

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE**

California Water Supply Outlook Report

February, 2015



Photo taken on January 29, 2015 by NRCS. Bare ground at 7,100 feet along the West Fork Carson River in Hope Valley, California

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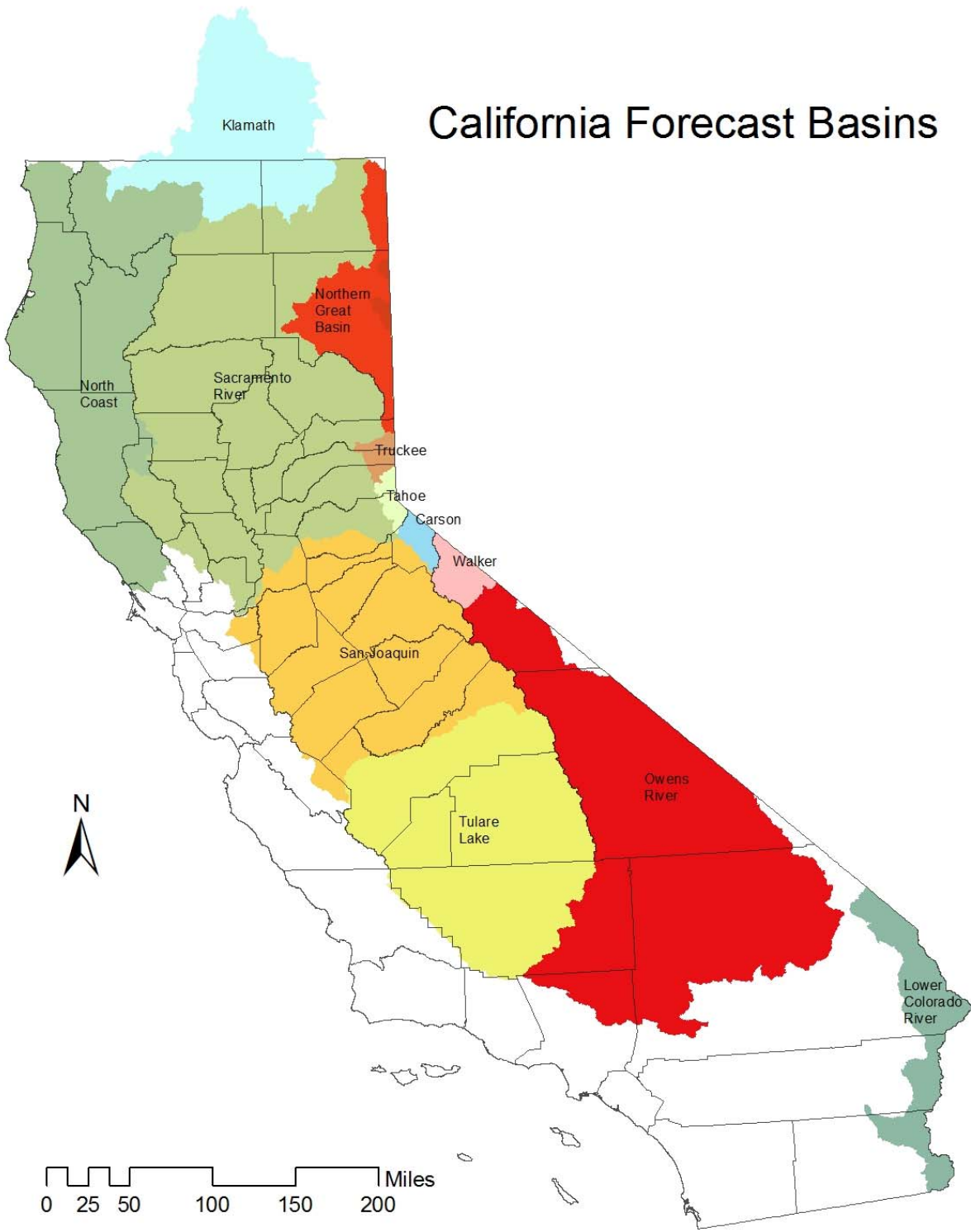
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How Forecasts are Made

California Forecast Basins



STATE OF CALIFORNIA GENERAL OUTLOOK

February, 2015

SUMMARY

California experienced little to no precipitation in the form of rainfall or snow during the month of January. As a result, existing snowpack dwindled due to warm temperatures. Fortunately though, water levels in the major storage reservoirs remained approximately the same due to low water demand during the winter months.

SNOWPACK

As of February 10 snowpack conditions for the Northern, Central, and Southern Sierras are below normal for this time of year. Although not as low as this time last year, the snow water equivalents are in the range of 25%-30% of normal with a downward trend due to higher than normal day time temperatures and long durations between storms. The major storms that California received this year were warm in nature and did not provide significant amounts of snow to the snowpack. For more information please visit:

<http://cdec.water.ca.gov/cgi-progs/snow/DLYSWEQ>

PRECIPITATION

Mountain rainfall precipitation varies from the Northern end of the Sierras to the Southern end of the Sierras. As of February 10, rainfall gages in the Northern Sierra Region (8-Station index) show rainfall amounts to be right at normal while gages used to develop a Central Sierra Region (5-Station index) show rainfall amounts to be at 56% of normal for this time of year. The Southern Sierra region is also below average at 52% of normal for this time of year.

http://cdec.water.ca.gov/snow_rain.html

RESERVOIRS

Most major reservoirs in California, especially those fed by the Sierra Mountains and Foothills are still below average capacity for this time of year. The February 10 report shows Lake Oroville is at 68% of normal storage, Lake Shasta is at 75% of normal storage, and New Hogan is at 45% of normal storage. Folsom Lake is one reservoir that seems to be recovering and is currently at 99% percent of normal storage. Due to a recent storm system, all reservoir water levels are showing an upward trend and are expected to be higher this time next month.

<http://cdec.water.ca.gov/cgi-progs/reservoirs/RES>

STREAMFLOW

Forecasted flows from Sierra fed streams all show below normal due to the lack of snowpack to date. The streamflow forecasts for the major basins in California are shown as follows:

Sacramento River Basin

2/1/2015

Forecasted streamflow volumes for this April through July are below average, ranging from 36% to 78% of average.

