the month storage in 33 San Joaquin Basin reservoirs was 7.1 million acre-feet which is 105 percent of average. About 65 percent of available capacity was being used. Storage in these reservoirs at this time last year was 75 percent of average.

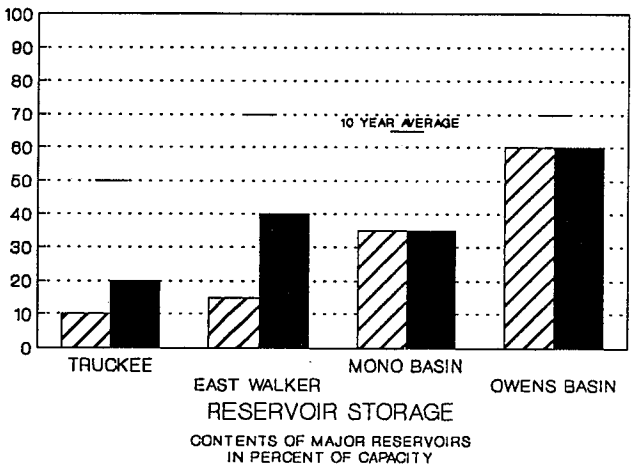
First of the month storage in 6 Tulare Lake Basin reservoirs was 787 thousand acre-feet which is 100 percent of average. About 40 percent of available capacity was being used. Storage in these reservoirs at this time last year was 65 percent of average.

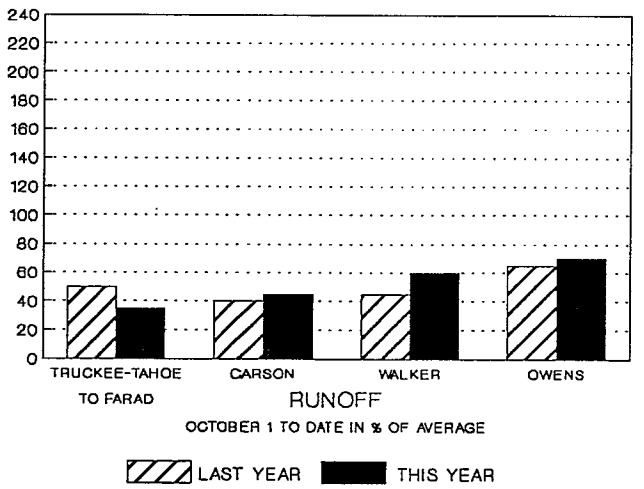
RUNOFF - Seasonal runoff of streams draining into the San Joaquin Basin totaled 435 thousand acre-feet which is 25 percent of average for this period. Last year, runoff for this same period was 120 percent of average.

Seasonal runoff of streams draining into the Tulare Lake Basin totaled 251 thousand acre-feet which is 45 percent of average for this period. Last year, runoff for this same period was 100 percent of average.









NORTH AND SOUTH LAHONTAN AREA

SNOWPACK - First of the month measurements made at 16 North Lahontan snow courses indicate an area wide snow water equivalent of 15.8 inches which is 55 percent of average for this date and 50 percent of the seasonal (April 1) average. Last year at this time, the pack was holding 39.0 inches of water.

At the same time, 22 South Lahontan courses indicated an area-wide snow water equivalent of 12.1 inches which is 55 percent of the average for this date. Last year at this time, the pack was holding 38.8 inches of water.

PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) over the North Lahontan area was 55 percent of normal. Precipitation last month was 100 percent of the monthly average. Seasonal precipitation at this time last year stood at 150 percent of normal.

