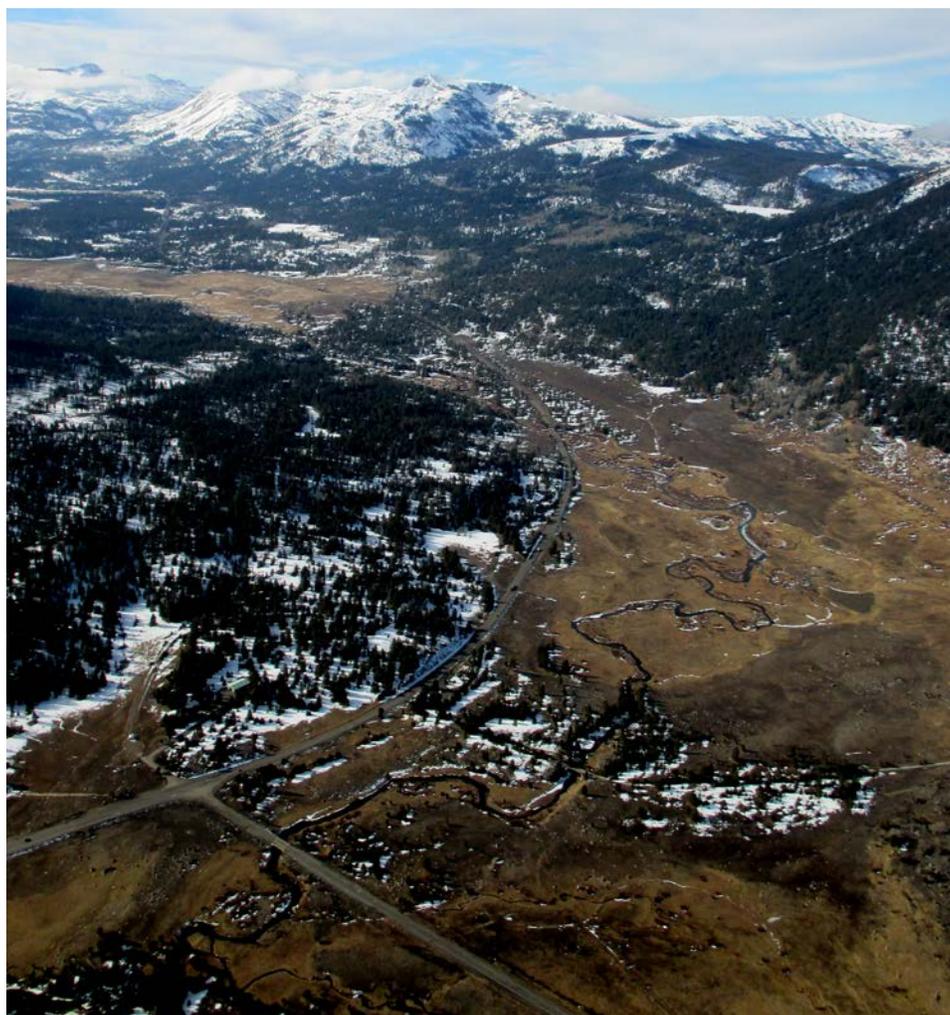


Natural Resources Conservation Service

Nevada Water Supply Outlook Report

February 1, 2015



January 29, 2015

**The drought continues, bare ground at 7,100 feet
along the West Fork Carson River in Hope Valley, California**

Hope Valley, located south of Lake Tahoe, is traditionally a winter recreation playground for cross country skiers, snowshoers and snowmobilers. Not so much on January 29th as was photographed by snow surveyors Jim Gifford and Matt Cole during their helicopter snow survey. Hope Valley's elevation of 7,100 feet normally holds a healthy snowpack at this time of year. But a warm January melted what little snow was on the ground at New Years. Persistently dry conditions failed to add snow. SNOTEL sites in the eastern Sierra averaged just 0.2 inches of precipitation in January, making it the driest January since SNOTEL records begin in 1979.

Water Supply Outlook Reports

Federal - State – Private Cooperative Snow Surveys

For more water supply and resource management information:

Internet: www.nv.nrcs.usda.gov/snow/

Contact: Jeff Anderson, Water Supply Specialist, jeff.anderson@nv.usda.gov or 775-857-8500 x152
Natural Resources Conservation Service, Nevada Snow Survey, 1365 Corporate Blvd, Reno, NV 89502

To join a free email subscription list please email: jeff.anderson@nv.usda.gov

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 the snow melts. Measurements of snow water equivalent at selected manual snow courses 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 produce runoff forecasts. 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 uncertainty is in 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.

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Or call toll free at (866) 632-9992 (voice) to obtain additional information, the appropriate office or to request documents. Individuals who are deaf, hard of hearing, or have speech disabilities may contact USDA through the Federal Relay service at (800) 877-8339 or (800) 845-6136 (in Spanish). USDA is an equal opportunity provider, employer, and lender. Persons with disabilities who require alternative means for communication of program information (e.g. Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

Nevada Water Supply Outlook Report

February 1, 2015

First, thanks to everyone who responded to the mailing survey last month. The email subscription list grew from 80 people to over 120! If you forgot to reply there is still time.

Email: jeff.anderson@nv.usda.gov to be added to the list.

SUMMARY

The drought strengthened its grip on Nevada in January. Monthly precipitation was drier than normal statewide and record dry in the eastern Sierra. Snowpack percentages slid across the state, down 20% to 55% since last month. February 1st snow ranges from 17% of normal in the Lake Tahoe Basin to 97% in the Snake River Basin. Lake Tahoe's snowpack is the lowest for February 1st since SNOTEL sites were installed in the early 1980s. The first major Pacific storm in seven weeks is headed our way and there are hints of more storms to follow. Hopefully these systems bring enough moisture to improve our water supply. There are two months remaining in the snow accumulation season and improvement is still possible, but a full recovery to normal is not likely for the western half of the state. Water managers and water users should take appropriate actions and prepare for a fourth year of below normal surface water supplies.

PRECIPITATION

Nevada was exceptionally dry in January during what should be the wettest month of the year. Only Eastern Nevada recorded more than half its normal monthly amount. Next best were the Northern Great Basin, Humboldt, Snake, and Owyhee basins at 30-50% of normal. The lack of moisture broke records in the eastern Sierra watersheds. 20 out of 24 SNOTEL sites recorded the driest January since they were installed; the other four sites recorded their second driest January. Averaged together Sierra SNOTEL sites measured just 0.2 inches of precipitation in January, breaking the previous low record of 0.5 inches set in 1991. The normal January amount for these sites is 6.6 inches. As of February 1st water year precipitation since the beginning of October is 40-50% of normal in the Sierra, 67% in Eastern Nevada and 80-95% of average in the Upper and Lower Humboldt, Northern Great Basin, Snake, Owyhee, Clover Valley and Franklin River basins.

SNOWPACK

February 1st basin-wide snowpacks range from 17-31% in the eastern Sierra up to 73-97% in Owyhee, Upper Humboldt, Snake and Clover Valley and Franklin River basins. All basin snowpack figures are down significantly from January 1st. The biggest monthly decline in snow percentages since January 1st occurred in Clover Valley and Franklin River -55%, Northern Great Basin -52%, Upper Humboldt Basin -43%, and Owyhee Basin -38%. Most other basins declined -20% to -35%, while the smallest decrease was in Eastern Nevada at -12%. Increasing averages and snowmelt explain the slide in percentages. January is normally our snowiest month; each day without new snow causes percentages to fall about 1% even if the snow isn't melting. This is because the current snowpack amount is compared to a "normal amount" which increases each day of the month, causing daily percentages to decrease. Unfortunately snowmelt also occurred at times in January leading to further decreases in the snow percentages. January temperatures were 5-10 degrees above normal for the month. At times

overnight low temperatures remained above freezing for consecutive days and on January 25th high temperatures were in the 50s and 60s at most SNOTEL sites. This resulted in a loss of snow in a number of locations. In the Sierra, the ground is bare below 7,000 feet and much higher on south facing aspects. This was the first time the Richardsons #2 snow course, located at 6,553 feet elevation on the southwest end of Lake Tahoe, had a zero measurement for the February 1st survey since surveyors started measuring the site 64 years ago in 1951. The long term average for February 1st at this location is 28 inches of snow, while the maximum snow depth ever measured on February 1st was 93 inches back in 1952. The chance to recover to a normal April 1st snowpack in the Lake Tahoe, Truckee, Carson and Walker basins is not likely based on historic data. Perhaps a repeat of 1991 might be a good result to hope for. That year these basins also had skimpy February 1st snowpack and little January precipitation, but ended up with a 60-80% of normal snowpack by April 1st.

SOIL MOISTURE

Soil moisture percentages are comparable to last month despite the dry weather and remain better than last year in most areas. Soils soaked up snowmelt in locations where melt occurred. Soil moisture continues to be near to above average in the Lake Tahoe, Truckee, Carson, Walker, Lower Humboldt, Northern Great Basin, Owyhee, Snake, Clover Valley and Lower Colorado basins. Only the Upper Humboldt had a noteworthy decrease in soil moisture from 41% (near average) last month to 32% (below average) this month.

RESERVOIRS

Nevada's key irrigation reservoirs continue to be very low. Lake Tahoe's water surface elevation decreased almost an inch in January and is now 6,222.42 feet, or about 70,380 acre-feet below its natural rim. Storage downstream in the Truckee River reservoirs is 26% of capacity, 45% of the average February 1st amount. Lahontan Reservoir increased from 5% to 8% of capacity in January, and now contains 23,180 acre-feet. Volumes increased somewhat in Bridgeport Reservoir and Topaz Lake which are 10% of capacity, 44% of average. Rye Patch storage is 5% of capacity, 13% of average.

STREAMFLOW FORECASTS

The Truckee, Carson and Walker streamflow forecasts are down about 20% and are now in the 20-45% of average range for the March – July period. In the Humboldt basin, forecasts for the tributaries range from about 30-40% for the Little Humboldt, Martin Creek and Rock Creek to 60-75% for the Marys River, Lamoille Creek, NF Humboldt and SF Humboldt rivers. The main-stem Humboldt forecasts are 45% of average for the points near Elko and Carlin and decrease moving downstream to 23% for the Imlay forecast. In eastern Nevada creeks are forecast between 30-56% of average. The highest forecast in the state is for Salmon Falls Creek at 84%.

UPCOMING EVENTS

Northern Nevada Water Forecast Meeting

March 20, 2015, 10am, Tahoe Hearing Room, Nevada Division of Water Resources, Carson City
Contact Reed Cozens to be put on a notification list: (775) 684-2800, rcozens@water.nv.gov

Western Snow Conference, April 20-23, 2015, Grass Valley, CA,

<http://www.westernsnowconference.org/>

SNOW SURVEY PRODUCTS HIGHLIGHT

This section highlights products that are linked from the Nevada Snow Program website: www.nv.nrcs.usda.gov/snow/. This month the [Interactive Map](#) is the focus. This tool provides a zoomable, map-based interface with the NRCS database which houses not only SNOTEL, SCAN and snow course data, but also data from other entities such as monthly streamflow, reservoir storage and co-op precipitation data. By clicking a station icon you will find station metadata and links to various data reports. The “Map Control” side bar gives you the ability to select stations based on data-type, network-type, state and county, user defined elevation criteria, and hydrologic unit code (HUC). There is also a choice between a variety of base maps, such as: street maps, topographic maps, or satellite imagery. You can also turn on overlays with watershed boundaries, as well as, station or watershed labels. Once you have customized a map, the web address (URL) can be bookmarked so you can return to your map. Here are a few a few examples of customized maps to give you the idea:

[SNOTEL sites in the Sierra above 8000ft with labels](#)

[SNOTEL and ACIS Valley Precipitation stations in the Humboldt R. watershed \(HUC 160401\) with labels](#)

[All stations in Walker River Watershed \(HUC 160503\), satellite base map, with station and HUC labels](#)

The screenshot shows the Interactive Map interface with several callouts explaining its features:

- Click here for an alphabetical list of all stations meeting the selection criteria, and for a metadata listing.** (Points to the map area)
- Display stations that have all or any of the selected elements.** (Points to the MAP CONTROLS sidebar)
- Filter stations by hydrometeorological element.** (Points to the MAP CONTROLS sidebar)
- Filter stations by location using any combination of political (state/county) or physical (hydrologic units/elevation) boundaries.** (Points to the MAP CONTROLS sidebar)
- Filter stations by network.** (Points to the MAP CONTROLS sidebar)
- View station location by zooming and panning.** (Points to the map area)
- View or exit fullscreen.** (Points to the map area)
- Tip: To save your settings, zoom to your area of interest and bookmark the url.** (Points to the map area)
- Rollover stations to display name and elevation. Click on stations to view metadata, reports, and site pages.** (Points to a station icon)
- Stations displayed on map meet criteria from selected Elements, Location, and Collection Networks filter.** (Points to the MAP CONTROLS sidebar)
- Customize by choosing a base map, optional overlays, and station labels.** (Points to the MAP CONTROLS sidebar)
- Get help or provide feedback.** (Points to the Help button)

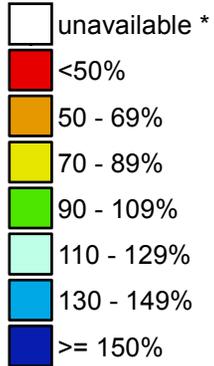
The interface includes a map of the United States with station icons, a sidebar for MAP CONTROLS, and a metadata window for a selected station (Buckboard Flat).