SACRAMENTO RIVER BASIN							
Streamflow Forecasts - February 1, 2015							
Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)	
	Chance of Exceeding * 90% 70% 50% (Most Prob) 30% 10% (1000AF) (1000AF) (1000AF) (% AVG.) (1000AF) (1000AF)						
Sacramento R at Shasta (DWR)							
APR-JUL			160	53		302	
Sacramento R at Shasta (NWS)							
APR-JUL	104	138	185	59	282	312	
McCloud R ab Shasta (DWR)							
APR-JUL			260	69		379	
McCloud R ab Shasta (NWS)							
APR-JUL	224	244	270	69	340	392	
Pit R at Shasta Lk (DWR)							
APR-JUL			700	67		1046	
Pit R at Shasta Lk (NWS)							
APR-JUL	476	507	568	56	769	1013	
Inflow to Shasta Lk (DWR)							
APR-JUL	690		1150	64	2150	1806	
OCT-SEP	3305		4450	74	7115	5979	
Inflow to Shasta Lk (NWS)							
APR-JUL	952	1034	1224	68	1691	1803	
Sacramento R nr Red Bluff (DWR)							
APR-JUL	890		1550	62	3220	2485	
OCT-SEP	4810		6760	78	10690	8727	
Sacramento R nr Red Bluff (NWS)							
APR-JUL	1449	1569	1869	75	2592	2479	
Feather R at Lk Almanor (DWR)							
APR-JUL			150	45		333	
NF Feather R at Pulga (DWR)							
APR-JUL			490	48		1028	
NF Feather R nr Prattville (NWS)							
APR-JUL	75	91	120	36	162	333	
MF Feather R nr Clio (DWR)							
APR-JUL			40	47		86	
SF Feather R at Ponderosa Dam (DWR)							
APR-JUL			50	46		110	
Inflow to Oroville Res (DWR)							
APR-JUL	380		860	49	2300	1758	
OCT-SEP	1715		2815	62	5495	4523	
Inflow to Oroville Res (NWS)							
APR-JUL	364	453	665	39	1018	1701	
N Yuba R bl Goodyears Bar (DWR)							
APR-JUL			140	50		279	
N Yuba R bl Goodyears Bar (NWS)							
APR-JUL	63	87	134	49	199	273	
Inflow Jackson Mdws & Bowman Res (DWR)							
APR-JUL			60	54		112	
S Yuba R nr Langs Crossing (DWR)							
APR-JUL			120	52		233	
Yuba R at Smartville (DWR)							

APR-JUL	190		510	51		1200	996
OCT-SEP	765		1450	62		2710	2329
Yuba R at Smartville (NWS)							
APR-JUL	221	313	465	47	711	986	981
NF American R at N FK Dam (DWR)							
APR-JUL			100	38			262
MF American R nr Auburn (DWR)							
APR-JUL			220	42			522
MF American R nr Auburn (NWS)							
APR-JUL	86	148	220	45	346	546	490
Inflow to Union Valley Res (NWS)							
APR-JUL	14.0	24	36	37	61	82	98
Silver Ck bl Camino Div. Dam (DWR)							
APR-JUL			80	46			173
Silver Ck bl Camino Div. Dam (NWS)							
APR-JUL	30	49	66	42	113	155	158
Inflow to Folsom Res (DWR)							
APR-JUL	190		540	44		1560	1231
OCT-SEP	690		1435	54		3130	2683
Inflow to Folsom Res (NWS)							
APR-JUL	173	318	480	39	841	1296	1232

=====

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management

San Joaquin River Basin

2/1/2015

Forecasted streamflow volumes for this April through July are below average, ranging from 32% to 56% of average.

SAN JOAQUIN RIVER BASIN						
Streamflow Forecasts - February 1, 2015						
Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)
	Chance of Exceeding * =====					
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
Cosumnes R at Michigan Bar (DWR)						
APR-JUL	6.0		45	35		225
OCT-SEP	40		170	44		765
Cosumnes R at Michigan Bar (NWS)						
APR-JUL	23	34	55	43	99	189
NF Mokelumne R nr West Point (DWR)						
APR-JUL			210	48		437
Inflow to Pardee Res (DWR)						
APR-JUL	85		230	50		530
OCT-SEP	170		400	53		870
Inflow to Pardee Res (NWS)						
APR-JUL	93	131	188	40	316	449
MF Stanislaus R bl Beardsley (DWR)						
APR-JUL			160	48		334
N F Inflow to McKays Pt Dam (DWR)						
APR-JUL			100	45		224
Inflow to New Melones Res (DWR)						
APR-JUL	100		350	50		810
Inflow to New Melones Resr (DWR)						
OCT-SEP	200		560	48		1140
Inflow to New Melones Res (NWS)						
APR-JUL	146	204	271	39	448	640
Cherry & Eleanor Cks, Hetch Hetchy (DWR)						
APR-JUL			170	54		315
Tuolumne R nr Hetch Hetchy (DWR)						
APR-JUL			340	56		604
Tuolumne R nr Hetch Hetchy (NWS)						
APR-JUL	177	215	307	52	438	622
Inflow to New Don Pedro Res (DWR)						
APR-JUL	270		640	52		1430
OCT-SEP	470		980	50		1960
Inflow to New Don Pedro Res (NWS)						
APR-JUL	318	409	614	48	913	1324
Merced R, Pohono Bridge Yosemite(DWR)						
APR-JUL			170	46		372
Merced R, Pohono Bridge Yosemite (NWS)						
APR-JUL	71	100	147	38	246	356
Inflow to Lake McClure (DWR)						
APR-JUL	102		270	43		780
OCT-SEP	160		395	39		1050
Inflow to Lake McClure (NWS)						
APR-JUL	89	128	207	32	385	592
San Joaquin R at Mammoth Pool (DWR)						
APR-JUL			480	47		1026

Big Ck bl Huntington Lk (DWR)						
APR-JUL		45	50			91
SF San Joaquin R nr Florence Lk (DWR)						
APR-JUL		90	45			201
Inflow to Millerton Lk (DWR)						
APR-JUL	270	550	44		1370	1258
OCT-SEP	400	770	42		1750	1831
Inflow to Millerton Lk (NWS)						
APR-JUL	205	276	471	37	798	1302
						1258

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* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

SAN JOAQUIN RIVER BASIN

Tulare Lake Basin

2/1/2015

Forecasted streamflow volumes for this April through July are below average, ranging from 14% to 45% of average.