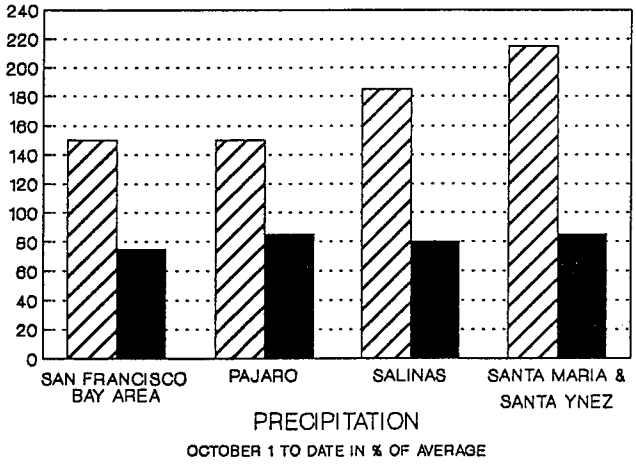
Seasonal precipitation over the South Lahontan area was 40 percent of normal. Last month's precipitation was 90 percent of the monthly average. Seasonal precipitation at this time last year stood at 215 percent of normal.

RESERVOIR STORAGE - First of the month storage in 5 North Lahontan reservoirs was 215 thousand acre-feet which is 35 percent of average. About 20 percent of available capacity was being used. Storage in these reservoirs at this time last year was 15 percent of average. Lake Tahoe was 0.6 feet below its natural rim on March 1.

First of the month storage in 8 South Lahontan reservoirs was 247 thousand acre-feet which is 85 percent of average. About 60 percent of available capacity was being used. Storage in these reservoirs at this time last year was 85 percent of average.

RUNOFF - Seasonal runoff of streams draining the North Lahontan area totaled 93 thousand acre-feet which is 45 percent of average for this period. Last year, runoff for this same period was 45 percent of average.

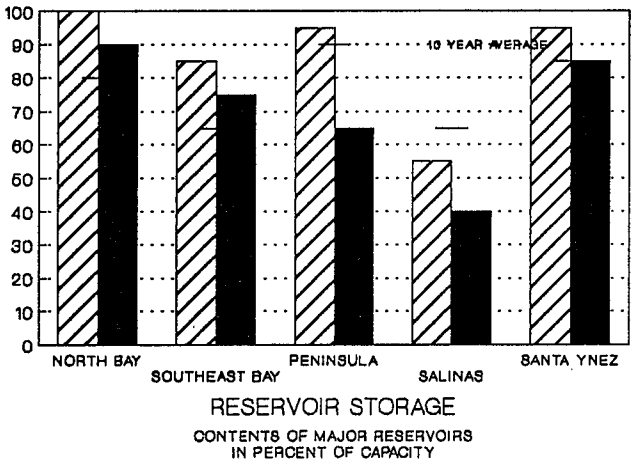
Seasonal runoff of the Owens River in the South Lahontan area totaled 40 thousand acre-feet which is 70 percent of average for this period. Last year, runoff for this same period was 65 percent of average.



SAN FRANCISCO AND CENTRAL COAST AREAS

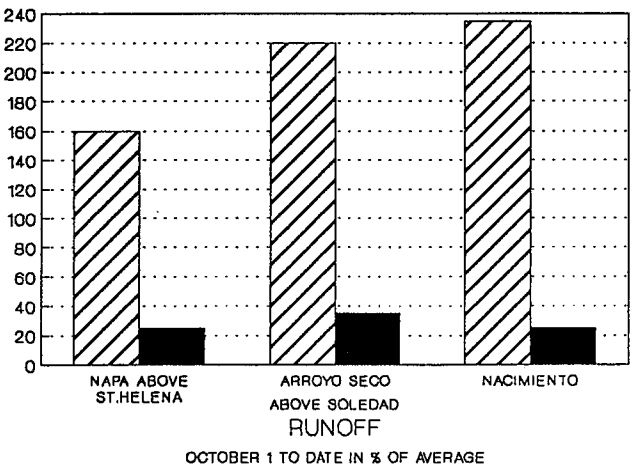
PRECIPITATION - Seasonal precipitation (October 1 through the end of last month) on the San Francisco Bay area was 75 percent of normal. Precipitation last month was 110 percent of the monthly average. Seasonal precipitation at this time last year stood at 150 percent of normal.