The above help screen is available too: http://www.wcc.nrcs.usda.gov/webmap/map_help.html

Nevada/California SNOTEL Current Snow Water Equivalent (SWE) % of Normal

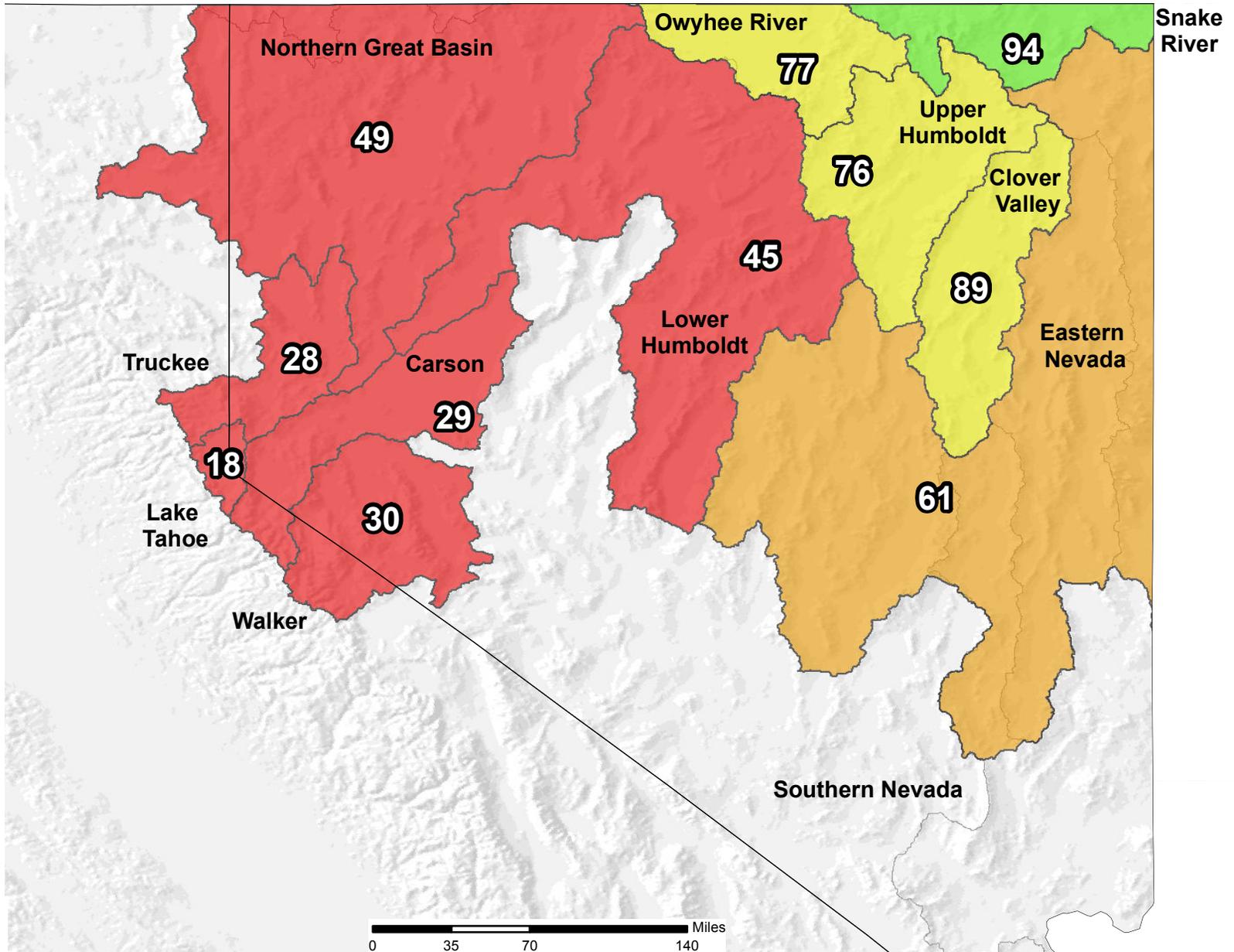
Feb 06, 2015

Current Snow Water Equivalent Basin-wide Percent of 1981-2010 Median



* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional data subject to revision



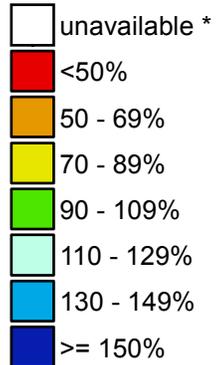
The current snow water equivalent percent of normal represents the snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
 USDA/NRCS National Water and Climate Center
 Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Nevada/California SNOTEL Water Year (Oct 1) to Date Precipitation % of Normal

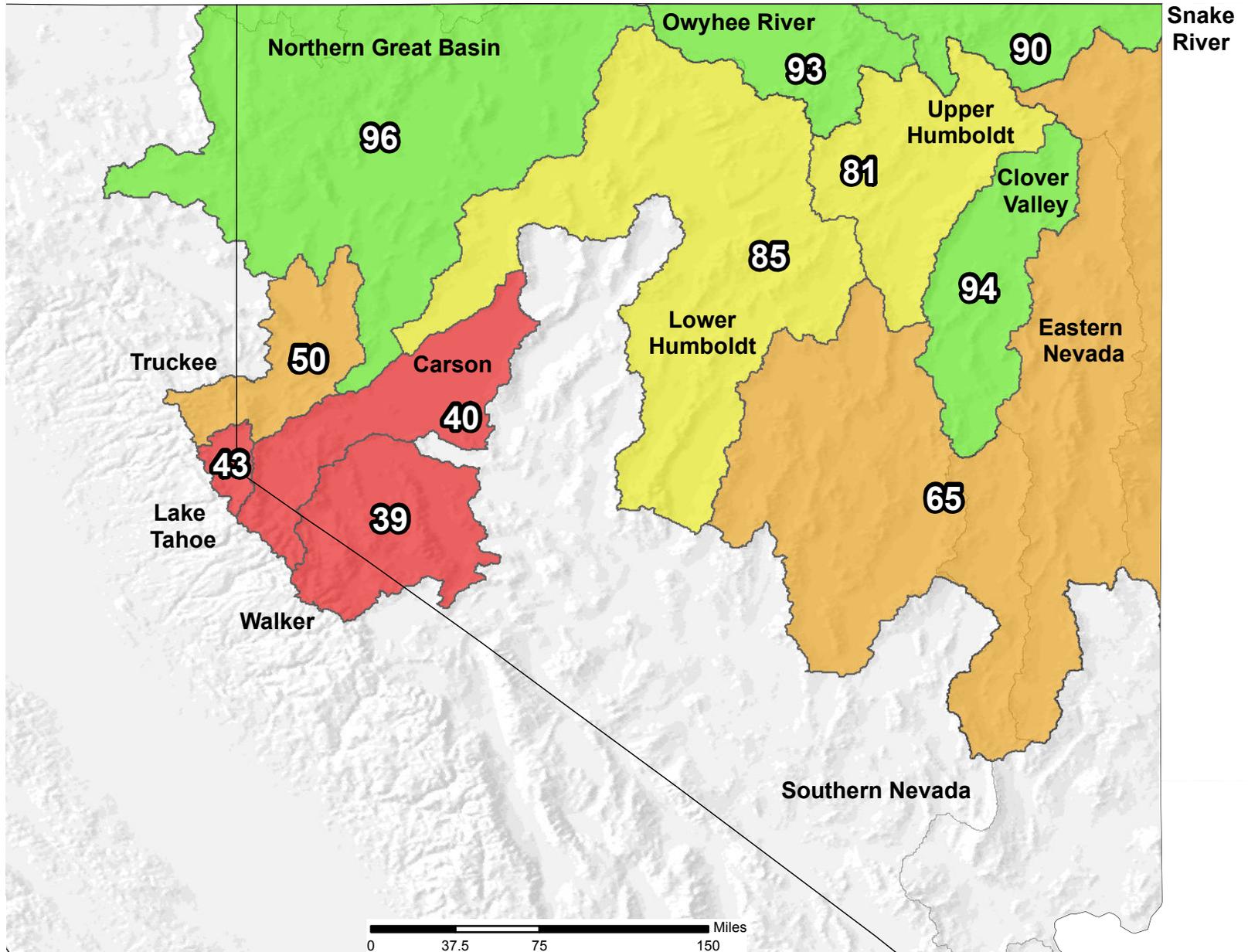
Feb 06, 2015

Water Year (Oct 1) to Date Precipitation Basin-wide Percent of 1981-2010 Average



* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional data subject to revision



The water year to date precipitation percent of normal represents the accumulated precipitation found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

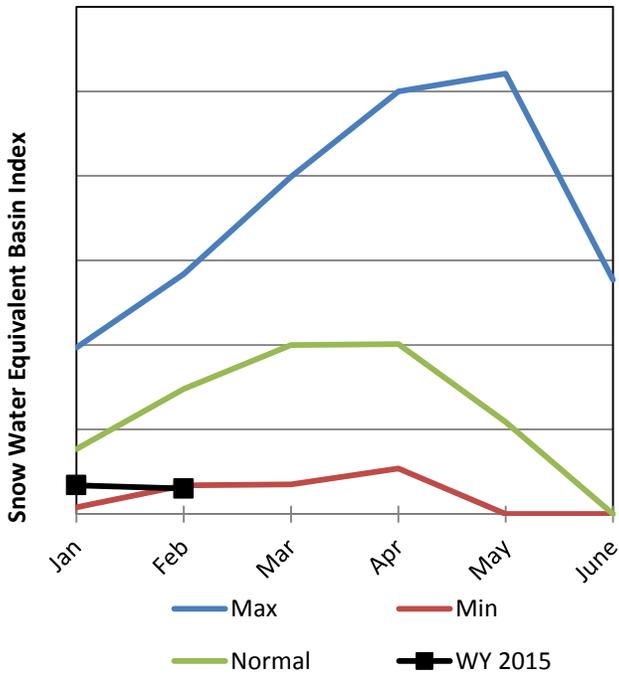
Prepared by:
 USDA/NRCS National Water and Climate Center
 Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Lake Tahoe Basin

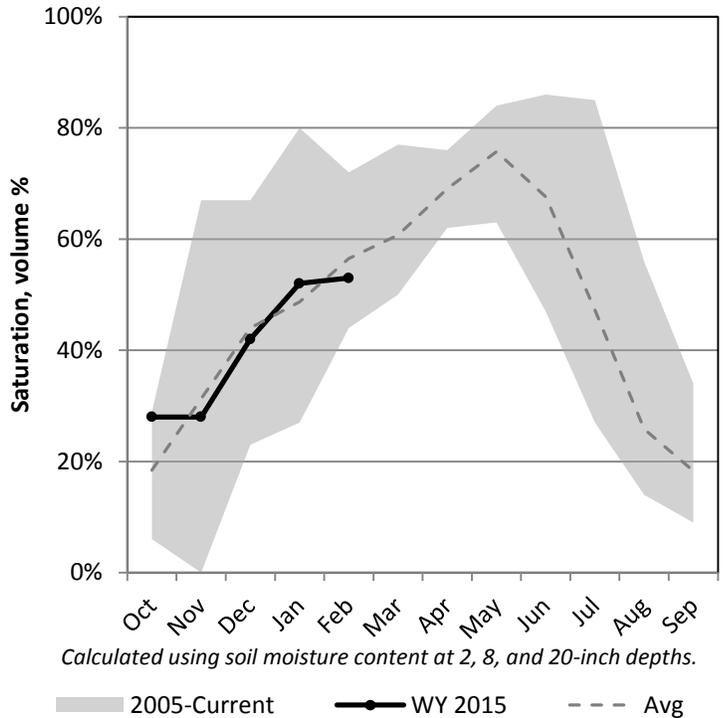
2/1/2015

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.

