

STATE OF CALIFORNIA

The Resources Agency

Department of Water Resources

BULLETIN No. 120-74

WATER CONDITIONS IN CALIFORNIA

REPORT No. 3



APRIL 1, 1974

NORMAN B. LIVERMORE, JR.
Secretary for Resources
The Resources Agency

RONALD REAGAN
Governor
State of California

JOHN R. TEERINK
Director
Department of Water Resources

State of California
The Resources Agency
DEPARTMENT OF WATER RESOURCES

RONALD REAGAN, Governor
NORMAN B. LIVERMORE, Secretary for Resources
JOHN R. TEERINK, Director, Department of Water Resources
ROBERT G. EILAND, Deputy Director

DIVISION OF RESOURCES DEVELOPMENT

Herbert W. Greydanus Division Engineer

Activities covered by this report are under the direction
of

Robert E. Whiting Chief, Flood Forecasting and Control Branch

Prepared by

A. Jean Brown Chief, Snow Surveys and Water Supply Forecasting Section

Assisted by

Charles H. Howard Associate Engineer, W. R.

Christopher L. Carr Assistant Engineer, W. R.

Ned R. Peterson Assistant Engineer, W. R.

Armando L. Raimundo Water Resources Technician II

William G. T. Fong Water Resources Technician I

C. Deon Lightfoot Stenographer II

WATER CONDITIONS INDEXES

THE PRINCIPAL INDEXES OF WATER CONDITIONS IN CALIFORNIA ARE LISTED BELOW WITH PERTINENT COMMENTS REGARDING THEIR PRESENTATION IN THIS REPORT.

SNOWPACK - APRIL 1 SNOW DATA ARE MAJOR INDEXES OF SPRING AND SUMMER RUNOFF FROM SIERRA WATERSHEDS AND HISTORICALLY REFLECT THE MAGNITUDE OF THE SNOWPACK AT NEAR MAXIMUM SEASONAL ACCUMULATION. AVERAGES ARE BASED ON THE PERIOD, 1931-1970 (40 YEARS).

PRECIPITATION - AVERAGES ARE BASED ON THE PERIOD, 1931-1970 (40 YEARS).

RESERVOIR STORAGE - AVERAGES ARE BASED ON THE PERIOD, 1964-1973 (10 YEARS).

RUNOFF - UNLESS OTHERWISE NOTED, STREAMFLOW DATA USED AS INDEXES OF BASIN OR AREA RUNOFF HAVE BEEN CORRECTED FOR MAJOR UPSTREAM IMPAIRMENTS. FORECASTS OF RUNOFF ASSUME NORMAL PRECIPITATION TO FOLLOW. RUNOFF PROBABILITY RANGES ARE STATISTICALLY DERIVED FROM HISTORICAL DATA; 80 PERCENT PROBABILITY MEANS THAT ACTUAL RUNOFF WILL FALL WITHIN THE STATED LIMITS EIGHT TIMES OUT OF TEN. AVERAGES ARE BASED ON THE PERIOD, 1921-1970 (50 YEARS).

AGENCIES COOPERATING IN THE CALIFORNIA SNOW SURVEYS PROGRAM

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
- KAWEAH RIVER ASSOCIATION
- KINGS RIVER WATER ASSOCIATION
- LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
- LOWER TULE RIVER IRRIGATION DISTRICT
- MERCED IRRIGATION DISTRICT
- MODESTO IRRIGATION DISTRICT
- NEVADA IRRIGATION DISTRICT
- OAKDALE IRRIGATION DISTRICT
- MOCHUMNE-HARTNELL WATER DISTRICT
- OROVILLE-WYANDOTTE IRRIGATION DISTRICT
- PLACER COUNTY WATER AGENCY
- PORTERVILLE IRRIGATION DISTRICT
- SACRAMENTO MUNICIPAL UTILITY DISTRICT
- SAUCELITO IRRIGATION DISTRICT
- SOUTH SAN JOAQUIN IRRIGATION DISTRICT
- ST. JOHNS RIVER ASSOCIATION
- TULE RIVER ASSOCIATION
- TURLOCK IRRIGATION DISTRICT

PUBLIC AGENCIES (CONTINUED)

- VANDALIA IRRIGATION DISTRICT
- YUBA COUNTY WATER AGENCY

PRIVATE ORGANIZATIONS

- ATMOSPHERICS INCORPORATED
- J. G. BOSWELL COMPANY
- KERN COUNTY LAND COMPANY
- LIBERTY FARMS COMPANY
- MT. REBA INC.
- UNION CARBIDE CORPORATION

PUBLIC UTILITIES

- PACIFIC GAS AND ELECTRIC COMPANY
- SIERRA PACIFIC POWER COMPANY
- SOUTHERN CALIFORNIA EDISON COMPANY

MUNICIPALITIES

- CITY OF LOS ANGELES
- DEPARTMENT OF WATER AND POWER
- CITY OF PORTERVILLE
- CITY AND COUNTY OF SAN FRANCISCO
- PUBLIC UTILITIES COMMISSION

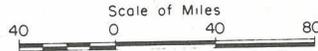
STATE AND FEDERAL AGENCIES

- CALIFORNIA DEPARTMENT OF WATER RESOURCES
- CALIFORNIA DEPARTMENT OF PARKS AND RECREATION
- 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 THE INTERIOR BUREAU OF RECLAMATION
- GEOLOGICAL SURVEY, WATER RESOURCES DIVISION
- NATIONAL PARK SERVICE (3 NATIONAL PARKS)
- U. S. DEPARTMENT OF THE ARMY CORPS OF ENGINEERS