Seasonal precipitation on the Central Coast area averaged 85 percent of normal. Precipitation last month was 145 percent of the monthly average. Seasonal precipitation at this time last year stood at 180 percent of normal.



RESERVOIR STORAGE - First of the month storage in 18 major Bay area reservoirs was 517 thousand acre-feet which is 105 percent of average. About 75 percent of available capacity was being used. Storage in these reservoirs at this time last year was 120 percent of average.

First of the month storage in 6 major Central Coast reservoirs was 506 thousand acre-feet which is 80 percent of average. About 55 percent of available capacity was being used. Storage in these reservoirs at this time last year was 95 percent of average.



RUNOFF - Seasonal runoff of the Napa River in the San Francisco Bay area totaled 13 thousand acre-feet which is 25 percent of average for this period. Last year, runoff for this same period was 160 percent of average.

Seasonal runoff of selected Central Coast streams totaled 62 thousand acre-feet which is 30 percent of average for this period. Last year, runoff for this same period was 230 percent of average.

LAST YEAR THIS YEAR

SOUTH COAST AND COLORADO RIVER AREAS

PRECIPITATION - Seasonal precipitation (October through the end of February) on the South Coast was 70 percent of normal. February precipitation was 140 percent of the monthly average. Seasonal precipitation at this time last year stood at 240 percent of normal.

Seasonal precipitation in the Colorado Desert area was 50 percent of normal. Seasonal precipitation at this time last year was 325 percent of the average.

RUNOFF - Seasonal runoff from selected South Coast streams totaled 22 thousand acre-feet which is 70 percent of average. Last year, runoff for the same period was 430 percent of average.

RESERVOIR STORAGE - March 1 storage in 29 major South Coast area reservoirs was 1.6 million acre-feet or 120 percent of average. About 80 percent of available capacity was being used. Storage in these reservoirs at this time last year was 150 percent of average.

First of the month combined storage in Lakes Powell, Mead, Mohave and Havasu was about 41.7 million acre-feet which is 110 percent of average. About 78 percent of available capacity was being used. One year ago, these reservoirs were storing 36.8 million acre-feet. The April through July inflow to Lake Powell is forecasted to be 6.1 million acre-feet which will be 79 percent of average.

UPPER COLORADO RIVER BASIN - The first of the month snowpack, according to the U.S. Soil Conservation Service reports was 80 percent of average and ranges from 55 percent in the Green River Basin above Flaming Gorge to 90 percent in the Colorado above Cisco.

CENTRAL VALLEY PROJECT

Based on March 1 conditions, Bureau of Reclamation water year forecasts for runoff into CVP reservoirs are: Trinity--64 percent of average, Shasta--67 percent of average, American--45 percent of average, Stanislaus--53 percent of average, San Joaquin above Friant--54 percent of average. As of February 28, 1994 CVP storage was 7.6 MAF which is an increase of 1.5 MAF compared to one year ago, and is approximately 102 percent of normal for that date.

The Bureau of Reclamation announced waer allocations for the CVP on February 15, 1994. Agricultural contractors north and south of the Delta received 35 percent of their contract supply; urban contractors received 75 percent of historical use. Wildlife refuges received 75 percent of level II supplies. Sacramento River water rights settlement contractors received 75 percent supplies, and San Joaquin Exchange contractors were allocated their Critical year supplies approximating 77 percent.

Friant Division received 60 percent Class I, and zero Class II supplies. Stanislaus River contractors were not allocated any water because of the continuing shortage in New Melones water supply. USBR will announce updated water allocations for the CVP on March 14, 1994.