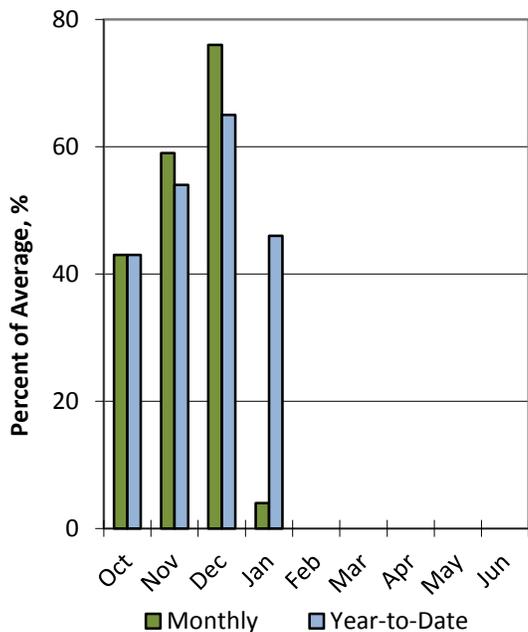
Snowpack



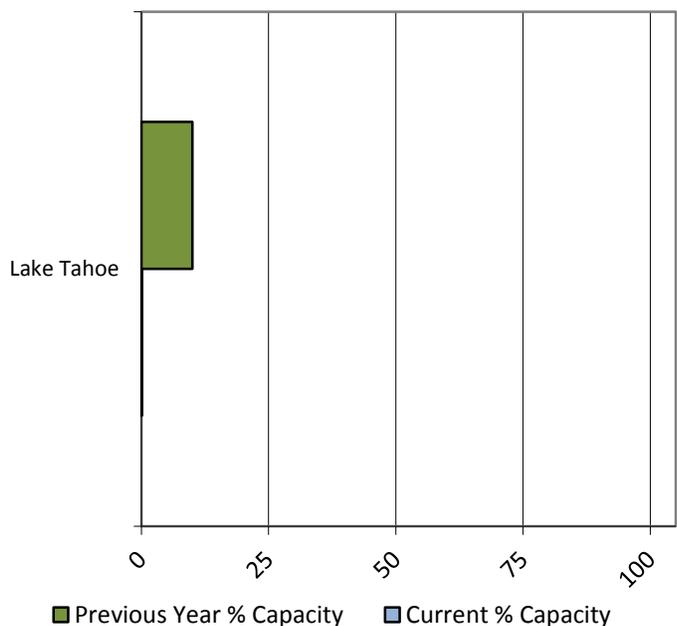
Soil Moisture



Precipitation



Reservoir Storage



Lake Tahoe Streamflow Forecasts - February 1, 2015

Lake Tahoe	Forecast Period	Forecast Exceedance Probabilities for Risk Assessment Chance that actual volume will exceed forecast						30yr Avg (KAF)
		90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	
Marlette Lake Inflow								
	MAR-JUL	-829	-246	150	12%	546	1129	1213
	APR-JUL	-744	-241	100	11%	441	944	911
Lake Tahoe Rise Gates Closed¹								
	OCT-HIGH	0.5	22	2.5	1.13	0.067	0.022	2.2
	MAR-HIGH	0.02	0.15	0.5	29%	0.86	1.64	1.73
	APR-HIGH	0.07	0.28	0.45	34%	0.85	1.4	1.31

1) 90% and 10% exceedance probabilities are actually 95% and 5%

2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Tahoe	0.0	72.8	276.2	744.6
Basin-wide Total		72.8	276.2	744.6
# of reservoirs	1	1	1	1

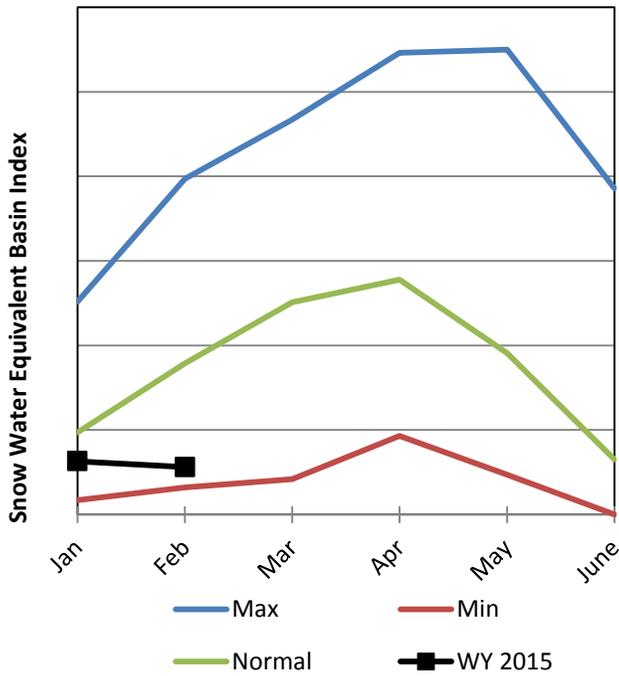
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Lake Tahoe Basin	14	17%	23%

Truckee River Basin

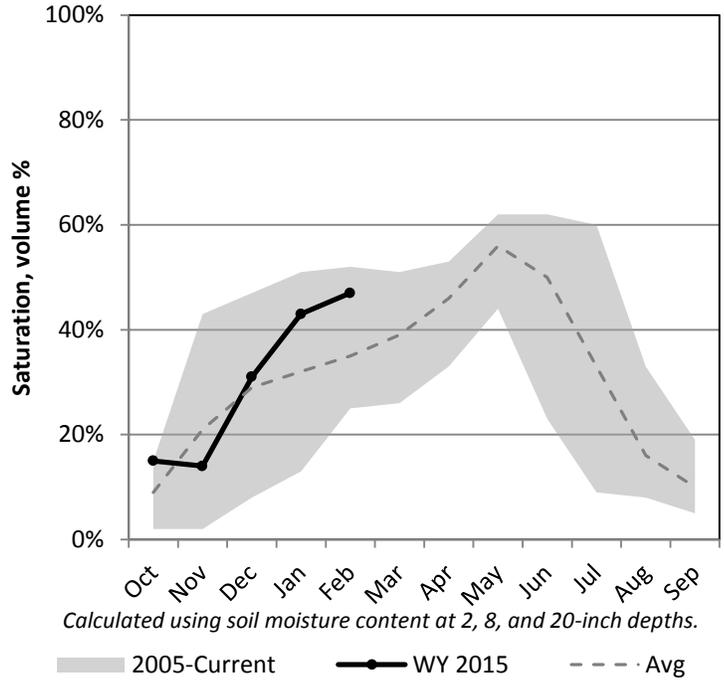
2/1/2015

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.

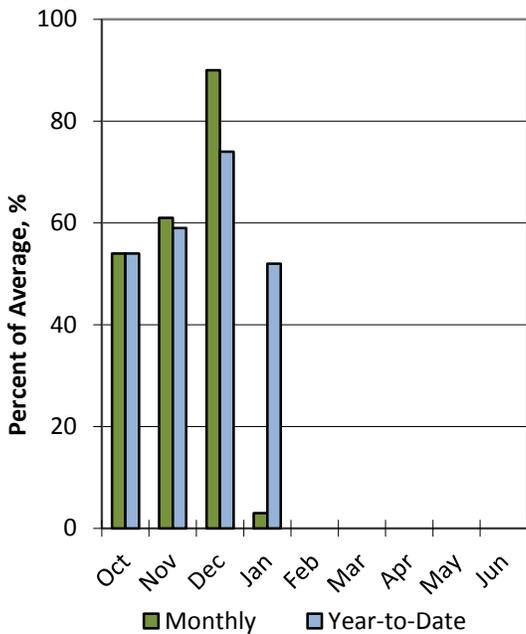
Snowpack



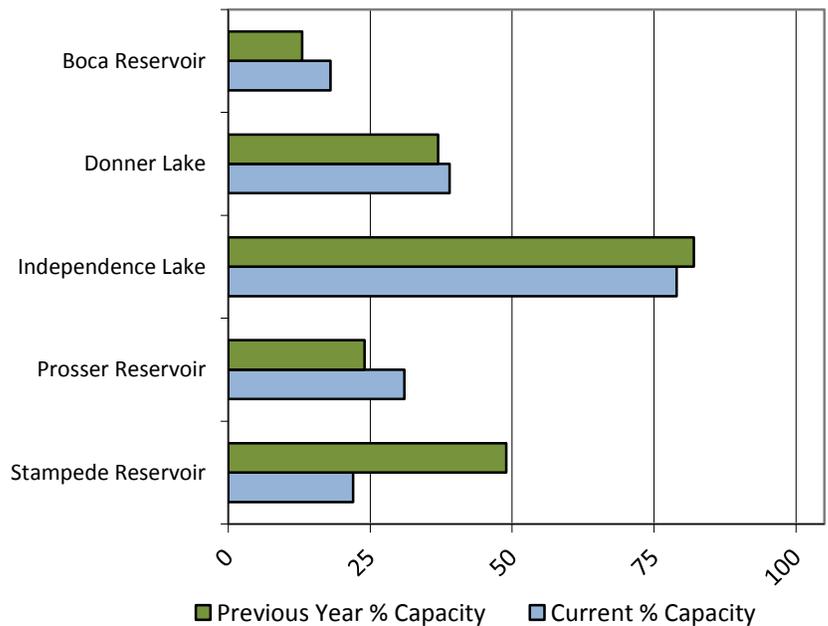
Soil Moisture



Precipitation



Reservoir Storage



Truckee River Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Truckee River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Sagehen Ck nr Truckee	MAR-JUL	0.65	0.94	1.2	19%	1.54	2.2	6.4
	APR-JUL	0.056	0.22	1	18%	1.31	1.96	5.6
L Truckee R ab Boca Reservoir	MAR-JUL	3	15.1	36	36%	57	88	99
	APR-JUL	12	22	33	39%	55	82	84
Truckee R at Farad	MAR-JUL	9.2	66	125	41%	184	270	307
	APR-JUL	53	77	105	41%	160	243	255
Steamboat Ck at Steamboat	APR-JUL	0.158	0.38	1.2	15%	2.7	6.8	7.9
Galena Ck at Galena Ck State Pk	MAR-JUL	0.097	0.87	1.6	33%	2.3	3.4	4.85
	APR-JUL	-0.5	0.57	1.3	30%	2	3.1	4.37
Pyramid Lake Elevation Change ¹	LOW-HIGH	-4.2	-1.18	0.2	12%	1.58	4.6	1.7

1) 90% and 10% exceedance probabilities are actually 95% and 5%

2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions

3) Median value used in place of average

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Boca Reservoir	7.2	5.2	15.1	40.9
Prosser Reservoir	9.0	7.0	9.5	28.6
Basin-wide Total	16.2	12.2	24.6	69.5
# of reservoirs	2	2	2	2