OTHER COOPERATIVE PROGRAMS

- NEVADA COOPERATIVE SNOW SURVEYS
- OREGON COOPERATIVE SNOW SURVEYS

SEASONAL PRECIPITATION OCTOBER 1, 1973 - MARCH 31, 1974



LEGEND

—100— PRECIPITATION IN PERCENT OF NORMAL

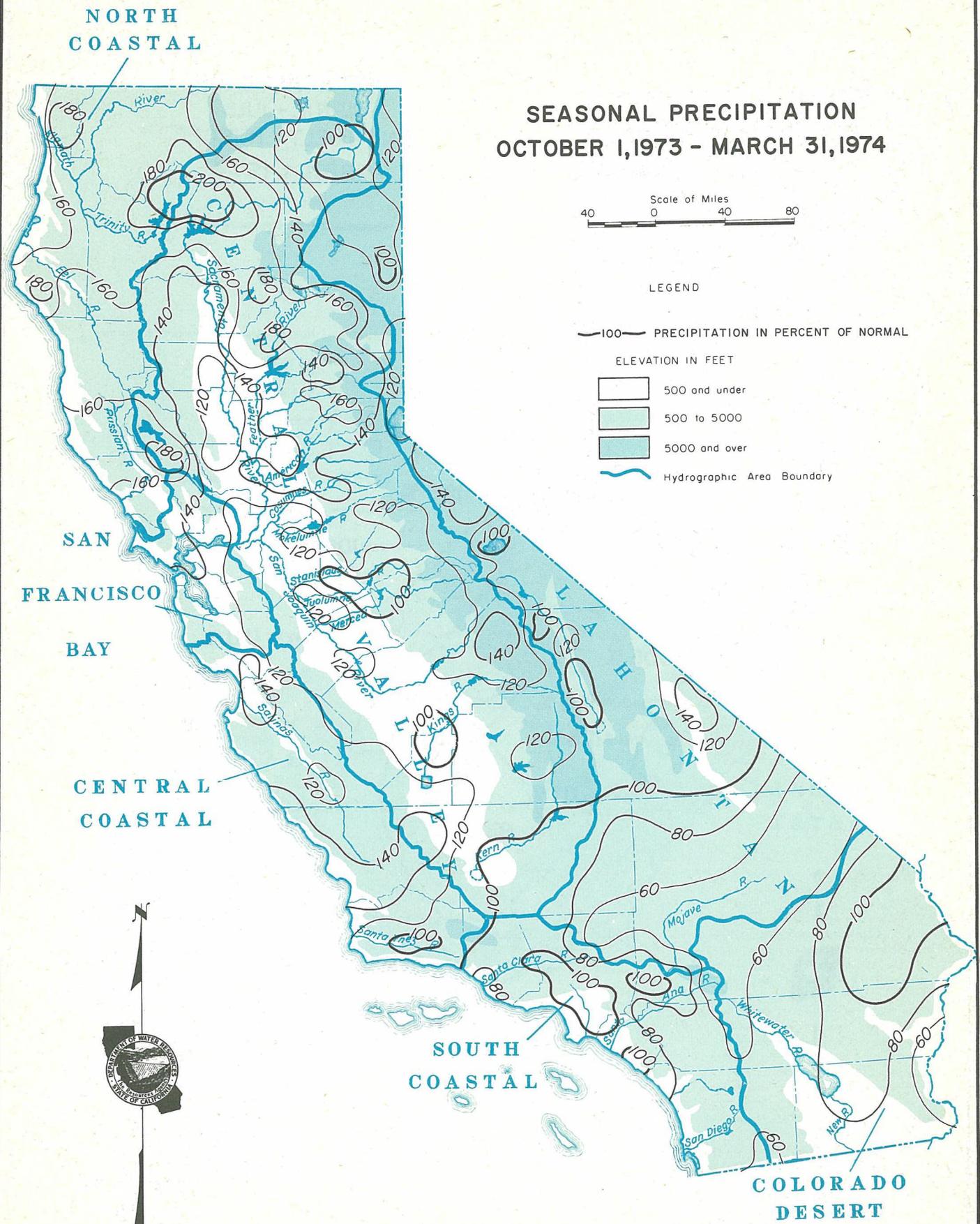
ELEVATION IN FEET

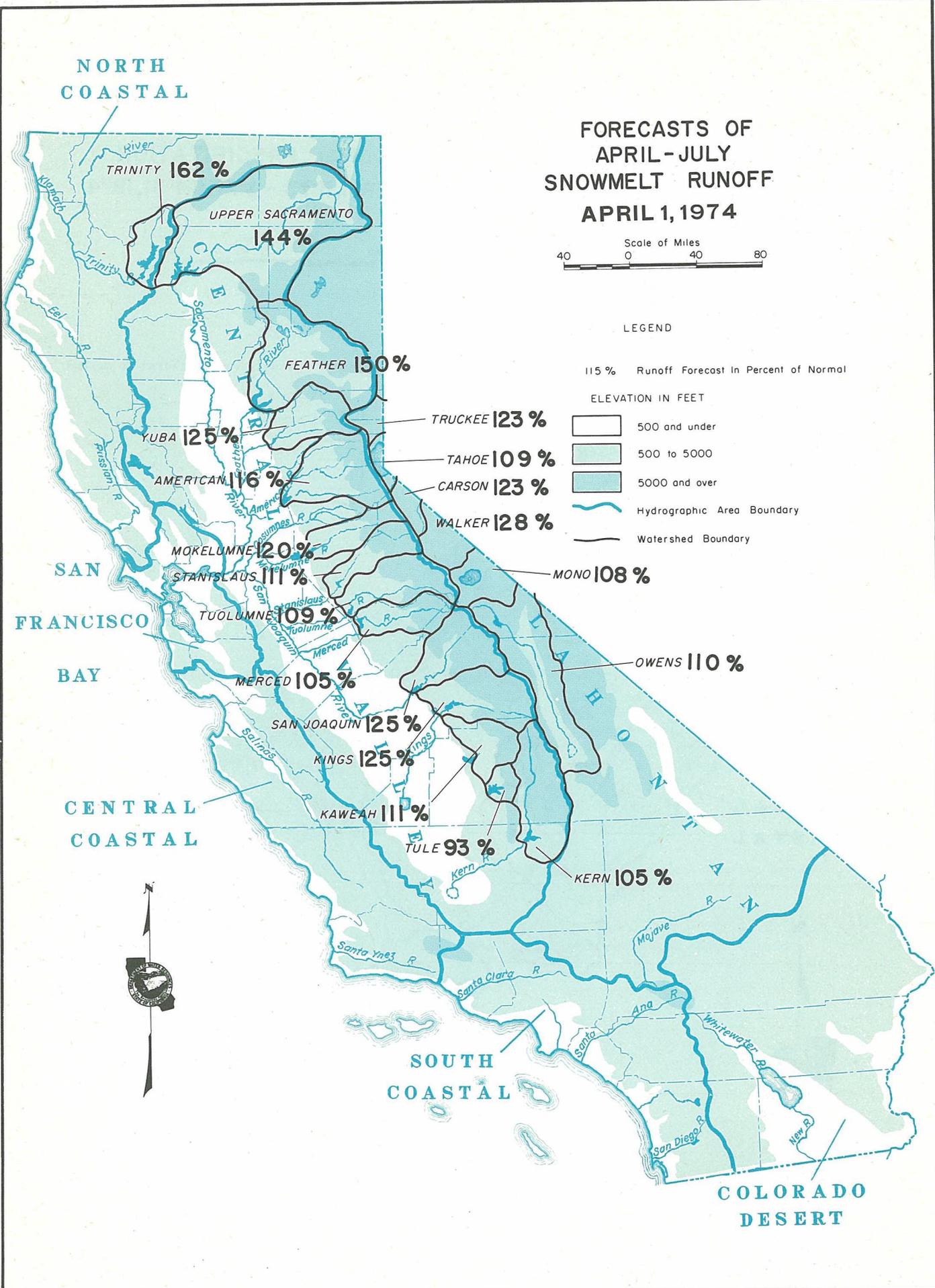
500 and under

500 to 5000

5000 and over

Hydrographic Area Boundary





SUMMARY OF WATER CONDITIONS

APRIL 1, 1974

CALIFORNIA'S WATER SUPPLY POTENTIALS HAVE BEEN ENHANCED CONSIDERABLY DURING THE LAST MONTH IN ALL AREAS OF THE STATE. APRIL 1 SNOW SURVEYS SHOW THE SPRING MELT CYCLE, THAT BEGAN IN MID-MARCH, WAS TEMPORARILY SUSPENDED BY A SERIES OF STORMS FOLLOWED BY COOLER WEATHER WHICH PRODUCED SUBSTANTIAL ACCUMULATIONS OF NEW SNOW.

THE COMBINATION OF ABOVE AVERAGE SNOW WATER CONTENT AND WELL ABOVE AVERAGE RESERVOIR STORAGE ASSURES CALIFORNIA AN EXCELLENT WATER SUPPLY IN 1974. RUNOFF ALREADY THIS YEAR HAS SET NEW RECORDS. FOR EXAMPLE IN THE SACRAMENTO VALLEY RUNOFF HAS EXCEEDED THE RECORD SET IN 1909.

SNOWPACK WATER CONTENT RANGES FROM 115 PERCENT OF NORMAL IN THE LAHONTAN AREA TO 140 PERCENT IN THE NORTH COASTAL AREA. STORMS DURING MARCH REVERSED THE DRY TREND OF FEBRUARY AND BOOSTED SNOW WATER CONTENT TO WELL ABOVE NORMAL IN ALL AREAS EXCEPT THE TULE RIVER BASIN. BECAUSE THE MID-ELEVATION PACK HAD RIPENED AND BEGAN TO MELT IN MID-MARCH, EARLIER THAN USUAL MELT-OFF IS ANTICIPATED THIS SEASON DESPITE THE ADDITIONAL INCREMENT OF NEW SNOW.

PRECIPITATION DURING MARCH WAS ABOVE AVERAGE THROUGHOUT THE STATE EXCEPT FOR A PORTION OF THE SOUTH COASTAL AND DESERT AREAS. NORTHERN CALIFORNIA EXPERIENCED TWICE NORMAL AMOUNTS AT MANY POINTS WITH SOME OBSERVERS REPORTING OVER 300 PERCENT OF AVERAGE. SEVERAL STATIONS HAVE RECEIVED SEASONAL ACCUMULATIONS EXCEEDED ONLY DURING THE 1889-90 WATER YEAR FOR THE CORRESPONDING SIX-MONTH PERIOD.

RUNOFF DURING MARCH REACHED NEAR RECORD VOLUMES IN THE SACRAMENTO VALLEY. NATURAL RUNOFF OF THE SACRAMENTO RIVER SYSTEM, INCLUDING INFLOWS TO SHASTA LAKE AND OROVILLE RESERVOIR, WAS THE SECOND HIGHEST MARCH RUNOFF OF RECORD. FOR THE OCTOBER 1 THROUGH MARCH 31 PERIOD, RUNOFF IN THE SACRAMENTO SYSTEM AMOUNTED TO 22.5 MILLION ACRE-Feet, EXCEEDING THE RECORD ESTABLISHED IN 1909 FOR THIS PERIOD. ON THE NORTH COAST THE SEASONAL RECORD ESTABLISHED IN 1958 WAS ALSO TOPPED AS 22.3 MILLION ACRE-Feet WERE RECORDED. IN THE SAN JOAQUIN VALLEY, RUNOFF FOR THE SIX-MONTH PERIOD SINCE OCTOBER 1 HAS BEEN 140 PERCENT OF AVERAGE. DURING MARCH, RUNOFF WAS ONE-AND-ONE-HALF TIMES NORMAL, RANGING FROM NORMAL ON THE TULE RIVER TO 180 PERCENT ON THE STANISLAUS.

RESERVOIR STORAGE IS EXCELLENT THROUGHOUT CALIFORNIA. IN THE SACRAMENTO VALLEY ONE-FOURTH OF THE RESERVOIRS ARE FULL AND ALL MAJOR RESERVOIRS ARE EXPECTED TO FILL AS FLOOD CONTROL RESERVATION CRITERIA ARE WITHDRAWN. IN THE SAN JOAQUIN VALLEY, STORAGE IS 120 PERCENT OF AVERAGE WITH 1.5 MILLION ACRE-Feet MORE STORAGE THAN LAST YEAR AT THIS TIME.