STATE WATER PROJECT

On March 1, State Water Project (SWP) conservation storage (Lake Oroville plus the state's share of San Luis) stood at 3.55 million acre-feet. The water supply outlook for 1994 continues to be poor due to below average precipitation and runoff. The SWP delivery allocation remains at 2.03 million acre-feet (MAF), or 50 percent of contractual entitlements of 4.15 MAF.

MAJOR WATER DISTRIBUTION PROJECTS

RESERVOIR STORAGE

(AVERAGES BASED ON PERIOD RECORD THROUGH 1990)

RESERVOIR	CAPACITY 1,000 AF	AVERAGE STORAGE 1,000 AF	STORAGE AS OF FEBRUARY 28 1993 1,000 AF	1994 1,000 AF	PERCENT AVERAGE
STATE WATER PROJECT					
Oroville	3,540	2,588	2,510	2,489	96
San Luis SWP	1,062	935	990	1,066	114
Lake Del Valle	77	33	40	28	83
Silverwood	73	66	70	66	99
Pyramid Lake	171	162	162	163	101
Castaic Lake	324	268	316	276	103
Perris Reservoir	132	115	124	118	102
CENTRAL VALLEY PROJECT					
Clair Engle Lake	2,450	1,897	895	1,962	103
Shasta Lake	4,550	3,377	3,459	3,299	98
Whiskeytown	241	208	198	206	99
Folsom	974	579	505	377	65
New Melones	2,420	1,492	368	792	53
Millerton Lake	521	306	449	279	91
San Luis CVP	971	764	645	965	126
COLORADO RIVER PROJECT					
Lake Mead	26,160	20,023	21,515	21,632	108
Lake Powell	25,000	15,410	12,944	17,852	116
Lake Mohave	1,810	1,641	1,709	1,693	103
Lake Havasu	619	537	599	538	100
EAST BAY MUNICIPAL UTILITY DISTRICT					
Pardee	210	177	180	185	104
Camanche	417	251	194	271	108
East Bay (4 reservoirs)	151	129	135	127	98
CITY & COUNTY OF SAN FRANCISCO					
Hetch Hetchy	360	131	79	240	183
Cherry Lake	268	103	90	266	258
Lake Eleanor	28	10	5	22	223
South Bay (4 reservoirs)	225	169	213	179	106
CITY OF LOS ANGELES(DWP)					
Crowley Lake(Long Valley)	183	130	123	117	86
Grant Lake	48	30	17	19	64
Other Aqueduct Storage(6 reservoirs)	95	75	56	63	84