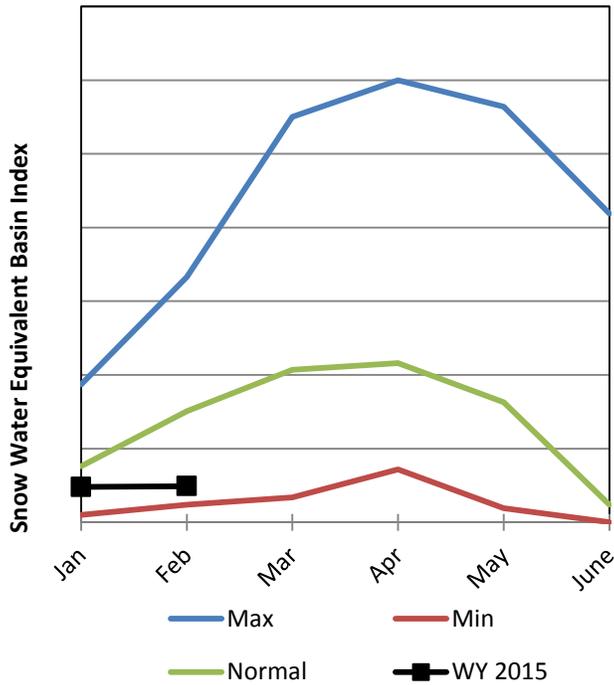
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Truckee River Basin	16	29%	13%
Little Truckee River	5	31%	11%
Sage Hen Creek	3	28%	14%
Galena Creek	1	37%	18%
Steamboat Drainage	2	32%	20%
Pyramid Lake	30	25%	17%

Carson River Basin

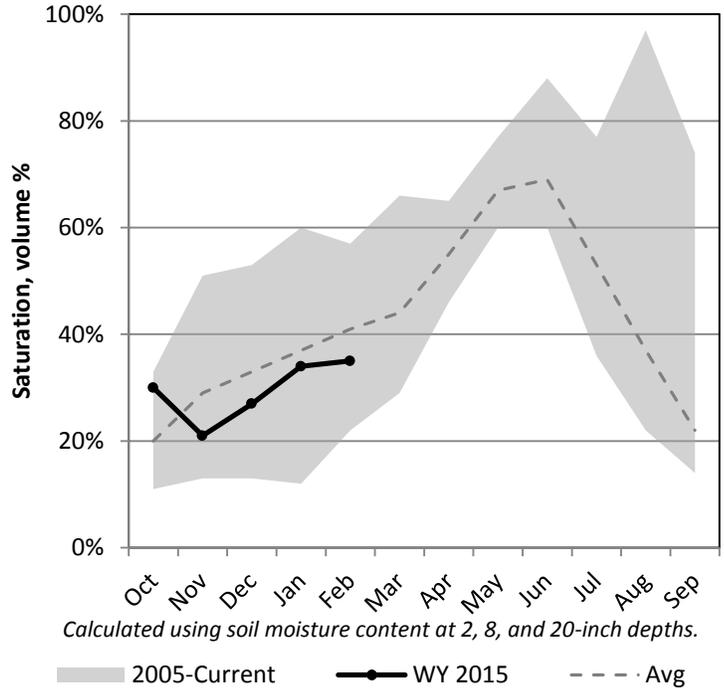
2/1/2015

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.

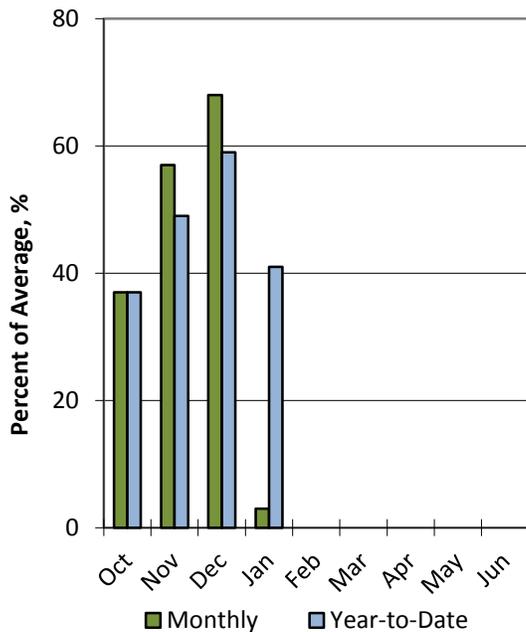
Snowpack



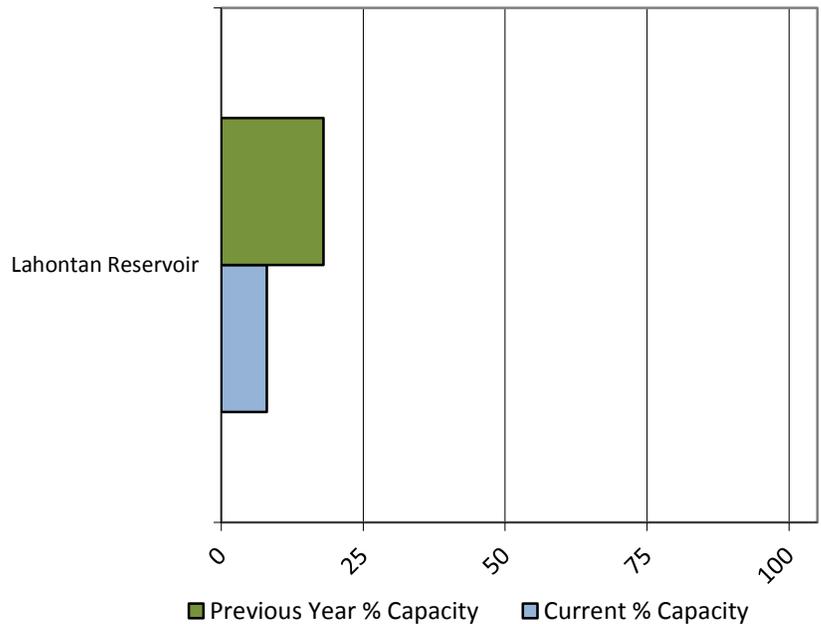
Soil Moisture



Precipitation



Reservoir Storage



Carson River Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Carson River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
EF Carson R nr Gardnerville	MAR-JUL	4.1	29	80	39%	131	206	205
	APR-JUL	3.7	22	68	37%	114	181	186
	200 cfs	07 May	30 May	15 Jun		01 Jul	24 Jul	25 Jul
	500 cfs	25 Apr	14 May	27 May		09 Jun	28 Jun	01 Jul
WF Carson R nr Woodfords	MAR-JUL	1.77	9.7	23	39%	36	56	59
	APR-JUL	1.08	9.3	20	37%	31	46	54
Carson R nr Carson City	MAR-JUL	2.1	6.3	55	26%	124	226	210
	APR-JUL	1.79	5.4	35	20%	89	168	179
Marlette Lake Inflow	MAR-JUL	-829	-246	150	12%	546	1129	1213
	APR-JUL	-744	-241	100	11%	441	944	911
King Canyon Ck nr Carson City	MAR-JUL	0.01	0.03	0.12	32%	0.31	0.6	0.38
	APR-JUL	0.01	0.03	0.1	26%	0.29	0.58	0.38
Carson R at Ft Churchill	MAR-JUL	9.4	23	38	19%	58	98	200
	APR-JUL	1	15	32	19%	70	110	171
Ash Canyon Ck nr Carson City	MAR-JUL	0.014	0.08	0.4	28%	0.72	1.19	1.41
	APR-JUL	0.011	0.056	0.3	27%	0.58	0.98	1.12

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lahontan Reservoir	23.2	53.5	146.9	295.1
Basin-wide Total	23.2	53.5	146.9	295.1
# of reservoirs	1	1	1	1

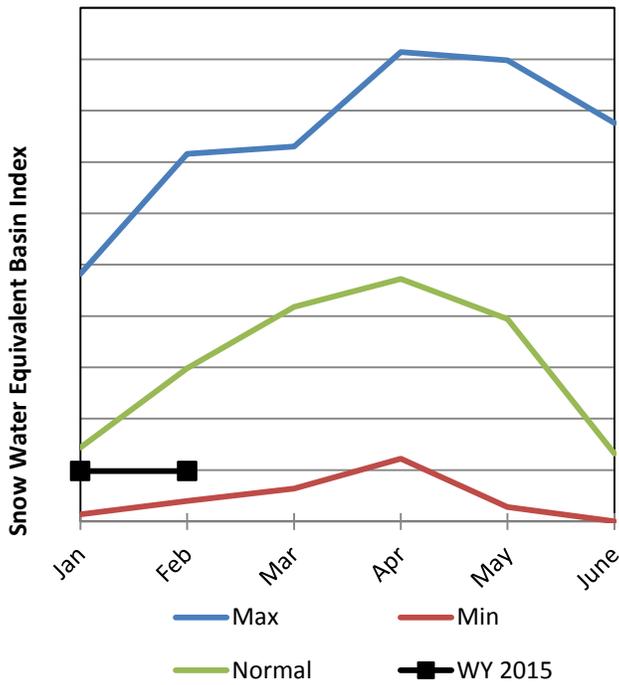
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Carson River Basin	9	31%	30%
E.F. Carson River	4	34%	35%
W.F. Carson River	9	31%	30%

Walker River Basin

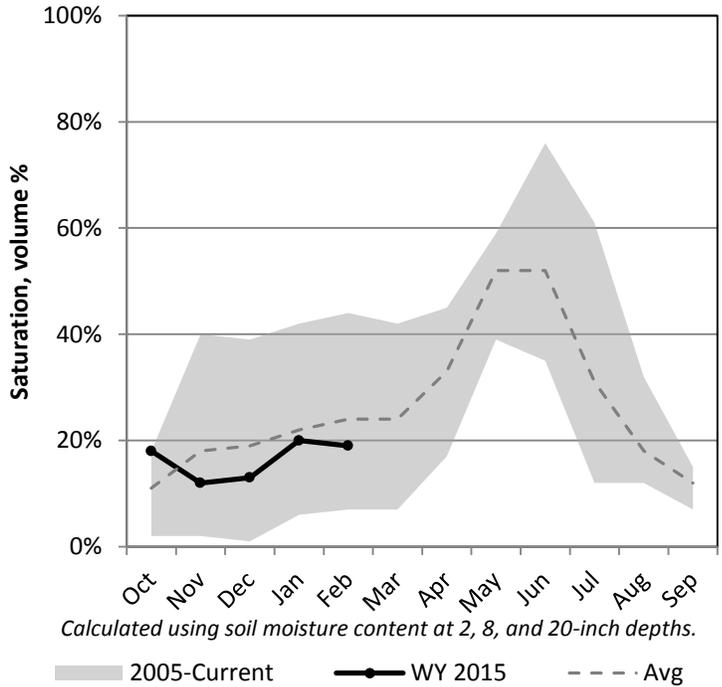
2/1/2015

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.