SUMMARY OF WATER CONDITIONS IN PERCENT OF AVERAGE						
HYDROGRAPHIC AREA	PRECIPITATION OCTOBER 1 TO DATE	SNOW WATER CONTENT	RESERVOIR STORAGE	RUNOFF		
				OCTOBER 1 TO DATE	APR-JULY FORECAST	WATER YEAR FORECAST
NORTH COASTAL	160	140	115	240	160	220
SAN FRANCISCO BAY	130	--	105	165	--	155
CENTRAL COASTAL	130	--	125	175	--	165
SOUTH COASTAL	90	--	120	75	--	85
SACRAMENTO VALLEY	140	135	120	225	135	185
SAN JOAQUIN VALLEY	115	120	120	140	115	120
LAHONTAN	115	115	100	170	120	135
COLORADO DESERT	80	--	--	--	--	--
AVERAGE	130	125	120	220	130	175

SACRAMENTO RIVER BASIN

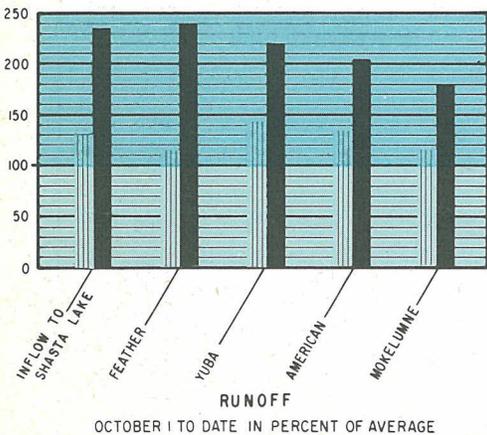
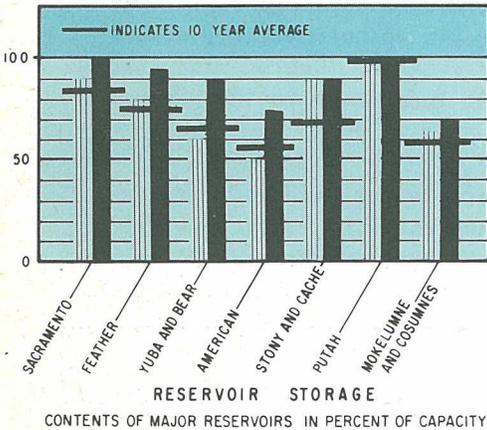
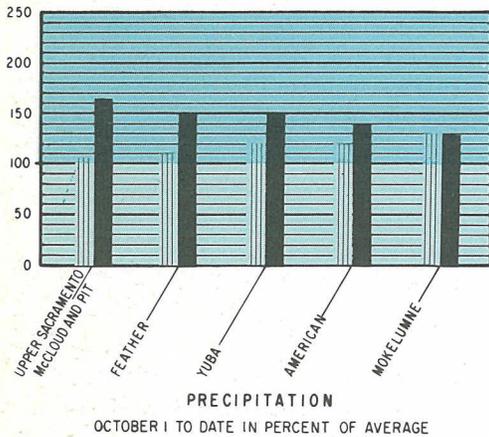
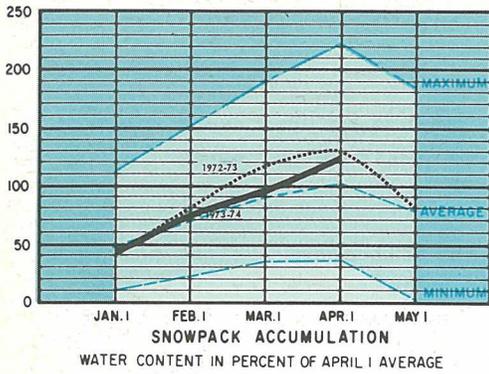
SNOWPACK - APRIL 1 SNOW SURVEY MEASUREMENTS INDICATED THAT SNOWPACK WATER CONTENT WAS 135 PERCENT OF AVERAGE, THE SAME AS ONE YEAR AGO. SNOWPACK WATER CONTENT RANGED FROM A HIGH OF 165 PERCENT IN THE McCloud River Basin to a low of 110 percent in the Mokelumne River Basin. The water content increased 30 percent during the month of March compared to a normal increase of 12 percent. For example Lower Lassen Peak reported a snow depth of 288.5 inches with a water content of 124.2 inches, an increase of 39 inches for the month of March.

STORMS DURING THE FIRST AND LAST WEEKS OF MARCH DEPOSITED HEAVY AMOUNTS OF SNOW. SOME MELTING OCCURRED DURING MID-MARCH. SNOW DENSITIES ARE IN THE 40-50 PERCENT RANGE, ABOUT 10 PERCENT ABOVE AVERAGE FOR THIS TIME OF YEAR.

PRECIPITATION - FROM OCTOBER 1, 1973 THROUGH MARCH 31, 1974, PRECIPITATION OVER THE SACRAMENTO VALLEY AVERAGED 140 PERCENT OF NORMAL. HALFWAY THROUGH THE WATER YEAR ONLY FEBRUARY YIELDED SUBNORMAL PRECIPITATION OVER THE PAST SIX MONTHS. ALL MOUNTAIN SUBDRAINAGES, AS WELL AS THE VALLEY FLOOR, ARE WELL ABOVE NORMAL FOR THIS DATE. SEASONAL VALUES ARE SUBSTANTIALLY GREATER THAN THE AMOUNTS FOR THE CORRESPONDING PERIOD ONE YEAR AGO, EXCEPT FOR THE MOKELUMNE RIVER BASIN WHERE THE VALUES ARE EQUAL. RECORD HIGH ACCUMULATION TOTALS FOR THIS CENTURY WERE REPORTED OVER THE UPPER SACRAMENTO, McCloud, and Pit River drainages. Pit River P.H. No. 5 logged 118.83 inches or 191 percent, Vollmers with 114.88 inches or 205 percent, and Dunsmuir R.S. had 95.75 inches or 200 percent. However, historical records indicate Dunsmuir received a sopping 104.32 inches for the corresponding period during the 1889-90 season.

RESERVOIR STORAGE - APRIL 1 STORAGE IN THIRTY-FOUR MAJOR RESERVOIRS IN THE SACRAMENTO RIVER SYSTEM WAS 15,145,000 ACRE-Feet, up 2,469,000 ACRE-Feet from one year ago. This is 120 percent of average for this date and represents 95 percent of available capacity. Severe flood damage was prevented during recent storms by storing much of the heavy inflow. Temporary encroachment of flood control space is being reduced as controlled releases continue. All major reservoirs are expected to fill as flood control reservations are withdrawn.

RUNOFF - TOTAL SEASONAL RUNOFF IN MAJOR SACRAMENTO VALLEY STREAMS AMOUNTED TO 22,559,000 ACRE-Feet from October 1 to date, or 225 percent of average. During March the runoff amounted to 5,742,000 ACRE-Feet or 235 percent of average for the month. March flows ranged from a high of 240 percent of average on the Feather River to a low of 180 percent of average on the Cosumnes River. The Sacramento River system runoff exceeded the record, October 1 to March 31 flows, set in 1909. Several records were set within the system, including inflow to Shasta and Oroville Reservoirs and runoff of the Sacramento River above Bend Bridge.



APRIL 1, 1973 APRIL 1, 1974

SAN JOAQUIN RIVER AND TULARE LAKE BASINS

SNOWPACK - APRIL 1 SNOW SURVEY MEASUREMENTS INDICATED THAT SNOWPACK WATER CONTENT WAS 120 PERCENT OF AVERAGE, COMPARED TO 150 PERCENT A YEAR AGO. SNOWPACK WATER CONTENT RANGED FROM A HIGH OF 130 PERCENT IN THE KINGS RIVER BASIN TO A LOW OF 90 PERCENT IN THE TULE RIVER BASIN. SNOWPACK WATER CONTENT INCREASED 25 PERCENT DURING THE MONTH OF MARCH, COMPARED TO A NORMAL INCREASE OF 10 PERCENT.