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                        TULARE LAKE BASIN
                Streamflow Forecasts - February 1, 2015
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Forecast Pt | <=== Drier === Future Conditions === Wetter ===> |
Forecast | ===== Chance of Exceeding * ===== |
Period | (1000AF) (1000AF) | (1000AF) (% AVG.) | (1000AF) (1000AF) | (1000AF)
=====
NF Kings R nr Cliff Camp (DWR)
  APR-JUL                100          42                239
Inflow to Pine Flat Res (DWR)
  APR-JUL          260          540          44          1340          1236
  OCT-SEP          370          720          42          1720          1729
Inflow to Pine Flat Res (NWS)
  APR-JUL          231          276          466          38          800          1251          1231
Kaweah R at Terminus Res (DWR)
  APR-JUL           58          130          45          370          290
  OCT-SEP           90          190          42          520          456
Kaweah R at Terminus Res (NWS)
  APR-JUL           24           44           76          26          153          312          288
Tule R at Success Res (DWR)
  APR-JUL           2.0           9.0          14           99           64
  OCT-SEP           5.0           26           18          250          147
Tule R at Success Res (NWS)
  APR-JUL           4.0           5.0          12.0          19           28           70           63
Kern R nr Kernville (DWR)
  APR-JUL          140          37                384
Inflow to Isabella Res (DWR)
  APR-JUL           80          155          33          640          465
  OCT-SEP          150          265          36          990          733
Inflow to Isabella Res (NWS)
  APR-JUL          18.0           46          108          24          228          415          454
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* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

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- (2) - The value is natural volume - actual volume may be affected by upstream water management.

North Coast Area Basin

2/1/2015

Forecasted streamflow volumes for this April through July are below average, ranging from 31% to 76% of average.

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                                NORTH COASTAL AREA
                                Streamflow Forecasts - February 1, 2015
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Forecast Pt | <=== Drier === Future Conditions === Wetter ===> |
Forecast Pt | ===== Chance of Exceeding * ===== |
Forecast Pt | 90%      70% | 50% (Most Prob) | 30%      10% | 30 Yr Avg
Period      | (1000AF) (1000AF) | (1000AF) (% AVG.) | (1000AF) (1000AF) | (1000AF)
=====
Trinity R at Lewiston (DWR)
  APR-JUL      90              310      48              710      651
  OCT-SEP      600              1045     76              1855     1376

Inflow to Clair Engle Lk (NWS)
  APR-JUL      176      222              317      48      472      629      666

Scott R nr Fort Jones (NWS)
  APR-JUL              61      0
  APR-JUL      28      41              53      31      81      126      173
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* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

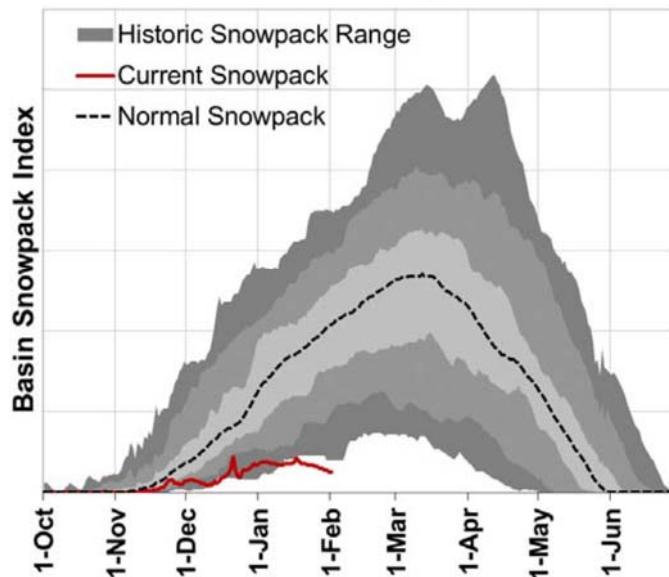
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Klamath Basin

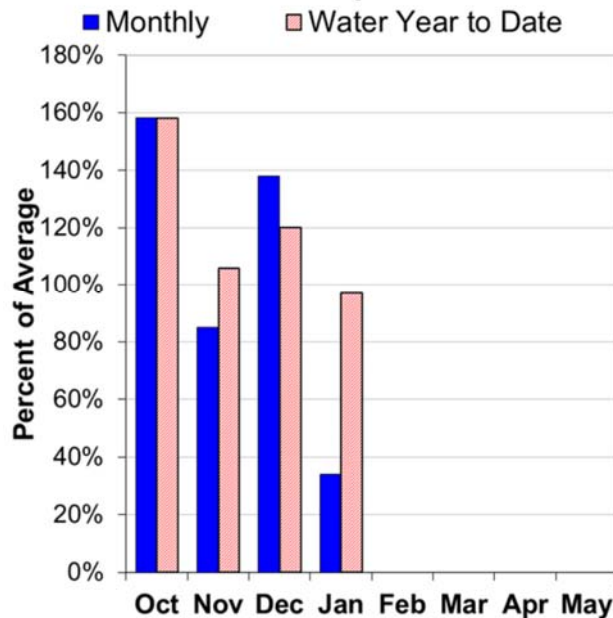
January 1, 2015

As of February 1, the basin snowpack was 19% of normal. This is significantly lower than last month when the basin snowpack was 37% of normal. Twelve out of 15 long-term snow measurement sites were at or near record low snowpack levels on February 1. January precipitation was 34% of average. Precipitation since the beginning of the water year (October 1 - February 1) has been 97% of average. Reservoir storage conditions vary widely across the basin. As of February 1, reservoir storage ranged from 18% of average (7% of capacity) at Clear Lake (CA) Reservoir to 104% of average (63% of capacity) at Upper Klamath Lake. Forecasted streamflow volumes for this April through July are below average, ranging from 28% to 57% of average.