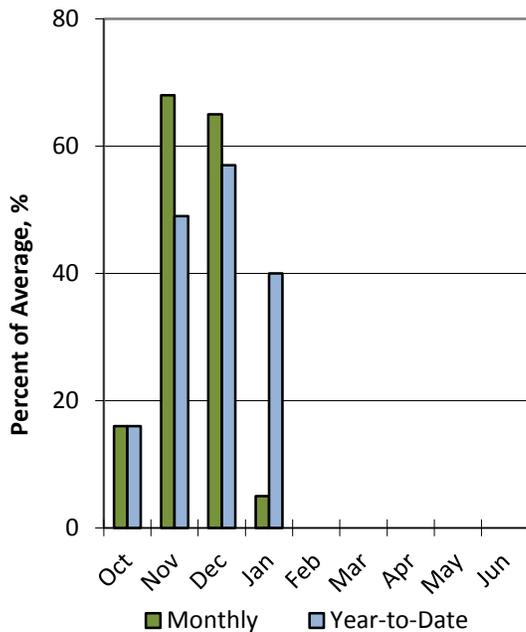
Snowpack



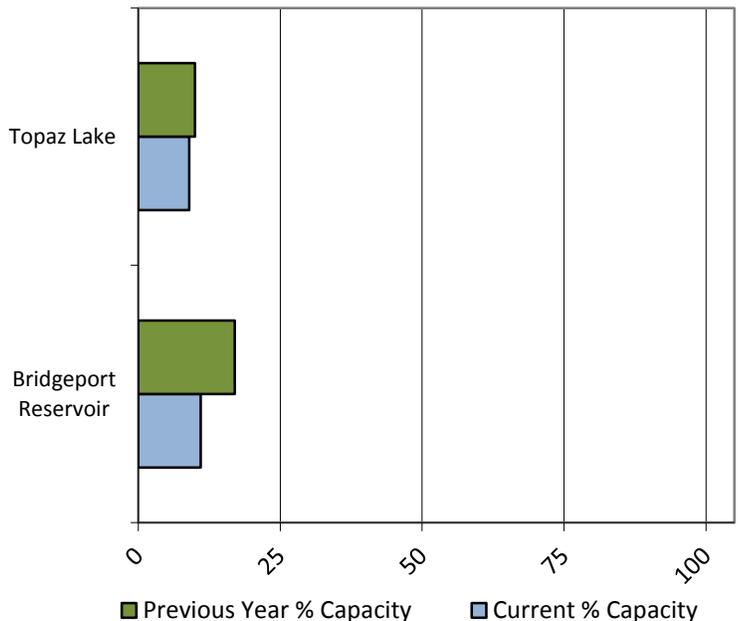
Soil Moisture



Precipitation



Reservoir Storage



Walker River Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Walker River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
E Walker R nr Bridgeport	MAR-AUG	0.76	4.6	20	26%	41	73	76
	APR-AUG	0.67	4.7	16	24%	34	61	67
W Walker R bl L Walker nr Coalville	MAR-JUL	5.1	41	75	44%	109	159	170
	APR-JUL	1.62	34	68	42%	102	153	162
W Walker R nr Coalville	MAR-JUL	67	73	76	44%	79	85	172
	APR-JUL	59	64	67	41%	70	75	163
Walker Lake Elevation Change ¹	LOW-HIGH	-6.1	-3.4	-2.2	-156%	-0.97	1.75	1.41

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Bridgeport Reservoir	4.7	7.4	20.8	42.5
Topaz Lake	5.5	6.2	23.6	59.4
Basin-wide Total	10.2	13.7	44.4	101.9
# of reservoirs	2	2	2	2

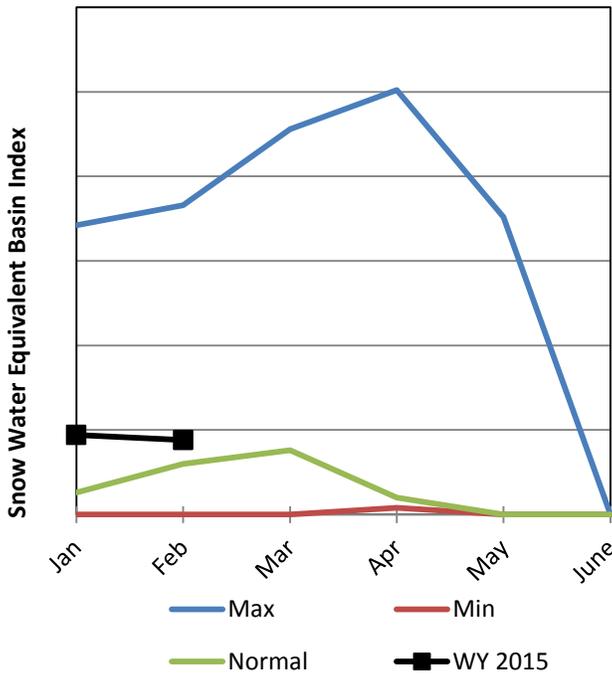
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Walker River Basin	7	31%	27%
E. Walker Rv. Nr Bridgeport	4	23%	28%
W. Walker Rv. Nr Coleville	4	35%	27%

Northern Great Basin

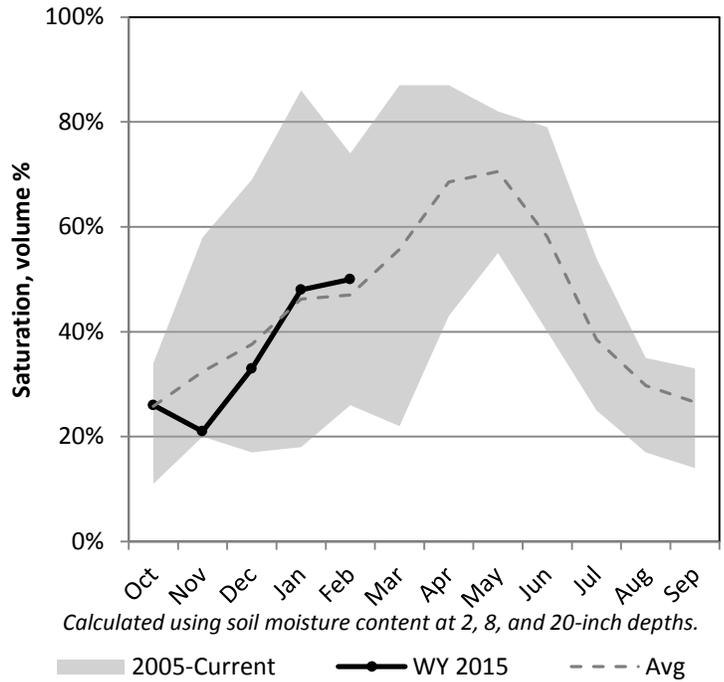
2/1/2015

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 38% to 55% of average.

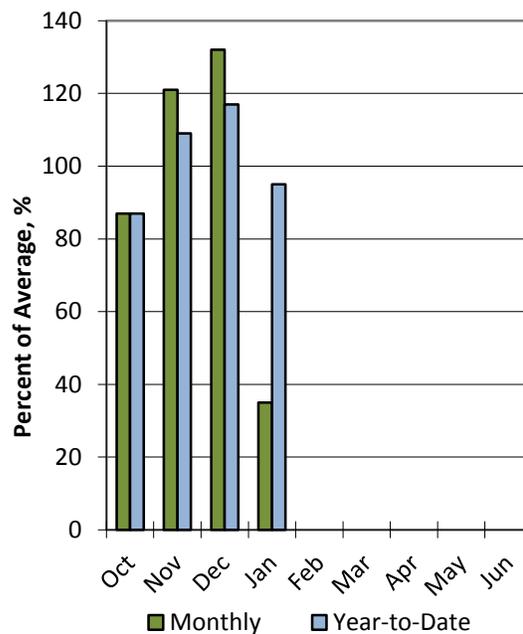
Snowpack



Soil Moisture



Precipitation



Northern Great Basin Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Northern Great Basin	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Eagle Ck nr Eagleville	APR-JUL	0.086	0.52	2	47%	3.5	5.7	4.3
Bidwell Ck nr Fort Bidwell	APR-JUL	1.15	3.4	5	42%	6.6	8.8	12
McDermitt Ck nr McDermitt	MAR-JUN	0.175	1.24	6.6	38%	12	19.8	17.5
	APR-JUL	0.14	0.44	4.5	32%	8.6	14.5	14
Davis Ck	APR-JUL	1859	2934	4000	55%	5454	8608	7233
	APR-SEP	2250	3444	4600	58%	6144	9406	7991

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

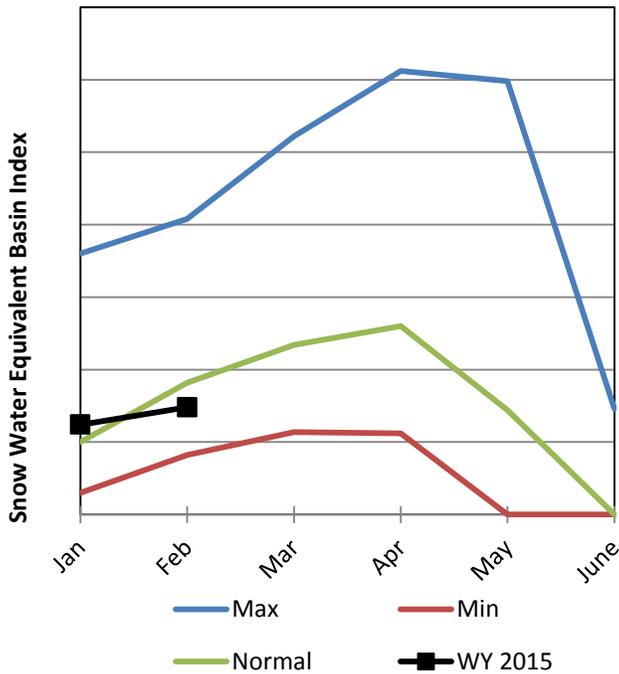
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
N Great Basin	4	50%	22%
Quinn River	1	18%	9%
McDermitt Creek	1	18%	9%

Upper Humboldt River Basin

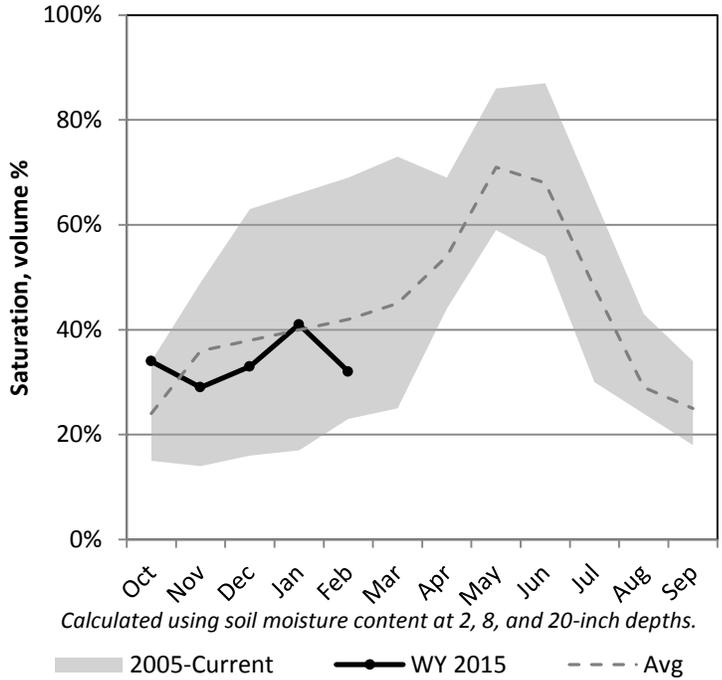
2/1/2015

Snowpack in the Upper Humboldt River Basin is below average at 73% of normal, compared to 54% last year. Precipitation in January was much below average at 44%, which brings the seasonal accumulation (Oct-Jan) to 82% of average. Soil moisture is at 32% compared to 29% last year. Forecast streamflow volumes range from 44% to 75% of average.