DEPARTMENT OF WATER RESOURCES - CALIFORNIA DATA EXCHANGE CENTER
TELEMETERED SNOW WATER EQUIVALENTS - March 1 1994

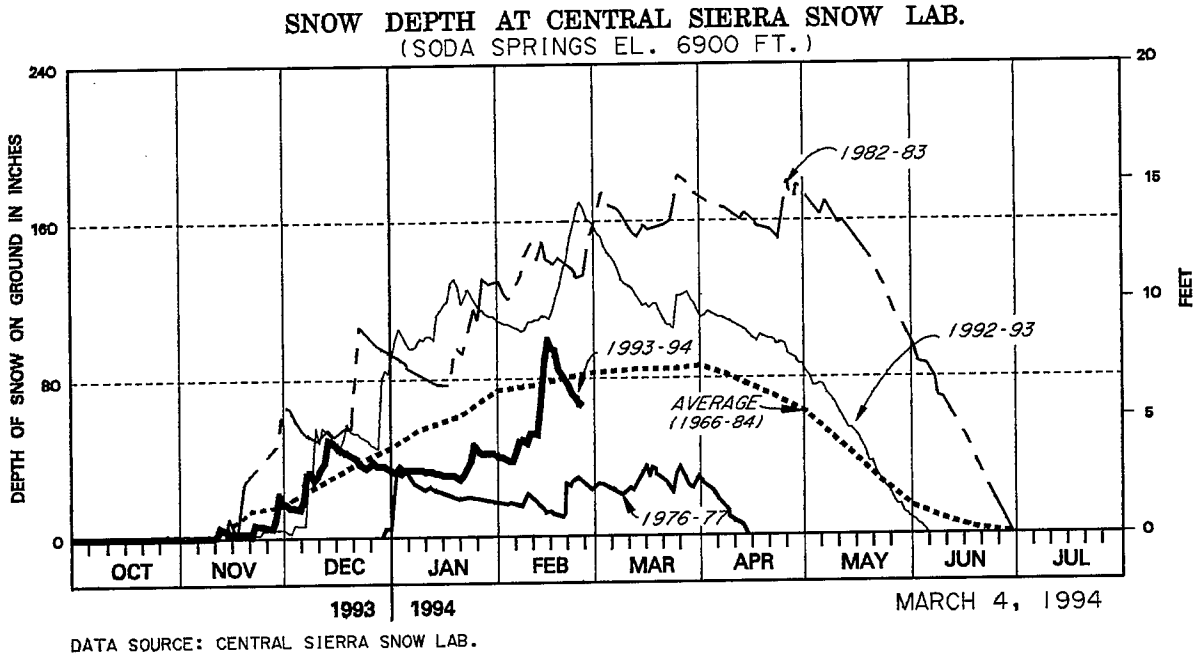
BASIN NAME STATION NAME	AGENCY	ELEV FEET	APR 1 AVG	TODAY	INCHES OF WATER EQUIVALENT PERCENT OF APR 1	24 HRS AGO	1 WEEK AGO
TRINITY RIVER							
PETERSON FLAT	USBR	7150	----	19.0	----	19.0	16.4r
RED ROCK MOUNTAIN	USBR	6700	39.6	29.4	74%	28.8	28.1
BONANZA KING	USBR	6450	40.5	22.8	56%	22.2	21.5
SHIMMY LAKE	USBR	6200	40.3	31.5	78%	34.7	34.7
MIDDLE BOULDER #3	USBR	6200	28.3	13.7	48%	13.7	13.7
HIGHLAND LAKES	USBR	6030	29.9	21.4	71%	21.7	21.4
SCOTTS MOUNTAIN	USBR	5900	----	16.7	----	16.6	16.2
MUMBO BASIN	USBR	5700	22.4	----	----	----	----
BIG FLAT	USBR	5100	----	13.2	----	13.4	13.2
SACRAMENTO RIVER							
CEDAR PASS	SCS	7100	18.1	11.6	64%	11.5	10.2
BLACKS MOUNTAIN	DWR	7100	----	9.1	----	9.0	8.3
SAND FLAT	USBR	6750	42.4	26.0	61%	26.0	25.0
MEDICINE LAKE	USBR	6700	----	16.7	----	16.4	15.5
ADIN MOUNTAIN	SCS	6350	13.6	10.4	76%	10.4	9.3
SNOW MOUNTAIN	USBR	5950	27.0	22.4	83%	22.0	18.7
SLATE CREEK	USBR	5600	29.0	22.2	77%	22.2	21.9
STOUTS MEADOW	USBR	5400	36.0	28.0	78%	28.0	25.2
FEATHER RIVER							
KETTLEROCK	DWR	7300	25.5	15.4	60%	15.1	14.4
GRIZZLY	DWR	6900	29.7	16.2	55%	16.0e	15.4
PILOT PEAK	DWR	6800	52.6	24.1	46%	24.1	22.3
GOLD LAKE	DWR	6750	36.5	25.2	69%	25.1	24.4
HUMBUG	DWR	6500	28.0	26.8	96%	26.5	25.3
RATTLESNAKE	DWR	6100	14.0	19.7	141%	19.8	19.3
BUCKS LAKE	DWR	5750	44.7	42.0	94%	41.9	38.8
FOUR TREES	DWR	5150	20.0	25.7	128%	26.0	25.6
YUBA & AMERICAN RIV							
LAKE LOIS	DWR	8800	----	26.2	----	26.2	24.2
SCHNEIDERS	SMUD	8750	34.5	20.7	60%	20.7	19.4