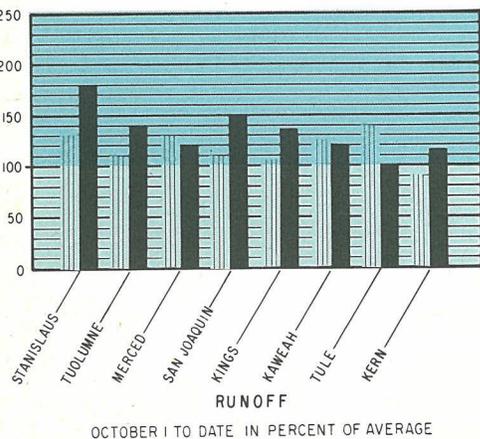
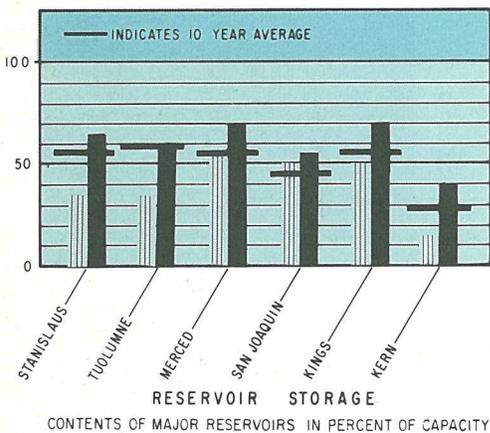
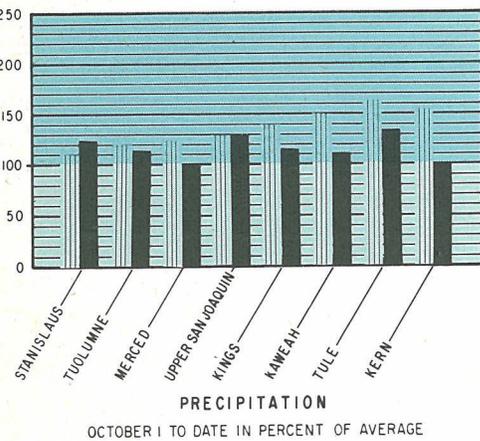
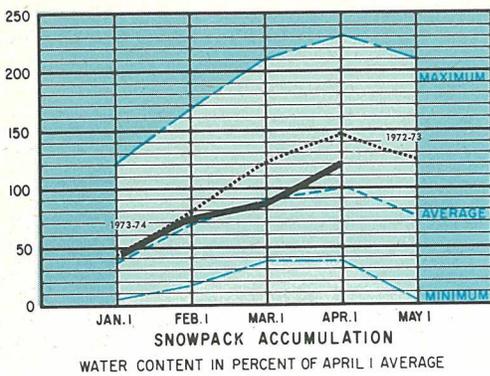
MELTING OCCURRED DURING MID-MARCH AT ALL BUT THE HIGHEST ELEVATION COURSES. SNOWPACK WATER CONTENT AT MOST MID AND HIGH ELEVATION COURSES EXCEEDED THE APRIL 1 AVERAGE. HOWEVER, THE LOW ELEVATION COURSES ARE BELOW NORMAL WITH A FEW COURSES REPORTING NO SNOW. DENSITIES ARE IN THE 35-50 RANGE, ABOUT 10 PERCENT ABOVE AVERAGE. SNOW SURVEYORS REPORTED THAT THE STORM DURING THE LAST WEEK OF MARCH DEPOSITED HEAVY-WET SNOW WHICH SETTLED RAPIDLY. THE PACK REMAINS ABOVE AVERAGE IN DENSITY.

PRECIPITATION - FROM OCTOBER 1, 1973 THROUGH MARCH 31, 1974, PRECIPITATION WAS 115 PERCENT OF NORMAL OVER THE SAN JOAQUIN VALLEY. EXCEPT FOR THE STANISLAUS RIVER DRAINAGE, SEASONAL PRECIPITATION VALUES ARE DOWN AS MUCH AS A THIRD LESS THAN THEY WERE FOR THE CORRESPONDING PERIOD ONE YEAR AGO. EXTREMES RANGE FROM 61.21 INCHES OR 134 PERCENT AT CALAVERAS BIG TREES, IN THE STANISLAUS RIVER DRAINAGE, TO 7.95 INCHES OR 86 PERCENT AT WOFFORD HEIGHTS, IN THE KERN RIVER DRAINAGE. VALLEY FLOOR STATIONS RECEIVED FROM 13.63 INCHES OR 110 PERCENT AT STOCKTON TO 4.45 INCHES OR 91 PERCENT AT BAKERSFIELD.

PRECIPITATION DURING MARCH AVERAGED 160 PERCENT OF NORMAL. IT VARIED FROM 17.64 INCHES (223 PERCENT) AT CALAVERAS BIG TREES TO 1.53 INCHES (161 PERCENT) AT BAKERSFIELD. HEAVY PRECIPITATION OVER THE SOUTHERN SIERRA RESULTED IN HUNTINGTON LAKE LOGGING 11.40 INCHES OR 265 PERCENT, ONLY 0.99 INCH SHORT OF EQUALING THEIR 1958 MARCH RECORD.

RESERVOIR STORAGE - APRIL 1 STORAGE IN TWENTY-SEVEN MAJOR RESERVOIRS SERVING THE SAN JOAQUIN VALLEY WAS 4,667,000 ACRE-FEET. THIS IS 120 PERCENT OF AVERAGE AND 1,425,000 ACRE-FEET MORE THAN WAS IMPOUNDED LAST YEAR AT THIS TIME. THIS REPRESENTS 60 PERCENT OF AVAILABLE CAPACITY. STORAGE RANGED FROM 24 PERCENT OF AVERAGE IN RELIEF RESERVOIR ON THE STANISLAUS RIVER TO 160 PERCENT OF AVERAGE IN CHERRY LAKE ON THE TUOLUMNE RIVER. APRIL 1 SNOW SURVEYS INDICATE ABOVE AVERAGE INFLOWS CAN BE EXPECTED THIS SPRING IN ALL MAJOR RESERVOIRS EXCEPT SUCCESS RESERVOIR ON THE TULE RIVER.

RUNOFF - TOTAL SEASONAL RUNOFF IN MAJOR SAN JOAQUIN VALLEY STREAMS HAS PRODUCED 145 PERCENT OF AVERAGE FLOWS FOR THE OCTOBER 1 TO MARCH 31 PERIOD. MARCH FLOWS HAVE BEEN 150 PERCENT OF AVERAGE. RUNOFF DURING MARCH RANGED FROM A HIGH OF 180 PERCENT OF AVERAGE ON THE STANISLAUS RIVER TO A LOW OF 100 PERCENT OF AVERAGE ON THE TULE RIVER.



APRIL 1, 1973 APRIL 1, 1974

FORECASTS OF APRIL - JULY FOR CENTRAL

APRIL

DRAINAGE BASIN AND WATERSHED	April Through July 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 Acre-Feet
SACRAMENTO RIVER BASIN						
Upper Sacramento River						
Pit River inflow to Shasta Lake	1,012	1,796	480	1,420	140	--
McCloud River inflow to Shasta Lake	422	850	194	570	135	--
Sacramento River inflow to Shasta Lake	288	636	39	460	160	--
Total inflow to Shasta Lake	1,774	3,064	726	2,550	144	2,190 to 3,190
Sacramento River near Red Bluff	2,424	4,611	943	3,550	146	3,040 to 4,430
Feather River						
Inflow to Lake Almanor (nr Prattville)	326	675	120	450	138	--
North Fork at Pulga	1,031	2,416	254	1,500	145	--
Middle Fork near Clio	85	518	8	150	176	--
South Fork at Enterprise	106	267	19	155	146	--
Total inflow to Oroville Reservoir	1,862	4,676	396	2,800	150	2,500 to 3,500
Yuba River						
North Fork below Goodyears Bar	289	647	68	355	123	--
Combined inflow to Jackson Mdw. and Bowman Reservoirs	109	236	37	135	124	--
South Fork at Langs Crossings	233	481	74	280	120	--
Yuba River at Smartville	1,079	2,424	239	1,350	125	1,200 to 1,730
American River						
North Fork at North Fork Dam	264	716	48	305	116	--
Middle Fork near Auburn	548	1,406	117	635	116	--
Silver Creek below Camino Diversion Dam	180	383	43	210	117	--
Total inflow to Folsom Reservoir	1,314	3,074	257	1,530	116	1,370 to 2,020
<i>Sacramento River at Sacramento</i>						
Cosumnes River						
Cosumnes River at Michigan Bar	145	361	12	200	138	170 to 270
Mokelumne River						
North Fork near West Point	416	829	143	500	120	--
Total inflow to Pardee Reservoir	465	1,065	127	560	120	490 to 710
SAN JOAQUIN RIVER BASIN						
Stanislaus River						
Middle Fork at Sand Bar Flat near Avery	339	702	83	375	111	--
Total inflow to Melones Reservoir	718	1,710	167	800	111	700 to 1,040
Tuolumne River						
Cherry Creek and Eleanor Creek near Hetch Hetchy	305	560	102	330	108	--
Tuolumne River near Hetch Hetchy	599	1,392	215	680	114	--
Total inflow to Don Pedro Reservoir	1,193	2,609	385	1,300	109	1,160 to 1,560
Merced River						
Merced River at Pohono Bridge	359	888	121	390	109	--
Total inflow to Exchequer	608	1,491	175	640	105	560 to 820
San Joaquin River						
South Fork near Florence Lake	187	511	58	230	123	--
Big Creek below Huntington Lake	85	264	19	110	129	--
San Joaquin River at Mammoth Pool	971	2,218	254	1,220	126	--
Total inflow to Millerton Lake	1,193	3,355	310	1,490	125	1,270 to 1,810
<i>San Joaquin River near Vernalis</i>						
TULARE LAKE BASIN						
Kings River						
North Fork near Cliff Camp	232	478	50	290	125	--
Total inflow to Pine Flat Reservoir	1,163	3,163	280	1,450	125	1,270 to 1,670
Kaweah River						
Total inflow to Terminus Reservoir	271	814	69	300	111	265 to 355
Tule River						
Total inflow to Success Reservoir	59	222	2	55	93	45 to 70
Kern River						
Kern River near Kernville	349	1,200	75	370	106	--
Total inflow to Isabella Reservoir	419	1,649	84	440	105	340 to 560