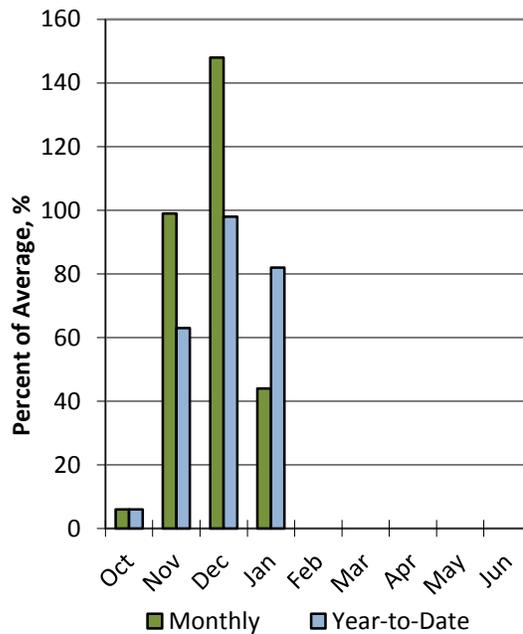
Snowpack



Soil Moisture



Precipitation



Upper Humboldt River Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Upper Humboldt River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Marys R nr Deeth	MAR-JUL	1.4	16	26	63%	36	51	41
	APR-JUL	0.72	10.1	20	56%	30	44	36
Lamoille Ck nr Lamoille	MAR-JUL	12.3	19.9	22	73%	30	38	30
	APR-JUL	11.9	19.5	20	69%	30	37	29
NF Humboldt R at Devils Gate	MAR-JUL	2.9	16.7	26	59%	35	49	44
	APR-JUL	0.68	5.8	16	47%	26	41	34
Humboldt R nr Elko	MAR-JUL	5.5	45	84	46%	123	180	182
	APR-JUL	4.6	33	70	45%	107	161	154
SF Humboldt R at Dixie	MAR-JUL	3	33	54	75%	74	104	72
	APR-JUL	2.6	26	48	73%	66	95	66
Humboldt R nr Carlin	MAR-JUL	31	90	130	47%	170	229	274
	APR-JUL	16.8	72	110	46%	148	203	238
Humboldt R at Palisades	MAR-JUL	18.7	79	120	44%	161	221	270
	APR-JUL	5.1	68	110	49%	152	215	225

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

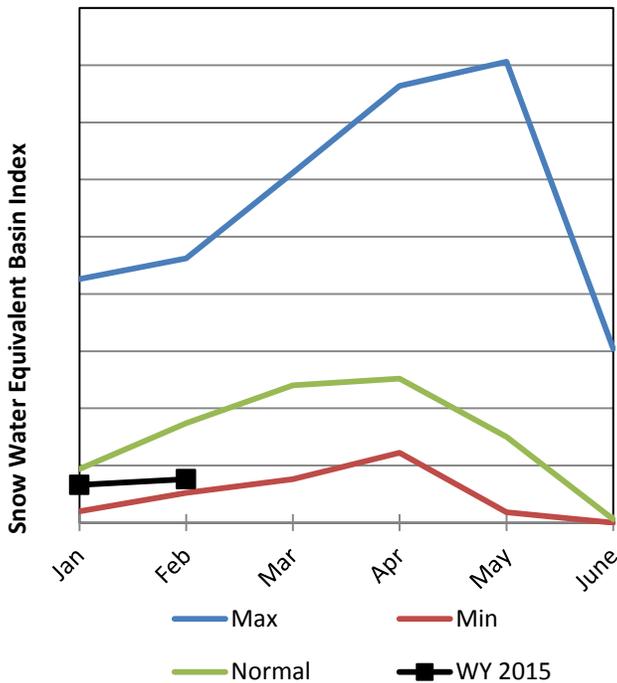
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Upper Humboldt R ab Palisades	16	73%	54%
Lamoille Creek	3	70%	49%
S. Fork Humboldt	4	72%	75%
Mary's River	1	94%	36%
N. Fork Humboldt	2	19%	28%

Lower Humboldt River Basin

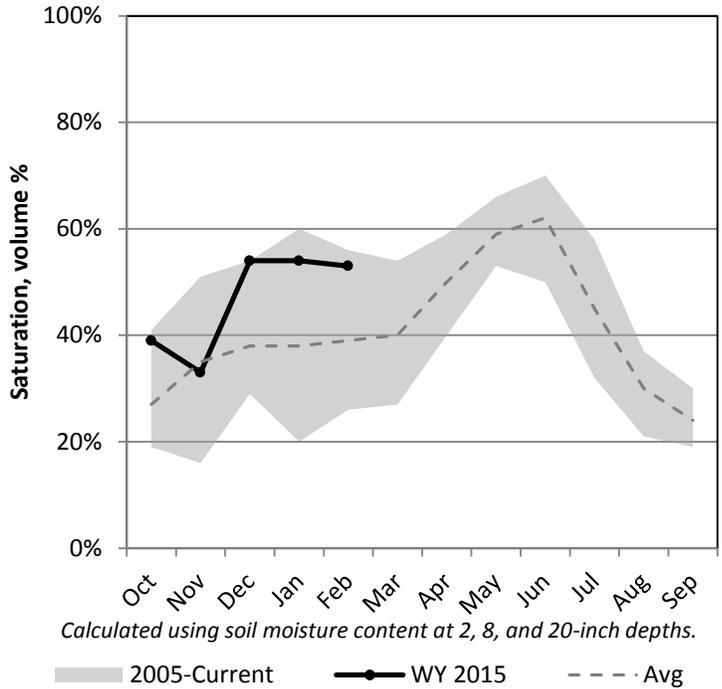
2/1/2015

Snowpack in the Lower Humboldt River Basin is much below average at 42% of normal, compared to 38% last year. Precipitation in January was much below average at 32%, which brings the seasonal accumulation (Oct-Jan) to 85% of average. Soil moisture is at 53% compared to 41% last year. Storage in Rye Patch Reservoir is 5% of capacity, compared to 4% last year. Forecast streamflow volumes range from 23% to 41% of average.

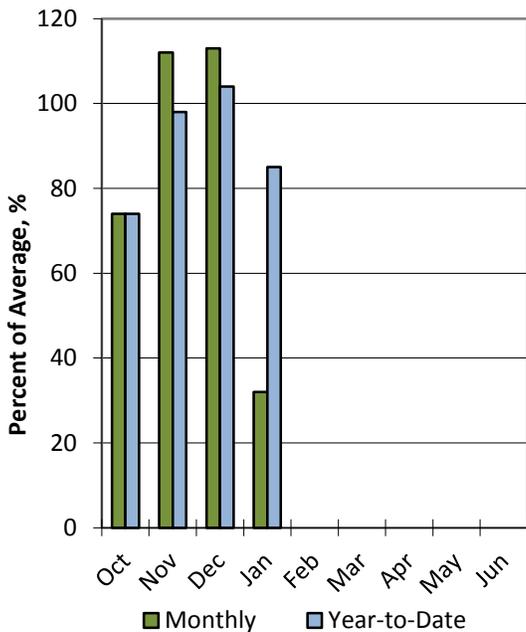
Snowpack



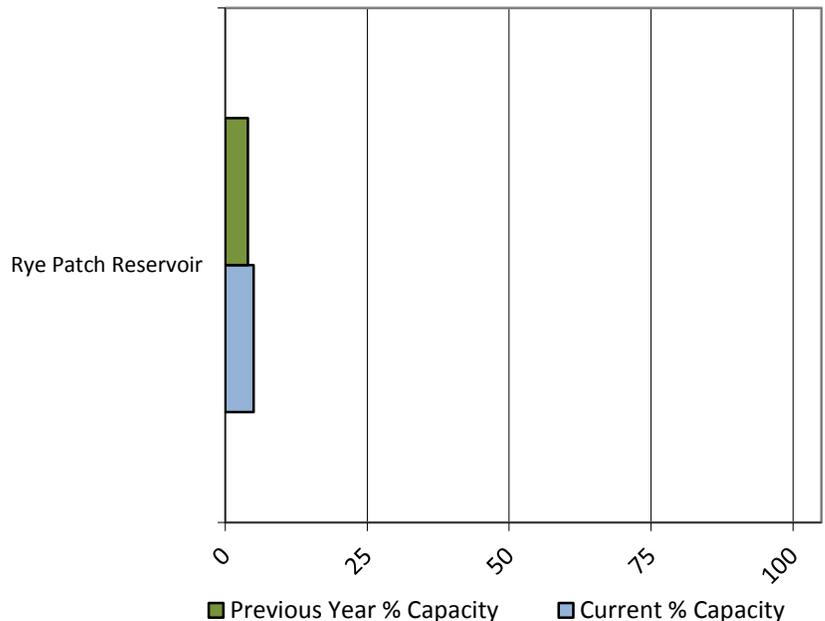
Soil Moisture



Precipitation



Reservoir Storage



Lower Humboldt River Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Lower Humboldt River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Rock Ck nr Battle Mtn	MAR-JUL	2.8	7.7	11	41%	14.3	19.2	27
	APR-JUL	1.93	4.7	6.7	37%	8.6	11.4	18.2
Humboldt R at Comus	MAR-JUL	2.6	13.7	90	35%	115	189	255
	APR-JUL	4.3	25	75	35%	125	199	215
L Humboldt R nr Paradise	MAR-JUL	0.11	0.32	3.4	32%	7.1	12.7	10.5
	APR-JUL	0.097	0.29	2.9	30%	6.5	11.8	9.7
Martin Ck nr Paradise	MAR-JUL	0.22	0.66	7.1	32%	13.8	24	22
	APR-JUL	0.175	1.05	5	29%	11	19.9	17.5
Humboldt R nr Imlay	MAR-JUL	6.7	11.1	50	23%	86	168	222
	APR-JUL	3.8	23	42	22%	101	187	188

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Rye Patch Reservoir	9.4	8.1	72.1	194.3
Basin-wide Total	9.4	8.1	72.1	194.3
# of reservoirs	1	1	1	1

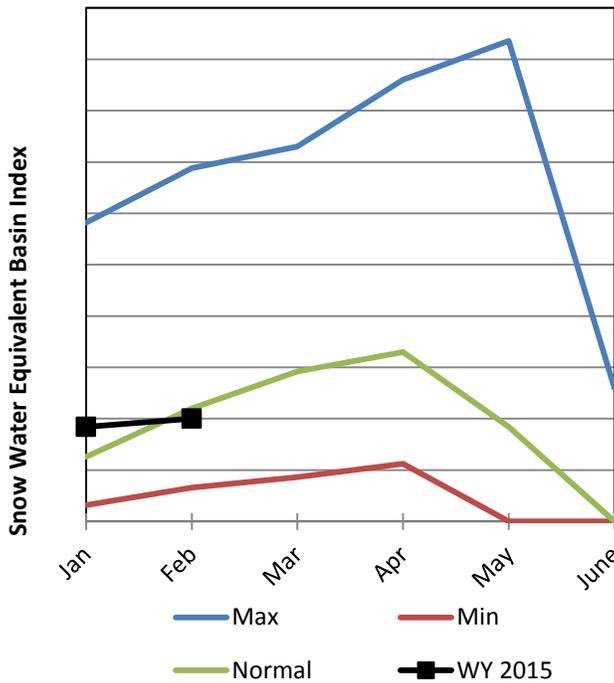
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Lower Humboldt River Basin	6	42%	38%
Little Humboldt River	4	52%	34%
Martin Creek	3	38%	30%
Reese River	2	54%	55%
Rock Creek	1	0%	8%

Clover Valley & Franklin River Basin

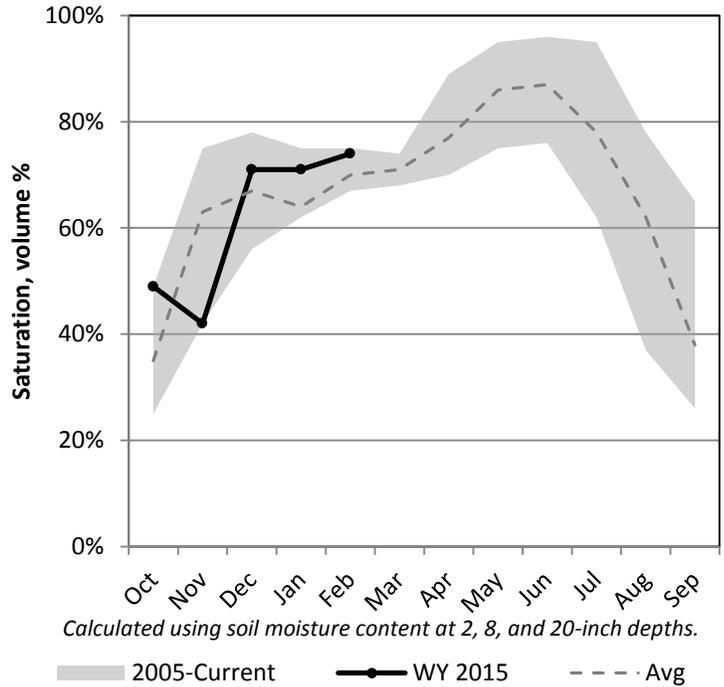
2/1/2015

Snowpack in the Clover Valley & Franklin River Basin is near average at 91% of normal, compared to 55% last year. Precipitation in January was much below average at 26%, which brings the seasonal accumulation (Oct-Jan) to 93% of average. Soil moisture is at 74% compared to 75% last year. The forecast streamflow volume for the Franklin River is 58% of average.