Mountain Snowpack



Basin Precipitation



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KLAMATH BASIN
Streamflow Forecasts - February 1, 2015

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Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)	
	===== Chance of Exceeding * =====						
	90%	70%	50% (Most Prob)	30%	10%		
	(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)	
Clear Lk Inflow (2)							
FEB-JUL	1.9	12.7	38	41	63	101	93
APR-SEP	0.3	4.2	14.0	40	24	38	35
Gerber Res Inflow (2)							
FEB-JUL	0.4	4.8	16.0	39	27	44	41
APR-SEP	0.1	0.4	4.0	28	10.3	19.5	14.4
Sprague R nr Chiloquin							
FEB-JUL	27	100	150	51	200	273	295
APR-SEP	40	88	120	57	152	200	210
Upper Klamath Lake Inflow							
FEB-JUL	89	285	375	52	465	660	720
APR-SEP	76	196	250	52	305	425	480
Williamson R bl Sprague R							
FEB-JUL	97	188	250	53	310	405	475
APR-SEP	96	158	200	56	240	305	355

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* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

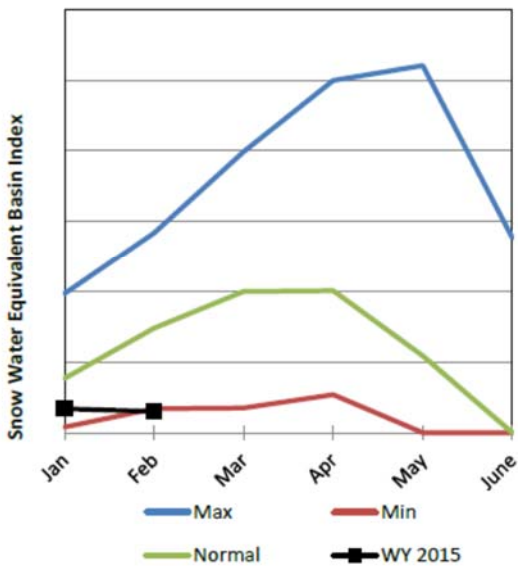
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management

Lake Tahoe Basin

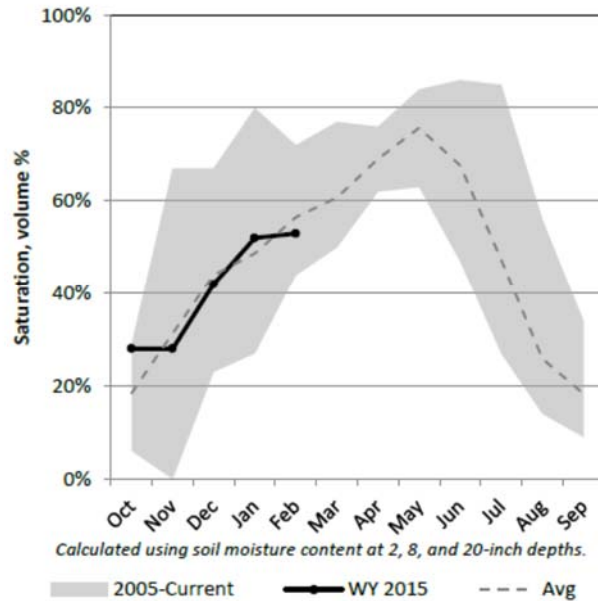
2/1/2015

Snowpack in the Lake Tahoe Basin is much below average at 17% of normal, compared to 23% last year. Precipitation in January was much below average at 4%, which brings the seasonal accumulation (Oct-Jan) to 46% of average. Soil moisture is at 53% compared to 44% last year. Lake Tahoe's water elevation is 6222.42 ft, which is 0.58 feet below the lake's natural rim and equals a storage deficit of about 70,300 acre-feet. Last year the elevation was 6223.63 ft and the useable storage equaled 76,460 acre-feet. Lake Tahoe is forecast to rise 0.5 feet from March to its high elevation.

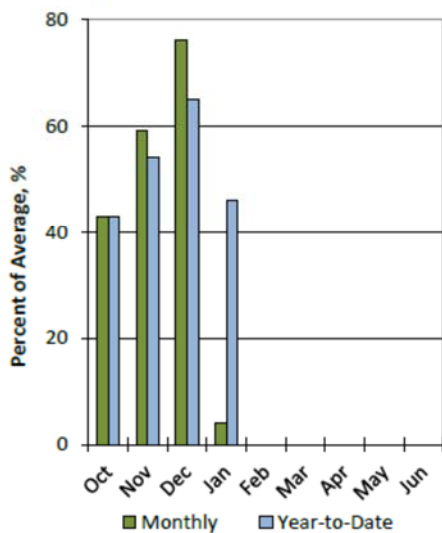
Snowpack



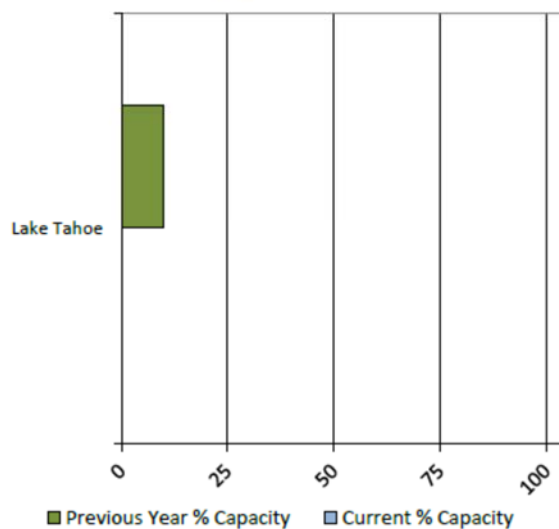
Soil Moisture



Precipitation



Reservoir Storage



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LAKE TAHOE BASIN
Streamflow Forecasts - February 1, 2015

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Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)
	===== Chance of Exceeding * =====					
	90%	70%	50% (Most Prob)	30%	10%	
	(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)
=====						
Marlette Lk Inflow (Acre-Ft)						
MAR-JUL	-829.0	-246.0	150	12	546	1129
APR-JUL	-744.0	-241.0	100	11	441	944
Lake Tahoe Rise (Gates Closed) (1)						
MAR-HIGH	0.02	0.15	0.5	29	0.86	1.64
APR-HIGH	0.07	0.28	0.45	34	0.85	1.40

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The average is computed for the 1981-2010 base period.