ND WATER YEAR RUNOFF LEY STREAMS

974

Water Year --- October Through September --- in 1,000 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
2,863	4,698	1,484	--	--	--	--	--	--	--	--	5,110	178
1,222	2,353	632	--	--	--	--	--	--	--	--	2,110	173
780	1,767	171	--	--	--	--	--	--	--	--	1,650	212
5,481	9,700	2,479	5,172	695	1,778	1,150	740	410	250	475	10,670	195
7,950	15,121	3,294	7,749	1,055	2,576	1,780	880	570	320	620	15,550	196
722	1,269	396	--	--	--	--	--	--	--	--	--	--
2,265	4,400	819	--	--	--	--	--	--	--	--	--	--
203	637	41	--	--	--	--	--	--	--	--	--	--
257	562	67	--	--	--	--	--	--	--	--	--	--
4,286	9,492	1,295	3,331	442	1,569	1,090	1,010	500	200	258	8,400	196
526	1,056	162	--	--	--	--	--	--	--	--	--	--
166	292	60	--	--	--	--	--	--	--	--	--	--
343	565	114	--	--	--	--	--	--	--	--	--	--
2,266	4,544	603	1,703	182	621	460	530	280	80	54	3,910	173
550	1,234	110	--	--	--	--	--	--	--	--	--	--
1,009	2,575	283	--	--	--	--	--	--	--	--	--	--
298	537	83	--	--	--	--	--	--	--	--	--	--
2,570	5,787	543	1,584	209	724	570	570	300	90	43	4,090	159
												187
363	876	40	222	35	130	105	65	25	5	3	590	163
583	1,009	197	--	--	--	--	--	--	--	--	--	--
705	1,692	190	269	37	122	150	230	150	30	12	1,000	142
456	929	128	--	--	--	--	--	--	--	--	--	--
1,085	2,834	261	378	50	203	210	310	220	60	19	1,450	134
428	740	158	--	--	--	--	--	--	--	--	--	--
738	1,661	265	--	--	--	--	--	--	--	--	--	--
1,789	3,756	546	499	69	229	340	470	400	90	33	2,130	119
439	1,020	145	--	--	--	--	--	--	--	--	--	--
920	2,203	252	212	38	105	160	270	170	40	15	1,010	110
226	653	71	--	--	--	--	--	--	--	--	--	--
100	298	22	--	--	--	--	--	--	--	--	--	--
1,256	2,964	361	--	--	--	--	--	--	--	--	--	--
1,659	4,368	444	328	66	208	290	560	490	150	88	2,180	131
												128
266	542	58	--	--	--	--	--	--	--	--	--	--
1,568	4,243	392	247	53	159	250	490	540	170	81	1,990	127
404	1,265	102	72	19	55	80	110	90	20	9	455	113
133	499	19	41	9	26	23	20	10	2	1	132	99
514	1,800	147	--	--	--	--	--	--	--	--	--	--
629	2,207	175	106	27	67	100	160	130	50	45	685	109

Monthly unimpaired values are proportionally distributed based on historical years of similar magnitude.
* Unimpaired flows to date.

NORTH COASTAL AREA

SNOWPACK - APRIL 1 SNOW SURVEY MEASUREMENTS INDICATED THAT SNOWPACK WATER CONTENT WAS 140 PERCENT OF AVERAGE, COMPARED TO 130 PERCENT ONE YEAR AGO. SNOWPACK WATER CONTENT RANGED FROM A HIGH OF 145 PERCENT IN THE TRINITY RIVER BASIN TO A LOW OF 130 PERCENT IN THE SHASTA RIVER BASIN. SNOWPACK WATER CONTENT INCREASED 15 PERCENT DURING MARCH WHICH IS THE NORMAL INCREMENT. SNOWMELT OCCURRED IN THIS AREA DURING MID-MARCH DUE TO WARMER TEMPERATURES AND AGAIN DURING THE LAST WEEK IN MARCH WHEN RAIN ON SNOW OCCURRED, HELPING TO PRODUCE HIGH RIVER FLOWS. AS THE STORMS BECAME COOLER, ADDITIONAL SNOW WAS DEPOSITED IN THIS AREA FOR A NET GAIN IN SNOWPACK WATER CONTENT. DENSITIES ARE IN THE 35-40 PERCENT RANGE WHICH IS NEAR NORMAL FOR THIS AREA.

THE OREGON COOPERATIVE SNOW SURVEYS, THROUGH THE U. S. SOIL CONSERVATION SERVICE, PORTLAND, OREGON, REPORTS THAT SNOWPACK WATER CONTENT IN THE UPPER KLAMATH RIVER BASIN ON APRIL 1 WAS 136 PERCENT OF NORMAL AS COMPARED TO 60 PERCENT ONE YEAR AGO.

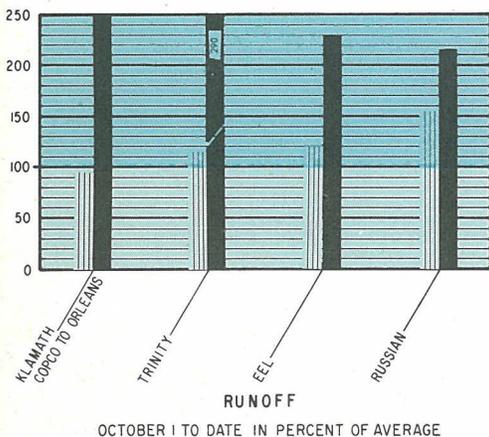
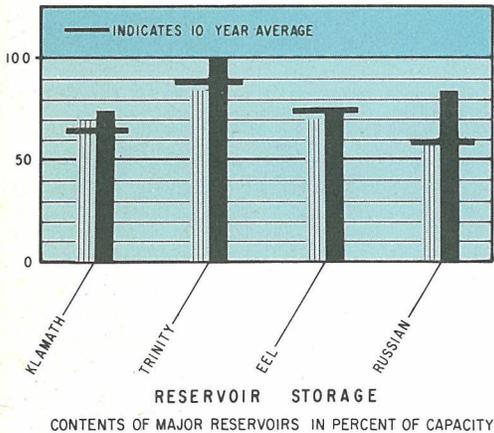
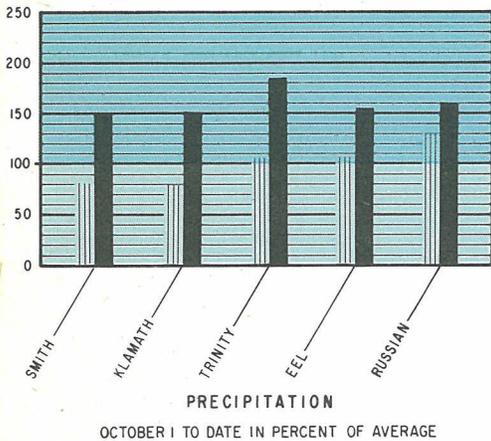
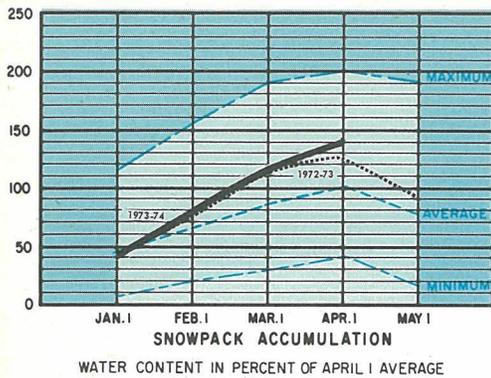
PRECIPITATION - PRECIPITATION IN THE NORTH COASTAL AREA WAS 160 PERCENT OF NORMAL FOR THE PERIOD OCTOBER 1 THROUGH MARCH 31. SUBDRAINAGE VALUES ARE ABOUT TWICE LAST YEAR'S AMOUNTS. A HALF YEAR OF PRECIPITATION PRODUCED SOME SPECTACULAR CATCHES FROM 181.86 INCHES AT HONEYDEW-DUNN, IN THE MATTOLE RIVER DRAINAGE, 129.51 INCHES AT GASQUET R.S., IN THE SMITH RIVER DRAINAGE, AND 101.32 INCHES OVER CAZADERO 3W, IN THE RUSSIAN RIVER DRAINAGE.

FOR THE MONTH OF MARCH, PRECIPITATION AVERAGED 200 PERCENT OF NORMAL. EXTREMES VARIED WIDELY FROM 30.31 INCHES AT HONEYDEW-DUNN TO 1.45 INCHES AT TULELAKE. COFFEE CREEK R.S., IN THE TRINITY RIVER DRAINAGE, REPORTED A RECORD MARCH TOTAL OF 15.60 INCHES OR 338 PERCENT.

RESERVOIR STORAGE - THE FOUR MAJOR RESERVOIRS IN THIS AREA ARE STORING 2,690,000 ACRE-FEET ON APRIL 1. THIS AMOUNTS TO 115 PERCENT OF AVERAGE FOR THIS DATE AND 378,000 ACRE-FEET MORE THAN ONE YEAR AGO. THREE INTERSTATE RESERVOIRS ON THE KLAMATH RIVER SYSTEM ARE STORING 923,000 ACRE-FEET, 120 PERCENT OF AVERAGE FOR THIS DATE.