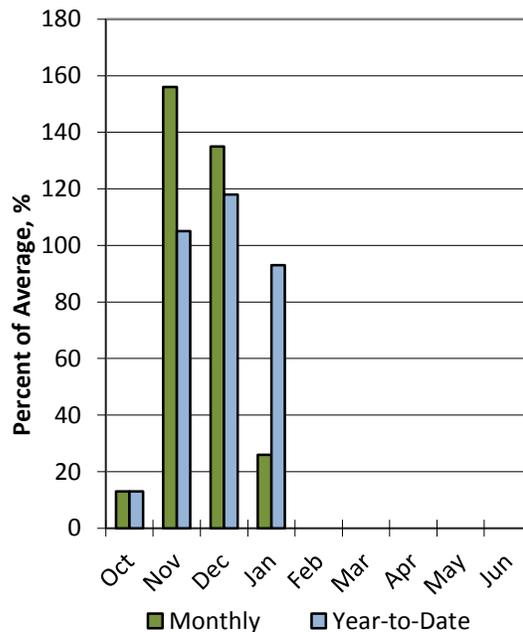
Snowpack



Soil Moisture



Precipitation



Clover Valley & Franklin River Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Clover Valley & Franklin River	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Franklin Ck nr Arthur	APR-JUL	1.72	3.1	4	58%	4.9	6.3	6.9

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

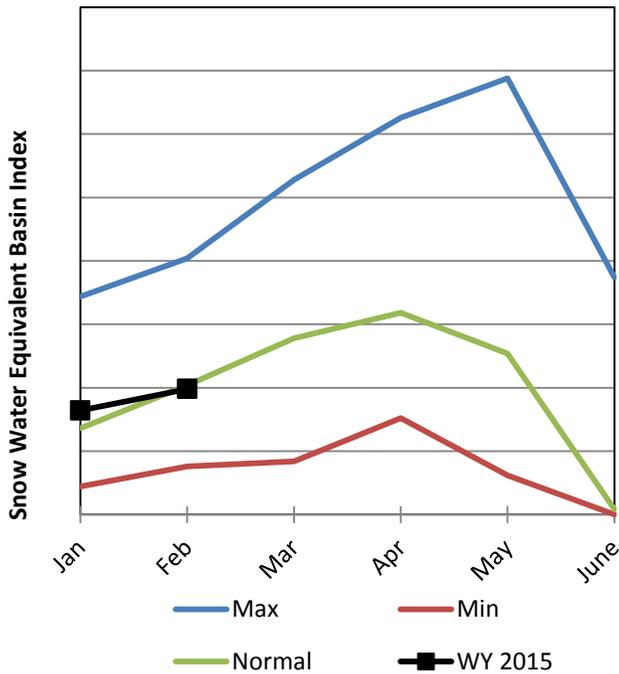
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Clover Valley & Franklin River	1	91%	55%
Franklin River	1	91%	55%
Clover Valley	1	91%	55%

Snake River Basin

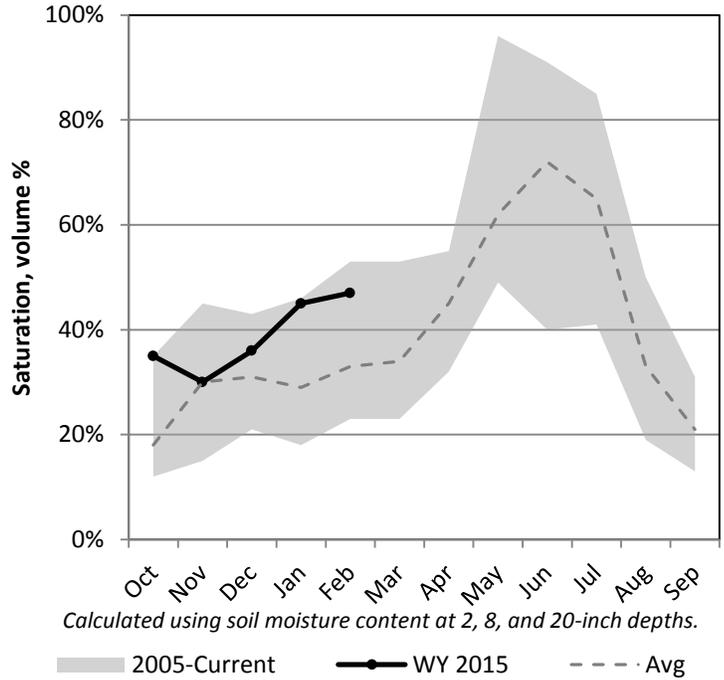
2/1/2015

Snowpack in the Snake River Basin is near average at 97% of normal, compared to 50% last year. Precipitation in January was much below average at 47%, which brings the seasonal accumulation (Oct-Jan) to 90% of average. Soil moisture is at 47% compared to 23% last year. The forecast streamflow volume for Salmon Falls Creek is 84% of average.

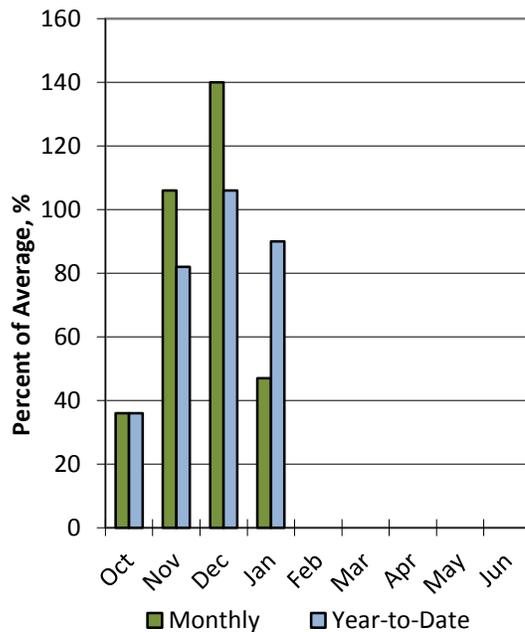
Snowpack



Soil Moisture



Precipitation



Snake River Basin Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Snake River Basin	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Salmon Falls Ck nr San Jacinto	MAR-JUL	41	57	68	84%	82	103	81
	MAR-SEP	44	60	72	85%	85	107	85

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- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

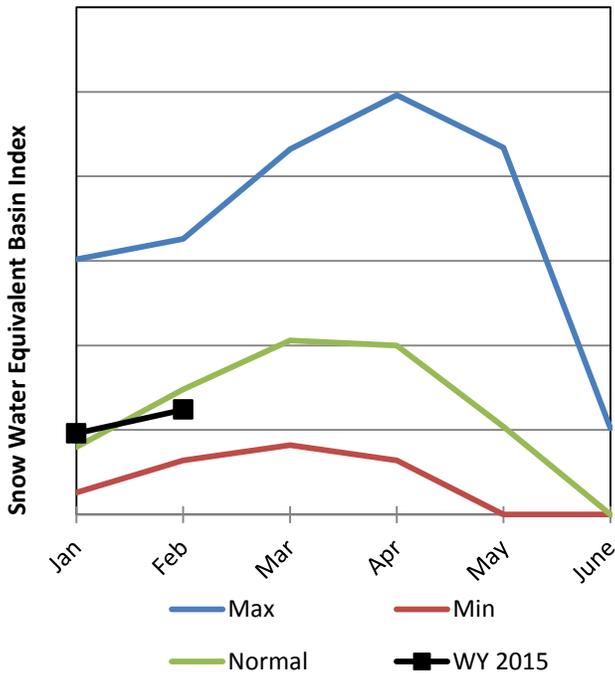
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Snake River Basin	3	97%	50%
Salmon Falls Creek	7	103%	55%

Owyhee River Basin

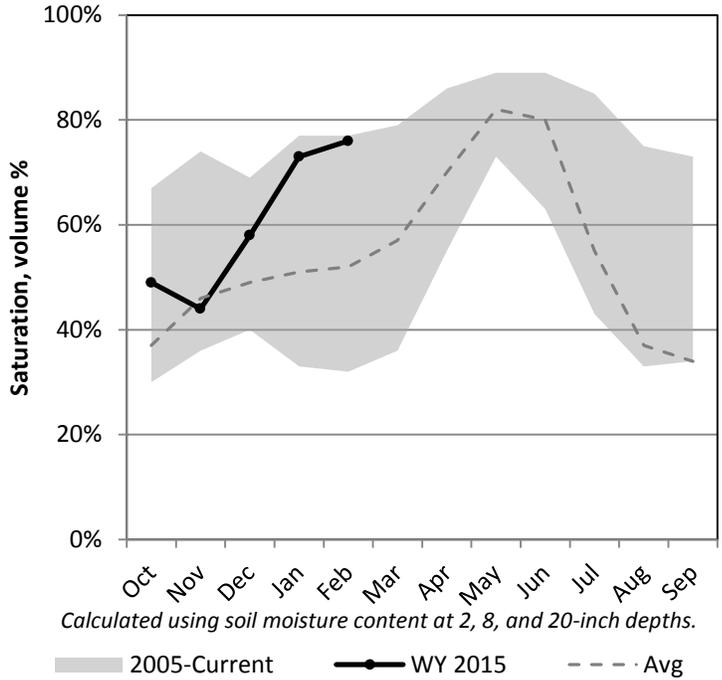
2/1/2015

Snowpack in the Owyhee River Basin is below average at 84% of normal, compared to 48% last year. Precipitation in January was much below average at 45%, which brings the seasonal accumulation (Oct-Jan) to 94% of average. Soil moisture is at 76% compared to 40% last year. Storage in Wildhorse Reservoir is 17% of capacity, compared to 18% last year. The forecast streamflow volume for the Owyhee River near Gold Creek is 63% of average.

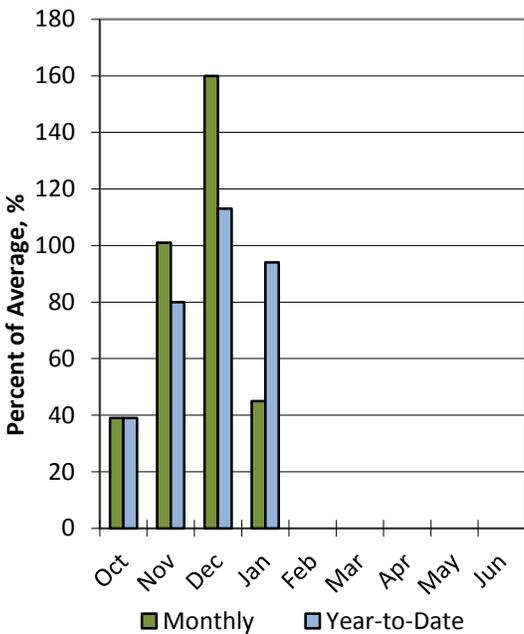
Snowpack



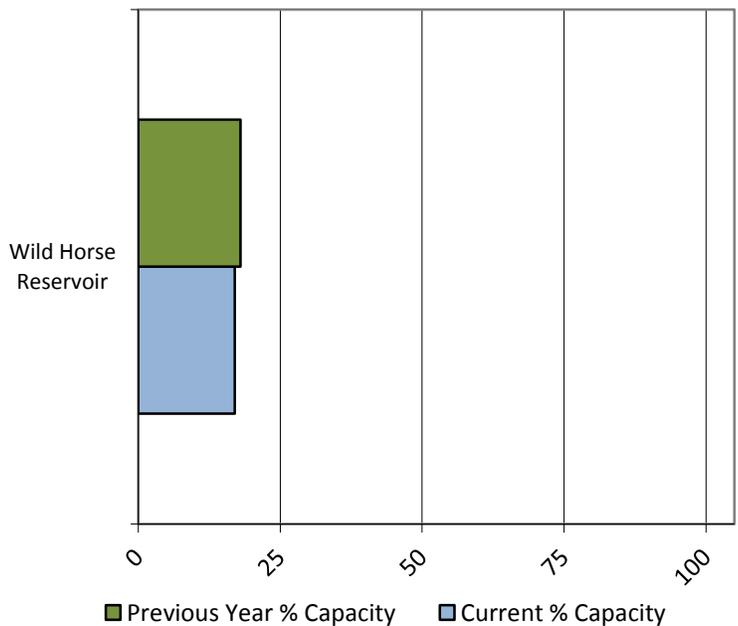
Soil Moisture



Precipitation



Reservoir Storage



Owyhee River Basin Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Owyhee River Basin	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Owyhee R nr Gold Ck ²	MAR-JUL	7.9	13.1	17.7	63%	23	33	28
	MAR-SEP	6.9	11.6	15.7	58%	21	30	27
	APR-JUL	3.2	7.1	11	50%	16.3	27	22