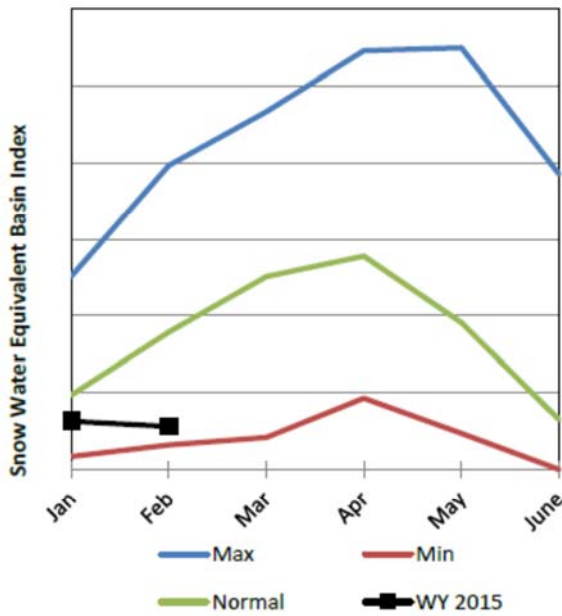
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management

Truckee River Basin

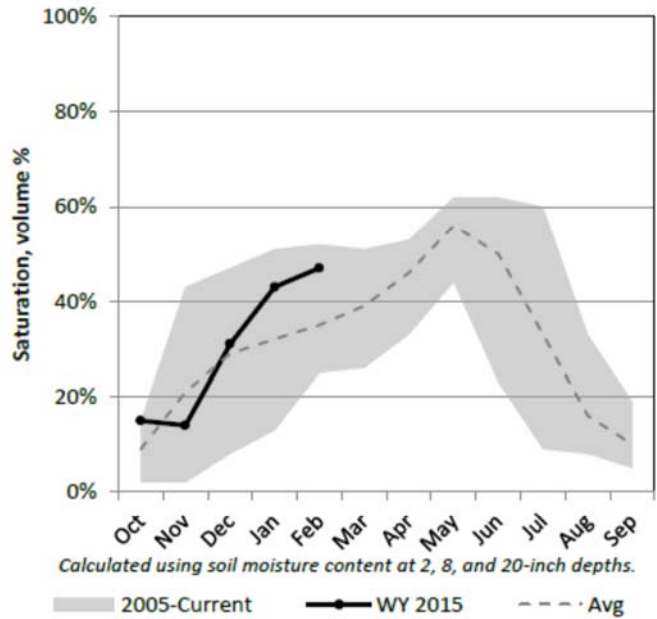
2/1/2015

Snowpack in the Truckee River Basin is much below average at 29% of normal, compared to 13% last year. Precipitation in January was much below average at 3%, which brings the seasonal accumulation (Oct-Jan) to 52% of average. Soil moisture is at 47% compared to 26% last year. Reservoir storage is at 26% of capacity, compared to 44% last year. Forecast streamflow volumes range from 15% to 41% of average.

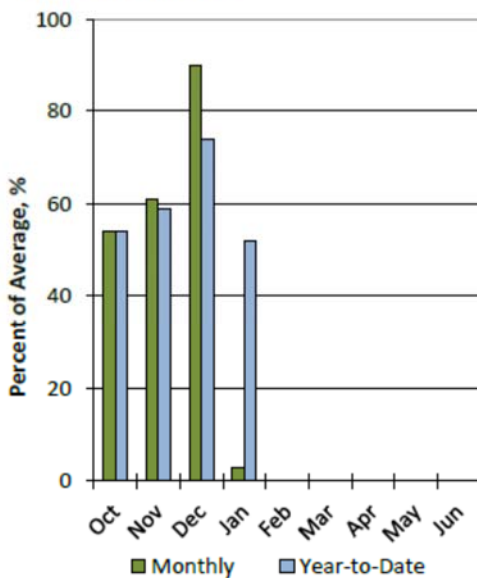
Snowpack



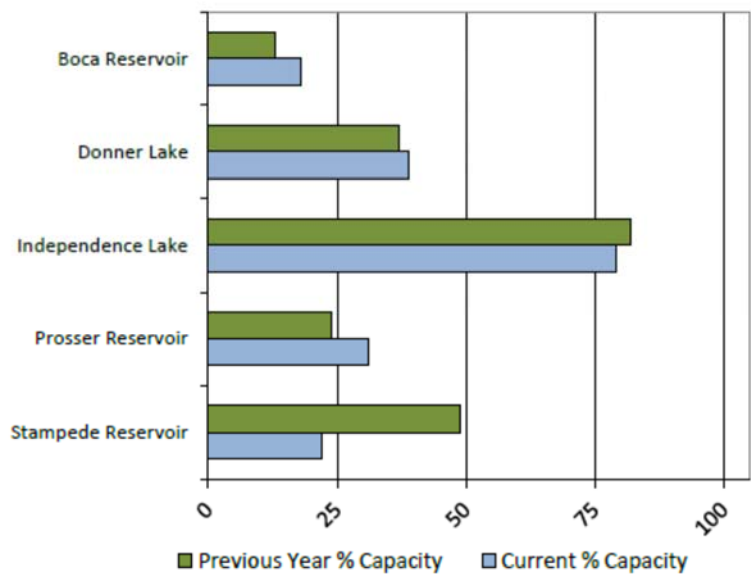
Soil Moisture



Precipitation



Reservoir Storage



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TRUCKEE RIVER BASIN
Streamflow Forecasts - February 1, 2015

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Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)	
	===== Chance of Exceeding * =====						
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)		
=====							
Sagehen Ck nr Truckee							
MAR-JUL	0.7	0.9	1.2	19	1.5	2.2	6.4
APR-JUL	0.1	0.2	1.0	18	1.3	2.0	5.6
L Truckee R ab Boca Resv							
MAR-JUL	3.0	15.1	36	36	57	88	99
APR-JUL	12.0	22	33	39	55	82	84
Truckee R at Farad							
MAR-JUL	9.0	66	125	41	184	270	307
APR-JUL	53	77	105	41	160	243	255

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* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

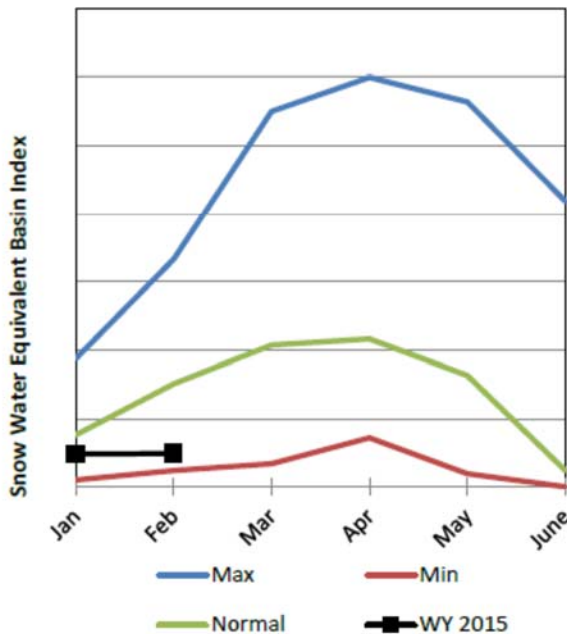
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Carson River Basin