RUNOFF - MARCH RUNOFF IN NORTH COASTAL STREAMS SET A NEW RECORD OF 4,578,000 ACRE-FEET OR 250 PERCENT OF AVERAGE. WATER YEAR RUNOFF ALSO SET A NEW RECORD IN ALL STREAMS WITH 22,182,000 ACRE-FEET FOR THE OCTOBER 1 TO MARCH 31 PERIOD, OR 240 PERCENT OF AVERAGE. THIS RUNOFF RANGED FROM 215 PERCENT OF AVERAGE ON THE RUSSIAN RIVER TO 285 PERCENT OF AVERAGE ON THE TRINITY RIVER FOR THIS SIX-MONTH PERIOD.

FORECASTS - CONDITIONS AT THIS TIME INDICATE THAT RUNOFF OF THE NORTH COASTAL AREA DURING THE 1973-74 WATER YEAR WILL BE ABOUT 220 PERCENT OF AVERAGE. THE APRIL-JULY RUNOFF OF THE TRINITY RIVER AT LEWISTON IS FORECASTED TO BE ABOUT 1,000,000 ACRE-FEET, WHICH IS 162 PERCENT OF THE AVERAGE RUNOFF AT THIS STATION. THE U. S. SOIL CONSERVATION SERVICE, THE OREGON EXPERIMENT STATION, AND THEIR COOPERATORS, FORECAST THAT THE APRIL-JULY RUNOFF INTO UPPER KLAMATH LAKE WILL BE ABOUT 555,000 ACRE-FEET OR 125 PERCENT OF THE 1953-67 AVERAGE.



APRIL 1, 1973



APRIL 1, 1974



SAN FRANCISCO BAY AND CENTRAL COASTAL AREAS

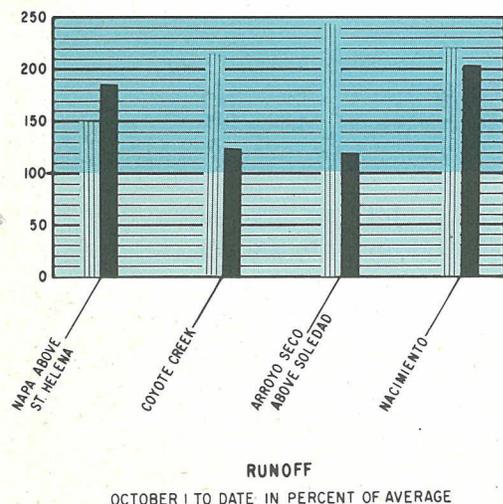
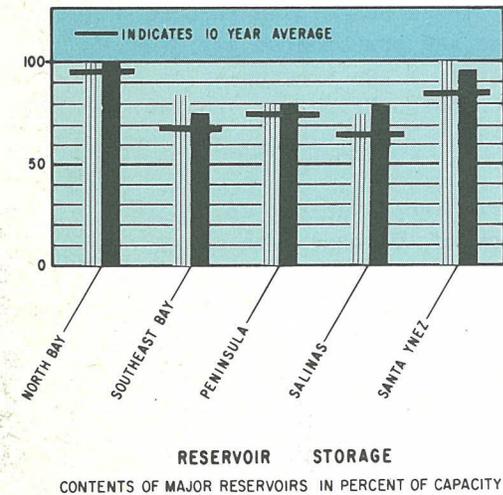
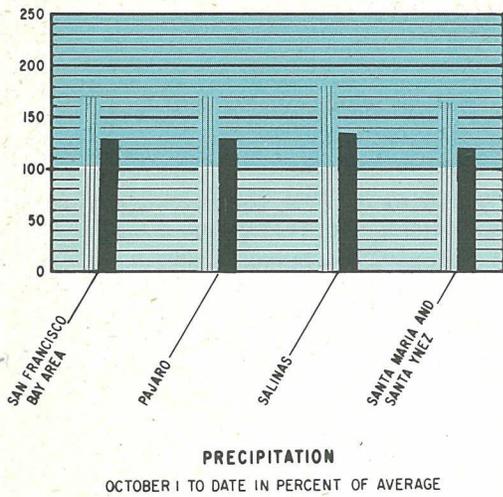
PRECIPITATION - IN THE SAN FRANCISCO BAY AND CENTRAL COASTAL AREAS, PRECIPITATION AVERAGED 130 PERCENT OF NORMAL FOR THE PERIOD OCTOBER 1 THROUGH MARCH 31. IT VARIED FROM 152 PERCENT OF NORMAL (28.26 INCHES) AT WATSONVILLE, IN THE PAJARO RIVER DRAINAGE, TO 96 PERCENT (15.98 INCHES) AT CACHUMA DAM COLLEGE, IN THE SANTA YNEZ RIVER DRAINAGE. SUBDRAINAGE PRECIPITATION AMOUNTS ARE WELL ABOVE NORMAL, BUT ABOUT ONE-FOURTH LESS THAN THE VALUES FOR THE CORRESPONDING PERIOD LAST YEAR. SEASONAL TOTALS VARIED FROM 66.90 INCHES (153 PERCENT) AT LAGUNITAS LAKE TO 1200 INCHES (131 PERCENT) AT KING CITY, IN THE SALINAS RIVER DRAINAGE. MARCH PRECIPITATION AVERAGED 190 PERCENT OF NORMAL. IT VARIED FROM 15.99 INCHES (338 PERCENT) AT ANGIN PACIFIC UNION COLLEGE TO 2.49 INCHES OR 159 PERCENT AT KING CITY. INCIDENTALLY, THE 15.99 INCHES AT ANGIN WASHED OUT THE PREVIOUS 1940 MARCH RECORD OF 11.58 INCHES BY 4.41 INCHES.

RESERVOIR STORAGE - THE SEVENTEEN MAJOR RESERVOIRS IN THE SAN FRANCISCO BAY AREA ARE STORING 491,000 ACRE-FEET ON APRIL 1. THIS IS 105 PERCENT OF AVERAGE AND REPRESENTS 80 PERCENT OF CAPACITY. CONTENTS ARE 50,000 ACRE-FEET LESS THAN THEY WERE ONE YEAR AGO. SEVEN OF THESE RESERVOIRS RECEIVE WATER IMPORTED FROM SIERRA NEVADA WATERSHEDS. ABOVE AVERAGE APRIL THROUGH JULY RUNOFF IS PRESENTLY BEING FORECASTED FOR THESE AREAS OF ORIGIN.

IN THE CENTRAL COASTAL AREA, STORAGE IN SIX MAJOR RESERVOIRS IS 850,000 ACRE-FEET OR 125 PERCENT OF AVERAGE FOR APRIL 1 AND 85 PERCENT OF AVAILABLE CAPACITY. THIS IS 46,000 ACRE-FEET MORE THAN WAS STORED ONE YEAR AGO. BOTH SANTA MARGARITA LAKE AND WHALE ROCK RESERVOIR ARE FULL AND SPILLING.

RUNOFF - MARCH RUNOFF IN SAN FRANCISCO BAY AREA STREAMS WAS 54,800 ACRE-FEET WHICH IS 295 PERCENT OF AVERAGE. THE NAPA RIVER SET A NEW RUNOFF RECORD FOR THE MONTH, BREAKING THE OLD RECORD WHICH WAS SET IN 1949. FOR THE SIX-MONTH WATER YEAR TO DATE, RUNOFF HAS BEEN 165 PERCENT OF AVERAGE.

RUNOFF IN THE CENTRAL COASTAL AREA STREAMS SINCE OCTOBER 1 HAS BEEN 440,700 ACRE-FEET, 175 PERCENT OF AVERAGE FOR THIS PERIOD. IN MARCH THE RUNOFF WAS 140,900 ACRE-FEET OR 240 PERCENT OF AVERAGE.



SOUTH COASTAL AND COLORADO DESERT AREAS

PRECIPITATION - IN THE SOUTH COASTAL AREA, PRECIPITATION AVERAGED 90 PERCENT OF NORMAL FOR THE PERIOD OCTOBER 1, 1973 THROUGH MARCH 31, 1974. SEASONAL VALUES OF SUBDRAINAGES ARE DOWN AS MUCH AS ONE-HALF FROM THOSE EXPERIENCED DURING THE SAME PERIOD LAST YEAR. EXTREMES VARIED FROM 32.71 INCHES (100 PERCENT) AT HOEGEE'S, IN THE SAN GABRIEL RIVER DRAINAGE, TO 6.54 INCHES (75 PERCENT) AT SAN DIEGO. MARCH PRECIPITATION AVERAGED 135 PERCENT OF NORMAL. IT VARIED FROM 5.03 INCHES (245 PERCENT) AT BURBANK TO 1.24 INCHES (54 PERCENT) AT CAMPO, IN SAN DIEGO COUNTY.

PRECIPITATION IN THE COLORADO DESERT AREA DURING THE OCTOBER THROUGH MARCH PERIOD AVERAGED 80 PERCENT OF NORMAL. EXTREMES VARIED FROM 110 PERCENT OF NORMAL AT IRON MOUNTAIN TO 41 PERCENT AT BLYTHE WHERE ITS SIX-MONTH TOTAL OF 0.90 INCH IS THE LATEST, STATEWIDE. MARCH PRECIPITATION AVERAGED NORMAL OVER THE AREA. IT VARIED FROM 0.65 INCH (181 PERCENT) AT NEEDLES TO 0.04 INCH (17 PERCENT) AT THERMAL.