CAPLES LAKE COURSE	USBR	7800	30.9	17.8	58%	17.8	16.4
ALPHA	SMUD	7600	35.9	21.3	59%	21.3	20.5
BETA	DWR	7600	----	19.7	----	19.6	18.4
FORNI RIDGE	USBR	7600	37.0	16.7	45%	16.7	15.4
SILVER LAKE	USBR	7100	22.7	14.4	63%	14.4	13.7
CENT SIERRA SNOW LAB	USFS	6950	33.6	24.2	72%	24.2	17.8
HUYSINK	USBR	6600	42.6	21.5	50%	21.5	20.3
VAN VLECK	SMUD	6700	35.9	26.4	74%	26.5	25.6
ROBBS SADDLE	SMUD	5900	21.4	20.1	94%	20.8	19.9
GREEK STORE	USBR	5600	21.0	18.9	90%	18.9	18.7
BLUE CANYON	USBR	5280	9.0	8.9	98%	9.3	8.8e
ROBBS POWERHOUSE	SMUD	5150	5.2	11.3	217%	11.8	11.7
MOKEL. & STANIS. RIV							
DEADMAN CREEK	USBR	9250	37.2	15.2	41%	15.2	14.5
HIGHLAND MEADOW	USBR	8800	47.9	12.4	26%	12.8	14.7
GIANELLI MEADOW	USBR	8350	55.5	23.6	43%	23.6	22.2
LOWER RELIEF VALLEY	DWR	8100	41.2	20.7	50%	20.7	20.0
BLUE LAKES	SCS	8000	33.1	15.7	47%	15.7	15.1
MUD LAKE	SMUD	7900	44.9	28.2	63%	28.2	27.0
STANISLAUS MEADOW	USBR	7750	47.5	24.2	51%	24.1	22.7
BLOODS CREEK	USBR	7200	35.5	20.5	58%	20.5	19.5
BLACK SPRINGS	USBR	6500	32.0	19.2	60%	19.2	18.2
TUOLUMNE & MERCED R.							
DANA MEADOWS	DWR	9800	27.7	13.8	50%	13.6	13.4
SLIDE CANYON	DWR	9200	----	17.7	----	17.7	17.7
SNOW FLAT	DWR	8700	44.1	18.9	43%	18.9	19.6
TUOLUMNE MEADOWS	DWR	8600	22.6	10.1	45%	10.1	9.7
HORSE MEADOW	DWR	8400	48.6	22.9	47%	22.9	22.2
OSTRANDER LAKE	DWR	8200	34.8	16.6	48%	16.6	16.0
PARADISE	DWR	7650	----	21.6	----	21.6	20.2
GIN FLAT	DWR	7050	34.2	16.4	48%	16.3	15.4
LOWER KIBBIE	DWR	6600	27.4	17.8r	65%	17.8	17.8
SAN JOAQUIN RIVER							
VOLCANIC KNOB	USBR	10100	30.1	13.1	43%	13.1	12.4
AGNEW PASS	USBR	9450	32.3	16.1	50%	16.1	16.1
KAISER POINT	USBR	9200	37.8	15.6	41%	15.6	14.8
GREEN MOUNTAIN	USBR	7900	30.8	17.5	57%	17.3	16.7