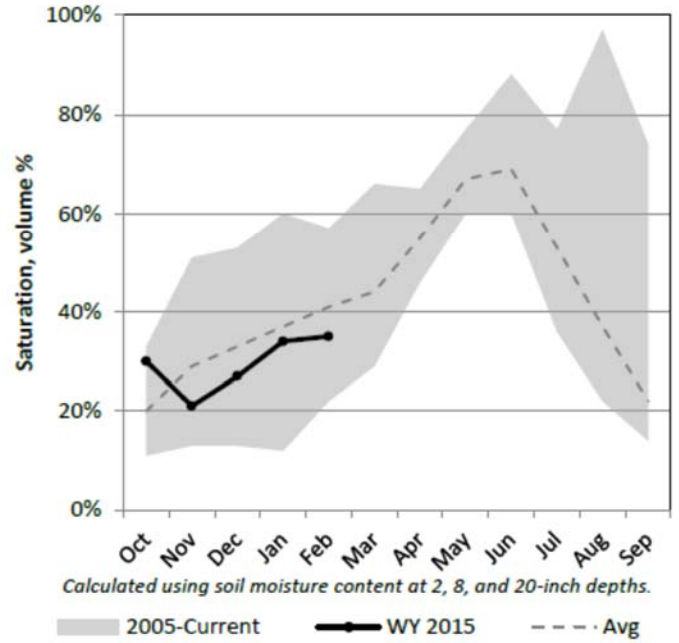
2/1/2015

Snowpack in the Carson River Basin is much below average at 31% of normal, compared to 30% last year. Precipitation in January was much below average at 3%, which brings the seasonal accumulation (Oct-Jan) to 41% of average. Soil moisture is at 35% compared to 22% last year. Storage in Lahontan Reservoir is 8% of capacity, compared to 18% last year. Forecast streamflow volumes range from 12% to 39% of average.

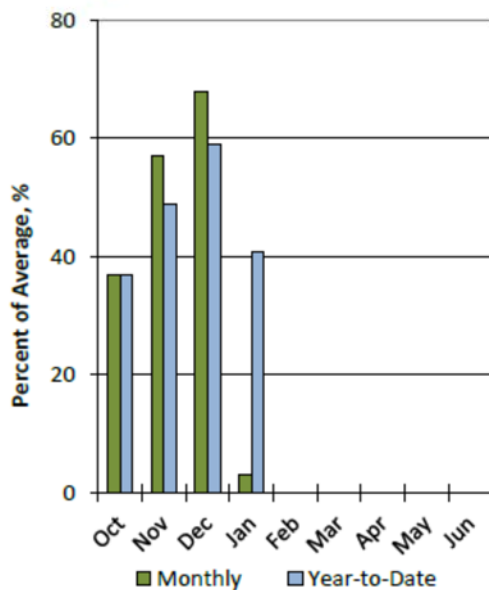
Snowpack



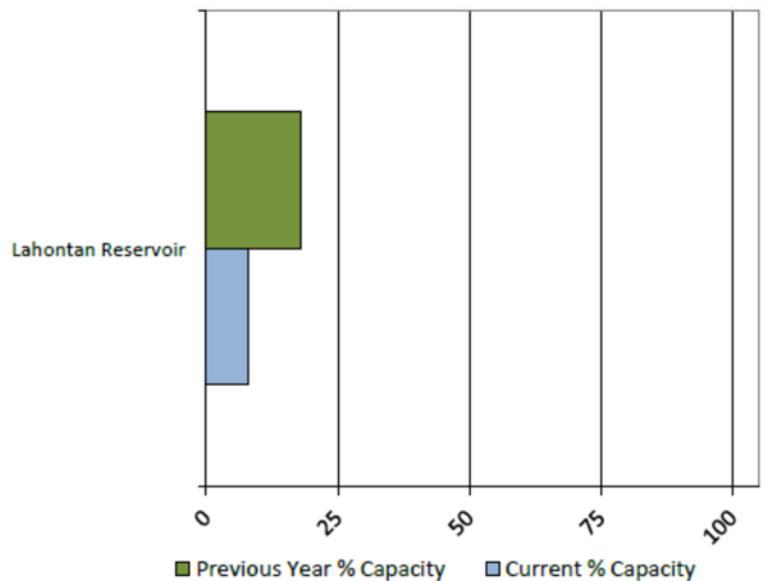
Soil Moisture



Precipitation



Reservoir Storage



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CARSON RIVER BASIN
Streamflow Forecasts - February 1, 2015

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Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)
	===== Chance of Exceeding * =====					
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
EF Carson R nr Gardnerville						
MAR-JUL	4.0	29	80	39	131	206
APR-JUL	4.0	22	68	37	114	181
WF Carson R at Woodfords						
MAR-JUL	1.8	9.7	23	39	36	56
APR-JUL	1.1	9.3	20	37	31	46

=====

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

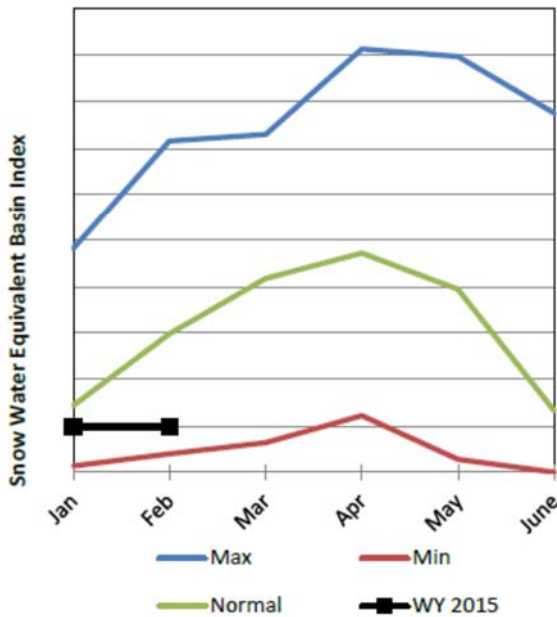
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Walker River Basin