RESERVOIR STORAGE - DATA FROM TWENTY-SIX MAJOR RESERVOIRS IN THE SOUTH COASTAL AREA SHOWS A COMBINED STORAGE OF 753,030 ACRE-Feet ON APRIL 1. THIS IS 44 PERCENT OF THEIR COMBINED CAPACITY AND 118 PERCENT OF AVERAGE CONTENTS FOR THIS DATE. TOTAL STORAGE IS 45,120 ACRE-Feet LESS THAN THAT HELD ONE YEAR AGO. ELEVEN OF THESE RESERVOIRS INCLUDE IMPORTED COLORADO RIVER WATER IN THEIR STORAGE. THESE RESERVOIRS ARE NOW STORING 334,040 ACRE-Feet WHICH REPRESENTS 107 PERCENT OF AVERAGE CONTENTS FOR APRIL 1 AND A DECREASE OF 12,179 ACRE-Feet SINCE ONE YEAR AGO. SOURCES OF IMPORT ON THE COLORADO RIVER ARE STORING NEAR OR ABOVE AVERAGE AMOUNTS FOR THIS DATE.

RUNOFF - BASED ON DATA RECEIVED FROM KEY SOUTH COASTAL AREA STREAMS, LOCAL RUNOFF DURING MARCH WAS ABOUT 75 PERCENT OF NORMAL. SEASONAL RUNOFF, OCTOBER 1 TO DATE, HAS ALSO BEEN 75 PERCENT OF NORMAL FOR THE PERIOD.

MAJOR WATER DISTRIBUTION PROJECTS

COLORADO RIVER - APRIL 1 SNOWPACK IN THE UPPER COLORADO RIVER BASIN, ACCORDING TO THE U. S. SOIL CONSERVATION SERVICE, IS 103 PERCENT OF NORMAL FOR THE AREA AND RANGES FROM A LOW OF 72 PERCENT ON THE DUCHESNE RIVER IN UTAH TO A HIGH OF 114 PERCENT ON THE YAMPA AND WHITE RIVERS IN COLORADO.

THE U. S. BUREAU OF RECLAMATION, SALT LAKE CITY, UTAH, FORECASTS THAT FLOW IN THE COLORADO RIVER, INFLOW TO LAKE POWELL, DURING APRIL-JULY 1974 WILL BE 8,000,000 ACRE-Feet, ABOUT 97 PERCENT OF THE 50-YEAR AVERAGE.

STORAGE IN LAKE MEAD ON APRIL 1 WAS 19,482,000 ACRE-Feet. THIS IS 125 PERCENT OF AVERAGE FOR THIS DATE AND 75 PERCENT OF TOTAL CAPACITY. CURRENTLY, STORAGE IS 498,000 ACRE-Feet LESS THAN WHAT IT WAS LAST YEAR AT THIS TIME. COMBINED STORAGE IN THE FOUR INTERSTATE RESERVOIRS ON THE COLORADO RIVER IS 39,620,000 ACRE-Feet, 145 PERCENT OF THE APRIL 1 AVERAGE.

MAJOR WATER DISTRIBUTION PROJECTS

CENTRAL VALLEY PROJECT - APRIL 1 RUNOFF FORECASTS INDICATE THAT ALL CVP RIVER BASINS SHOULD HAVE ABOVE NORMAL FLOWS THIS YEAR AND THE U. S. BUREAU OF RECLAMATION REPORTS THAT CLAIR ENGLE AND SHASTA LAKES ARE FULL, AND FOLSOM AND MILLERTON LAKES ARE EXPECTED TO FILL WITH SPRING SNOWMELT RUNOFF. ALL CONTRACTUAL WATER AND POWER DELIVERIES WILL BE MET. THE WATER SUPPLY FORECAST FOR MILLERTON LAKE INDICATES A FULL CLASS 1 SUPPLY AND 75 PERCENT OF A FULL CLASS 2 SUPPLY WILL BE AVAILABLE THIS YEAR.

STORAGE IN MAJOR CENTRAL VALLEY PROJECT RESERVOIRS

RESERVOIR	CAPACITY 1,000 AF	10-YEAR AVG. 1964-1973 1,000 AF	STORAGE AS OF APRIL 1		
			1973 1,000 AF	1974 1,000 AF	PERCENT AVERAGE
CLAIR ENGLE LAKE	2,447.7	2,177.1	2,133.0	2,463.1	113
SHASTA LAKE	4,552.1	3,880.2	3,985.5	4,503.4	116
WHISKEYTOWN	241.1	309.3 ^{1/}	311.8	250.7	120
FOLSOM	1,010.3	650.5	642.4	751.1	115
MILLERTON LAKE	520.5	333.5	479.5	462.5	139
SAN LUIS CVP	970.9	937.4 ^{1/}	973.6	959.2	102

^{1/} LESS THAN 10-YEAR AVERAGE.

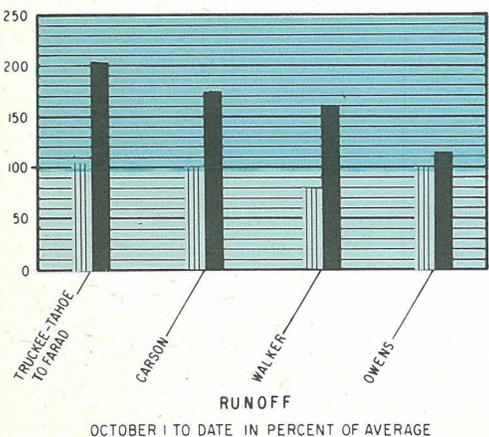
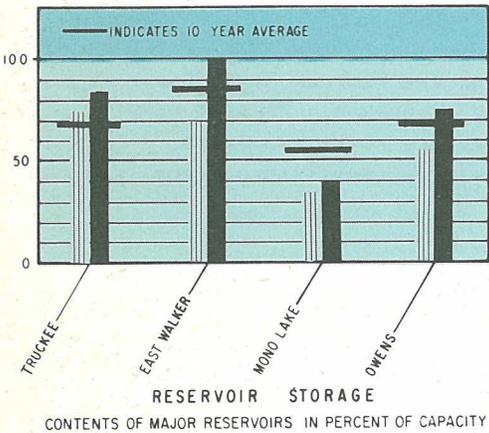
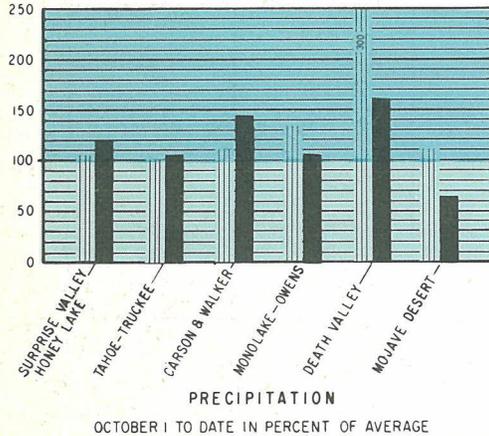
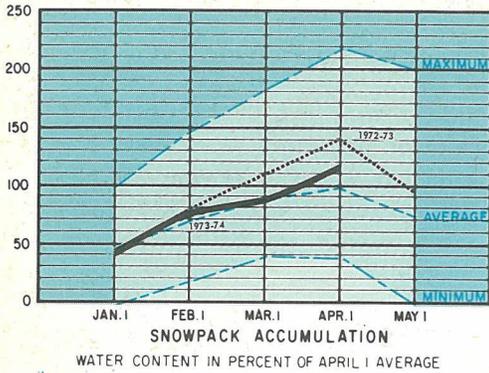
STATE WATER PROJECT - THE APRIL 1 RUNOFF FORECAST FOR THE FEATHER RIVER BASIN SHOWS THAT THE APRIL THROUGH JULY FLOW WILL BE ABOUT 150 PERCENT OF NORMAL. PRESENT CONDITIONS INDICATE THAT LAKE OROVILLE WILL FILL THIS YEAR. ALL SCHEDULED POWER AND WATER COMMITMENTS WILL BE MET. THE LAKE IS PRESENTLY BEING OPERATED WITHIN PERMISSIBLE FLOOD CONTROL SPACE.

STORAGE IN STATE WATER PROJECT RESERVOIRS

RESERVOIR	CAPACITY 1,000 AF	10-YEAR AVG. 1964-1973 1,000 AF	STORAGE AS OF APRIL 1		
			1973 1,000 AF	1974 1,000 AF	PERCENT AVERAGE
OROVILLE	3,538.0	2,799.2 ^{1/}	2,982.4	3,326.2	119
SAN LUIS SWP	1,067.0	1,007.2 ^{1/}	1,050.0	1,051.1	104
LAKE DEL VALLE	77.1	35.9 ^{1/}	39.9	40.8	114
SILVERWOOD LAKE	78.0	42.1 ^{1/}	32.9	71.8	170
PRYAMID LAKE	179.0	35.9 ^{1/}	0.1	107.1	298
CASTAIC LAKE	350.0	65.9 ^{1/}	71.7	93.4	142
PERRIS RESERVOIR	120.0	91.4 ^{1/}	NR	91.4	100

^{1/} LESS THAN 10-YEAR AVERAGE.