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Wild Horse Reservoir	12.2	13.0	33.2	71.5
Basin-wide Total	12.2	13.0	33.2	71.5
# of reservoirs	1	1	1	1

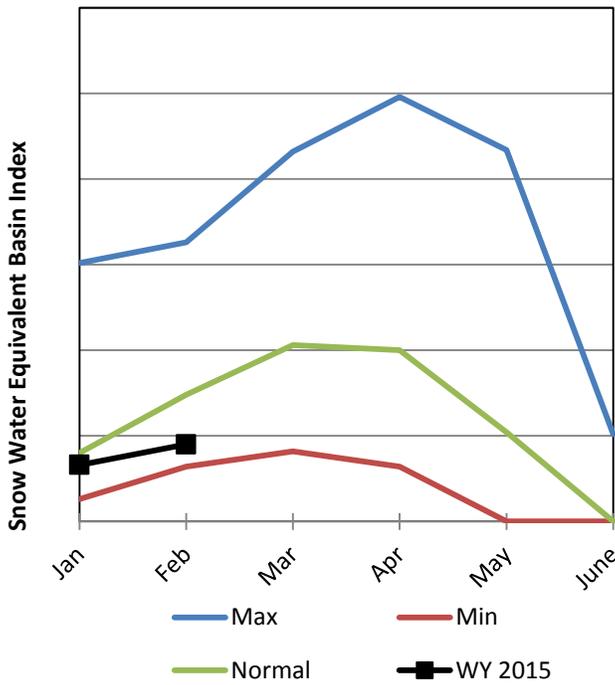
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Owyhee River Basin	5	84%	48%
Owyhee River nr Owyhee	4	83%	43%
Owyhee R. nr Gold Creek	2	70%	43%
S. Fork Owyhee River	2	79%	37%

Eastern Nevada

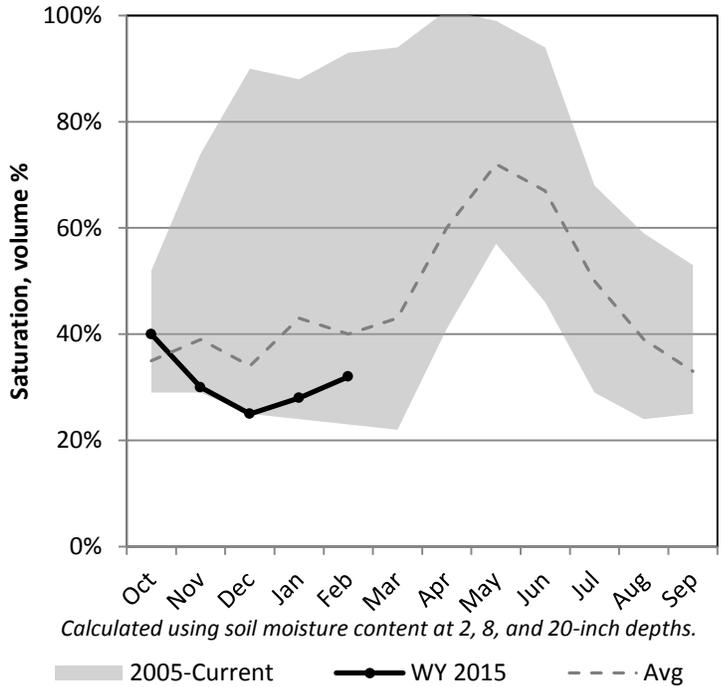
2/1/2015

Snowpack in the Eastern Nevada is much below average at 68% of normal, compared to 68% last year. Precipitation in January was much below average at 57%, which brings the seasonal accumulation (Oct-Jan) to 67% of average. Soil moisture is at 32% compared to 29% last year. Forecast streamflow volumes range from 30% to 56% of average.

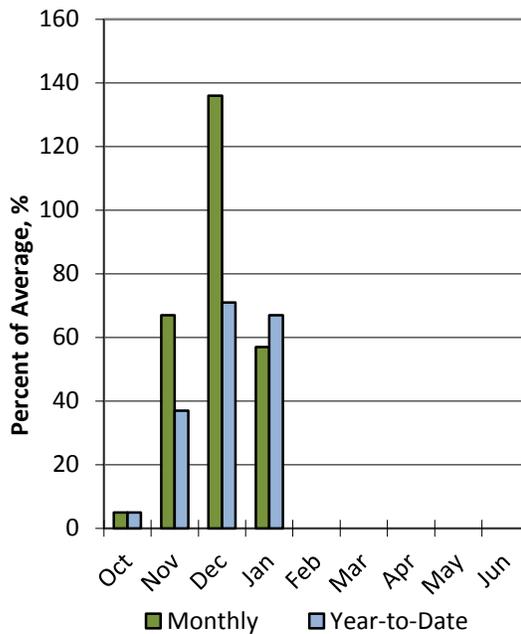
Snowpack



Soil Moisture



Precipitation



Eastern Nevada Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Eastern Nevada	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Kingston Ck nr Austin	APR-JUL	0.036	0.22	2	56%	3.8	6.5	3.6
Lehman Ck nr Baker	APR-JUL	0.027	0.41	1.2	44%	1.99	3.1	2.72
Cleve Ck nr Ely	APR-JUL	0.088	0.96	2	45%	3	4.6	4.41
Steptoe Ck nr Ely	APR-JUL	0.027	0.17	0.8	30%	1.43	2.4	2.7

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

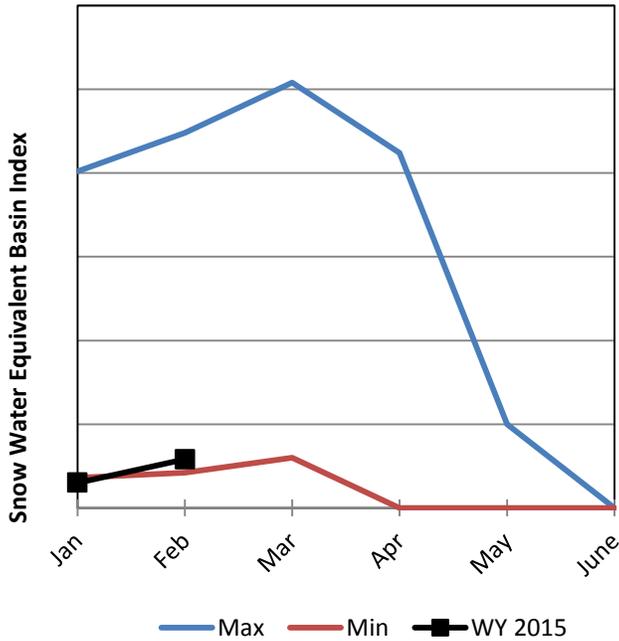
Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Eastern Nevada	3	68%	68%
Kingston Creek	1	61%	78%
Steptoe Valley	2	63%	58%

Lower Colorado River Basin

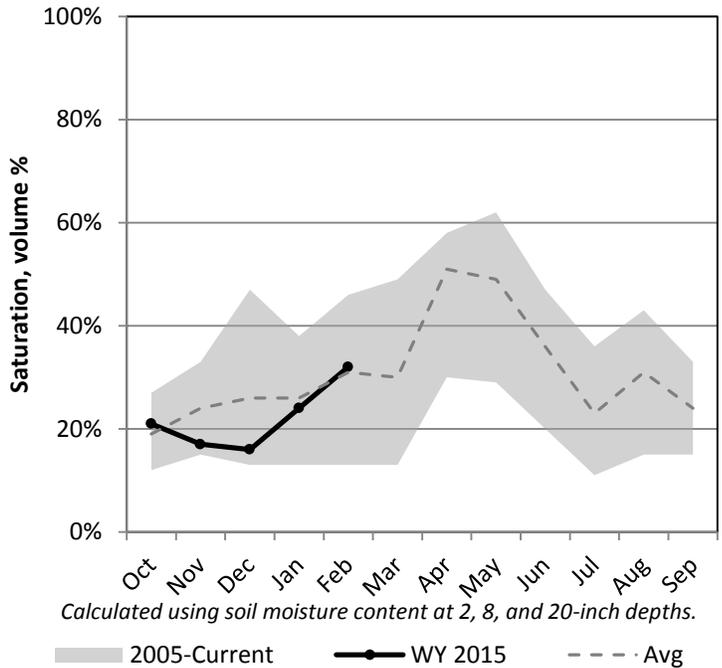
2/1/2015

Precipitation at SNOTEL stations within the Lower Colorado River Basin in January averaged 1.9 inches, which brings the average SNOTEL seasonal accumulation within the basin (Oct-Jan) to 6.3 inches. Soil moisture is at 32% compared to 19% last year. Reservoir storage is at 44% of capacity, compared to 51% last year. Forecast streamflow volumes range from 29% to 70% of average.

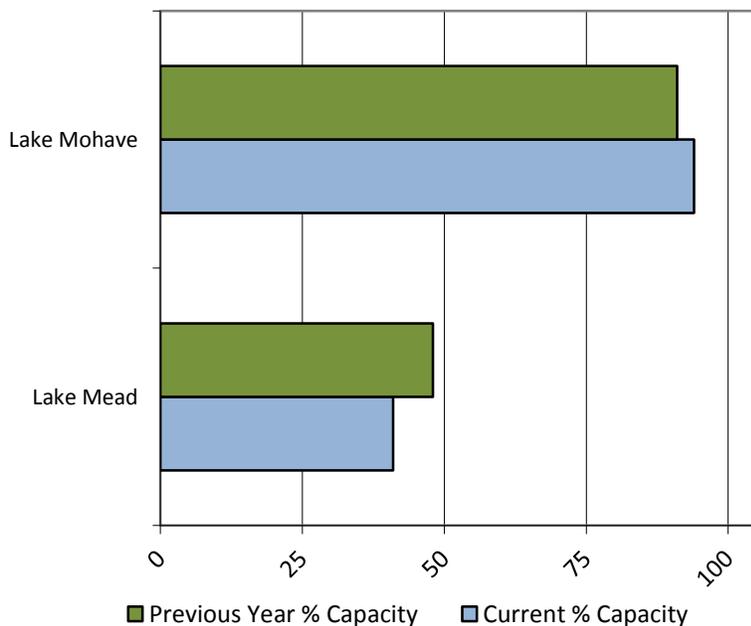
Snowpack



Soil Moisture



Reservoir Storage



Lower Colorado River Basin Streamflow Forecasts - February 1, 2015

Forecast Exceedance Probabilities for Risk Assessment
Chance that actual volume will exceed forecast

Lower Colorado River Basin	Forecast Period	90% (KAF)	70% (KAF)	50% (KAF)	% Avg	30% (KAF)	10% (KAF)	30yr Avg (KAF)
Virgin R at Littlefield	APR-JUL	15	17	19.1	29%	32	58	65
Lake Powell Inflow ²	APR-JUL	2620	3940	5000	70%	6180	8150	7160
Virgin R nr Hurricane	APR-JUL	15	17	19.1	30%	31	54	63

- 1) 90% and 10% exceedance probabilities are actually 95% and 5%
- 2) Forecasts are for unimpaired flows. Actual flow will be dependent on management of upstream reservoirs and diversions
- 3) Median value used in place of average

Reservoir Storage End of January, 2015	Current (KAF)	Last Year (KAF)	Average (KAF)	Capacity (KAF)
Lake Mead	10739.0	12543.0	20452.0	26159.0
Lake Mohave	1697.0	1640.0	1676.0	1810.0
Basin-wide Total	12436.0	14183.0	22128.0	27969.0
# of reservoirs	2	2	2	2

Watershed Snowpack Analysis February 1, 2015	# of Sites	% Median	Last Year % Median
Lower Colorado River Basin	0		
Spring Mountains	0		



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