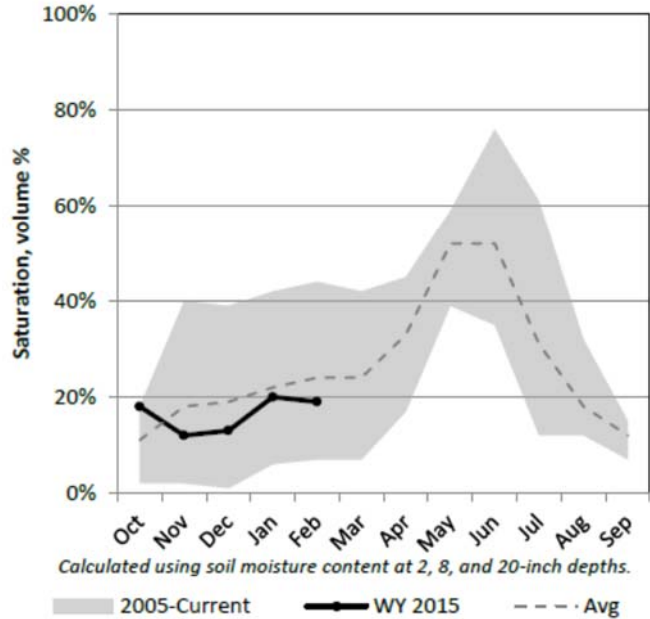
2/1/2015

Snowpack in the Walker River Basin is much below average at 31% of normal, compared to 27% last year. Precipitation in January was much below average at 5%, which brings the seasonal accumulation (Oct-Jan) to 40% of average. Soil moisture is at 19% compared to 7% last year. Reservoir storage is at 10% of capacity, compared to 12% last year. Forecast streamflow volumes range from 26% to 44% of average.

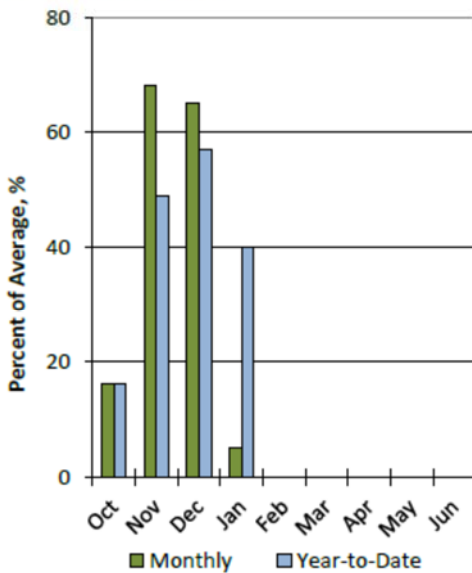
Snowpack



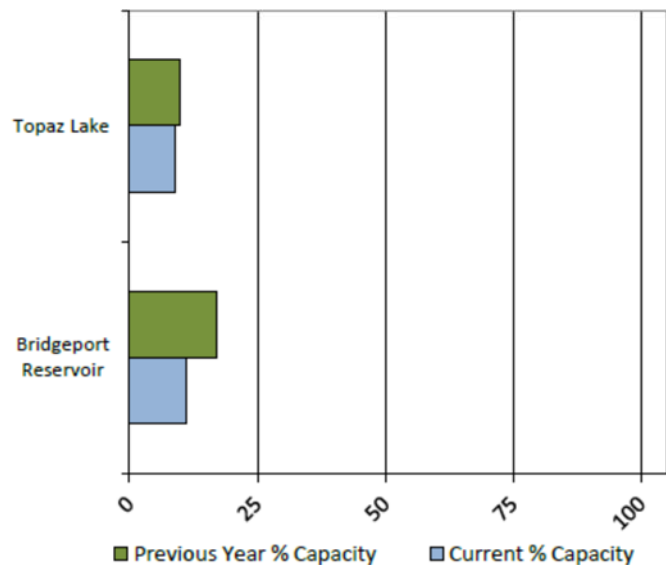
Soil Moisture



Precipitation



Reservoir Storage



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WALKER RIVER BASIN
Streamflow Forecasts - February 1, 2015

=====

Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)	
	Chance of Exceeding * 90% 70% 50% (Most Prob) 30% 10% (1000AF) (1000AF) (1000AF) (% AVG.) (1000AF) (1000AF)						
=====							
E Walker R nr Bridgeport							
MAR-AUG	0.8	4.6	20	26	41	73	76
APR-AUG	0.7	4.7	16.0	24	34	61	67
W Walker R bl L Walker R nr Coleville							
MAR-JUL	5.0	41	75	44	109	159	170
APR-JUL	2.0	34	68	42	102	153	162
W Walker R nr Coleville							
MAR-JUL	67	73	76	44	79	85	172
APR-JUL	59	64	67	41	70	75	163