DEPARTMENT OF WATER RESOURCES - CALIFORNIA DATA EXCHANGE CENTER
TELEMETERED SNOW WATER EQUIVALENTS - March 1 1994

BASIN NAME / STATION NAME	AGENCY	ELEV FEET	APR 1 AVG	TODAY	INCHES OF WATER EQUIVALENT PERCENT OF APR 1	24 HRS AGO	1 WEEK AGO
TAMARACK SUMMIT	USBR	7600	30.5	20.3	67%	20.3	20.1
CHILKOOT MEADOW	USBR	7150	38.0	22.6	60%	22.6	22.2
HUNTINGTON LAKE	USBR	7000	20.1	16.3r	81%	16.3	16.1
GRAVEYARD MEADOW	USBR	6900	18.8	13.2	70%	13.2	12.8
POISON RIDGE	USBR	6900	28.9	19.1	66%	19.1	18.9
KINGS RIVER							
BISHOP PASS	DWR	11200	----	14.4	----	14.4	14.4
CHARLOTTE LAKE	DWR	10400	----	14.8	----	14.8	14.0
STATE LAKES	USCE	10400	29.0	16.1	56%	16.1	15.9
MITCHELL MEADOW	USCE	10375	32.9	19.1	58%	19.1	18.9
BLACKCAP BASIN	USBR	10300	34.3	27.4	80%	27.4	27.4
UPPER BURNT CORRAL	DWR	9700	34.6	21.6	62%	21.6	21.6
WEST WOODCHUCK MDW	USCE	9100	32.8	----	----	----	----
BIG MEADOWS	DWR	7600	25.9	16.6	64%	16.8	17.3
KAWEAH & TULE RIVERS							
QUAKING ASPEN	DWR	7200	21.0	16.9	81%	16.9	16.9
GIANT FOREST	USCE	6400	10.0	10.3	103%	10.3	10.3
KERN RIVER							
UPPER TYNDALL CREEK	USCE	11500	27.7	10.5	38%	10.5	10.3
CRABTREE	DWR	10700	19.8	8.6r	44%	8.5	8.3
CHAGOOPA PLATEAU	DWR	10300	21.8	13.1	60%	13.1	13.1
PASCOES	USCE	9150	24.9	18.3	73%	18.3	17.4
TUNNEL	DWR	8950	15.6	7.8	50%	7.8	7.8
WET MEADOW	USCE	8900	30.3	15.0	50%	15.0	15.0
CASA VIEJA MDW	DWR	8400	20.9	11.8	56%	11.8	12.4
BEACH MEADOW	DWR	7650	11.0	6.3	57%	6.5	6.5
SURPRISE VALLEY AREA							
DISMAL SWAMP	SCS	7050	29.2	15.2	52%	15.3	13.6
TRUCKEE RIVER							
MOUNT ROSE SKI AREA	SCS	8850	38.5	18.9	49%	18.9	18.6
INDEPENDENCE LAKE	SCS	8450	41.4	21.1	51%	21.1	20.4
BIG MEADOWS	SCS	8700	25.7	7.0	27%	7.0	----
INDEPENDENCE CAMP	SCS	7000	21.8	11.2	51%	11.2	10.9
INDEPENDENCE CREEK	SCS	6500	12.7	10.1	80%	----	10.1
LAKE TAHOE BASIN							
HEAVENLY VALLEY	SCS	8800	28.1	----	----	12.5	12.4
HAGANS MEADOW	SCS	8000	16.5	10.7	65%	10.7	10.5
MARLETTE LAKE	SCS	8000	21.1	11.5	55%	11.5	11.3
ECHO PEAK	SCS	7800	39.5	22.8	58%	22.4	20.9
RUBICON NO. 2	SCS	7500	29.1	14.4	49%	14.2	13.2
WARD CREEK NO. 3	SCS	6750	39.4	20.1	51%	19.6	16.6
FALLEN LEAF LAKE	SCS	6300	7.0	5.8	83%	6.0	6.4
CARSON RIVER							
EBBETTS PASS	SCS	8700	38.8	17.8	46%	17.8	17.2
POISON FLAT	SCS	7900	16.2	12.0	74%	12.0	11.8
WALKER RIVER							
VIRGINIA LAKES RIDGE	SCS	9200	20.3	6.3	31%	6.3	6.4
LOBDELL LAKE	SCS	9200	17.3	7.5	43%	----	7.3
SONORA PASS BRIDGE	SCS	8750	26.0	11.8	45%	11.7	12.1
LEAVITT MEADOWS	SCS	7200	8.0	7.2	90%	7.3	7.7
OWENS RIVER/MONO LK.							
GEM PASS	LADWP	10750	31.7	13.7	43%	13.7	4.6
SAWMILL MEADOW	DWR	10300	19.4	9.8	50%	9.8	9.8
COTTONWOOD LAKES	LADWP	10200	11.6	4.6	39%	4.6	4.3
BIG PINE #3	LADWP	9800	17.9	7.2	40%	7.2	7.2
SOUTH LAKE	LADWP	9600	16.0	----	----	----	----
MAMMOTH PASS (RP)	USBR	9500	42.4	19.7	46%	19.7	19.1
MAMMOTH PASS-6 TANKS	USBR	9500	----	----	----	----	----
ROCK CREEK	LADWP	8200	----	6.4	----	6.4	6.7