LAHONTAN AREA



APRIL 1, 1973



APRIL 1, 1974



SNOWPACK - APRIL 1 SNOW SURVEY MEASUREMENTS INDICATED THAT SNOWPACK WATER CONTENT WAS 115 PERCENT OF AVERAGE, COMPARED TO 140 PERCENT ONE YEAR AGO. SNOWPACK WATER CONTENT RANGED FROM A HIGH OF 130 PERCENT IN SURPRISE VALLEY TO A LOW OF 100 PERCENT IN THE EAST CARSON RIVER BASIN. THE WATER CONTENT INCREASED 15 PERCENT DURING THE MONTH OF MARCH, COMPARED TO A NORMAL INCREASE OF 10 PERCENT.

SNOWMELT OCCURRED DURING MID-MARCH THROUGHOUT THE AREA EXCEPT AT THE HIGHEST ELEVATIONS. MANY LOW ELEVATION COURSES REPORTED LESS SNOW IN APRIL THAN DURING THE MARCH SURVEY. DENSITIES IN THIS AREA ARE IN THE 35-45 RANGE, ABOUT 5 PERCENT ABOVE AVERAGE.

PRECIPITATION - OCTOBER THROUGH MARCH PRECIPITATION AVERAGED 115 PERCENT OF NORMAL FOR THE LAHONTAN AREA. ALL SUB-DRAINAGES ARE ABOVE NORMAL EXCEPT FOR THE MOJAVE DESERT. AMOUNTS ARE MORE THAN VALUES FOR THE CORRESPONDING PERIOD LAST YEAR IN THE WALKER DRAINAGE NORTH AND LESS IN THE MONO LAKE DRAINAGE SOUTH. SEASONAL CATCHES VARIED FROM 29.54 INCHES (112 PERCENT) AT TRUCKEE TO 5.17 INCHES (112 PERCENT) AT BISHOP. MARCH PRECIPITATION AVERAGED 205 PERCENT OF NORMAL. EXTREMES VARIED WIDELY FROM 401 PERCENT OF NORMAL (2.93 INCHES) AT BIG PINE P.H. No. 3, IN THE OWENS RIVER DRAINAGE, TO 27 PERCENT (0.28 INCH) AT MOUNTAIN PASS, IN THE MOJAVE DESERT. DOYLE, IN THE HONEY LAKE DRAINAGE, RECEIVED THEIR SECOND HEAVIEST MARCH OF RECORD WITH 2.96 INCHES. BISHOP'S 1.75 INCHES WAS ITS WETTEST MARCH SINCE 1952.

RESERVOIR STORAGE - APRIL 1 STORAGE IN SEVEN MAJOR RESERVOIRS IN THIS AREA WAS 233,000 ACRE-Feet. THIS IS 65 PERCENT OF CAPACITY AND AVERAGE STORAGE FOR THIS DATE. STORAGE IN LAKE TAHOE, BOCA RESERVOIR, AND BRIDGEPORT RESERVOIR, IMPOUNDING WATER FOR USE IN BOTH CALIFORNIA AND NEVADA, WAS 709,250 ACRE-Feet OR 86 PERCENT OF AVAILABLE CAPACITY AND 120 PERCENT OF AVERAGE STORAGE FOR APRIL 1. LAKE TAHOE IS STORING 93,000 ACRE-Feet MORE THAN ONE YEAR AGO, AND HAS 120 PERCENT OF AVERAGE CONTENTS WITH THE SURFACE ELEVATION NOW AT 6228.20 FEET.

RUNOFF - MARCH RUNOFF IN THE LAHONTAN AREA TOTALED 108,000 ACRE-Feet OR 140 PERCENT OF AVERAGE FOR THE MONTH. ALL STREAMS IN THE AREA PRODUCED ABOVE AVERAGE RUNOFF DURING MARCH EXCEPT THE OWENS RIVER. RUNOFF AMOUNTS RANGED FROM 98 PERCENT OF AVERAGE FOR THE OWENS RIVER TO 154 PERCENT FOR THE TRUCKEE RIVER. WATER YEAR RUNOFF FOR THE AREA HAS BEEN 170 PERCENT OF AVERAGE FOR THE SIX-MONTH PERIOD SINCE OCTOBER 1.

FORECASTS - CONDITIONS ON APRIL 1 INDICATE THAT RUNOFF FROM THE LAHONTAN AREA DURING THE 1973-74 WATER YEAR WILL BE ABOUT 120 PERCENT OF AVERAGE. THE DEPARTMENT OF WATER AND POWER OF THE CITY OF LOS ANGELES FORECASTS THE APRIL-JULY RUNOFF FOR THE OWENS RIVER BELOW LONG VALLEY RESERVOIR TO BE ABOUT 76,500 ACRE-Feet, 123 PERCENT OF AVERAGE.

LAHONTAN AREA

FORECASTS AS OF APRIL 1, 1974			
STREAM AND STATION	APRIL-JULY RUNOFF		
	AVERAGE IN ACRE-FEET	IN ACRE-FEET	IN PERCENT OF AVERAGE
Bidwell Creek near Ft. Bidwell	11,180	15,200	136
Mill Creek above diversions	4,870	6,000	123
Deep Creek above diversions	3,540	5,000	141
Eagle Creek at Eagleville	4,770	6,300	132
Truckee River, Lake Tahoe to Farad accretion	264,000	325,000	123
Lake Tahoe Rise (assuming gates closed)	1.42 FT.	1.55 FT.	109
East Carson River near Gardnerville	181,000	225,000	124
West Carson River at Woodfords	51,000	60,000	118
East Walker River near Bridgeport	60,000	75,000	125
West Walker River near Coleville	143,000	185,000	129

SNOW LINES



WORLD'S FIRST DAM - THE EARLIEST KNOWN DAM WAS BUILT SEVEN MILES SOUTH OF HELWAN IN EGYPT. THE DAM IS ESTIMATED TO HAVE BEEN BUILT BETWEEN 2,950 AND 2,750 B.C. IT WAS 348 FEET IN LENGTH AND WAS RAISED TO A HEIGHT OF 37 FEET. NO EVIDENCE IS AVAILABLE ON WHAT METHOD WAS USED TO COMPACT THE EARTH FILL (IT WAS PROBABLY DONE WITH REAL SHEEP'S FEET).



SNOW NOTE MYSTERIES - YES -- WE STILL RECEIVE AN OCCASIONAL SNOW SURVEY NOTE THAT BAFFLES THE IMAGINATION -- NO SNOW COURSE NAME OR NUMBER ON THE FORM -- NO DATE OF SNOW SURVEY ENTERED -- SNOW DENSITIES NOT COMPUTED OR RECORDED -- MISSING TARE WEIGHTS -- NOTES FILLED OUT BY IBM ELECTRIC TYPEWRITERS (WOW!! DO THESE SNOW SURVEYORS PACK THE TYPEWRITER IN, PLUS A GENERATOR OR LARGE BATTERY)? THE POINT WE'RE REEMPHASIZING IS THAT WE WANT YOUR ORIGINAL, DIRTY, SWEAT-STAINED, SCRIBBLED UP, RECORRECTED, WRINKLED, AND PERHAPS BLOOD SPATTERED SNOW NOTES WITH ALL THE FIELD RECORDED DATA AND REMARKS ENTERED ON SAME. THEN WE CAN BE SURE OF TWO THINGS: (1) NO DATA WAS LEFT OUT OR ERRONEOUSLY TRANSFERRED WHILE MAKING A COPY; (2) WE CAN SEE WHERE SNOW SURVEYORS ENCOUNTERED SAMPLING DIFFICULTIES AND, WHEN INDICATED, MADE INTELLIGENT ADJUSTMENTS TO THE DATA.



NEED WATER? - A POTENTIAL SOURCE OF FRESH WATER FOR A THIRSTY WORLD IS LOCKED UP IN ICE STORAGE TO AN ESTIMATED AVERAGE DEPTH OF 7,500 FEET IN ANTARCTICA, MAKING THIS THE CONTINENT WITH THE HIGHEST AVERAGE ELEVATION. THIS IS THE WORLD'S LARGEST ICE MASS, CONTAINING 90 PERCENT OF THE WORLD'S ICE. DEPTHS UP TO THREE MILES THICK HAVE BEEN MEASURED AT THE SOUTH POLE. IF IT MELTED, THE OCEANS WOULD RISE 200 FEET, DROWNING EVERY COASTLINE AND WIPING OUT EVERY PORT, HARBOR, AND COASTAL CITY IN THE WORLD, INCLUDING LOWER ELEVATION AREAS LIKE CALIFORNIA'S GREAT CENTRAL VALLEY.

- COVER -

SHOWN IS SOMETHING MOST SNOW SURVEYORS HATE TO SEE. A BEAUTIFUL, SPARKLING LITTLE STREAM JOYOUSLY BUBBLING ITS WAY THROUGH A WINTER WONDERLAND -- AND DIRECTLY ACROSS HIS ROUTE OF TRAVEL. THIS IS LYONS CREEK IN THE AMERICAN RIVER BASIN (DWR PHOTO).