=====

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Owens River Basin

2/1/2015

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=====
                                OWENS RIVER BASIN
                                Streamflow Forecasts - February 1, 2015
=====
Forecast Pt | <=== Drier === Future Conditions === Wetter ===> |
Forecast | ===== Chance of Exceeding * ===== |
Period | 90%      70%   | 50% (Most Prob) | 30%      10%   | 30 Yr Avg
          |(1000AF) (1000AF)| (1000AF) (% AVG.)|(1000AF) (1000AF)| (1000AF)
=====
Owens R (DWR)
APR-SEP                                55      23                                235
=====

```

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

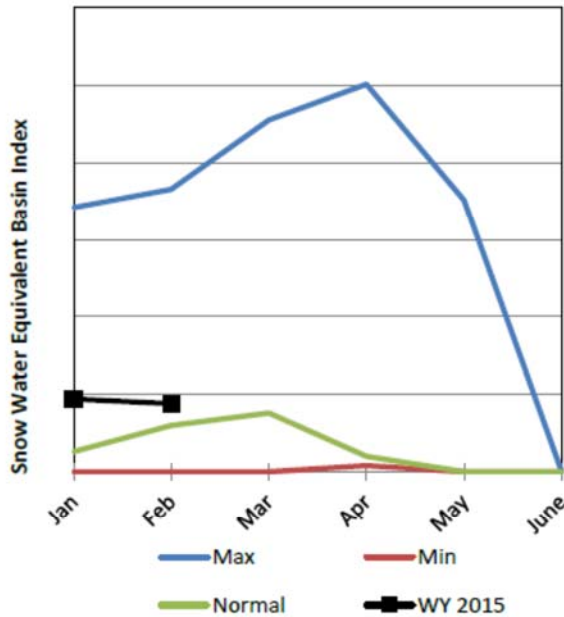
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Northern Great Basin

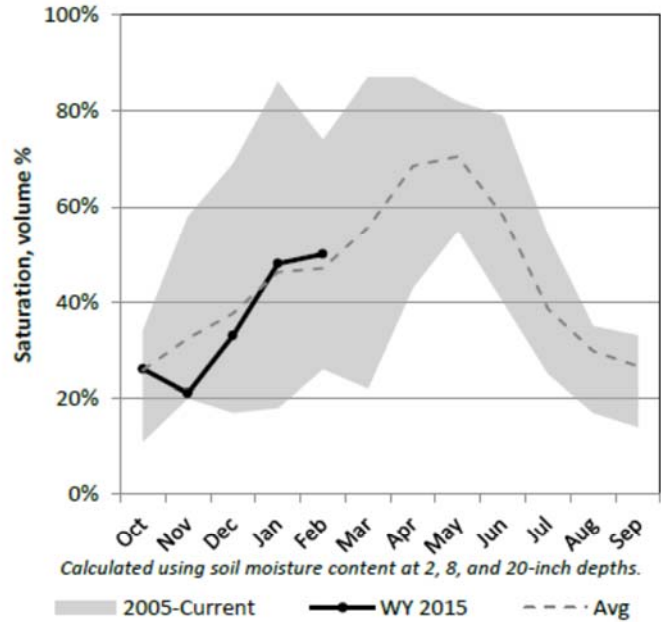
2/1/2015

Snowpack in the Northern Great Basin is much below average at 50% of normal, compared to 22% last year. Precipitation in January was much below average at 35%, which brings the seasonal accumulation (Oct-Jan) to 95% of average. Soil moisture is at 50% compared to 18% last year. Forecast streamflow volumes range from 42% to 47% of average.

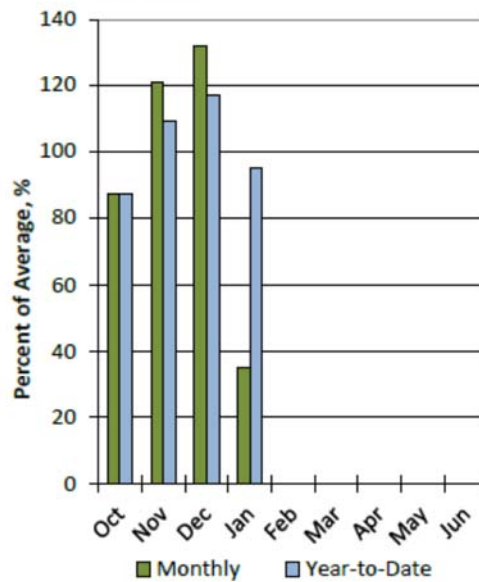
Snowpack



Soil Moisture



Precipitation



=====

NORTHERN GREAT BASIN
Streamflow Forecasts - February 1, 2015

=====

Forecast Pt Forecast Period	<=== Drier === Future Conditions === Wetter ===>					30 Yr Avg (1000AF)
	===== Chance of Exceeding * =====					
	90% (1000AF)	70% (1000AF)	50% (Most Prob) (1000AF) (% AVG.)	30% (1000AF)	10% (1000AF)	
Eagle Ck nr Eagleville						
APR-JUL	0.1	0.5	2.0	47	3.5	5.7
						4.3
Bidwell CK nr Ft. Bidwell						
APR-JUL	1.1	3.4	5.0	42	6.6	8.8
						12.0

=====

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

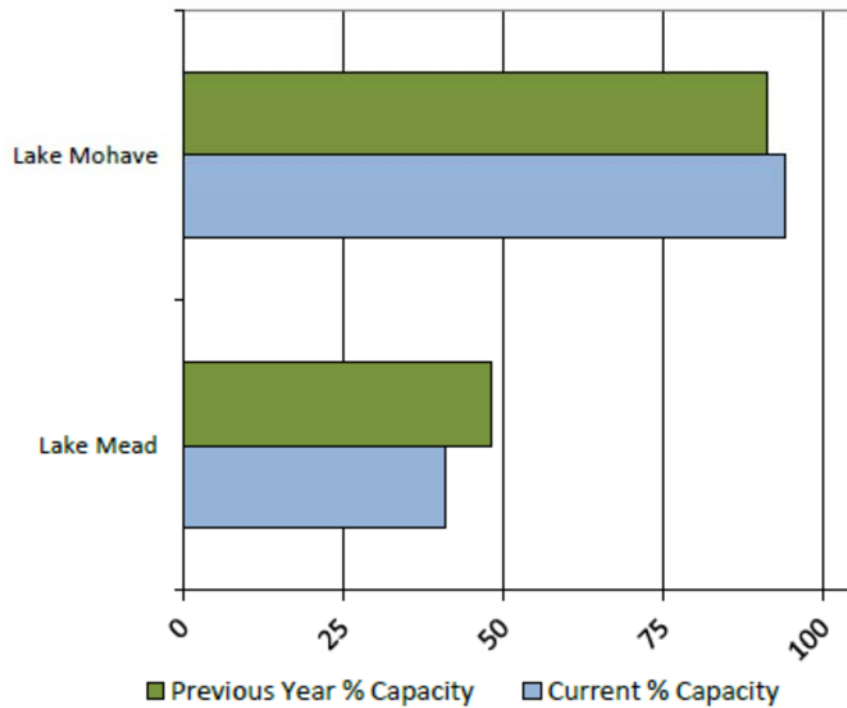
- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Lower Colorado River Basin

2/1/2015

Snowpack in the Colorado River Basin is forecasted to produce 70% of normal runoff into Lake Powell during the April to July months. Lake mead water levels have decreased as shown below since last year.

Reservoir Storage



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COLORADO RIVER BASIN
Streamflow Forecasts - February 1, 2015

=====

	<=== Drier === Future Conditions === Wetter ===>					
Forecast Pt	===== Chance of Exceeding * =====					
Forecast	90%	70%	50% (Most Prob)	30%	10%	30 Yr Avg
Period	(1000AF)	(1000AF)	(1000AF) (% AVG.)	(1000AF)	(1000AF)	(1000AF)
=====						
Lake Powell Inflow(2)						
APR-JUL	2620	3940	5000	70	6180	8150
						7160

=====

* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1981-2010 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snowcourses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

Issued by

Jason Weller
Chief
Natural Resources Conservation Service
U.S. Department of Agriculture

Released by

Carlos Suarez
State Conservationist
Natural Resources Conservation Service
Davis, CA



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California Water Supply Outlook Report

Natural Resources Conservation Service
Davis, CA