NORMAL SNOWPACK ACCUMULATION EXPRESSED AS A PERCENT OF APRIL 1ST AVERAGE

AREA	JANUARY	FEBRUARY	MARCH	APRIL	MAY
CENTRAL VALLEY NORTH	45	70	90	100	75
CENTRAL VALLEY SOUTH	45	65	85	100	80
NORTH COAST	40	60	85	100	80



❄❄❄❄❄ SNOWLINES ❄❄❄❄

WESTERN SNOW CONFERENCE The 62nd annual meeting of the Western Snow Conference is being held April 18-21 in Santa Fe, New Mexico. The conference theme is "Climate Change Effects on Snowmelt Water Supply". The gathering will be in The Inn at Loretto, 211 Old Santa Fe Trail. Contact Neil Berg at (510) 559-6451 or Gary Hester at (916) 653-7433 if you need more information.

CURRENT SNOW COURSE data and a file of all the historic course data is available via anonymous FTP from snow.water.ca.gov in the /pub directory. The file css.all.xx where xx is the month of interest contains current snow course data in shef format as it is being received. This data has not been checked or verified. The file snowdata contains all the historic validated course data. Check the README file additional information and file descriptions. Please call Dudley McFadden at (916) 653-0881 or Frank Gehrke at (916) 653-8255 for additional information.

SNOWPACK - Snow data is a major index of spring and summer runoff from Sierra Nevada watersheds. April 1 data historically reflects the magnitude of the snowpack at or near the maximum seasonal accumulation. Averages are based on April 1 data for the period 1941-1990 (50 years, except for data sites established after 1941).

PRECIPITATION - averages are based on April 1 data for the period 1941-1990 (50 years, except for data sites established after 1941).

RUNOFF AND FORECASTS - Runoff data and runoff forecasts are shown as unimpaired values. Unimpaired runoff represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds. Forecast of runoff assumes median conditions subsequent to the date of forecast.

Runoff probability ranges are statistically derived from historical data. The 80 percent probability range is comprised of the 90 percent exceedence level value and the 10 percent exceedence level value. This means that actual runoff should fall within the stated limits eight times out of ten.

Runoff averages for most streams are based on the 50 year period 1941-1990. For more details contact California Cooperative Snow Surveys, P. O. Box 942836, Sacramento, CA 94236-0001, (916) 653-8292.

On the front cover:
Bill Malacky and Norm Williams measure the Lexington snow course as a cooperative contribution from the Oroville-Wyandotte Irrigation District toward the Department's forecast of the Feather and Yuba River flows.

Photo by Dave Hart

State of Calfornia –The Resources Agency
DEPARTMENT OF WATER RESOURCES
P. O. Box 942836
Sacramento, CA 94236-0001

SNOW SURVEYS SECTION ID.23352
DIVISION OF FLOOD MANAGEMENT 1422
RM 1609-11 - RES BLDG
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First Class